

CURRICULUM VITAE

Batmanathan Dayanand (Daya) Reddy

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University of Cape Town
Department of Mathematics and Applied Mathematics

and

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Education

- 1965 - 1969 South End High School, Port Elizabeth (1965 - 1967)
Lenasia Indian High School, Lenasia (1968 - 1969)
- 1970 - 1973 University of Cape Town: BSc(Eng) in Civil Engineering
Degree awarded December 1973 with first class honours
- 1974 - 1977 Cambridge University (Gonville and Caius College), United Kingdom:
Doctoral studies in Mechanics; PhD degree awarded November 1977
Dissertation: *The Elastic and Plastic Buckling of Circular Cylinders in Bending*

Honours and awards

- 1974 - 1977 Smuts Trust Bursary for graduate research at Cambridge University
- 1992 Fellow of the Royal Society of South Africa
- 1992 Fellow of the University of Cape Town
- 1996 Member, Academy of Science of South Africa
- 2002 Fellow, South African Academy of Engineering
- 2004 Fellow, Academy of Sciences of the Developing World (TWAS)
- 2004 National Order of Mapungubwe (Bronze) bestowed by the President of the Republic of South Africa
- 2005 Member, Suid-Afrikaanse Akademie vir Wetenskap en Kuns
- 2006 Fellow, African Academy of Sciences
- 2008 Fellow, International Association for Computational Mechanics (IACM)

Employment

1974	University of Cape Town: Junior Lecturer, Department of Civil Engineering
1978	University College London: Associate Research Assistant (Postdoctoral), Department of Civil and Municipal Engineering
1979 - 1998	University of Cape Town Departments of Applied Mathematics and Civil Engineering (joint appointment) Lecturer (1979 - 1981), Senior Lecturer (1982 - 1984), Associate Professor (1985 - 1987) Department of Applied Mathematics (since 1995, Mathematics and Applied Mathematics): Associate Professor (1988), Professor (1989 -)
1984 -	UCT Centre for Research in Computational and Applied Mechanics (CERECAM) Deputy Director (1984 - 1994); Co-Director (1996 - 1999); Director (1999 -)
2002	Acting Deputy Vice-Chancellor, Research & Innovation (February - June)
1999 - 2005	University of Cape Town: Dean, Faculty of Science, and Professor of Applied Mathematics
2007 -	South African Research Chair in Computational Mechanics (Department of Science and Technology, and National Research Foundation), tenable at University of Cape Town

Visiting positions

1982	Brunel University, Department of Mathematics (January - June). Host: Professor RW Ogden
1987	Università di Pavia, Istituto di Analisi Numerica del CNR (January - June) Host: Professor F Brezzi
1989	University of Minnesota, Institute for Mathematics and its Applications (January - February)
1991	Stanford University, Division of Applied Mechanics (October - November) Host: Professor JC Simo
1993, 1997	Universität Karlsruhe, Institut für Technische Mechanik and Universität Stuttgart, Mathematisches Institut A (2 months each in 1993 and 1997) Hosts: Professors E Schnack and W Wendland
2003	Queen's University, Canada; Visiting Professor, Southern African Research Centre (January) Hosts: Professors J Crush and P Oosthuizen
2006	The University of Texas at Austin, Institute for Computational Sciences and Engineering: Visiting Faculty Fellowship (1 month in September - October) Host: Professor J T Oden
2007	Technische Universität Kaiserslautern, Institut für Mechanik Host: Professor P Steinmann (February)
2009	Timoshenko Visitor, Stanford University, Mechanics and Computation Group Host: Professor A Lew (January)

Membership of professional societies

American Mathematical Society
Gesellschaft für Angewandte Mathematik und Mechanik (Germany)
International Association for Computational Mechanics
Society for Industrial and Applied Mathematics (SIAM) (USA)

Society of Rheology
 South African Mathematical Society (SAMS)
 South African Society for Numerical Mathematics (SANUM)
 South African Association for Theoretical and Applied Mechanics (SAAM)

Service on professional committees and boards

1987 - 91, 1997 - 2001	South African Mathematical Society: Member of Council
1988 - 1989	South African Society for Numerical Mathematics: Vice-President
1991 - 1994	Facilitating Committee for the Establishment of a South African Academy of Science: Member
1993 - 2001	South African Association for Theoretical and Applied Mechanics (SAAM): Council Member, Treasurer 1993-6, President 1996 - 2001
1993 - 2000	SA National Committee for the International Union of Mathematicians: Member, and Chair 1997 - 2000
1995 - 1997	FRD Core Programme Evaluation Committee, Mathematical Sciences: Convenor
1995	FRD Committee for evaluating proposals in Mathematical Sciences, Open Programmes
1995 - 2000	Member, Rhodes Scholarships (South Africa-at-Large) Selection Committee
1996 - 2003	SA National Committee, International Union of Theoretical and Applied Mechanics: Chair
1996 - 2001	Academy of Science of South Africa: Council member
1998	General Assembly of the International Mathematical Union: South African delegate
1994 -	International Association of Computational Mechanics: Member of General Council
1999 - 2008	Board of the National Research Foundation: Member, and Chair since July 2002
2002 -	African Institute for Mathematical Sciences (AIMS), Cape Town Trustee, AIMS Trust, and Member of the AIMS Council
2005 -	Centre for High Performance Computing: Member of the Management Committee, and of the Scientific Advisory Committee (the latter since 2007)
2005 - 2008	Meraka Institute (Advanced African Institute for Information and Communications Technology), South Africa: Member of the Research Advisory Panel

University committees and positions

1989 - 1994	Head of Department, Department of Applied Mathematics, UCT
1987 - 1994	Students' Fund for Visiting Speakers (Chair, July 1993 - June 1994)
1989 - 1994	Financial Aid Committee
1991 - 1994	Readmission Review Committee
1991 - 1996	Academic Planning Committee
1995 - 1999	Assessor, University Court
1996 to date	General Purposes Committee of Senate, (subsequently Senate Executive Committee)
1995 - 2005	Doctoral Degrees Board (occasionally Deputy Chair and Acting Chair)
2004 -	Steering Committee, UCT-CSIR Memorandum of Understanding

2005 -	Steering Committee, UCT-Mintek Memorandum of Understanding Service on selection committees for posts at executive level:
1995	Post of Vice-Chancellor: elected to serve by Senate; Chairperson
1996	Posts of Deputy Vice-Chancellor: elected by Senate; Chairperson
1999-2000	Post of Vice-Chancellor: nominated by deans
2001-2004	Posts of Deputy Vice-Chancellor: nominated by deans
1996-99, 2002-2008	UCT Council Member, elected by Senate
2008 - 2009	Acting Deputy Vice-Chancellor (July - March)

Teaching experience and activities

Between 1979 and 1987 I was responsible for the following courses or projects in the Department of Civil Engineering at UCT: Structural Analysis (2nd and 4th years), Elasticity and Plasticity (Masters), Frame Analysis (Masters), 4th year projects on topics in structural mechanics

Since 1979 I have taught the following courses in the Department of Applied Mathematics (from 1995, Mathematics & Applied Mathematics) at UCT: partial differential equations, classical mechanics, calculus of several variables (2nd year), complex variables, tensor analysis, applied functional analysis, methods of mathematical physics (3rd year), continuum Mechanics, numerical analysis and scientific computing, methods of mathematical physics, finite elements (3rd and 4th years), Honours projects on topics in continuum mechanics, variational methods, and finite element analysis

I have taught courses at Masters level, at Cerecam, on finite element analysis, continuum mechanics, and nonlinear material behaviour.

Examining and reviewing activities

I have served as external examiner for courses in applied mathematics and engineering at a number of South African universities, and as examiner for masters and doctoral dissertations submitted to universities in South Africa and Germany.

I have served as an external reviewer on reviews of departments or schools of mathematical sciences at the Universities of the Free State, Pretoria, and the Witwatersrand.

Research interests

My research interests lie at the intersection of continuum mechanics, applied functional analysis, and numerical analysis and computing. My research programmes address some or all of the following issues: the formulation in mathematical terms of problems in continuum mechanics; studies of the well-posedness of such problems; construction by computational means of approximate solutions; and studies of the quality of such approximations. I also have a serious involvement in finite element analysis *per se*. My research involves issues of importance to applied mathematicians and engineering scientists, and much of it has a connection to problems and applications in industry.

Research appointees

Professor J M-S Lubuma, FRD Research Fellow, July 1993 - June 1994

Dr B-H Sun, Postdoctoral Researcher, July 1994 - June 1995

Dr M Küssner, Postdoctoral Researcher, January 1996 - December 1997

Ms D Kleine, Research Officer, July 1998 - February 2002
 Dr JMW Munganga, Postdoctoral Researcher, January 1999 - June 2001
 Dr F Ebobisse Bille, Postdoctoral Researcher, September 2002 - January 2004
 Dr J K Djoko, Postdoctoral Researcher, October 2004 - December 2005
 Dr N S Weerasekara, Postdoctoral Researcher, November 2006 -
 A T McBride, Research Officer, July 2007 -
 Dr V Udoewa, Postdoctoral Researcher, September 2007 -
 Dr S Jasinowski, Postdoctoral Researcher, January 2009 -

Postgraduate students

Students have been registered in the Faculty of Science except for those whose names are marked with an asterisk, and who were registered in the Faculty of Engineering and the Built Environment

Masters students

*G A Duffett	1981	<i>Plastic Buckling of Initially Imperfect Cylinders in Axial Compression</i>
*G P Mitchell	1982	<i>A Programming Approach to the Solution of Problems involving Elastic-Plastic Plates</i>
*A C Bolt	1983	<i>The Use of a Non-Classical Friction Law in Finite Element Analysis of Contact Problems</i>
*L R Watkins	1986	<i>Electromagnetic Field Solutions via the Finite Element Method</i>
*R A Eve	1986	<i>Conforming Finite Element Methods for Static and Eigenvalue Problems of Thin Elastic Shells</i>
H F du Toit	1986	<i>Finite Element Analysis of Eigenvalue Problems in the Stability of Fluid Motions</i> Degree awarded with distinction
*M B Nates	1989	<i>Parameters Affecting the Performance of Tube Mills</i> (co-supervisor: Professor GN Nurick)
*K von Benthheim	1991	<i>Dynamics of Balls in Tube Mills</i> (co-supervisor: Professor GN Nurick)
M B Volpi	1991	<i>Mixed Finite Element Approximations for Circular Arches</i> Degree awarded with distinction
C le Roux	1991	<i>Mixed Variational Problems Associated with Viscous Incompressible Free Surface Flows</i> Degree awarded with distinction
K Arunakirinathar	1991	<i>Mixed Finite Element Approximations for Curved Rods</i> Degree awarded with distinction
L H G Chandrasiri	1992	<i>The Solution of Steady-State Free Surface Problems by the Finite Element Method</i>

G C Schroeder	1993	<i>Estimates for the Rate of Convergence of Finite Element Approximations of the Solution of a Time-Dependent Variational Inequality</i> Degree awarded with distinction
*M A Stülpner	1995	<i>Various Continuum Bone Remodelling Algorithms Applied to the Proximal Femur in Two and Three Dimensions</i> (co-supervisor: A Spirakis)
*I MacKellar	1998	<i>The Mechanical Design Aspects of a Small Diameter Vascular Prosthesis</i> (co-supervisor: G R Starke)
J K Diatezua	1999	<i>Some theoretical aspects of fibre suspension flows</i>
T Koch	2005	<i>Non-linear finite element analyses of the aortic heart valve</i>
H van der Merwe	2007	<i>Development of a numerical tool for the design optimization of vascular prostheses towards physiological compliance</i> MSc (Med) degree awarded with distinction (co-supervisor: Dr T Franz)

Doctoral students

*G A Duffett	1985	<i>Some Aspects of the Numerical Solution of Equilibrium Problems in Finite Elasticity</i>
*T B Griffin	1986	<i>Variational and Numerical Aspects of Problems in Classical Plasticity</i>
G P Bleach	1989	<i>Acceleration Waves in Constrained Thermoelastic Media</i>
T Gültop	1992	<i>A Finite Strain Theory of Elastoplasticity and its Application to Wave Propagation</i>
R A Eve	1992	<i>Theoretical and Numerical Aspects of Problems in Finite Strain Plasticity</i>
*A Ozinsky	1993	<i>Mathematical Simulation of Dynamic Behaviour of Secondary Settling Tanks</i> (co-supervisor: Prof GA Ekama)
H de G Laurie	1994	<i>Nonlinear Age-Dependent Population Dynamics</i> (co-supervisor: Prof R Cowling)
*W J de Kock	1994	<i>Numerical Simulation of the Plastics Injection Molding Process</i> (co-supervisor: Professor JB Martin)
K Arunakirinathar	1995	<i>Mathematical and Numerical Aspects of the Enhanced Strain Finite Element Method</i>
J M W Munganga	2000	<i>Existence and Stability of Solutions to the Equations for Fibre Suspension Flows</i>

B J L Brown	2001	<i>A Variational Approach to Local Optimality in Control Theory</i>
S K F Hattingh	2002	<i>Finite Element Analysis of Flows in Fractured Hydrocarbon Reservoirs</i>
D Kleine	2003	<i>Finite Element Analysis of Flows in Secondary Settling Tanks</i>
M S Yeoman	2004	<i>The Design and Optimisation of Fabric Reinforced Grafts using Finite Element Methods and Genetic Algorithms</i>
M S Tladi	2004	<i>Well-posedness and Long-time Dynamics of β-plane Ageostrophic Flows</i>
J K Djoko	2004	<i>Convergence in the Incompressible Limit of Finite Element Approximations based on the Hu-Washizu Formulation in Elasticity</i>
A T McBride	2008	<i>Formulation, analysis and solution algorithms for a model of gradient plasticity within a discontinuous Galerkin framework</i>

Current postgraduate students

K Penzhorn*	MSc (Eng)	<i>Mesh-free finite element methods</i>
S Bartle*	MSc (Eng)	<i>Biomechanics</i>
Y Kajee*	MSc (Eng)	<i>Biomechanics</i>
L Adams*	MSc (Eng)	<i>Computational electromagnetics</i>
H Morrissey*	MSc (Eng)	<i>Mechanics of composites</i>
H Bakri Mohamed	PhD	<i>Analysis of models for viscoelastic fluids</i>
R Benjamin	PhD	<i>The Lattice Boltzmann method</i>
Q Reynolds	PhD	<i>Mathematical modelling of the behaviour of DC plasma arcs</i>
J-P Pelteret*	PhD	<i>Biomechanics</i>

Research colloquia

I have presented colloquia on my research at the following institutions:

South Africa: University of Cape Town (Departments of Applied Mathematics, Civil Engineering, Chemical Engineering, Mathematics), University of the Western Cape, University of Durban-Westville, University of Pretoria, University of Transkei, University of Kwazulu-Natal, National Research Institute for Mathematical Sciences (CSIR, Pretoria)

United Kingdom: Brunel University, University of Bath, University of East Anglia, University of Nottingham, University of Glasgow

Germany: Technische Hochschule Darmstadt, Universität Karlsruhe, Universität Hannover, Universität Stuttgart, Technische Universität Kaiserslautern

Italy: Università di Pavia, Politecnico di Milano

Switzerland: Eidgenössische Technische Hochschule (Zürich)

- USA:** Brown University, Carnegie-Mellon University, The University of Texas at Austin, Massachusetts Institute of Technology, Stanford University, Oregon State University, Texas A&M University, University of Houston
- Canada:** Queen's University
- India:** Tata Institute for Fundamental Research (Bangalore, India), Indian Institute of Technology (Madras)

Presentations at conferences

- First ASCE Engineering Mechanics Specialty Conference, University of Waterloo, Waterloo, Canada, 26-28 May 1976
'A programming approach to the solution of the rate problem in elastic, plastic solids'
- Conference on Wave Phenomena: Modern Theory and Applications, University of Toronto, Toronto, Canada, 20-23 June 1983
'Acceleration waves in isotropic constrained thermoelastic media'
- 21st Annual Meeting, Society of Engineering Science, Virginia Polytechnic Institute and State University, USA, 15-17 October 1984
'Variational inequalities and penalty methods for a class of problems in elasto-plasticity' (invited presentation)
- Second International Conference on Variational Methods in Engineering, Southampton University, UK, 17-19 July 1985
'Penalty-finite element approximations of the rate problem in plasticity'
- Sixth Conference on Mathematics of Finite Elements and its Applications, Brunel University, UK, 28 April-1 May 1987
'Variational and numerical aspects of eigenvalue problems in the stability of fluids'
- Minisymposium on Plasticity, Institute for Mathematics and its Applications, University of Minnesota, USA, 6-10 February 1989
'Finite strain plasticity'
- Symposium on the Interaction between Mechanics and Applied Mathematics, University of Cape Town, 15-18 January 1990
'Convexity and the variational approach to problems in elastoplasticity' (keynote lecture)
- Symposium on Free Boundary Problems, Université de Montreal, Canada, 12-21 June 1990:
'Qualitative problems in elastoplasticity'
- 1st European Colloquium on Elliptic and Parabolic Problems, Pont-à-Mousson, France, 17-21 June 1991:
'Existence of solutions to quasistatic problems in elastoplasticity'
- 3rd International Conference on Computational Plasticity, Barcelona, Spain, 6-9 April 1992:
'Algorithms for the solution of problems in finite-strain plasticity'
- IMACS International Symposium on Mathematical Modelling and Scientific Computing, Bangalore, India, 7-11 December 1992:
'Stability and convergence of enhanced strain finite element methods'
- 3rd World Congress on Computational Mechanics, Chiba, Japan, 1 - 5 August 1994:
'Further results for isoparametric enhanced strain elements'
- 13th Symposium on Finite Element Methods in South Africa (FEMSA), Stellenbosch, South Africa, 17 - 20 January 1995:
 Series of Pre-Symposium Lectures: *'Elastoplasticity'*
'Enhanced strain finite element methods' (keynote lecture)

3rd US National Congress on Computational Mechanics (USNCCM), Dallas, Texas, 12 - 14 June 1995:

Organiser of Special Session on Enhanced Strain Finite Element Methods as part of the Juan C Simo Memorial Minisymposium, at the USNCCM

'Why do enhanced strain methods work so well?' (Distinguished Guest Speaker)

Conference Internationale sur les Problèmes Variationnels en Mathématiques Appliquées'

Kinshasa, Zaire, 21 - 26 August 1995:

'The Finite Element Method' (series of invited lectures)

SIAM Annual Meeting, Charlotte, North Carolina, 23 - 26 October 1995:

Co-organiser of Minisymposium (with W Han) on *'Analytical and Computational Studies of Granular Flow Modelling and Elastoplasticity Problems'*

Minisymposium lecture: *'The variational structure of elastoplastic problems'*

Conference on Research Capacity Building at Colleges of Education in Kwazulu-Natal,

Springfield College of Education, Durban, 20 - 21 June 1997:

Research: What's the Point? (Keynote lecture)

Interdisciplinary Symposium on Advances in Computational Mechanics, Austin, Texas, 13 - 15 January 1997:

'Some new results in the development of stable and efficient low-order elements'

IUTAM Symposium on Rheology and Computation, Sydney University, 20 - 25 July 1997:

'Finite element simulation of flows of fibre suspensions'

Fourth US National Congress on Computational Mechanics, San Francisco, 6 - 8 August 1997:

'Alternative integration rules which lead to stable low-order elements'

Fourth World Congress on Computational Mechanics, Buenos Aires, 29 June - 2 July 1998:

'Approximation of Non-Newtonian Flows using Finite Elements'

Meeting on *'Mathematische Analyse von FEM für Probleme in der Mechanik'*, Mathematisches Forschungsinstitut Oberwolfach, Germany, 7 - 13 February 1999:

'Affine-approximate Finite Element Methods'

Workshop on Computational Plasticity, Kiel, 20 - 24 August 1999:

'Some theoretical aspects of problems in perfect plasticity'

13th International Congress on Rheology, Cambridge, UK, 20 - 25 August 2000:

'Thermodynamic consistency and stability of equations for fibre suspension flows'

Workshop on Computational Fluid Dynamics, Indian Institute of Technology, Madras (Chennai), India, 11 - 15 January 2000: *'The Mechanics of Fibre Suspension Flows'* (series of invited lectures)

Meeting on *'Mixed Finite Element Methods and Applications'*, Mathematisches

Forschungsinstitut Oberwolfach, Germany, 4 - 10 February 2001: *'Some new mixed finite element methods in elasticity'* (by invitation)

2nd European Conference on Computational Mechanics, Cracow, Poland, 26 - 29 June 2001:

'Stable and efficient finite elements for Mindlin-Reissner plates' (Keynote Lecture)

IUTAM Symposium on Computational Mechanics of Solid Materials at Large Strains, Stuttgart, 20 - 24 August 2001: *'Affine-approximate finite element methods and stabilization techniques in elasticity'* (by invitation)

Fifth World Congress on Computational Mechanics, Vienna, 7 - 12 July 2002: *'Some new mixed finite elements in elasticity'* (Keynote Lecture)

SFB 'Schlusskolloquium' on Deformation and Failure of Metallic and Granular Structures, Seeheim, Germany, 18 - 19 November 2002: *'Some mathematical problems in perfect and softening plasticity'* (by invitation)

Second European Finite Element Fair, Berlin, 4 - 5 June 2004: *Finite element approximations based on the Hu-Washizu formulation in elasticity*

Fourth European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Jyväskylä, Finland, 24 - 28 July 2004: *Convergence in the incompressible limit of finite element approximations based on the Hu-Washizu formulation in elasticity*

Meeting on *'Non-standard Finite Element Methods'*, Mathematisches Forschungsinstitut Oberwolfach, Germany, 28 January - 1 February 2005: *Discontinuous Galerkin methods for variational inequalities arising in plasticity* (by invitation)

US National Congress on Computational Mechanics, Austin, Texas, 24 - 27 July 2005: *'Discontinuous Galerkin methods in classical and gradient plasticity'*

International Workshop on Direct and Inverse Field Computations in Mechanics, Linz, Austria, 7 - 11 November 2005: *'A Discontinuous Galerkin method for a variational inequality arising in plasticity'* (by invitation)

Sixth World Congress on Computational Mechanics, Los Angeles, 16 - 22 July 2006: *'DG methods for strain gradient plasticity'*

Meeting on *'Analysis and Numerics for Rate-Independent Processes'*, Mathematisches Forschungsinstitut Oberwolfach, Germany, 25 February - 3 March 2007: *'Well-posedness and approximation of problems in gradient plasticity and related models'* (by invitation)

7th World Congress on Computational Mechanics, Los Angeles, 16 - 22 July 2006: *'DG methods for strain gradient plasticity'*

US National Congress on Computational Mechanics, San Francisco, 22 - 26 July 2007: *'Algorithms for the solution of problems in gradient plasticity'*

8th World Congress on Computational Mechanics, Venice, Italy, 30 June - 4 July 2008: *'Variational and computational aspects of problems in single-crystal gradient plasticity'*

1st African Conference on Computational Mechanics, Sun City, South Africa, 7 - 11 January 2009: *'Variational and computational aspects of problems in single- and polycrystal gradient plasticity'*

Local conferences. I am a regular contributor to the following local conferences: Annual Congresses of the SA Mathematical Society, Annual Symposia of the SA Society for Numerical Mathematics, and SACAM (SA Conferences on Applied Mechanics)

Membership of conference committees

FEMSA (Finite Element Methods in SA) and SACAM (SA Conferences on Applied Mechanics): Member of Organising Committees

Symposium on the Interaction between Mechanics and Applied Mathematics, University of Cape Town, 15-18 January 1990: Member of Organising and Scientific Committees

International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Kharagpur, India, 1 - 5 December 1998: Member of International Advisory Board

GAMM Workshop on Computational Plasticity, Kiel, 20 - 24 August 1999: Co-organiser (with C Carstensen and M Brokate)

European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2000), Barcelona, 11 - 14 September 2000: Member of Scientific Committee

Finite Elements in Fluids, Austin, Texas, April 2000: Member of Scientific Committee

2nd European Conference on Computational Mechanics, Cracow, Poland, 26 - 29 June 2001: Member of International Scientific Committee,

International Conference on Structural Engineering, Mechanics and Computation, Cape Town, South Africa: 2001, 2004, 2007: Member of International Scientific and Technical Advisory Board

First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, Massachusetts, June 12 - 14, 2001: Scientific Advisory Board Member

First Asian Pacific Congress on Computational Mechanics, Sydney, Australia, 20 - 23 November 2001: Member of International Scientific Committee

5th World Congress on Computational Mechanics (WCCM V), Vienna, Austria, 8 - 12 July 2002: Scientific Board member

Computational Solid and Structural Mechanics, European Congress on Computational Methods in Applied Sciences and Engineering, Jyväskylä, Finland, 24 - 28 July 2004: Scientific Committee member

US-Africa Workshop on Materials and Mechanics, Cape Town, 24 - 28 January 2005: Co-organiser (with R B Tait, A Needleman, and W Obeyejo)

8th US National Congress on Computational Mechanics, Austin, Texas, 24 - 28 July 2005: Scientific Program Committee member

9th International Symposium on Multiscale and Functionally Graded Materials, Hawaii, 15 - 19 October 2006: International Scientific Committee member

IUTAM Symposium on Theoretical, Modelling and Computational Aspects of Inelastic Media, Cape Town, 14 - 18 January 2008: Convenor and Chair of the Scientific Committee

ECCM2010, Fourth European Conference on Computational Mechanics, Paris, 16 - 21 May 2010: International Advisory Board member

Editorial and review activities

Reviewing activities:

Applications for evaluation by the National Research Foundation and the National Science Foundation (USA)

Springer-Verlag (New York and Berlin): book manuscripts

Research articles submitted to the journals

Applied and Numerical Mathematics

Archive for Rational Mechanics and Analysis

Communications in Numerical Methods in Engineering

Computer Methods in Applied Mechanics and Engineering

Computers and Structures

European Journal of Mechanics: A/Solids

Indian Journal of Pure and Applied Mathematics

International Journal for Engineering Analysis and Design
International Journal of Engineering Science
International Journal for Numerical Methods in Engineering
International Journal of Plasticity
International Journal of Solids and Structures
Mathematical Models and Methods in Applied Sciences
Numerische Mathematik
Numerical Methods for Partial Differential Equations
Quarterly of Applied Mathematics
The Royal Society of Edinburgh Proceedings A (Mathematics)
SIAM Journal on Numerical Analysis
Water SA
Zentralblatt für Mathematik

Membership of Editorial Boards:

Acta Academica Solida Sinica
Engineering Analysis and Design
Computer Methods in Applied Mechanics and Engineering
Computers and Structures
International Journal for Computational Civil and Structural Engineering (Russia)
South African Journal of Science (membership ended December 2002)
International Journal of Computational Methods in Engineering Science and Mechanics
Trends in Mathematics