CURRICULUM VITA

FULL NAME John Macleod BALL.

DATE AND PLACE OF BIRTH 19 May 1948; Farnham, Surrey, U.K.

FAMILY SITUATION Married with 3 children.

EDUCATION AND POSITIONS HELD

1961-65 Mill Hill School, London NW7.
1966-69 St John's College, Cambridge.
1969-72 School of Applied Sciences, University of Sussex.
1972-74 Department of Mathematics, Heriot-Watt University and Lefschetz Center for Dynamical Systems, Brown University, Providence, R.I., USA (Science Research Council postdoctoral research fellowship).
1974-78 Heriot-Watt University, Lecturer in Mathematics.
1978-82 Heriot-Watt University, Reader in Mathematics.
1980-85 Science and Engineering Research Council Senior Fellow.
1982-96 Heriot-Watt University, Professor of Applied Analysis.
1996- Sedleian Professor of Natural Philosophy, University of Oxford, and Fellow of The Queen's College.
1998 - Honorary Professor, Heriot-Watt University

VISITING POSITIONS

1979-80 Visiting Professor, Department of Mathematics, University of California, Berkeley.
1987-88 Visiting Professor, Laboratoire d'Analyse Numérique, Université Pierre et Marie Curie, Paris.
1990 Ordway Visiting Professor, University of Minnesota.
1992 Visiting Professor, Université Paris Dauphine.
1993-94 Visiting Professor, Institute for Advanced Study, Princeton (organizer of year on Mathematics in Materials Science).
1994 Visiting Professor, Laboratoire d'Analyse Numérique, Université Pierre et Marie Curie, Paris.
1996 Ordway Visiting Professor, University of Minnesota.
2000 Visiting Professor, University of Crete.
2001 Visiting Professor, Tata Institute for Fundamental Research Bangalore.
2002-03 Member, Institute for Advanced Study, Princeton.
2003 Visiting Professor, Université Montpellier II.

ACADEMIC QUALIFICATIONS

Open Exhibition in Mathematics to St John's College, Cambridge.
Honours Degree in Mathematics, Cambridge University.
D.Phil. in Mechanical Engineering (supervised by Professor D E Edmunds, Mathematics Division), University of Sussex.

OTHER EMPLOYMENT

A total of 1 year's experience (during 1965-67) systems analysis in the Mathematical Services Department, British Aircraft Corporation, Weybridge, Surrey.

AWARDS, FELLOWSHIPS

Fellow of Royal Society of Edinburgh (elected 1980).
Whittaker Prize of Edinburgh Mathematical Society 1981.
Junior Whitehead Prize of London Mathematical Society 1982.
Fellow of Royal Society of London (elected 1989).
Keith Prize, Royal Society of Edinburgh, 1990.
Honorary Degree, Ecole Polytechnique Fédérale de Lausanne, 1992.
Naylor Prize of London Mathematical Society, 1995.
Honorary D.Sc., Heriot-Watt University, 1998.
Theodore von Karman Prize of the Society for Industrial and Applied Mathematics, 1999.
Associé Etranger, Académie des Sciences, Paris, (elected 2000).
Honorary D.Sc. University of Sussex, 2000.
David Crighton Medal, jointly awarded by the Institute of Mathematics and its Applications and the London Mathematical Society, 2003.
Honorary D.Sc. Université Montpellier II, 2003.
Fellow, Institute of Mathematics and its Applications, 2003.
Foreign Member, Istituto Lombardo, 2005
Knighthood, 2006.
Royal Medal, Royal Society of Edinburgh, 2006.
Foreign Member, Norwegian Academy of Science and Letters, 2007.
Honorary Member, Edinburgh Mathematical Society, 2008.
Member, Academia Europaea, 2008

CURRENT EDITORIAL POSITIONS

Chief Editor (with R.D. James), Archive for Rational Mechanics and Analysis

Member of Editorial Boards of: Analyse Nonlinéaire (Institut Henri Poincaré); Annali di Matematica Pura ed Applicata, Applicable Analysis; Calculus of Variations and Partial Differential Equations; Control, Optimisation and Calculus of Variations; Dynamics and Differential Equations; Journal of Differential Equations; Journal of Elasticity; Journal des Mathématiques Pures et Appliquées; Mathematical Methods and Models in Applied Science; Mathematical Modelling and Numerical Analysis; Tbilisi Mathematical Journal.

Editor, Oxford Mathematical Monographs, Oxford Lecture Series in Mathematics and its Applications (Oxford University Press).
Consulting Editor, World Scientific Series in Applied Analysis.
Editorial Board, Unione Matematica Italiana Lecture Notes Series.

PAST EDITORIAL POSITIONS

Executive editor, Proceedings A, Royal Society of Edinburgh, 1987-92.
Member of Editorial Boards: Archive for Rational Mechanics and Analysis, Interfaces and Free Boundary Problems, Nonlinear Differential Equations and Applications, Physica D, Proceedings Royal Society of London.
Consulting Editor, Birkhauser series on Progress in Nonlinear Differential Equations and their Applications, 1989-94.

CURRENT PROFESSIONAL ACTIVITIES

National and International

Member and Past-President of International Mathematical Union (IMU), 2007-10.
Member, IMU Committee on Electronic Information and Communication (CEIC)
Programme Committee, International Centre for Mathematical Sciences, Edinburgh, 1991-.
Member, Board of Governors and Scientific and Academic Advisory Committee, Weizmann Institute, Rehovot, Israel, 1998-.
Council, Weizmann Institute Foundation, 2000-.

Conseil de Recherche et de l'Enseignement, École Polytechnique, Palaiseau, 2001-
Chair, Scientific Steering Committee (and Member of Management Committee, National Advisory Board), Isaac Newton Institute, 2006-
Member, EPSRC College.

Oxford

Delegate, Oxford University Press 1998-
Vice-Chairman, Mathematical Institute.
Chair, Research Committee of Mathematical Institute
Mathematical Institute Executive Committee
Mathematical Institute Departmental Committee
Mathematical Prizes Committee
Mathematical Institute Building Committee
Mathematical Institute Development Committee
Mathematical, Physical and Life Sciences Divisional Board

PAST PROFESSIONAL ACTIVITIES

National and International

U.K. Delegation to General Assembly of International Mathematical Union, 1986, 1994, Chief Delegate 1998.
President, Edinburgh Mathematical Society, 1989-90
Sectional Committee 1, Royal Society, 1990-93.
Steering Committee, International Centre for Mathematical Sciences, Edinburgh, 1991-96.
Scientific Advisory Board, Isaac Newton Institute, Cambridge, 1991-95.
Council of London Mathematical Society, 1992-93, 1995-96.
Partial Differential Equations Sectional Panel for International Congress of Mathematicians, 1994.
Council, Engineering and Physical Sciences Research Council, 1994-99.
Scientific Board, Basic Research Institute in the Mathematical Sciences (Hewlett-Packard), 1994-2001.
Jury Senior de l'Institut Universitaire de France, 1996.
Applied Nonlinear Systems Panel, EPSRC, 1996-97.
President of London Mathematical Society, 1996-98.
Conseil Scientifique, l'Institut Henri Poincaré, 1996-2000.
Scientific Committee, CNRS UMR, Lyon, 1997.
Member, 1998 Fields Medal Committee of the International Mathematical Union.
President 1998-99, Mathematics Section, British Association for the Advancement of Science.
Chair of Nominating Committee, London Mathematical Society, 1999.
Evaluation Panel for Department of Mathematics, Ecole Polytechnique Fédérale de Lausanne, 1999.
Nominating Committee of London Mathematical Society, 1999-2001.
Chair of Review Panel, Isaac Newton Institute, 1999.
Chair, Mathematics Advanced Fellowships Panel of EPSRC, 2000-01.
Science Steering Committee, National Institute for Environmental eScience, Cambridge, 2001-2.
Member, CNRS Review Panel, Mathematical Institute of Toulouse, 2002.
Program Committee, International Congress of Mathematicians, Beijing, 2002.
Member of first Abel Prize Committee, 2002-03.
Member, Peter Gruber Foundation Cosmology Prize Committee (IMU representative), 2002-04.
Member, Selection Committee for position at ICTP, Trieste, 2004.
International Council for Science, 2003-06
President, International Mathematical Union 2003-06.
Chair, Fields Medal Committee, 2006.
Member of various Chair Selection Committees, e.g. at Cambridge, Loughborough, St Andrews, Dundee, Kent, Sussex, Warwick, ETH Zurich.

Oxford

Electoral Board for Chair in Numerical Analysis 1996-97
Selection Panel for University Lectureship in Applied Mathematics 1997.
Selection Panel for Praelectorship in Applied Analysis, Lincoln College 1997.
Selection Panel for Hardy Junior Research Fellowship, New College, 1998.
Selection Panel Junior Lectureship in Mathematics 1998.
Electoral Board, Chair in Mathematics and its Applications
Electoral Board, Wallis Chair.
Selection Panel GCHQ Research Fellowship, Merton College, 2000.
Committee of Management, Glasstone Benefaction 1997-2001.
Halley Lectureship and Board of Trustees of the Johnson Memorial Prizes.
Selection Panel for University Lectureship in Nonlinear Analysis, 2002.
Convener, Mathematical Institute Colloquium, 1998-2002.
President, CNRS Evaluation Committee, Centre de Mathématiques Appliquées, Ecole Polytechnique, 2004.

MAJOR CONFERENCE ORGANIZATION

Systems of Nonlinear Partial Differential Equations, NATO ASI, Oxford, 1982.
The Mathematics of Nonlinear Systems (co-organiser J.F. Toland), Bath, 1991.
Mathematical Problems in Materials Science, International Centre for Mathematical Sciences special year, 1991-92.
Mathematical Continuum Mechanics (co-organisers R.D. James, A. Mielke), Oberwolfach 1997.
Euroconference, New Mathematical Methods in Continuum Mechanics (co-organiser S. Müller), Anogia, Crete, 2000.
Mathematical Continuum Mechanics (co-organisers R.D. James, S. Müller)), Oberwolfach 2000.
Instructional Conference on Nonlinear Partial Differential Equations, ICMS 2001 (co-organisers M.J. Esteban, J.F. Toland)
Progress in Partial Differential Equations, ICMS 2001, (co-organisers A. Grigoryan, S Kuksin)
Conference on Nonlinear Partial Differential Equations in Continuum Physics (in honour of 60th birthday of C.M. Dafermos), Heidelberg, 3-6 December 2001
Quasiconvexity and its applications, Princeton, 14-16 November 2002 (co-organisers Weinan E., R.V. Kohn, S. Müller).
PDE and Materials, Oberwolfach, 7-13 September 2003 (co-organisers: R.D. James, S. Müller).

CURRENT MAJOR RESEARCH GRANTS

EU TMR Network Grant FMRX-CT98-0229 (DG 12 - BDCN), Phase Transitions in Crystalline Solids, 180,000 ECU, 1998-02.

Ph.D STUDENTS

G.Andrews 1979, B.Dacorogna 1980, M.C.Calderer 1981, J.C.Currie 1983, J.Sivaloganathan 1984, N.C.Owen 1986, P.J.Davies 1987, S.Müller 1989, P.Lin 1990, G. Friesecke 1993, G.J. Ruddock 1994, A. Taheri 1998, Z. Iqbal 1999, A. Forclaz 2002, J.J. Bevan 2003

Current Ph.D. student: M. Jungen

SELECTED INVITED LECTURES IN LAST 5 YEARS

From the Calculus of Variations to the Discovery of New Materials, Plenary Lecture, Inaugural Conference, Center for Advanced Mathematical Sciences, Beirut, 11 January, 1999.

Microstructure and the austenite-martensite transition, Theodore von Karman Prize Lecture, SIAM Annual Meeting, Atlanta, 12 May 1999.

Quasiconvexity, singularities and computation, Plenary Lecture, Foundations of Computational Mathematics 99, Oxford, 19 July 1999.

Young measure, microstructure ans quasiregular maps, Plenary Lecture, International Conference on Analysis and Geometry (in honour of 70th birthday of Yu.G. Reshetnyak), Novosibirsk, 30 August, 1999.

Microstructure and the austenite-martensite transition, Plenary Lecture, International Conference on Nonlinear Analysis, Academia Sinica, Taipei, 16 October 1999.

Changes of shape and microgeometry, Rouse Ball Lecture, Cambridge, 10 May 2000.

Compatible and incompatible sets of gradients, S. Antman 60th birthday meeting, University of Maryland, 13 May 2000).

Some 20th century developments of Hilbert's problems on the calculus of variations, LMS meeting on Hilbert's problems, Oxford, 20 May 2000.

Compatibility, Hadamard's jump condition, and microstructure, Conference in Continuum Mechanics and Conservation Laws in honour of 60th birthday of C.M. Dafermos, Brown University, 28 April 2001.

Microgeometry and phase transformations, Petrovskii Centenary Conference, Moscow, 24 May 2001.

The formation of macrotwins in NiAl martensite, IUTAM symposium on Mechanics of Martensitic Phase Transformation in Solids, Hong Kong, 11 June 2001.

Compatibility and the Hadamard jump condition, Conference on Applied Nonlinear Analysis and Differential Equations in honour of J.B. McLeod, 20 July 2001.

Is rigorous analysis relevant to engineering in the age of computing, or a distraction?, Connectivity Between Mathematics and Engineering, EPSRC/LMS/IMA meeting, Manchester, 20 September 2001.

Microgeometry and phase transformations, Lezioni Leonardesche, Milan, 30 October 2001.
Minimizers and weak forms of the equilibrium equations of nonlinear elasticity, Conference on Partial Differential Equations and Function Spaces in honour of the 70th birthday of D.E. Edmunds, University of Sussex, 22 September 2001.

Hadamard's compatibility condition for microstructures, Fourth European Conference on Elliptic and Parabolic Problems: Theory-Applications, Gaeta, 25 September 2001.

Compatibility of Microstructures, Conference on Nonlinear Analysis (in honour of 70th birthday of Klaus Kirchgassner), Kloster Irsee, 9 January, 2002.

Hadamard's compatibility condition for microstructures, Special Anniversary Conference, Technion, Haifa, 14 January, 2002.

The Euler-Lagrange equation and minimizers in elastostatics, Plenary lecture, Conference on Nonlinear Differential, Mechanics and Bifurcation, Duke University, 21 May 2002.

An introduction to quasiconvexity, 6 introductory lectures prior to the conference *Quasiconvexity and its applications*, Princeton 12-13 November, 2002.

The regularity of minimizers in elasticity, DiPerna Memorial Lecture, Berkeley, 30 January 2003.

Compatibility, microgeometry and materials, Plenary lecture, 24^{th} Brazilian Mathematical Colloquium, Rio de Janeiro, 30 July 2003

Mathematical models of martensitic microstructure, Plenary lecture, European Symposium on Martensitic Transformations, Cranfield University, 19 August 2003.

The regularity of energy minimizers in elasticity, Workshop on Geometry, Elasticity and Gravitation, Albert Einstein Institute, Golm, 9 October 2003.

Global attractors for semiflows without uniqueness, Workshop on Computational Modelling in Dynamical Systems, Budapest, 14 October 2003.

Incompatibility of gradients and quasiconvexity, Workshop on Nonlinear Analysis and Numerics, Bonn, 28 October 2003.

Incompatibility and quasiconvex functions, International Colloquium on Theoretical and Numerical Nonsmooth Mechanics, Montpellier, 19 November 2003.

SEMINARS

At the following universities:
Aberdeen, Academia Sinica (Taipei), Amsterdam, Antwerp, Australian National University, Bangalore, Bangor, Bath, Beijing (Peking, Tsing Hua, Academia Sinica), Berlin, Berkeley, Bonn, Bristol, Brown,

Cambridge, Carnegie-Mellon, Chicago, Columbia, Courant Institute, Delft, Delhi, Duke, Dundee, Edinburgh, Essex, Florence, Glasgow, Grenoble, Guwahati, Heidelberg, Houston, Imperial College, Kentucky, EPFL Lausanne, Leiden, Leipzig, Leningrad, Liverpool, Lyngby, Macquarie, Maryland, Minnesota, Modena, Monash, Moscow, Mumbai, Nancy, Naples, Newcastle, New Jersey Institute of Technology, New South Wales, Nottingham, Nottingham Trent, North Carolina State, Oregon State, Oxford, Paris (Collège de France, Dauphine, Paris 6, Orsay), Pavia, Pisa, Penn State, Princeton, Rome, Rutgers, St. Andrews, Santa Barbara, Shanghai (Fudan), Shillong, Stanford, Strathclyde, Stuttgart, Sussex, Swansea, Syracuse, Taiwan National University, Temple, Toulouse, University College, Warsaw, Warwick, Wisconsin, Yerevan, York, Xian (Jiaotong), ETH Zurich.