THE INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS

IMANA NEWSLETTER

Newsletter of the Numerical Analysis Group of the Institute of Mathematics and its Applications

Volume 34 Number 2
January 2010

Contents

1 Happy New Year

This first Newsletter of the new decade features details of the new EPSRC-funded Centres for Doctoral Training at Cambridge, Lancaster and Warwick. An investment of 13M GBP has been made available for these centres, which will admit their first students in October 2010. The creation of the centres has lead to a number of new vacancies at lectureship and assistant professor level (see Section 13), as well as a significant number of PhD Studentships.

Other news likely to be of interest to readers is the announcement of the results of the recent SIAM elections. On January 1 2010 Nick Trefethen became President-Elect of SIAM and Nick Higham became Vice-President at Large. See http://www.siam.org/about/news-siam.php?id=1662 for more information.

An important date for your diary: A one-day workshop is planned in the Oxford University Computing Laboratory to celebrate Bill Morton's 80th birthday. This is scheduled for Saturday, 29 May 2010. Further details will be available shortly.

The copy date for the next Newsletter will be **Friday 26th March**.

Jennifer Scott (jennifer.scott@stfc.ac.uk)
Group Leader, Numerical Analysis Group
Rutherford Appleton Laboratory, Didcot, Oxfordshire OX11 0QX

2 Cambridge Centre for Analysis

I wish to let you know about the new Cambridge Centre for Analysis.

The CCA is an EPSRC-funded Centre for Doctoral Training in Mathematical Analysis, a joint project of the two mathematics departments of University of Cambridge under the directorship of Arieh Iserles and James Norris. We intend to admit each year about fifteen research students in all areas of mathematical analysis: pure, stochastic, computational and applied, and train them for four years toward a Cambridge PhD. More details are available at www.maths.cam.ac.uk/cca

The CCA is intended to fill a perceived national need in provision of first-class mathematical analysts for both academic setting and industry.

Most of our students will be funded by the EPSRC studentships. This means that UK nationals, as well as EU students resident in UK for at least three years, will receive both tuition costs and maintenance, other EU nationals being eligible only for tuition costs. In addition, we will have four Cambridge-funded scholarships, open to all candidates without restriction of nationality.

I would like to take this opportunity to ask you to bring this new exciting opportunity to the notice of suitable candidates. We are currently seeking first-class young mathematicians, typically in either the final year of four-year mathematics degree course or currently undergoing MSc training, who wish to conduct their PhD research in one of the areas of mathematical analysis, emphasising both research excellence and the breadth of knowledge and intellectual curiosity essential, we believe, to successful work in mathematical analysis.

Interested candidates are encouraged to pursue the application procedure detailed at www.maths.cam.ac.uk/cca but they should feel free at any time to consult either James or myself at cca@maths.cam.ac.uk . See also Section 13 for details of new positions available in relation to the Centre.

Arieh Iserles (A.Iserles@damtp.cam.ac.uk)

3 Lancaster Centre Doctoral Training

Lancaster University is launching a new Centre for Doctoral Training in Statistics and Operational Research. The EPSRC investment will be accompanied by substantial contributions from the university, business, industry and other organisations. The combined 6.7M GBP award, joint between the Departments of Mathematics and Statistics and Management Science, builds on Lancaster's long-standing commitment to Statistics and Operational Research and its leading reputation in these fields. It is also testament to the success of recent initiatives such as the EPSRC Science and Innovation award in

Operational Research (the LANCS Initiative) and the HEFCE-funded Centre for Excellence in Teaching and Learning in Postgraduate Statistics.

Industrial partners, including Unilever Research, Shell Research and other multinationals, will be involved at every stage in delivering the four-year PhDs, providing real-world projects and experience throughout the course. These links will help to produce a new generation of highly-employable researchers working in diverse fields, ranging from banking and manufacturing to aviation and energy.

The centre will be led by Idris Eckley, Kevin Glazebrook and Jonathan Tawn. It will train at least 40 students over seven years.

For further information, see http://www.maths.lancs.ac.uk/department/postgraduate or contact j.tawn or i.eckley@Lancaster.ac.uk for details of studentships.

4 MASDOC Centre for Doctoral Training Warwick

The Department of Mathematics and the Department of Statistics are delighted to announce that they have been awarded a 4M+ GBP grant from EPSRC to create a new Centre for Doctoral Training (CDT) in Warwick.

The mathematical science of the programme will be of broad scope, rooted in four MASDOC themes:

- Analysis which provides the language and tools for mathematical formulations, well-posedness and qualitative study of models of continuum phenomena in large multi-scale and multi-physics applications.
- Computation and Numerical Analysis for the numerical simulation of complex models. The design of good computational methods is a significant mathematical challenge requiring the interplay between analysis and computing in the context of applications.
- Probability to provide a detailed and rigorous understanding of the behaviour of complex stochastic models motivated by applications.
- Statistics for inference in both deterministic and stochastic models, exploiting the increasing volume and quality of data now routinely available in many areas of science and technology.

These are not only major areas in the mathematical sciences but are also key to developing the mathematical and statistical methodology that increasingly will be required to meet significant modern challenges arising from applications such as climate change, energy production, nano-sciences for technological and medical applications, molecular modelling of materials, and models arising in ecology, epidemiology and data mining. MASDOC is a novel doctoral training centre which will prepares students not only with mathematical science tools but also with skills of quantitative and qualitative study, modelling, teamwork and critical thinking.

The Centre will have 40 PhD student fellowships available, with the first entry in September 2010. Each studentship will cover fees and provide a stipend for four years.

For further details, please see http://www2.warwick.ac.uk/fac/sci/masdoc and see Section 13 for details of new positions available in relation to the Centre.

5 Who's Visiting Whom

Chester

Eugene Tyrtyshnikov, Institute of Numerical Mathematics, Russian Academy of Sciences, Moscow, Leverhulme International Professor, June - July 2010.
Research interests: Numerical linear algebra, model reduction, integral equations.
Host: Neville Ford (njford@chester.ac.uk).

Manchester

Yangfeng Su, School of Mathematical Sciences, Fudan University. March - April 2010.
Research interests: Matrix eigenvalue problems and model order reduction.
Host: Francoise Tisseur (F.Tisseur@manchester.ac.uk).

Oxford

Dr Pedro Gonnet, ETH Zurich, 1 October 2009 - 30 September 2010.
Host: Nick Trefethen (Nick.Trefethen@maths.ox.ac.uk).

Prof Zdenek Strakos and Dr Miro Rozloznik, both from the Academy of Sciences of the Czech Republic, Prague. 10 - 15 January 2010. Host: Andy Wathen.

Rutherford

Prof Miroslav Tuma, Academy of Sciences of the Czech Republic, Prague. 25 - 29 January 2010.
Host: Jennifer Scott.

6 Technical Reports

University of Bath

BICS reports: Available from http://www.bath.ac.uk/math-sci/bics/preprints/

Brunel University

Reports available from http://people.brunel.ac.uk/∼icsrsss/bicom/tech_rep.html

University of Cambridge

Reports available from http://www.damtp.cam.ac.uk/user/na/reports.html

NA2009/09 M. Condon, A. Deano and A. Iserles.
On systems of differential equations with extrinsic oscillation.

NA2009/08 H. Brunner, A. Iserles and S.P. Nrsett.
On the singular values of the Fox-Li operator.

Cardiff University

09/07 P. J. Bowen, T. N. Phillips and Y. Zheng.
A fundamental analysis of droplet deformation prior to droplet breakup.

09/08 S. J. Lind and T. N. Phillips.
The effect of viscoelasticity on a rising gas bubble.

09/09 L. Traverso, T. N. Phillips and Y. Yang.
Mixed finite element approximation of groundwater flow in heterogeneous aquifers described by the Karhunen-Love expansion method.

University of Edinburgh

Reports available from http://www.maths.ed.ac.uk/ERGO/preprints.html

ERGO 09-012 J. Gondzio.
Matrix-free interior point method.

ERGO 09-013 C. Cartis, N.I.M. Gould and Ph.L. Toint.
On the complexity of steepest descent, Newton's and regularized Newton's methods for nonconvex unconstrained optimization.

ERGO 09-014 R. Fletcher.
A limited memory steepest descent method.

University of Liverpool

Reports available from http://www.liv.ac.uk/∼cmchenke/na_liverpool.htm

09/05 A New Study of the Burton and Miller method for the Solution of A Three-Dimensional Helmholtz Problem.
Ke Chen, Jin Cheng and Paul J. Harris.

01/10 Image selective segmentation under geometrical constraints using an active contour approach.
Noor Badshah and Ke Chen.

University of Manchester

MIMS EPrints from http://www.manchester.ac.uk/mims/eprints Preprints with AMS Mathematics Subject Classification 65: Numerical Analysis.

2009.88: Catherine E. Powell and Elisabeth Ullmann (2009).
Preconditioning stochastic Galerkin saddle point systems.

2009.87: Rudiger Borsdorf, Nicholas J. Higham and Marcos Raydan (2009).
Computing a Nearest Correlation Matrix with Factor Structure.

2009.86: Nicholas J. Higham (2009).
The Scaling and Squaring Method for the Matrix Exponential Revisited.

2009.85: Anne Trefethen, Nicholas J. Higham, Iain Duff and Peter Coveney (2009).
Applications/Algorithms Roadmapping Activity. First Stage Final Report.

2009.84: Anne Trefethen, Nicholas J. Higham, Iain Duff and Peter Coveney (2009).
Developing a High-Performance Computing/Numerical Analysis Roadmap.

2009.77: Fernando De Teran, Froilan M. Dopico and D. Steven Mackey (2009).
Fiedler Companion Linearizations and the Recovery of Minimal Indices.

2009.75: Qifeng Liao and David Silvester (2009).
A simple yet effective a posteriori estimator for classical mixed approximation of Stokes equations.

2009.56: D. Steven Mackey, Niloufer Mackey, Christian Mehl and Volker Mehrmann (2009).
Jordan Structures of Alternating Matrix Polynomials.

University of Oxford

Reports available from http://web.comlab.ox.ac.uk/oucl/publications/natr/index.html

NA-09/05 Rodrigo B. Platte.
How fast do radial basis function interpolants of analytic functions converge?

NA-09/06 Nicholas I. M. Gould and Daniel P. Robinson.
A second-derivative trust-region SQP method with a "trust-region-free" predictor step.

NA-09/07 Sheehan Olver.
Computing the Hilbert transform and its inverse.

University of Reading

Preprints available from http://www.reading.ac.uk/maths/research/maths-preprints.aspx

MPS_2009_01 D. J. Needham and S. Langdon.
The unsteady flow of a weakly compressible fluid in a thin porous layer II: Three-dimensional theory.

MPS_2009_02 P.J. Smith, S.L. Dance, M.J. Baines, N.K. Nichols and T.R. Scott.
Variational data assimilation for parameter estimation: application to a simple morphodynamic model.

MPS_2009_03 S. N. Chandler-Wilde, I. G. Graham, S. Langdon and M. Lindner.
Condition number estimates for combined potential integral operators in acoustics and their boundary element discretisation.

MPS_2009_04 N.K. Nichols.
Mathematical concepts of data assimilation.

MPS_2009_05 T. Betcke and D. Kressner.
Perturbation, Computation and Refinement of Invariant Pairs for Matrix Polynomials.

MPS_2009_06 V. Lucarini and K. Fraedrich.
Symmetry-break, mixing, instability, and low frequency variability in a minimal Lorenz-like system.

MPS_2009_07 V. Lucarini.
Symmetry-break in Voronoi Tessellations.

MPS_2009_08 A. H. Barnett and T. Betcke.
An exponentially convergent nonpolynomial finite element method for time-harmonic scattering from polygons.

MPS_2009_09 A.V. Lukyanov.
Liquid flow over a substrate structured by seeded nanoparticles.

MPS_2009_10 A. Pedchenko, S. Molokov, J. Priede, A. Lukyanov and P.J. Thomas.
Experimental Model of the Interfacial Instability in Aluminium Reduction Cells.

MPS_2009_11 Sergei Molokov, Gennady El and Alexander Lukyanov.
Classification of instability modes in a model of aluminium reduction cells with a uniform magnetic field.

MPS_2009_12 Peter Grindrod and Desmond J. Higham.

Evolving Graphs: Dynamical Models, Inverse Problems and Propagation.

MPS_2009_13 Peter Grindrod and Dimitris Pinotsis.
On the spectra of certain Integro-Differential-Delay problems with applications in neurodynamics.

MPS_2009_14 Mark D. Preston, Peter G. Chamberlain and Simon N. Chandler-Wilde. A Nystrom Method for a Boundary Value Problem arising in Unsteady Water Wave.

MPS_2009_15 A.V. Lukyanov.
The flow induced dynamic surface tension effects at nanoscale.

MPS_2009_16 B. Pelloni and D.A. Pinotsis.
The elliptic sine-Gordon equation in a half plane.

MPS_2009_17 Simon Chandler-Wilde and Johannes Elschner.
Variational Approach in Weighted Sobolev Spaces to Scattering by Unbounded Rough Surfaces.

Rutherford Appleton Laboratory

Reports available from http://www.numerical.rl.ac.uk/reports/reports.shtml

RAL-TR-2009-024 N. I. M. Gould and D. P. Robinson.
A second-derivative trust-region SQP method with a trust-region-free predictor step.

RAL-TR-2009-023 C. Cartis, N. I. M. Gould and Ph. L. Toint.
On the complexity of steepest descent, Newton's method and regularized Newton methods for nonconvex unconstrained optimization.

University of Strathclyde
Available from http://www.mathstat.strath.ac.uk/research/reports

7 Diary of Seminars (January - March 2010)

BATH Numerical Analysis Seminars: Seminars take place on Fridays at 12:15pm in Department of Mathematical Sciences, Building 1 West, Room 1W3.6. The timetable is available at http://people.bath.ac.uk/cn229/naseminars/

BATH BICS series: Seminars take place at 1:15pm in Department of Mathematical Sciences, Building 1 West, Room 1W3.6. A timetable is available at http://www.bath.ac.uk/math-sci/bics/seminars/

BATH CNM Seminars: Seminars take place on Tuesdays at 1:15pm in the Department of Mathematical Sciences, Building 1 West, Room 1W3.6. The timetable is available at http://www.bath.ac.uk/cnm/

BATH Numerical Analysis series: Seminars take place on Fridays at 1:15pm in the Department of Mathematical Sciences, Building 1 West, Room 1W3.6. The timetable is available at http://www.maths.bath.ac.uk/∼mamamf/naseminar.html

BIRMINGHAM : The Optimisation and Numerical Analysis seminar at Birmingham run on Thursdays, between 12-1pm in Arts Lecture Room 6, Edgbaston Campus at the University of Birmingham. The programme can be found at http://web.mat.bham.ac.uk/loghin/onaseminars.html

BRUNEL : Two seminar series are held in the Department of Mathematical Sciences, John-Crank Building, Room M128. The Applied Mathematics Research Seminars take place on Mondays at 14:00, and the Seminars on Mathematical Physics and Random Matrices are held on Tuesdays at 16:00. More details are available at http://www.brunel.ac.uk/about/acad/siscm/maths/events

CARDIFF : Seminars take place on Tuesdays at 4pm in School of Mathematics room M/2.06. Contact: Tim Phillips (phillipstn@cardiff.ac.uk).

CAMBRIDGE : There are three relevant seminar series in Cambridge which are held in MR14, Pavilion F, Centre for Mathematical Sciences: Applied and Computational Analysis Seminars (up-to-date details at http://talks.cam.ac.uk/show/index/9811), Numerical Analysis Seminars (up-to-date details at http://www.damtp.cam.ac.uk/user/na/seminars.html), and ACA Graduate Seminars (up-to-date details at http://talks.cam.ac.uk/show/index/15177).

EDINBURGH : The Edinburgh Research Group in Optimization (ERGO) runs seminars on Optimization and Numerical Analysis. Sseminars are usually on Wednesdays at 3.30pm in Room 6206 of the James Clerk Maxwell Building. More details are available from: http://www.maths.ed.ac.uk/ERGO/seminars.html

LIVERPOOL : Seminars are normally held on Wednesdays at 4pm, in the Whittaker Room (211), Mathematical Sciences Building.
See http://www.liv.ac.uk/maths/Applied/Research/Seminars/index.html

MANCHESTER : Numerical Analysis and Scientific Computing Seminars are held in the in the Alan Turing Building, Frank Adams Room 1, at 3pm. For more details and abstracts, see http://www.mims.manchester.ac.uk/events/seminars/numerical-analysis.php

OXFORD : Unless stated otherwise, seminars take place on Thursdays at 2pm in the NA Group Seminar Room, 3 Worcester Street. For further information contact Lotti Ekert (Lotti.Ekert@maths.ox.ac.uk). A timetable and abstracts are available from http://www.maths.ox.ac.uk/events/seminars/

RAL : Seminars are held in the Atlas Centre, Rutherford Appleton Laboratory and start at 2pm. Contact: sue.thorne@stfc.ac.uk

READING : Seminars take place on Fridays promptly at 3pm in room 113 of the Mathematics Department. External audiences are advised to contact Brigitte Calderon on 0118 378 5002 or email b.calderon@reading.ac.uk to confirm the programme before attending. Timetable available at http://www.reading.ac.uk/maths/news/AppMathsNumAnalSeminars.aspx

Please note that, at the time of writing, not many people had fully sorted out their seminar series for this coming term so you are advised to check the given websites for details of titles and of further seminars as they become available.

JANUARY 2010

JANUARY 07 : BATH. Tatiana Kim (Bath). Title TBA.

JANUARY 14 : OXFORD. Zdenek Strakos (Academy of Sciences of the Czech Republic). Golub-Kahan Iterative Bidiagonalization and Revealing Noise in the Data.

JANUARY 21 : LIVERPOOL. Jason Xie (Swansea). Implicit methods for image segmentation.

JANUARY 21 : RAL. Ernesto Estrada (Strathclyde). Title TBA.

JANUARY 28 : OXFORD. Catherine Powell (Manchester). Preconditioning Stochastic Finite Element Matrices.

FEBRUARY 2010

FEBRUARY 10 : LIVERPOOL. Daniel Rueckert (Imperial College). Image registration and segmentation

FEBRUARY 11 : RAL. Melina Freitag (Bath). Title TBA.

FEBRUARY 12 : BATH. Euan Spence (Bath). Approximating the numerical range of linear operators, and applications to boundary integral equations for high frequency scattering.

FEBRUARY 18 : OXFORD. Alison Ramage (Strathclyde). Saddle point problems in liquid crystal modelling.

FEBRUARY 19 : BATH. Nigel Wood (UK Met Office). Title TBA.

FEBRUARY 25 : OXFORD. Ekkehard Sachs (Trier). Title TBA.

FEBRUARY 26 : BATH. Zhivko Stoyanov (University of Bath). Title TBA.

MARCH 2010

MARCH 2 : CARDIFF. Y. Luo (Glasgow). Dynamic modelling of chorded mitral valve using immersed boundary methods.

MARCH 4 : OXFORD. Thomas Goldstein (University of California, Los Angeles). Split Bregman methods for L1-Regularized Problems with Applications to Image Processing.

MARCH 11 : OXFORD. Yangfeng Su (Fudan University Shanghai). Nonlinear Eigenvalue Problems.

MARCH 19 : BATH. Manolis Georgoulis (Leicester). Title TBA.

8 Forthcoming Meetings and Conferences

JANUARY 2010

UK and Republic of Ireland SIAM Section Annual Meeting 2010, January 8.
Heriot-Watt University, Edinburgh. http://www.numerical.rl.ac.uk/people/hsd/ukiesiam/

FEBRUARY 2010

3rd Global Conference on Power Control and Optimization, February 2-4.
Gold Coast, Australia. http://www.engedu2.net/index.htm

Workshop on optimization and control, February 3-5.
Toulouse, France. http://www.fondation-stae.net/fr/actions/seminaires.html

PDP 2010 - 18th Euromicro International Conference on Parallel, Distributed and Network-Based Computing, February 17-19.
Pisa, Italy. http://www.pdp2010.org/
Special session: Parallel Algorithms and Software for Sparse Linear Algebra Computations.
http://www.na.icar.cnr.it/pdp2010/psla.html

GAMM Seminar on Tensor Approximations, February 22-24.
Leipzig, Germany. http://www.mis.mpg.de/scicomp/gamm26/index.html

SIAM Conference on Parallel Processing and Scientific Computing (PP10), February 24-26.
Hyatt Regency Seattle, Seattle. http://www.siam.org/meetings

MARCH 2010

34th South African Symposium on Numerical and Applied Mathematics (SANUM 2010), March 15-17.
University of Stellenbosch, Cape Town. http://dip.sun.ac.za/sanum/

Facing the Multicore-Challenge. Conference for Junior Researchers, March 17-19.
Heidelberg Academy of Sciences, Germany. http://www.multicore-challenge.org

81st Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), March 22-26.
Karlsruhe, Germany. http://www.gamm2010.uni-karlsruhe.de

Eighth International Workshop on Computer Algebra Systems and Their Applications, CASA'2010, March 23-26.
Kyushu Sangyo University, Fukuoka, Japan. http://personales.unican.es/iglesias/CASA2010/

Optimization for tensor decompositions, March 29 - April 2.
American Institute of Mathematics, Palo Alto, California.
http://www.aimath.org/ARCC/workshops/comptensor.html

APRIL 2010

Eleventh Copper Mountain Conference on Iterative Methods, April 4-9.
Copper Mountain, Colorado. http://grandmaster.colorado.edu/∼copper/2010

ICFD Numerical Methods for Fluid Dynamics, April 12-15.
Reading, UK. http://www.icfd.reading.ac.uk/ICFD2010

European Workshop on Mixed Integer Nonlinear Programming, April 12-16.
Marseilles, France. http://sites.google.com/site/ewminlp/

Third International Workshop on Parallel and Distributed Computing in Finance, April 23.
Atlanta, USA. http://www.cs.umanitoba.ca/∼pdcof

MAY 2010

European Finite Element Fair (EFEF), May 20-21.
University of Warwick.
http://www2.warwick.ac.uk/fac/sci/maths/research/events/2009-2010/workshops/efef10/

Applied Linear Algebra - in honor of Hans Schneider, May 24-28.
Novi Sad, Serbia. http://www.dmi.uns.ac.rs/events/ala2010

15th International Conference Mathematical Modelling and Analysis (MMA2010), May 26-29.
Druskininkai, Lithuania. http://www.vgtu.lt/mma/mma2010/

Tenth International Conference on Computational Science (ICSS 2010), May 31 - June 2.
Amsterdam, The Netherlands. http://www.iccs-meeting.org/iccs2010

JUNE 2010

Seventh Panamerican Workshop in Applied and Computational Mathematics, June 6-11.
Choroni, Venezuela. http://www.csrc.sdsu.edu/csrc/panam/index.php

PARA 2010, June 6-9.
Reykjavik, Iceland. http://vefir.hi.is/para10

16th Conference of the International Linear Algebra Society (ILAS), June 21-25.
Pisa, Italy. http://www.dm.unipi.it/∼ilas2010

BIT 50th Anniversary Conference, June 17-20.
Lund, Sweden. http://www.csc.kth.se/BIT/

Computational Methods in Applied Mathematics, June 20-26. Bedlewo, Poland. http://www.impan.pl/∼cmam-4/,

9th International Meeting on High Performance Computing for Computational Science

(VECPAR 2010), June 22-25.
Lawrence Berkeley National Laboratory, CA. http://vecpar.fe.up.pt/2010/

International Workshop on Accurate Solution of Eigenvalue Problems VIII (IWASEP VIII), June 28 - July 1.
Berlin. http://www3.math.tu-berlin.de/iwasep8/

6th International workshop on Parallel Matrix Algorithms and Applications (PMAA), June 30 - July 2.
Basel, Switzerland. http://www.pmaa10.unibas.ch/

Multiscale Molecular Modelling 2010,
June 30 - July 3.
Edinburgh. http://www.nais.org.uk/mmm2010

JULY 2010

Boundary and Interior Layers (BAIL 2010), July 5 - 9.
University of Zaragoza, Spain. http://www.bail2010.unizar.es/

International Congress on Computational and Applied Mathematics, July 5-9.
University of Leuven, Belgium. http://www.iccam.ugent.be/

Uncertainty in Computer Models 2010, July 12 - 14.
Sheffield. http://mucm.group.shef.ac.uk/UCM2010.html

EUROPT Workshop on Advances in continuous optimization, July 12 - 16.
Aveiro, Portugal. http://www.europt2010.com

2010 SIAM Annual Meeting (AN10), July 12 - 16.
The David L. Lawrence Convention Center, Pittsburgh, Pennsylvania. http://www.siam.org/meetings

Numerical Linear Algebra: Perturbation, Performance, and Portability - A conference in honor of G.W. (Pete) Stewart, July 19 - 20.
University of Texas at Austin, USA. http://z.cs.utexas.edu/wiki/stewart2010.wiki/

European Conference on Mathematics for Industry (ECMI), July 26 - 30.
Wuppertal, Germany. http://www.ecmi2010.eu

AUGUST 2010

IEEE 9th International Symposium on Distributed Computing and Applications to Business, Engineering and Science (DCABES 2010), August 10 - 12.
Lingnan University, Hong Kong. http://dcabes.meeting.whut.edu.cn/DCABES2010/

Seventh International Conference on Numerical Methods and Applications, August 20 - 24.
Borovets, Bulgaria. http://www.math.bas.bg/∼nummeth/nma10

Summerschool: Sparse Tensor Discretizations of High-Dimensional Problems, August 23 - 27.
ETH Zurich, Switzerland. http://www.sam.math.ethz.ch/zss2010/

16th International European Conference on Parallel and Distributed Computing - Euro-Par 2010, August 31 - September 3.
Ischia, Italy. http://www.europar2010.it

SEPTEMBER 2010

Joint European Science Foundation European Mathematical Society conference on highly oscillatory problems, September 12 - 17.
Isaac Newton Institute for Mathematical Sciences in Cambridge. http://www.esf.org/index.php?id=6532

Second IMA Conference on Numerical Linear Algebra and Optimisation, September 13 - 15.
University of Birmingham. http://www.ima.org.uk/Conferences/2nd_numerical_linear_algebra.html

Conference in Numerical Analysis (NumAn 2010) - Recent Approaches to Numerical Analysis: Theory, Methods and Applications, September 15 - 18.
Chania, Greece. http://numan2010.science.tuc.gr

European Multigrid Conference EMG 2010, September 19 - 23.
Isola dIschia (Napoli), Italy. http://www.emg2010.unisannio.it/

International Conference on Numerical Analysis and Applied Mathematics, September 19 - 25.
Rhodes, Greece. http://www.icnaam.org/

10th International Conference on Parametric Optimization, September 20 - 24.
Karlsruhe, Germany. http://www.ior.kit.edu/paraoptX.php

JUNE 2011

Householder Symposium XVIII, June 12 - 17.
Tahoe City, California. http://crd.lbl.gov/SCG/HH11/

JULY 2011

Foundations of Computational Mathematics, July 4 - 14.
Budapest. http://www.damtp.cam.ac.uk/user/na/FoCM11/

ICIAM 2011, July 18 - 22.
Vancouver, BC, Canada. http://www.iciam2011.com/

9 Highlighted Conferences and Workshops

Annual Meeting of UK and Republic of Ireland SIAM Section
8 January 2010, National e-Science Centre, Edinburgh

Confirmed speakers:

- Douglas Arnold (SIAM President)
- Ivan Graham (Bath)
- Matthias Heil (Manchester)
- Philip Maini (Oxford)
- Barbara Niethammer (Oxford)
- Michael Tretyakov (Leicester)

Cost: 10 GBP for SIAM Members, 15 GBP for non-SIAM members (this covers the cost of refreshments and lunch).

Full details available at http://www.numerical.rl.ac.uk/people/hsd/ukiesiam/

To register, send an email to sue.thorne@stfc.ac.uk
Please advise of any special requirements.

Novel multi-scale methods for multi-phase porous media flow
International Centre for Mathematical Sciences (ICMS), Edinburgh
18-19 January 2010.

The meeting will examine novel mathematical approaches for modelling multi-phase flow (e.g., oil, gas, water) in porous media. Three-phase flow occurs in petroleum engineering, for example when gas is injected into a reservoir that is past its peak production to recover additional volumes of oil. The gas phase may be carbon dioxide, which has the additional benefit of storing this greenhouse gas underground. Novel descriptions are sought for flow processes on the length scale of meters to kilometres, while incorporating the physical processes occurring on the millimeter scale or smaller (e.g., mobilisation of blobs of oil that have become trapped in the porous reservoir rock). Robust and efficient numerical algorithms, supported by sound mathematical theories and proofs, are of wide importance in all engineering disciplines and in particular in this field for accurate flow predictions.

Confirmed speakers:

- Martin Blunt
- Yalchin Efendiev
- Majid Hassanizadeh
- Rainer Helmig
- Patrick Jenny
- Ruben Juanes
- Rink van Dijke
- Mary Wheeler

Organizers: L. Banas, D. Duncan, S. Geiger, G. Lord, R. van Dijke.

Further information from http://www.icms.org.uk/workshops/mediaflow

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THE INSTITUTE FOR COMPUTATIONAL FLUID DYNAMICS (ICFD)
Conference on Numerical Methods for Fluid Dynamics
12 - 15 April 2010, University of Reading.

This is the tenth international conference on CFD organised by the ICFD (Institute for Computational Fluids Dynamics), a joint research organisation at the Universities of Oxford and Reading. The aim of the conference, as in previous years, is to bring together mathematicians, engineers and other scientists in the field of computational fluid dynamics to review recent advances in mathematical and computational techniques for modelling fluid flows.

Invited Speakers include:

- Michael Edwards (Swansea)
- Bengt Fornberg (Colorado)
- Emmanuel Hanert (Universit Catholique de Louvain)
- Peter Jan van Leeuwen (Reading)
- Jan Dirk Jansen (Delft)
- Patrick Jenny (ETH)
- Dean Oliver (Oklahoma)
- Volker Schultz (Trier)
- Mikhail Shashkov (LANL)
- Jaap Van der Vegt (Twente)
- Tim Warburton (Rice)
- Andy Wathen (Oxford)

CALL FOR PAPERS: Two page abstracts for contributed papers should be submitted via the website (see below) by 30 November 2009, stating a preference for oral or poster presentation. Notification of acceptance will be given by 24 January 2010. All accepted papers (including those for posters) will be required at the meeting for distribution immediately after the Conference on CD. All accepted papers will be refereed for inclusion in the Proceedings which will be published, as at the previous Conference, in a Special Issue of the International Journal for Numerical Methods in Fluids.

WORKSHOP ON OPTIMIZATION IN COMPUTATIONAL FLUID DYNAMICS: Incorporated within the ICFD 2010 meeting will be a workshop on Optimization in Computational Fluid Dynamics, sponsored by the European Science Foundation OPTPDE (Optimization with PDE Constraints) Network. Three speakers will give invited talks as part of the workshop. Contributed presentations are also invited and funding is available to support a limited number of contributors at the conference presenting papers on the theory and applications of optimization in CFD.

THE BILL MORTON PRIZE: A feature of the meeting will be the sixth award of The Bill Morton Prize for a paper on CFD by a young research worker.

For further information see www.icfd.reading.ac.uk/ICFD2010

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Integral Methods in Science and Engineering (IMSE2010)
July 12 - 15 2010, University of Brighton.

The eleventh international conference on Integral Methods in Science and Engineering will be held at the University of Brighton from 12-15 July 2010. IMSE2010 will provide an international forum for communicating recent advances in research work which promotes the link between mathematics and the applied sciences and engineering. The conference will also provide an opportunity for delegates to exchange information and ideas that support their work.

The deadline for the submission of abstracts in Friday 2nd April 2010. Authors will be notified of acceptance by Friday 23rd April 2010.

Further details may be found at http://www.cmis.brighton.ac.uk/imse2010/ or by contacting Paul Harris at imse2010@brighton.ac.uk

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9th International Conference on Distributed Computing and Applications
in Business, Engineering, and Sciences (DCABES 2010)
10 - 12 August 2010
Hong Kong, China.

The DCABES is a community working in the area of Distributed Computing and its Applications in Business, Engineering, and Sciences, and is responsible for organising meetings and symposia related to the field. The 2010 conference will take place in Hong Kong Lingnan University. Topics include parallel numerical algorithms, optimisation techniques in modern computing environment, and image processing and parallel processing, amongst others. The conference proceedings will be published by IEEE and post-conference journal special issues will be published in the Journal of Algorithms and Computational Technologies. Abstract submission deadline: 15/03/2010.

Conference website: http://dcabes.meeting.whut.edu.cn/DCABES2010/

Leverhulme International Network:
Numerical and analytical solution of stochastic delay differential equations
University of Chester, 31st August to 3rd September 2010.

This is the third meeting in a series of four meetings to be organised by the Leverhulme International Network. The Leverhulme International Network, based in Chester and led by Professor Neville Ford, has been established for 3 years from 2008 to 2011, with the aim of bringing together experts from the areas of mathematical modelling, mathematical analysis, numerical and computational methods and stochastic analysis of functional differential equations. All are welcome to this meeting.

For further details contact Nicola Williams (nicola.williams@chester.ac.uk).
Also see http://www.stochasticdelay.org.uk/

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European Science Foundation / European Mathematical Society conference
Highly Oscillatory Problems: From Theory to Applications
1217 September 2010, Isaac Newton Institute in Cambridge

An ESF/EMS conference on highly oscillatory problems, with an emphasis on their computation, will be held on 1217 September 2010 at the Isaac Newton Institute in Cambridge. The conference is chaired by Arieh Iserles and Claude Le Bris, the other organisers being Folkmar Bornemann, Simon Chandler-Wilde, Bjorn Engquist, Ernst Hairer, Laurence Halpern and Ralf Hiptmair, and it will cover a wide range of subjects, inclusive of electromagnetic and acoustic scattering, wave mechanics, multiscale problems, homogenisation, symplectic algorithms, computational asymptotics, RiemannHilbert techniques and theory of highly oscillatory partial differential equations.

The invited speakers are

- Assyr Abdulle - EPFL Lausanne, CH
- Dario Bambusi - University of Milano, IT
- Oscar Bruno - University of Caltech, US
- Weinan E - University of Princeton, US
- Yalchin Efendiev - Texas A&M, US
- Thanasis Fokas - University of Cambridge, UK
- Irene Fonseca - Carnegie Mellon University (CMU), US
- Daan Huybrechs - Katholieke Universiteit Leuven (KUL), BE
- Caroline Lasser - Freie Universitat Berlin, DE
- Tony Lelievre - CERMICS - ENPC, FR
- Christian Lubich - University of Tbingen, DE
- Peter Markowich - University of Cambridge, UK
- Houman Owhadi - University of Caltech, US
- Ilaria Perugia - University of Pavia, IT
- Chus Sanz-Serna - University of Valladolid, ES
- Andrew Stuart - University of Warwick, UK
- Isabelle Terrasse - Aerospatiale Paris, FR
- Edriss Titi - Weizmann, IL & UC Irvine, US

Further details and registration information available at http://www.esf.org/index.php?id=6532 .

10 Summer Schools

Gene Golub SIAM Summer School 2010
International Summer School on Numerical Linear Algebra (ISSNLA)
Fasano (Bari), Italy. 7-18 June 2010

The first Gene Golub SIAM Summer School will take place at the Centro Internazionale Alti Studi Universitari (CIASU), in Fasano (Bari), Italy. The following four courses will be given during the two weeks 7-18 June 2010.

- Minimizing communication in numerical linear algebra, James Demmel, University of California at Berkeley, USA
- Nonlinear eigenvalue problems: analysis and numerical solution, Volker Mehrmann, Technische Universitaet Berlin, Germany.
- From Matrix to Tensor: The Transition to Computational Multilinear Algebra, Charles Van Loan, Cornell University, Ithaca, New York, USA.
- Linear Algebra and Optimization, Margaret H. Wright, Courant Institute, New York University, USA

The summer school is geared towards doctoral students. There will be a limit of 50 students. There will be no registration fee. Funding for local accommodations and/or local expenses will be available for some of the participants. Limited travel funds may also be available. Watch the website for announcement of application deadline and procedures. For more information see: http://www.ba.cnr.it/ISSNLA2010

This summer school is the second ISSNLA organized by the SIAM Activity group on Linear Algebra. The first took place in 2008 (http://www.simumat.es/SIAGLA2008).

11 Software News

News from NAG

A couple a weeks ago I found myself explaining to a young colleague how magnetic tape used to be used to store data on computers. Punched cards and paper tape soon came into the conversation and I was left to regret that things that I had grown up with were now forgotten pieces of pre-history.

This has put me in a philosophical mood. It seems natural, as we approach a new year, to look backwards at what has gone before, as well as anticipating the year ahead.

2009 saw the release of Mark 22 of our Fortran library and the associated Matlab Toolboxes. At our AGM Stewart Andrews was elected to the Board of NAG, where he had served with distinction as a co-opted member.

I am tempted though to look further back and recap a little of NAG's history, just for those who, like my colleague, do not remember magnetic tapes or the origins and ideals of NAG. As we do so I think we should note the with grateful thanks the enormous contribution to NAG that a multitude of people have made to NAG in the past. Apologies to everyone whose name doesn't appear explicitly in this potted history.

NAG began life in 1970 as the Nottingham Algorithms Group as a co-operative venture between a number of universities and the Atlas Computer Centre (now Rutherford Apppleton). Brian Ford was its first Director and Steve Hague soon joined him to work as NAG's first employee. Together these two fostered the spirit of co-operation and drew in other people and institutions willing to give freely their time and facilities for the common good. In particular I recall the enthusiastic help of Jim Wilkinson and Gwen Peters from NPL. NPL were later to contribute even more through Geoff Hayes, Maurice Cox, Pauline Curtis, Walter Murray, Philip Gill and Geoff Miller and others.

Inevitably government funding was phased out and NAG had to support itself by selling the library. NAG became a company limited by guarantee in 1976 but the collaborative nature of NAG remained and it was still a main goal to promote good numerical methods via a quality library.

Providing a routine just because someone requested it wasn't on the agenda. I recall Geoff Hayes firmly resisting any thoughts of providing approximating polynomials in explicit power series form; NAG users got good Chebyshev forms with the ability to evaluate, differentiate and integrate them. He saw NAG's role as educational in addition to providing a library service. We were to set the standard, not follow the herd.

Joan Walsh became NAG's first Chairman and she worked with Brian and Steve to maintain the delicate balance between financial viability and NAG's ideals of collaboration and not-for-profit status. The chairman's baton was passed to David Hartley and Richard Field. Brian Ford was keen to foster mutual collaboration and software research; commercial considerations were always constraints, rather than a goal in their own right.

Recently Anne Trefethen and latterly Ken Brodlie have served as chairmen. Brian and Steve have both retired and Rob Meyer, from our U.S. office has taken over as C.E.O. I would like to feel that the earlier pioneering ideals are still being maintained in an increasingly difficult commercial world.

All of which brings us to the present and our hopes for this year. We are certainly planning some form of 40th birthday celebration for NAG and we hope that anyone who has lost touch and who helped us during those 40 years will make contact.

On a practical front we shall be forming new engine software to put in the next releases of our Fortran and C libraries and of course any associated Toolboxes. We are also conducting a questionnaire to help us assess where we should best deploy our contribution and implementation efforts. If you receive our electronic newsletter then you will have been invited to participate. (There is a small gift for doing so.) Otherwise you may fill in the form at: https://www.surveymonkey.com/s/nagcustomersurvey2009 Your assistance with this would be greatly appreciated.

Finally may I wish everyone a very happy and productive 2010.
Best wishes,
David Sayers

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Chebfun Version 3

We are pleased to announce the release of Chebfun Version 3 for "numerical computation with functions instead of numbers". Version 3 has many new features including:

- Infinite intervals
- Poles and singularities
- Automatic differentiation
- Nonlinear backslash for solving ODEs
- Fast Gauss/Gauss-Jacobi/Clenshaw-Curtis quadrature nodes and weights, even for tens of thousands of points
- New function approximation commands such as REMEZ, CHEBPADE, RATINTERP, CF, LEBESGUE

Chebfun is freely available and runs on Matlab. For download, user's guide, and other information see http://www.maths.ox.ac.uk/chebfun/

Nick Trefethen, Nick Hale, Rodrigo Platte and the Chebfun Team

Forthcoming HECToR Courses

NAG is pleased to announce the following HPC courses that are free for UK researchers.

- January 4-6, 2010 Imperial College London. Parallel Programming with MPI.
- January 7-8, 2010 Imperial College London. OpenMP.
- January 11-15, 2010 NAG Oxford Best Practice in HPC Software Development (see below).
- January 26-28, 2010 University of Bath Parallel Programming with MPI.

Best Practice in HPC Software Development- The course is designed for those with parallel programming experience who are embarking on a major software development project. It is a five day course and covers hardware, compilers and optimization, tools for the programmer including debugging and profiling, parallel I/O, testing and benchmarking code and portability and maintainability issues. All aspects of the course will be backed up with hands on exercises.

NAG provides Computational Science and Engineering (CSE) support for HECToR, the UK Supercomputing Service. You are eligible for training, for which there is no charge, if you are a HECToR user or your work is covered by the remit of either EPSRC, BBSRC or NERC. We provide a regular schedule of courses that cover Fortran 95, general HPC topics, such as MPI and OpenMP, as well material specific to HECToR. We can also provide training tailored to your specific requirements and deliver courses at your institution.

For further information and our current training schedule and locations please see:
http://www.hector.ac.uk/cse/training/

A full list of available courses and contact details are available at:
http://www.hector.ac.uk/cse/training/courselist/

For more information about NAG, HECToR and the CSE service please see the following links:
http://www.nag.co.uk
http://www.hector.ac.uk/
http://www.hector.ac.uk/cse/

Craig.Lucas@nag.co.uk

12 PhD Theses

University of Liverpool

Carlos Francisco Brito-Loeza. Fast Numerical Algorithms for High Order Partial Differential Equations with Applications to Image Restoration Techniques.

13 Vacant positions and studentships

Brunel University
Post Doctoral Research Fellow in Applied Scientific Computing and Numerical Analysis

Post-doctoral research fellow sought to work for three years on an EPSRC funded project entitled Acoustic Localisation of Coronary Artery Stenosis. This is concerned with mathematical modelling and development of novel software for the diagnosis of coronary artery disease. It is a joint effort with biomedical engineers at Queen Mary University of London and Barts and The Royal London NHS Trust (Whitechapel), and with mathematicians at North Carolina State University.

You will be involved in the development and implementation of time domain finite element methods in a high performance computing environment and will have the following attributes.

1. A PhD in an area involving the finite element approximation of time dependent partial differential equations.

2. Practical and theoretical expertise in the implementation of three dimensional finite element approximations (and mesh generation software) in a high performance computing environment.

3. A willingness to work as part of an international, interdisciplinary and multi-site team involving experimental scientists as well as other mathematicians.

4. An enthusiasm to step away from abstract mathematics and to match theoretical results with experimental ones in an applied and results-driven project.

5. Excellent written and oral communication skills.

Please refer to the official web page at http://www.brunel.ac.uk/about/job/cdata/research/BHA0266-1 for further details and the application procedure.

Closing date: 8 January 2010.

University of Cambridge
Applications are invited for a University Lectureship in Applied and Computational Analysis to be held in the Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge. The position is associated with the establishment of the Cambridge Centre for Analysis (CCA) (http://www.maths.cam.ac.uk/cca) (see Section 2). The CCA is a joint activity with the Department of Pure Mathematics and Mathematical Statistics (DPMMS) and funded by the EPSRC and the University of Cambridge. Its aim is to train a new generation of doctoral students in the full range of modern techniques in analysis from theory to practice. DAMTP will take special responsibility for the teaching of computational analysis and for developing links with applications areas.

The successful applicant will be able to contribute to the activities of the CCA and will also have an outstanding research record in an area overlapping or complementing the current interests of DAMTP members working in Applied and Computational Analysis, which span a wide range of themes, in partial differential equations, numerical analysis, dynamical systems and integrable systems.

The Lectureship in DAMTP is being advertised in parallel with a Lectureship in DPMMS also associated with the CCA. Applicants for one job will automatically be considered for the other: there is no need to apply twice. The appointment will be taken up from 1 September 2010 or from another date by negotiation. Informal enquiries about the position may be made to Professor Arieh Iserles (A.Iserles@damtp.cam.ac.uk) or to Professor Peter Markowich (P.A.Markowich@damtp.cam.ac.uk).

Further details available at
http://www.damtp.cam.ac.uk/vacancy/Lecturer_in_Analysis_Further_Particulars.pdf

Closing date: 15 January.

Cranfield University
The Department of Engineering Systems and Management of Cranfield University within the Defence Academy - College of Management and Technology is offering several research internships, some of which are in the areas of scientific computing or numerical modelling (e.g., automatic differentiation, neural networks, finite elements, user interface development, fragmentation modelling)

Student internships are normally for a duration of three/four months and do not lead to a formal academic award. It is expected that the internships will start in May or a mutually convenient time. Students are expected to produce a final report based on the work carried out during their internship. There is no tuition fee attached to the internship and a stipend of 240 GBP per week is paid towards the cost of living for the duration of the internship.

Applications are normally closed on 25 January 2010. It is anticipated that the selected candidates are informed towards end of February 2010. Further details are available at http://www.amorg.co.uk/SummerInterns/topics.html

Imperial College
Research Associate in Next-generation Reservoir Simulation

Applications are invited for two fixed term posts for three years funded through major long-term support from Qatar Petroleum and Shell International for the Qatar Carbonates and Carbon Storage Research Centre (QCCSRC).

You will join a multi-disciplinary team of computational physicists and reservoir engineers in the Department of Earth Science and Engineering at Imperial College London.

The research will involve the development of next-generation reservoir simulation technology to be used in hydrocarbon recovery and geological storage of CO2 applications. We have an existing code which uses state-of-the-art numerics and has a variety of modules suited for simulating fluid dynamics in applications, from nuclear reactors to ocean currents. This code will be used as the engine to build a multi-physics reservoir simulator that will be faster and more accurate than current reservoir simulators. The primary thrust of this research will be on altering the underlying numerics of the simulator so that multiphase and compositional porous media flows can be simulated using adaptive meshing.

For further details please visit: http://www3.imperial.ac.uk/employment select "Job Search" and enter the job reference no EN20090254

Closing date: 10 February.

Oxford University
Postgraduate studentship in Numerical Computing on Surfaces with the Closest Point Finite Element Method, supervised by Dr Colin Macdonald. See: http://www.maths.ox.ac.uk/node/11155

Postgraduate studentship in the Numerical Linear Algebra of Approximation Involving Radial Basis Functions, supervised by Dr Andy Wathen. See: http://www.maths.ox.ac.uk/node/11156

Postgraduate studentship in Multiscale Methods Based on Unstructured Data, supervised by Prof Holger Wendland. See: http://www.maths.ox.ac.uk/node/11157

These studentships (to start on 1 October 2010) will be based in the newly established Oxford Centre for Collaborative Applied Mathematics (OCCAM). OCCAM has been established with substantial funding from the KAUST GRP. The Centre, which is part of the Mathematical Institute, is allied to a global network of mathematicians. Aiming to meet the ever-increasing global demand for quantitative understanding of complex scientific phenomena, OCCAM has been built on the strength of four pre-existing groups of applied and computational mathematicians working in Oxford: the Oxford Centre for Industrial and Applied Mathematics, the Centre for Mathematical Biology, the Numerical Analysis Group and the Computational Biology Group. It has a symbiotic relationship with other scientific communities which have a need for problem-solving mathematics both within the University of Oxford and beyond.

For information about OCCAM please visit www.maths.ox.ac.uk/occam

University of Warwick
The Mathematics Institute, University of Warwick (http://www2.warwick.ac.uk/fac/sci/maths/) invites applications for two Assistant Professorships in Applied Mathematics (including numerical analysis, partial differential equations and their applications, and applied analysis).
See https://secure.admin.warwick.ac.uk/webjobs/jobs/academic/job11666.html for further particulars and instructions on how to apply.

These posts are associated with the establishment of MASDOC
(http://www2.warwick.ac.uk/fac/sci/masdoc), a new Centre for Doctoral Training in Mathematics and Statistics funded by EPSRC (see Section 4).

Informal enquiries from potential applicants may be addressed to Charlie Elliott
(C.M.Elliott@warwick.ac.uk) or Andrew Stuart (A.M.Stuart@warwick.ac.uk).

Details of a further position in the Department of Statistics may be found at
https://secure.admin.warwick.ac.uk/webjobs/jobs/academic/job16106.html

Closing date: 26 January.

14 Postgraduate Courses

Only those courses that were not included in the newsletter dated October 2009 (available at http://www.ima.org.uk/learned_soc/interestgroups.htm) are listed here.

University of Chester
An MSc in Mathematics is offered at the University of Chester. The focus of the course is on Computational Applied Mathematics. It is available on a full time or part time basis (flexible over up to 6 years).

The modular programme has been designed to allow students with as wide a range of previous experiences as possible to embark upon postgraduate study in Mathematics. It offers different combinations of modules to different students; students who would like to try one or two modules to build up confidence before embarking on the whole programme are welcome.

For course details, contact Dr Jason Roberts (Programme Leader),
University of Chester,
Parkgate Road, Chester CH1 4BJ.
Tel. 01244 511000 or email j.roberts@chester.ac.uk

For general admissions enquiries, contact postgrad@chester.ac.uk
See also http://www.chester.ac.uk/postgraduate/mathematics

Cranfield University
Cranfield University offers an MSc/PgDip/PgCert in Scientific Computation (MSc - 1 year full time or up to 5 years part time). The course is suitable for graduates or experienced professionals who wish to gain an understanding of the processes through which good software is developed for applications in science and engineering, and of the numerical methods involved in the computer solution of such problems. Potential students should have a reasonable knowledge of mathematics and some experience of elementary computer programming. The course will take you on to employment in scientific computing within industry, research establishments and commerce.

Further information available at http://www.cranfield.ac.uk/students/courses/page1813.jsp

University of Greenwich
The School of Computing and Mathematical Sciences of the University of Greenwich runs a number of MSc programmes in applied mathematics. These programmes are:-
MSc Applied Mathematical Modelling and Scientific Computing
MSc Applied Industrial Modelling
MSc Computational Mechanics, Reliability and Risk Analysis
MSc Scientific and Engineering Software
MSc Scientific Computing

Typical modules: Core Technologies, Computational Fluid Dynamics, Finite Element Analysis, Electromagnetics, Multi-Phyiscs, etc., plus a range of other options.

Deadline for applications: 31st July 2010 (overseas applicants) and 31st August 2010 (home applicants). Please refer to the website http://www.cms.gre.ac.uk/postgraduate/ or http://ammsc.gre.ac.uk

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Contents of Volume 29, Number 4 (see http://imajna.oxfordjournals.org/)

For further details see: www.imanum.oupjournals.org

16 Acknowledgements

I would like to thank the following people for contributing to this issue of the Newsletter.
Coralia Cartis (Edinburgh)
Ke Chen (Liverpool)
Lotti Ekert (Oxford)
Melina Freitag (Bath)
Neville Ford (Chester)
Shaun Forth (Shrivenham)
Arieh Iserles (Cambridge)
Nick Higham (Manchester)
Choi-Hong Lai (Greenwich)
Tim Phillips (Cardiff)
Jason Roberts (Chester)
David Sayers (NAG)
Nick Trefethen (Oxford)