

PROFESSOR DAVID F. WILLIAMS, Ph.D., D.Sc., F.R.Eng



CURRICULUM VITAE

October 2017

Career Overview

Professor Williams has had 49 years experience in the fields of biomaterials, medical devices and tissue engineering, gained during appointments at the University of Liverpool in the UK, and more recently at various positions around the world. During his career, he has published over 30 books and 420 papers: his latest book, *Essential Biomaterials Science*, was published by Cambridge University Press in June 2014. He was Editor-in-Chief of *Biomaterials*, the world's leading journal in this field between 2000 and 2014. He has received the major awards from the US, European and Indian societies of biomaterials including the Founders Award of the US Society for Biomaterials in 2007, and received the prestigious Acta Biomaterialia Gold Medal in 2012. In 1999, he was elected as a Fellow of the Royal Academy of Engineering and is a Foreign Fellow of the Indian National Academy of Engineering and a Fellow of the American Institute of Medical and Biological Engineering, all in recognition of his contributions to engineering in medicine. He was global President of the Tissue Engineering & Regenerative Medicine International Society from 2013-2015. He was a scientific advisor to several divisions of the European Commission during the 1990s and wrote several opinions on which European actions were taken. He has, over the last 20 years, given evidence in several major product liability and patent legal cases in the USA, Europe and Australia.

Professor Williams left the University of Liverpool, UK, in 2007, where he had been Head of Clinical Engineering, Director of the UK Centre for Tissue Engineering and Pro Vice Chancellor of the University. While retaining the title of Emeritus Professor at Liverpool, he is currently Professor and Director of International Affairs, Wake Forest Institute of Regenerative Medicine, North Carolina, USA. In addition, he is a Visiting Professor in the Christiaan Barnard Department of Cardiothoracic Surgery, Cape Town, South Africa. He is a Guest Professor, at Tsinghua University, Beijing, Advisory Professor at Shanghai Jiao Tong University, Honorary Professor of Sichuan University, Chengdu, Scientific Advisor at Nantong Key Laboratory for Neuroregeneration, and Scientific Advisor of Zhenjiang National University Science Park, all in China. He advises several industry parks in China concerning the attraction of overseas companies to medical technology opportunities in China. He is Visiting Chair Professor of Biomedical Materials, Taipei Medical University, Taiwan. In Cape Town, along with Professor Peter Zilla, the current Chris Barnard Professor of Surgery, he has formed a company that will produce low cost but high technology medical devices that can be used with minimally invasive procedures to treat young adults in sub-Saharan Africa, who are suffering from rheumatic heart disease but currently have no therapies available to them. As Chairman and Founding Director of the company, Strait Access Technologies Pty Ltd, he has been responsible for raising over US\$20 million and clinical trials / first-in-man implantations are imminent. The company employs around 30 engineers, scientists and clinicians and is located in Groote Schuur Hospital in Cape Town.

1. PERSONAL DETAILS

Name David Franklyn Williams
 Date of Birth 18 December 1944
 Nationality British Citizen
 USA Resident
 Address One Sheffield Place
 Winston-Salem
 North Carolina 27104-2046
 USA
 Telephone +1 336 671 8895
dfwillia@wakehealth.edu

2 FURTHER/HIGHER EDUCATION

B.Sc. First Class Honours, Physical Metallurgy
 University of Birmingham, UK 1965
Ph.D. Physical Metallurgy
 University of Birmingham, UK 1969
D.Sc. Biomaterials Science
 University of Birmingham, UK 1983

3 PROFESSIONAL QUALIFICATIONS AND FELLOWSHIPS

F.R.Eng. Fellow, Royal Academy of Engineering.
 F.F.I.N.A.E Foreign Fellow, Indian National Academy of Engineering
 F.A.I.M.B.E. Fellow, American Institute of Medical and Biological Engineering.
 F.I.M. Fellow, Institute of Materials, Minerals and Mining, UK.
 F.I.P.E.M. Fellow, Institute of Physics and Engineering in Medicine, UK.
 F.B.S.E. Fellow, Biomaterials Science and Engineering,
 FTERM Founding Fellow, Tissue Engineering & Regenerative Medicine
 International Society
 C.Eng. Chartered Engineer, UK.
 MAE Member, Academia Europaea.

4 AWARDS AND HONOURS

Awarded the CLEMSON AWARD of the Society for Biomaterials USA for "Outstanding Contributions to the Literature in Biomaterials", 1983.

Awarded the GEORGE WINTER AWARD of the European Society for Biomaterials for "Outstanding Contributions to the Science of Biomaterials", 1996.

Awarded the PRESIDENTIAL PRIZE of the UK Society of Biomaterials for "Services to Biomaterials in the UK and Beyond", 2003.

Awarded the FOUNDERS AWARD of the Society for Biomaterials USA for "Long term Landmark Contributions to the Discipline of Biomaterials Science", 2007.

Awarded the CHAPMAN MEDAL. The Institute of Materials, UK, for "Distinguished Research in the Field of Biomedical Materials", 2007.

Awarded the SHANDRA CHARMA Award, Indian Society for Biomaterials and Artificial Organs, 2008.

Presented with Honorary Life Membership, European Society for Biomaterials, 2008.

Elected Chair, TERMIS-EU, 2009.

Awarded 'EXCELLENCE IN SURFACE SCIENCE' Award, Surfaces in Biomaterials Foundation, USA, 2010.

Elected President, TERMIS Governing Board, 2013-2015

Awarded the 'ACTA BIOMATERIALIA GOLD MEDAL by the Acta Materialia Board of Governors for 'Excellence in the research and the practice of biomaterials', 2012.

Elected FOUNDING FELLOW, Tissue Engineering & Regenerative Medicine International Society 2012.

5 EMPLOYMENT

1968-72 Assistant Lecturer/Lecturer, Department of Orthopaedic Surgery
University of Liverpool

1972-78 Lecturer, Department of Dental Sciences.
University of Liverpool

- 1978-84 Senior Lecturer, Department of Dental Sciences
University of Liverpool
- 1984-91 Professor of Dental Sciences, Department of Dental Sciences and,
Director of the Institute of Dental and Medical Bioengineering
University of Liverpool
- 1991-07 Professor and Head of Department , Department of Clinical Engineering
University of Liverpool
- 1992- 07 Honorary Consultant Scientist
Royal Liverpool University Hospital
- 1997- 02 Scientific Director
AorTech International Plc
- 1997-00 Pro-Vice-Chancellor
University of Liverpool
- 2000-07 Professor of Tissue Engineering
University of Liverpool
- 2003- 06 MRC Research Facilitator
University of Liverpool
- 2004- 07 Director, UK Centre for Tissue Engineering
University of Liverpool
- 2008 - Emeritus Professor,
University of Liverpool
- 2008 - Professor of Biomaterials and Director of International Affairs
Wake Forest Institute of Regenerative Medicine, North Carolina, USA
- 2012- Chairman, and Executive Scientific Director, Strait Access Technologies
Holdings Pty Ltd, South Africa

6 VISITING, HONORARY AND GUEST PROFESSORSHIPS / POSITIONS

- 1975-6 Clemson University, USA, Visiting Associate Professor and Senior
Fulbright Scholar
- 2002 Cleveland Clinic Foundation, USA, Visiting Professor
- 2006-8 Guest Professor, South China University of Technology, Guanzhou, China
- 2006-9 Guest Professor Tsinghua University, Beijing, China,
- 2006-8 Guest Professor, University of Sichuan, Chengdu, China,
- 2008 -11 Visiting Professor, University of Cape Town, South Africa
- 2008 -13 Visiting Professor, University of New South Wales, Australia
- 2008-11 Visiting Professor, Shanghai Jiao Tong University, China
- 2008-09 Visiting Professor, East China University of Science & Technology, China
- 2011-13 Visiting Professor, Sree Chitra Medical Institute, Trivandrum, India
- 2011-13 Chair Professor of Biomedical Materials, Taipei Medical University, Taiwan
- 2011-13 Honorary Professor, Beihang University, China
- 2011-13 Science Technology Adviser, Beijing Science & Technology Committee
- 2011- Senior Scientific Adviser, Key Laboratory of Neuroregeneration, Nantong
University, China
- 2011 Senior Visiting International Scientist, Chinese Academy of Sciences

2012-13 Visiting Professor, National University of Singapore, Singapore
 2012-13 Senior Visiting Fellow, Commonwealth Scientific and Industrial Research
 Organization (CSIRO), Australia
 2013-18 Advisory Professor, Shanghai Jiao Tong University, China
 2014-18 Visiting Professor, Taipei Medical University, Taiwan
 2015-18 Adjunct Professor, University of Technology, Sydney, Australia
 2017-20 Honorary Professor, Sichuan University, China
 2017- Scientific Advisor, Zhenjiang National University Science Park

7 ADMINISTRATIVE EXPERIENCE

7.1 *Departmental, University of Liverpool*

1984-91 Director, Institute of Medical and Dental Bioengineering
 1991-07 Head of Department / Division of Clinical Engineering

7.2 *Faculty of Medicine, University of Liverpool*

1978-07 Member, Board of Faculty of Medicine
 1978-97 Member, Board of Dental Studies
 1985-88 Chairman, Board of Dental Studies
 1984-92 Member, Faculty of Medicine Agenda Committee
 1988-91 Member, Faculty of Medicine Higher Degrees Committee
 1986-91 Chairman, Research Committee, School of Dentistry
 1988-94 Member, Research and Awards Committee, Faculty of Medicine

7.3 *Senate, University of Liverpool*

1984-07 Member of Senate
 1894-07 Member of University Council
 1990-94 Member, University Academic Committee
 1989-02 Chairman, Liverpool University Press Management Committee
 1991-94 Chairman, University Research Sub-Committee
 1994-97 Member, University Research Strategy Committee
 1996-99 Member, University Postgraduate Appeals Committee
 1997-98 Chairman, University Information Systems Strategy Group
 1997-00 Pro-Vice-Chancellor
 Chairman, University Research Performance Group
 Chairman, University Academic Committee
 Member of University Planning & Resources Group

7.4 *UK Government Committees*

1980-83 Member, Biomaterials Sub-Committee Science & Engineering Research
 Council (SERC)
 1981-82 Member, Co-operative Grants Committee SERC
 1983-87 Member, Education and Training Panel, Materials Committee SERC
 1986-90 SERC representative, Board of Hunterian Institute London

- 1989-94 Member, Joint Dental Committee, SERC/Department of Health (DHSS)/
Medical Research Council (MRC)
- 1989-92 Member, Medical Engineering Committee, SERC
- 1992-94 Chairman, Medical Engineering Committee, SERC
- 1991-96 Member, Medical Implants LINK Programme Management Committee
- 1992-94 Member, DoH Research Liaison Committee in Biomedical Technology
- 1994-95 Member, Department of Health, Health Technology Committee
- 1995-07 Member of Medical Engineering College, EPSRC
- 1999-01 Member of Technical Opportunities Panel, EPSRC
- 2001-04 Member of Council, Central Laboratories Research Council
- 2001-07 Member, UK Focus in Medical Engineering, Royal Academy of
Engineering

7.5 *European and International Governmental and Non-governmental Organizations*

- 1992-96 Expert Assessor, EC-BRITE EURAM Programme
- 1996-99 Expert Assessor, EC-BIOMED Programme
- 1997-03 Member and Vice-Chairman, Scientific Committee on Medicinal Products
and Medical Devices, DG XXIV, European Commission
- 2004-07 Member, Scientific Committee of Emerging and Newly Identified Health
Risks, DG Sanco, European Commission
- 2007-08 Scientific Adviser, World Health Organization

7.6 *Professional Societies*

- 1976-79 Elected Member of Council, Biological Engineering Society
- 1980-82 UK Representative, International Biomaterials Liaison Committee
- 1974-92 Chairman, Biomaterials Group, Biological Engineering Society
- 1985-95 Member of Council, European Society of Biomaterials
- 2003-06 Chairman, Education Committee, European Society of Biomaterials
- 2006-09 Chairman-Elect, European Council, Tissue Engineering and Regenerative
Medicine Society International
- 2009-10 Chairman, European Council, Tissue Engineering and Regenerative
Medicine Society International
- 2010-12 President-Elect, Tissue Engineering and Regenerative Medicine
International Society
- 2013-15 President, Tissue Engineering and Regenerative Medicine International
Society
- 2014- Appointed Master of the DeTao Masters Academy, China

8 EDITORIAL BOARDS

- 1978-84 Editorial Board, *Journal of Biomedical Materials Research*
- 1985-90 European Editor, *Journal of Biomedical Materials Research*
- 1990- Editorial Board, *Journal of Biomedical Materials Research*
- 1978-95 Editorial Advisory Board, *Biomaterials*

1983-90	Editor, <i>CRC Critical Reviews in Biocompatibility</i>
1990-95	Editor, <i>Materials in Medicine</i>
1985-99	Editorial Board, <i>Journal of Materials Science</i>
1991-99	Editorial Board, <i>British Journal of Oral and Maxillofacial Surgery</i>
1985-99	Editorial Board, <i>Bulletin of Medical Polymers</i>
1994-99	Editorial Board, <i>Medical Engineering and Physics</i>
1994-99	Editorial Board, <i>Biomedical Materials and Engineering</i>
1995-2014	Editor-in-Chief, <i>Biomaterials</i>
2015-	Honorary Editor, <i>Biomaterials</i>

9 RESEARCH CONTRACTS AND GRANTS

1973-1976	Medical Research Council £8,268 for "An evaluation of some degradation implantable polymers"
1977-1980	Medical Research Council £33,366 for "A study of the interactions between biomaterials and tissues, especially in relation to oral and dental surgery"
1979-1981	Science Research Council £28,000 for "A study of interactions between biomaterials and tissues"
1980-1983	Science Research Council £29,828 for "A study of the influence of enzymes and bacteria on dental and surgical polymers and composites"
1981-1984	Science Research Council £36,000 for "A study of mechanisms of metal-tissue interactions"
1981-1984	Imperial Chemical Industries Ltd. £2,500 for "Clinical evaluation of composite restorative materials in Class II cavities"
1981	Visiting Scholars Fund, University of Liverpool £2,395 towards expenses of Professor R. A. Topazian University of Connecticut, USA
1981	Science Research Council £2,550 for visit to Japan
1981	Science Research Council £4960 for "A study of biomaterials used in mandibular ridge preservation"
1982	Smith & Nephew Research Ltd £5,500 for "A study of the antibacterial properties of some polymeric compounds"
1982.	Science and Engineering Research Council, £2,944 Visiting Fellowship for Dr C. C. Chu, Cornell University, USA
1982	Imperial Chemical Industries Ltd £1,600 for "A study on the degradation of a novel synthetic polymer in the physiological environment"
1983.	Smith & Nephew Research Ltd £15,500 for "Further studies of the antibacterial properties of some polymeric compounds"
1983-1984	Science and Engineering Research Council £14,670 for "A study of the biocompatibility and biodegradation of medical grade polyurethanes"
1983-1986	Science and Engineering Research Council £47,983 (part of a £135,000 grant jointly to the Universities of Leeds and Liverpool) for "A study of the tribological, creep and biocompatibility properties of prosthetic materials"
1983-1985	Imperial Chemical Industries PLC £42,150 for "A study of adhesive dental materials"

- 1984-1988 The Wolfson Foundation £142,200 under the Scientific Research Linked to Industry Scheme with Imperial Chemical Industries for "The development of adhesive dental materials".
- 1984-1986 Johnson Matthey Research Centre £30,000 for "A study of the biocompatibility of silver"
- 1984-1987 Department of Health and Social Security £250,000 for "An evaluation of dental restorative materials"
- 1985 Imperial Chemical Industries PLC £3,000 for "A study of the medical application of APC materials"
- 1986-1988 Science and Engineering Research Council £45,111 for "Control of epithelial investment of percutaneous and permucosal devices"
- 1986-1989 Science and Engineering Research Council, 1986-1989 £67,103 for "The characterisation of and improvement to the blood compatibility for clinical transducers and sensors" (with the University of Oxford)
1986. Science and Engineering Research Council £250,000 for a Scanning Auger Microscope (with Dr G. Tatlock and Professor D, King)
- 1986 Johnson Matthey Technology Centre £18,000 for the provision of a research studentship
- 1987 Imperial Chemical Industries PLC £24,000 for "A study of the medical application of particulate composites"
- 1988 Beiersdorf AC. Germany £20,000 for "Calcification of biomaterials"
- 1989 Imperial Chemical Industries PLC £43,000 for "Further studies on the properties of particulate composites"
- 1988-1991 Science and Engineering Research Council £57,884 for "The mechanism of polymer degradation in implanted devices"
- 1988-1990 Inotek, France £25,000 for "Biocompatibility of coral"
- 1988-1991 Department of Trade and Industry £102,000 for "The development of standard test procedure of implantable devices"
- 1990 Metalor, Switzerland £6,000 for "Tissue response to dental alloys".
- 1990-1991 Fidia s.p.a. Italy 110 million lira for "Biocompatibility of hyaluronic acid derivatives"
- 1991-1995 Science and Engineering Research Council £344,133 Rolling Programme "Mechanism of Biocompatibility"
- 1992 Fidia s.p.a. 70 million lira for "Biocompatibility and biodegradation of hyaluronic acid derivatives"
- 1992 Smith and Nephew Plc £5,000 for "Analysis of tissue response to materials"
- 1993 Fidia s.p.a Italy £31,818 for "Biodegradation of natural polymers"
- 1993 Science and Engineering Research Council £81,690 for "Development of composite structures in advanced load bearing articulating implants"
- 1993 Welding Institute £3,000 for "Biocompatibility of laser treated surfaces and adhesive systems"
- 1993 Royal Society £6,110 for "Controlled release of Neurotrophic Factors"
- 1993 Polystan Holding A/S Denmark £47,811 for "The coating of blood-contacting surfaces of an extra-corporeal circuit to improve haemocompatibility"

- 1993 Osteonics Corporation, USA \$100 000 for "Development of materials and processes having applications in the manufacture of prosthetic devices"
- 1994-1997 EU Brite-Euram, Project 100,000 ECU for "Mechanisms of carcinogenicity induced by biomaterials"
- 1998-2001 NHS Executive £75 000 for Implant Retrieval Programme
- 1998-2001 EC Biomed, £206 000, for Polyurethane Vascular Grafts
- 1997-2000 UK DoH Medlink Programme £900 000 for "Development of flexible leaflet heart valves" with Universities of Glasgow and Leeds, and Aortech
- 1998-2001 EU Brite-EuRam £185,000 for Development of Tissue Engineered Ligament Replacement
- 2000-2004 EU 5th Framework, £350 000 for "Polyurethane Medical Devices"
- 1999-2004 EPSRC £335 000 for Masters Training Package in Clinical Engineering
- 1999 UK Joint Infrastructure Fund, £3.5 million for a Biomaterials and Tissue Engineering Laboratory
- 2000-2006 Office of Science & Technology, UK Government, £10.9 million for the UK Centre for Tissue Engineering in conjunction with the University of Manchester
- 2003-2006 MRC Institutional Discipline Bridging Award, on behalf of the University of Liverpool £250 000
- 2005-2009 EU 6th Framework, Scientific Director of STEPS, and Integrated Project of 25 partners €23 million

10 RESEARCH ASSESSMENTS

- 1989 Assessor for MRC Canada, Programme Grant, Toronto, Canada
- 1989 Assessor for INSERM Unit, Bordeaux, France
- 1991 Assessor for Swedish Technical Board, Programme on Biomaterials
- 1992 Assessor for MRC Canada, Programme Grant, Halifax, Canada
- 1992 Assessor for Department of Economic Affairs, Northern Ireland
- 1992-1999 Scientific Advisor, CRC Cardiac Technology, Sydney, Australia
- 1995-1999 Assessor, Stiftelsen for Strategisk Forskning, Sweden
- 1996-2000 Assessor, Swiss Federal Government Programme on Materials
- 2001 Assessor, ETH Materials, Zurich
- 2003 Assessor, Irish Government research policy
- 2003 Assessor, Australian Government research policy
- 2006 Assessor, Norwegian Research Councils
- 2006 Assessor, Irish Government Universities Infrastructure
- 2008-2013 Scientific Advisory Board, National University of Ireland Galway Center of Excellence, Network of Functional Biomaterials
- 2012 Assessor, National University of Singapore Tissue Engineering Program
- 2013 Assessor, Commonwealth Scientific & Industrial Research Organization (CSIRO), Australia
- 2014-2017 Assessor, Research Assessment Exercise, Hong Kong
- 2015-2018 Scientific Advisory Board, National University of Ireland Galway Center for Research in Medical Devices (CURAM)

11 RESEARCH STUDENTS SUPERVISOR

1977-80	Anne McNamara, M.R.C. Studentship, Ph.D. obtained 1981
1980-83	Hanora Crowley, M.R.C. Studentship, M.Sc. obtained 1984
1981-84	Nigel Miller, S.E.R.C. Studentship, Ph.D. obtained 1985
1984-86	Rachel Williams, S.E.R.C. Studentship, Ph.D. obtained 1987
1985-88	David Vince, University Studentship, Ph.D. obtained 1989
1986-89	Tim Freestone, Johnson Matthey Studentship, Ph.D. obtained 1991
1986-89	Andrew Remes, S.E.R.C. Studentship, Ph.D. obtained 1990
1987-90	Sarah Smith, S.E.R.C. Studentship, Ph.D. obtained 1990
1988-91	John Hunt, S.E.R.C. Studentship, Ph.D. obtained 1992
1989-92	Nick Rhodes, S.E.R.C. Studentship, Ph.D. obtained 1992
1989-93	Samuel Zhong, Chinese Government Scholarship, Ph.D. obtained 1993
1989-94	Kamal Albustany, Self financed, part-time, Ph.D. obtained 1995
1990-94	Piyamol Sasanaluckit, British Council Scholarship, Ph.D. obtained 1994
1991-95	Wan Hong, British Council Scholarship, Ph.D. obtained 1995
1992-95	Ahymen Hajjar, Government of Syria, M.Dent.Sci. obtained 1994
1992-96	Nicholas Jones, S.E.R.C. Studentship Ph.D. obtained 1996
1992-96	Simon Rhodes, EC-supported Studentship Ph.D. obtained 1997
1994-98	Grant Fretwell, E.P.S.R.C. Studentship Ph.D. obtained 1998
1994-98	Maxood Khan, University Scholarship Ph.D. obtained 1998
1996-03	Semra Gorst, E.P.S.R.C. Case Studentship, Ph.D. obtained 2004
2001-05	Marie-France Guidoin, IRCol studentship, Ph.D. obtained 2005
2001-05	Gail Donnegan, IRCol studentship, Ph.D. obtained 2005

12 PH.D. EXAMINER

1984	North Staffordshire Polytechnic
1985	University of Strathclyde
1986	Indian Institute of Technology, Madras
1987	UMIST
1987	University of Sheffield
1988	Université Claude Bernard, Lyon, France
1988	University of London
1988	University of Birmingham
1989	University of Newcastle
1990	University of Bath
1990	Indian Institute of Technology, Delhi, India
1990	University of Bristol
1990	University Claude Bernard, Lyon, France
1991	University of Aston
1991	University of Strathclyde
1992	University of Paris VII
1992	University of Aston
1992	University of Bath
1992	University of London
1993	University of Aston

1995	University of Surrey
1996	University of Gothenburg, Sweden
1996	University of Toronto, Canada
1999	University of Leeds
2000	Imperial College, London
2001	University of Birmingham
2001	Imperial College, London
2001	University of Southampton
2003	Indian Institute of Technology, Delhi, India
2004	University of Oxford
2007	University of Cape Town, South Africa

13 NON-ACADEMIC CONSULTING

13.1 *Independent Consultant to Medical Device Industry*

- Member of Scientific Advisory Board of the following companies at various times: Biocompatibles Plc, Elastomedic Pty, Mednova Ltd, Weston Medical Ltd. Osteonics, Boston Scientific, Invivio Ltd
- Detailed analysis of failure mechanisms of the Bjork Shiley heart valve, particularly in relation to the metallurgical and haemodynamic factors. Performed for Shiley Inc. and the parent company, Pfizer, the outcome being a major report submitted to the FDA and to various regulatory bodies world wide, 1994/5.
- Detailed assessment of the scientific issues and regulatory requirements related to the manufacture and biological testing of animal derived tissues for orthopaedic prostheses, performed for major international orthopaedic company, 1997.
- Evaluation of commercial risks associated with the manufacture and supply of speciality medical polymers, performed for major polymer manufacturer, 1996.
- Evaluation of mutagenic potential of materials used in heart valves, performed for small UK manufacturer of a medical device, 1996.
- Evaluation of the design dossier to be submitted for CE mark, including all pre-clinical testing data, on behalf of a medium size US manufacturer of urological devices. 1995.
- Assessment of surface modification technologies for improved blood compatibility for major multi-national company involved in the supply of medical grade tubing for extracorporeal devices, 1996/7.
- Interpretation of test data on complement activation on behalf of a company in USA that had obtained contradictory data concerning blood compatibility of device used for electrophysiological measurements, 1996.
- Evaluation of clinical data related to possible hypersensitivity of orthopaedic alloys on behalf of major multi-national orthopaedic company, 1995.
- Evaluation of design dossier, risk assessment and management protocols and clinical trials protocols on behalf of major multi-national device company with respect to tissue adhesive, 1997/98
- Assessment of carcinogenicity potential of established orthopaedic biomaterials on behalf of major orthopaedic company, 1992

- Strategic advice of research and development programs for several multinational medical device companies, 1996-2006
- Advice on regulatory position of devices with respect to the device-drug borderline, 1996-9.
- Preparation of Risk Analysis for xenograft product, 2000, 2006
- Evaluation of major incidents of medical device failure, 2000, 2004, 2006
- Consultant to Trade Organizations involving medical device classification, 2003,
- Consultant to WHO, 2007
- Advice on European regulatory position on borderline products, 2008
- Assessment of biological safety of tissue heart valves for multinational company, 2009, 2011, 2012, 2013, 2015
- Assessment of biological safety of intravascular devices, small European company, 2010, 2012, 2013, 2014

13.2 *Product Liability Litigation Expert Witness*

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| 1994-2004 | Silicone breast implant litigation, USA, on behalf of defendant Bristol-Myers-Squibb, testimony in State and Federal courts |
| 2005 | Implantable defibrillator litigation, USA, on behalf of defendant Guidant, depositions |
| 2002-2012 | Silzone heart valve litigation, USA and Canada, on behalf of defendant St Jude Medical, depositions in USA, testimony in Canadian Class Action |
| 2012-2013 | Urogynecology mesh litigation, USA, on behalf of defendant Bard, deposition and state court trial testimony |
| 2013-2017 | Urogynecology mesh litigation, on behalf of defendant J & J Mentor deposition and state court trial testimony |
| 2013-2014 | Urogynecology mesh litigation, on behalf of J & J Ethicon, USA, deposition testimony |
| 2013-2014 | Metal-on-Metal hip replacement, on behalf of J & J DePuy, USA deposition testimony |
| 2013-2015 | Metal-on-Metal hip replacement, on behalf of J & J DePuy, Australia trial testimony |
| 2014- | Hernia mesh litigation, on behalf of Covidien, USA, deposition testimony |

13.3 *Patent Litigation Expert Witness*

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|-----------|--|
| 2002 | Breast implant suit, appearance at High Court, London, UK |
| 2008 | Intravascular stent suit, appearance at High Court, London, UK |
| 2009 | Intravascular device suit, appearance at High Court, London, UK |
| 2009-2013 | Cardiac occluder suit, appearance at High Court, London, UK, at Swedish Court, Stockholm, at Spanish Court, Madrid, evidence to Dutch court. |
| 2012-2014 | Surgical access device suit, New York and California, USA, deposition |

14 COMPANY DIRECTORSHIPS

1997-2002 Executive Director AorTech International plc
 2009 - Chairman and Scientific Director, Strait Access Technologies (Pty) Ltd and Strait Access Technologies Holdings (Pty) Ltd, South Africa

15 MAJOR INVITATIONS TO SPEAK

- **** Major international status
- *** Significant international status
- ** Important international paper
- * Important regional paper

1973 International Biomaterials Symposium, Clemson, SC, USA **

1974 International Conference on Materials for Use in Medicine and Biology, Cambridge Biannual Engineering Exhibition Lecture, London, UK *

1975 International Biomaterials Symposium, Clemson, SC, USA**
 Conference of American Society of Engineering Education, CO, USA*

1976 Symposium at National Bureau of Standards, Washington D.C., USA*
 Symposium of A.S.T.M., St Louis, MO, USA*
 Plenary tutorial at 11th International Conference on Medical and Biological Engineering, Ottawa, Canada***

1978 International Symposium of A.S.T.M., Kansas City, KS, USA**
 Gordon Conference on Biomaterials, NH, USA****
 International Conference on Materials for Use in Medicine, Keele, UK**

1979 Conference on Dental Materials, Birmingham, UK *
 Joint SRC/CNRS meeting on Biomaterials, Paris, France*

1980 Plenary Lecture, First World Biomaterial Congress, Vienna, Austria. ****
 Inaugural meeting of Flemish Engineering Society, Biomedical Engineering Section, Antwerp, Belgium **
 Symposium at National Bureau of Standards, Washington, D.C., USA**

1981 European meeting of the International College of Surgeons, London, UK **
 Gordon Conference Science and Technology of Biomaterials, USA****
 Keynote Paper to meeting of Royal Microscopical Society, London, UK***
 Conference on Mercury Hazards in Dentistry, Glasgow, Scotland**

1982 Annual Meeting, British Society of Periodontology, Lancaster, UK*
 Conference on Biomedical Polymers, Durham, UK**

1983 Conference on Polyurethanes in Medical Practice, Denkendorf, Germany*
 Plenary Keynote paper and read two contributed papers to the Society for Biomaterials Annual Meeting, Birmingham, AL, USA****
 International Congress on Maxillo-Facial Prosthetics, London, UK*
 Workshop on Bioceramics, Chester Sponsored by SERC and DHSS
 Conference on Material-Tissue Interactions, Berlin, West Germany**

- 1984 International Conference "Bio-interactions 84", London European Society for Biomechanics, Davos, Switzerland**
 NATO Advanced Seminars on Biomaterials, Marbella, Spain* *
 International Association for Pharmaceutical Technology, Frankfurt, Germany**
 Conference of Academy of Dental Materials, GA, USA***
 Royal College of Surgeons, London, UK**
- 1985 International Workshop on Biocompatibility of Alloys used in Dentistry, University of Michigan, MI, USA***
 International Symposium on the Toxicology of Nickel and Chromium in Orthopaedic and Dental Alloys, Strasbourg, France*
 Second Conference on Polymers in Medicine, Capri, Italy***
 Conference on Tanageuchi Research Society, Kyoto, Japan***
- 1986 Organised and chaired Conference of European Society for Biomaterials, "Definitions in Biomaterials", Chester, UK****
 Cardioslim Conference, Monte Carlo, Monaco* *
 Conference of European Society for Biomaterials, Bologna, Italy*
 Institute of Physics, Runcorn, UK**
 Invited to present Triennial Lecture to Dental Faculty of the Royal College of Surgeons, Edinburgh, Scotland***
 British Society for Restorative Dentistry, London, UK**
- 1987 Annual Meeting of British Society for Dental Research* *
 SERC/INSERM meeting Paris, France**
 International Conference on Medical Application of Silver, Washington D.C., USA***
 Belgian Congress of Dentistry, Ostend, Belgium*
 Gordon Research Conference on Biomaterials, NH, USA****
 Royal Swedish Academy of Engineering, Stockholm, Sweden*
 British Association for the Advancement of Science, Belfast, N. Ireland*
 Dental Materials Conference, Cork, Ireland*
 Annual Meeting of European Society for Biomaterials, Netherlands***
 SERC/Japan meeting on biomaterials, Tokyo, Japan***
- 1988 Conference of Australian Society of Chemistry, Melbourne, Australia***
 Annual Meeting Australia and New Zealand Association for the Advancement of Science, Sydney, Australia***
 Bicentennial Conference, Australian Institute of Metals, Sydney, Australia***
 Keynote paper to Symposium to mark 50th Anniversary of the Discovery of Nylon, Wilmington, DE, USA****
 British Association of Oral and Maxillofacial Surgery, London, UK**
 National Bureau of Standards, Washington D.C., USA**
- 1989 Mediterranean Conference on Advanced Polymers, Sorrento, Italy***
 Royal College of Surgeons of Edinburgh, Scotland**
 Workshop at National Heart Hospital, London, UK*
 International Association for Dental Research, Dublin, Ireland **
 Gordon Research Conference on Biomaterials, NH, USA****

- European Society for Artificial Organs, Brussels, Belgium*
- International Congress on Preprosthetic Surgery, Arnhem, The Netherlands*
- International Conference on Biodegradation, Toronto, Canada**
- Indo-UK Biomaterials Symposium, Trivandrum, India **
- 1990 Conference on Heart Valve Prostheses, Istanbul, Turkey**
- Conference on Polymer Degradation, Frankfurt, Germany***
- Conference on Ceramics, Institute of Ceramics, Leeds, UK*
- Society for Dental Implantology, London, UK*
- 1991 RAPS meeting on Biological Testing, Lucca, Italy**
- EUROBIOMAT Summer School on Biomaterials, Sienna, Italy*
- Conference on Bioceramics, Faenza, Italy**
- Symposium on Heart Valve Prostheses, Avignon, France***
- Conference on Biomedical Polymers, Jerusalem, Israel**
- Conference of Italian Society for Plastic Surgery, Rome, Italy*
- Conference on Polymer Degradation, Denkendorf, Germany**
- Symposium on Surfaces in Biomaterials, Minneapolis, MN, USA**
- 1992 Lister Grand Rounds Lecturer, University of Toronto and University of Western Ontario, Canada *
- International Association for Dental Research, Glasgow, Scotland**
- Symposium of Orthopaedic Bioengineering, Glasgow, Scotland*
- Ontario Materials Research Centre distinguished lecturer at University of Toronto, McMaster University and Queen's University, Toronto, Canada**
- International Symposium on Intra-Ocular Lenses, Seville, Spain**
- International Conference on Intelligent Materials, Brindisi, Italy**
- Rapporteur, EC BRITE EURAM workshop, Brussels, Belgium*
- Lectures to SCTIMS Trivandrum, India**
- 1993 Invited lecture on Biocompatibility in Relation to Intraocular Lenses, to Congress Ophthalmology, Madrid, Spain **
- Implications of Medical Engineering in Society, Conference of European Society of Clinical Engineering, Stuttgart, Germany **
- Invited keynote lecturer to Biocompatibility to International Society of Artificial Organs, Amsterdam, Netherlands**
- Invited presentation to Gordon Conference on Biomaterials, USA****
- Ophthalmological implications of biocompatibility, International Congress on Cataract and Refractory Surgery, Innsbruck, Austria *
- Invited lecture on Biocompatibility of dental alloys to Symposium on Biocompatibility, Toxicology and Corrosion Resistance in Dental Materials, Neuchatel, Switzerland**
- Invited keynote presentation, Conference of the European Society for Biomaterials , Davos, Switzerland**
- Invited introductory presentation to SERC/NSF meeting on Cellular Engineering, Chester, UK*
- Series of lectures to UNIDL Advanced Workshop on Composite Biomaterials, Trieste, Italy**
- Lecture to Institute of Orthopaedics Symposium on Failure of Joint Replacement Prostheses, Stanmore, UK*

- Invited lecture, Inst Mech. Eng / BTG Symposium on Biocompatibility, London, UK**
- Invited lecture, Conference on Biomaterials and Medical Devices, Dusseldorf, Germany **
- Invited lecture, British Dental Association Symposium on Dentistry; London, UK**
- Invited lecture, Biomineralisation 93, Monte Carlo, Monaco **
- SERC/I.Mech E. Expert Meeting on Failure of Joint Prostheses, Bournemouth, UK*
- Invited seminar on Biocompatibility issues of implantable electronic devices to Teletronics / CSIRO joint meeting, Sydney, Australia**
- Invited series of lectures to Sree Tirunal Institute of Medical Sciences, Trivandrum, India **
- 1994 Research seminar, IRC Biomedical Materials, London, UK*
- Invited lecture to Conference on Knee Prostheses, Breckenridge, CO, USA*
- Keynote paper to Conference on Implant Tracking, Hyannis, MA, USA**
- Invited lecture, Northern Ireland Bioengineering Centre, Belfast **
- Lectures to Medical Device Technology Conference, Paris, France*
- Invited lecture to NATO ASI, Crete, Greece*
- Invited lecture to Annual conference of International Association of Oral Pathologists, York **
- Invited lecture to Annual conference of International Society of Electrochemistry, Oporto, Portugal **
- Plenary lecture to Workshop of Brite-Euram programme, Pisa Italy**
- Invited lecture to Canadian Department of Health, Canada**
- Keynote paper, Conference on Testing of Biomaterials, Montreal, Canada**
- Invited lecture Colloquium on Collagen, Maastricht, Netherlands*
- Presented series of lectures to Medical Device Technology Conference on Biocompatibility, Dusseldorf, Germany**
- 1995 Invited lecture to Conference on Implant Tracking, Melbourne, Australia***
- Invited lecture, ESB Annual Meeting, Oporto, Portugal**
- Invited lecture to Italian Society for Electron Microscopy, Rimmini, Italy **
- Invited lecture, Spanish Congress on Refractive Surgery, Pamplona, Spain**
- Invited lecture, Baxter Technology Conference, Chicago, IL, USA**
- Invited lecture, Surface Science Symposium, Liverpool, UK*
- Invited lecture, Society for Experimental Biology, St. Andrews, Scotland**
- Invited lecture, Conference on Implant Retrieval, Amsterdam, Netherlands*
- Invited Keynote lecture, IUPAC Symposium on Hydrogels, Prague, Czech Republic***
- 1996 Invited lecture, International Society for Applied Biology in Cardiology, Manchester, UK**
- Invited lecture, International Conference Implant Tracking, Buffalo, USA**
- Invited lecture, Swiss Society of Biomaterials, Zurich***
- Invited lecture, Manchester Medical Society*
- Invited lecture, European Summer School on Biomaterials, Sienna, Italy**
- Invited lecture, Italian Chemical Society. L'Aquila, Italy**

- Invited lecture, Materials Research Society, Boston , MA, USA**
- Invited lecture, Symposium on Biocompatibility of Dental Materials, Neuchatel, Switzerland*
- Invited lecture, European Conference on Glass Ionomer Cements, Warwick, UK**
- Invited lecture, British Dental Association Symposium on Dental Amalgam**
- Invited lecture to Medlink Symposium on Orthopaedic Implants, Sheffield, UK*
- Presentation to North East Section, Institute of Materials *
- Invited lecture, International Conference on Osteoporosis, Bologna, Italy **
- Invited lecture, International Conference on Drug Delivery System, Israel **
- 1997 Invited lecture, Medical Device Technology Conference, London, UK*
- Invited lecture, Bioceramics Conference, Faenza, Italy **
- Invited lecture, BIOMATECH, Lyon, France **
- Invited presentation to RAPS conference, Cannes, France**
- Invited lecture, DTI Technology Transfer Seminar, Birmingham, UK*
- Invited keynote lecture to Composite Conference, Lake Louise, Canada **
- Invited to present the Naughton Dunn Lecture, British Orthopaedic Association, Cardiff *****
- Presented George Winter Award lecture, European Society for Biomaterials, Göthenberg, Sweden,*****
- Invited lecture, Medical Device Technology Conference, Paris, France**
- Invited keynote paper to conference on Bioceramics, Faenza, Italy**
- 1998 Invited guest lecture, Tissue Engineering Symposium, Padua, Italy***
- Invited lecture to Medical Polymers Conference, Dusseldorf, Germany**
- 1999 Invited presentation, European Commission Conference on Materials for the 21st Century, Patten, Netherlands***
- Invited seminar, Medical Device Technology Conference, London, UK*
- Orthopaedic Biomaterials Seminar, Hôpital Erasmus, Brussels, Belgium*
- Invited lecture, Institute of Mechanical Engineers, Cheshire, UK,*
- Invited lecture, UK Tissue Engineering Society, London, **
- Invited lecture, World Congress on Heart Valves, London *****
- Invited lecture, Shape Memory Alloys, London,*
- Invited Discussion Leader, Gordon Conference on Biomaterials, USA***
- Invited lecture, Conference on the Operating room of the Twenty First Century, Glasgow**
- Invited presentation, Bone Tissue Engineering Conference, Toronto***
- 2000 Invited lecture, British Association, London*****
- Invited lecture, Institute of Materials Annual Conference, Cirencester**
- Invited Lecture, Biochemical Society, Leeds**
- 2001 Invited lecture, Anglo-Japanese Medical Engineering Conference, London**
- Presidential Lecture, Italian Society of Biomaterials, Bologna, Italy****
- Invited Lecture, Irish Medical Device Forum, Galway, Ireland***
- Invited Lecture, Fifth Asian Conference on Biomaterials, Hong Kong***
- Invited Seminar, Nanyang Technological University, Singapore**

- 2002
- Invited Paper, Hilton Head Symposium on Heart Valves, USA***
 - Invited Lecture, Medical device Technology Conference, Birmingham, UK*
 - Invited Keynote Paper, USA Society for Biomaterials, Tampa, USA***
 - Invited Lecture, Viral Safety Conference, Institut Pasteur, Paris, France **
 - Invited Paper, Conference on Implant –Tissue Interfaces, University of Oslo, Norway***
 - Invited Contribution, Medical Technology Leaders Forum, Atlanta, USA***
 - Invited Keynote paper, Institute of Physics Workshop, Manchester, UK**
 - Invited Keynote Paper, DTI / LGC Workshop, Liverpool, UK**
 - Invited Seminar, Cleveland Clinic Foundation, USA**
 - Invited lecture, Institute of Mech Eng Symposium, London, UK**
 - Invited lecture to Young Scientist Forum ESB Annual Conference, Barcelona, Spain**
 - Invited presentation to Eucomed Technical Forum, Brussels, Belgium**
 - Guest lecturer, Institute of Physics, Belfast, Dublin and Galway, Ireland **
- 2003
- Invited paper to conference of The Geneva Association, Berlin, Germany***
 - Invited Paper, Hilton Head Symposium on Tissue Engineering, USA***
 - Invited Lecture, UK Society for Biomaterials, Belfast, UK***
 - Lettura Magistrale, Societa Italiana di Osteointegrazione, Milan, Italy**
 - Invited Lecture, Society of Plasticisers, Brussels, Belgium**
 - Invited Seminar. Institute for Frontier Medical Sciences, Kyoto, Japan**
 - Invited Seminar, Tokyo Women’s Medical University, Japan**
 - Invited Seminar, National Institute for Materials Science, Ibaraki, Japan**
 - Invited Seminar, Korean Institute of Science and Technology, Korea**
 - Invited Keynote Lecture, Conference on Medical Textiles, Bolton, UK**
 - Invited Guest Lecture, Brunel University / Hillingdon Hospital, UK*
 - Invited Presentation, European Society for Allergology and Immunology, Paris, France ***
 - Guest Presentation, European Federation of Orthopaedics and Traumatology, Helsinki, Finland*
 - Invited Presentation, Wellcome Foundation Workshop, London, UK*
 - Invited keynote lecture, University of Washington Symposium, USA***
 - Invited keynote lecture, EPSRC Network Surface Science, York, UK*
 - Invited paper, DTI Network, Tissue Engineering, London, UK*
 - Invited paper, Orthobiologics Conference, London, UK*
 - Invited paper, Elsevier Editors Conference, Brussels, Belgium*
- 2004
- Invited lecture. McGowan Institute of Regenerative Medicine, Pittsburgh**
 - Invited lecture. Limbach Entrepreneurial Centre, Pittsburgh, USA**
 - Invited paper on the Globalisation of Medical Technology. AIMBE, Washington, USA****
 - Invited keynote paper and Lectore Magistrale, Italian Society for Plastic Surgery, Cortina Italy**
 - Special Presentation on the Commercialisation of Tissue Engineering, MerseyBio, Liverpool, UK*
 - Plenary Lecture, British Society for Dental Research, Birmingham, UK***
 - Invited seminar, University of Edinburgh, UK*

- Invited Plenary lecture, World Congress of Biomaterials, Australia****
- Invited presentation on the European Doctorate in Biomaterials and Tissue Engineering, at the World Congress of Biomaterials, Sydney, Australia**
- Invited Keynote Plenary Lecture, Regenerate Conference, Seattle, USA****
- Invited Keynote Plenary Lecture, ETG Conference, Seattle, USA***
- Invited Keynote Plenary Lecture, Chitosan Conference, Singapore ***
- Invited Keynote Plenary Lecture, MEDTEC, Galway, Ireland**
- Invited Lectures, American Chemical Society, Polymers in Biology Biennial Meeting, Savannah, USA***
- Invited Keynote Lecture, Eucomed Annual Meeting, Prague, Czech**
- Keynote Lecture, Romanian Society for Biomaterials, Bucharest, Romania**
- Invited Keynote Lecture, International Conference on Advanced Materials, IIT Kharagpur, India**
- Invited Seminar, IIT Delhi, India*
- Invited Lecture, Khatmandu Medical Society, Khatmandu, Nepal**
- 2005 Invited Presentations, International Society for Applied Cardiovascular Biology Biennial Symposium, Cape Town, South Africa ***
- Invited Keynote Lecture, US Society for Biomaterials Annual Meeting Symposium on Tissue Engineering, Memphis, USA ****
- Invited Keynote Lecture, 2nd World Congress on Regenerative Medicine, Leipzig, Germany *****
- Invited Keynote Lecture, 3rd International Conference on Ethics in Biomedical Engineering, Rochester NY, USA ***
- Invited Plenary Lecture, ICMAT, Singapore *****
- Invited Presentation, Biomaterials and Tissue Engineering Workshop, Singapore **
- Invited Opening Presentation, Gordon Conference of Biomaterials, Biocompatibility and Tissue Engineering, New Hampshire, USA ****
- Invited Keynote Presentation, Orthopaedic Hospital Research Day, Los Angeles, USA ***
- Invited Opening Lecture, EPF Summer School on Biomedical Polymers, St Die en Vosges, France **
- Special Lecture, TESi Shanghai *****
- Invited Presentation, Sabon Conference on Regenerative Medicine, Los Angeles, USA***
- Seminar, Chinese Academy of Sciences, Beijing, China**
- Seminar, Sichuan University, Chengdu, China *
- 2006 Invited Introductory Lecture, Anatomical Society, Tissue Engineering Symposium, Oxford, UK, **
- The Smith & Nephew Lecture, Institution of Mech Eng., London ****
- Invited Keynote Lecture, FEBS annual meeting, Istanbul, ***
- Campus Lecture, Straumann Institute, Basle, Switzerland **
- Invited Opening Paper, EMEA Workshop on Regulatory Issues in Cell and Tissue Engineering Products, London ***.
- Invited Keynote Lecture, Bioceramics 19, Chengdu, China, *****

- Presentation, UK-Netherlands Meeting, British Embassy, The Hague **
 Invited presentation to UK-China Meeting, British Consul, Chengdu **
 Seminar, Sichuan University, Chengdu, China *
 Seminar, South China University of Technology, Guanzhou, China *
 Seminar, East China University of Science and Technology, Shanghai, China *
 Presentation of Café Scientifique, Chengdu, China ***
 Invited Presentation, AusBioTech, Sydney, Australia ****
 Invited Plenary Speaker, ICBPE 2006 Conference, Singapore ****
 Invited Keynote Speaker, Biomaterials Conference, Hawaii, ****
 2007 Founders Award Presentation, Society for Biomaterials Annual Meeting, Chicago, USA, ****
 Invited paper, TERMIS North America, Toronto, Canada ****
 Invited paper TERMIS Europe, London UK ****
 Invited lectures, TERMIS Summer School, Madeira, Portugal ***
 Seminar, CSIRO, Melbourne, Australia**
 Invited presentations, UNSW, Sydney, Australia, **
 Seminar, University of Cape Town, South Africa **
 Seminar, Wake Forest Institute of Regenerative Medicine, USA***
 Seminar, Drexel University, USA**
 Invited Presentation, STEPS Forum, London School of Economics, UK**
 Invited Lecture, Legal Aspects of Nanotechnology, London, UK**
 Invited Presentation, IASCB Workshop, Darwin Australia**
 Invited Keynote Lecture, European Spine Conference, Leipzig, Germany***
 Invited Keynote Presentation, Beijing Olympic Committee / United Nations conference on Green Materials and the Green Olympics, Beijing, China****
 Invited lecture, International Microbiology Day, Tsinghua University, Beijing, China***
 Seminar, Shantou University, China*
 Invited Keynote Presentation, ICOBNS, Taipei, Taiwan****
 Invited Lecture, Indian Society for Biomaterials, Chennai, India***
 Invited Lecture, Indian Society for Tissue Engineering, Chennai, India****
 2008 Invited Seminar, National University of Singapore**
 Invited Seminar, University of New South Wales, Australia, **
 Presenter, College of Fellows Debate, World Biomaterials Congress, Amsterdam****
 Plenary Paper, TERMIS-EU, Porto, Portugal, ****
 Keynote lecture, TERMIS-AP, Taipei, Taiwan ****
 Invited Seminar, Hong Kong University, Hong Kong,**
 Invited Seminar, East China University of Science and Technology, Shanghai, China*
 Invited Seminar, IBN, Singapore ***
 Invited Keynote Lecture, Indian Society for Biomaterials, Kathmandu, Nepal****
 Invited Presentation, Eucomed Conference, Brussels,****
 Invited Seminars, Shantou University, China*

- 2009
- Invited Plenary Lecture, ISACB, Bordeaux, France****
 - Plenary Lectures, Biomaterials Asia 2009, Hong Kong ****
 - Invited seminar, Hong Kong University *
 - Invited seminar, Queensland University of Technology, Australia*
 - Guest Lecture, Tsinghua University, Beijing, China **
 - Invited Lecture, International Association Anatomy Societies, Cape Town, South Africa ***
 - Invited Lecture, Regenerative Medicine Symposium, Daegu, Korea **
 - Seminar, Tokyo Womens Medical University, Japan**
 - Invited Lecture, International Conference on Quality Control of Biomaterials, Beijing, China ***
 - Invited Presentation, North Carolina – Shanghai Biosciences Seminar, China ***
 - Presentation to ISACB, Chiang Mai, Thailand***
 - Plenary Lecture, 12th Chinese Conference for Biomaterials, Guangzhou, China ****
- 2010
- Plenary Lecture, TERMIS-Asia Pacific, Sydney, Australia****
 - Organizer and Chair, TERMIS_EU Debate, Galway, Ireland ****
 - Award Lecture, Surfaces in Biomaterials Foundation, Atlanta, USA ****
 - Seminar, A*STAR, Singapore ***
 - Plenary Lecture, International Nanotechnology Conference, Taiwan ****
 - Invited Seminar, sFDA, Beijing, China ***
 - Global Vision Lecture, Tsinghua University, Beijing, China ****
- 2011
- Introductory Plenary Lecture, Medical Innovation for the Twenty-First Century, Science Council of Japan / Japan Science & Technology Agency, Tokyo****
 - Invited Presentations to Workshop on ‘New Visions for Biomaterials and Tissue Engineering in India, Trivanrum, India ***
 - Plenary Lecture, TERMIS-AP, Singapore****
 - Invited Seminar, National University of Singapore ***
 - Invited Seminar, CSIRO, Melbourne, Australia ***
 - Invited Keynote lecture, Taiwan Society for Stem Cells, Taipei ****
 - Invited Seminar, Taipei Medical University, Taiwan ***
 - Invited Seminar, National Taiwan University, Taiwan **
 - Invited Seminars, East China University of Science and Technology, Shanghai, China **
 - Invited Keynote Lecture, Chinese Society for Biomaterials, China ****
 - Invited Seminar, Wuhan University China ***
 - Invited Seminar, Nankai University, China **
 - Plenary Lecture, Chinanano Forum, Suzhou, China ****
 - Invited Seminar, Nanjing University, China **
 - Invited ‘Top talk’ Lecture, Suzhou Institute for Nanoscience and Nanophotonics, Suzhou, China****
 - Invited Seminar, Beihang University Beijing, China ***
 - Invited Plenary Lecture, Beijing Science and Technology Committee, China ****

- Invited Plenary Lecture, Beijing HealthCare Conference, China ****
- Invited Plenary Keynote Lecture, German Society for Biomaterials, Giessen, Germany ****
- Invited Plenary Lecture, Regenerative Medicine Conference, Astana, Kazakhstan ****
- 2012 Annual Guest Lecture, VA-Hines / Loyola University, Chicago ****
- Presented a Café Scientifique in Franschhoek, Western Cape, South Africa, on ‘Straight to the Heart of a Child’ ***
- Invited Plenary Keynote Lecture, MANA International Symposium, Tsukuba, Japan ****
- Invited Keynote Speech, North Carolina Nanotech Commercialization Conference, Durham, USA ****
- Keynote Lecture, World Biomaterials Congress, Chengdu, China ****
- Invited Workshop Keynote Presentation, World Biomaterials Congress, Chengdu, China ****
- Invited Keynote Presentation, High Level Forum of the Chinese Academy of Engineering, Chengdu, China, ****
- Organizer and Chair, World Congress Debate, Chengdu, China ****
- Invited Seminar, State Key laboratory of Biotherapy, Sichuan University, Chengdu, China, ***
- Invited Seminar, National University of Singapore, Singapore ***
- Invited Keynote Presentation, ISOMRM Conference, Taipei****
- Invited Seminar, Nantong Laboratory for Neuroregeneration, China****
- Invited Seminar, National University of Singapore, Singapore ***
- Presentation of Workshop, National University of Singapore, ***
- Invited Seminar, AIBN, University of Queensland, Australia ***
- Presented week-long Course “Biomaterials Science” Graduate School of Biomedical Engineering, University of New South Wales, Australia, ***
- 2013 Invited Keynote Presentations, BIND 12 Conf, Bangalore, India ****
- Invited Keynote Lecture, Biocompatibility and Medical Device Performance Symposium, London, UK ****
- Invited paper, Society for Biomaterials Special Symposium, Boston ****
- Invited seminar, Shanghai Jiao Tong University, Shanghai, China ***
- Invited Keynote Paper, Chinese Tissue Engineering Society Conference, Xi’an, China ****
- Invited seminar, Pharmacy, National University of Singapore **
- Invited Forum Presentation, Bioengineering, National University of Singapore **
- Invited Keynote Lecture, Biocompatibility and Medical Device Performance Symposium, Minneapolis, USA ****
- Invited Keynote lecture, TERMIS_AP annual meeting, Shanghai, China ****
- Invited Keynote Lecture, International Brain Research Organization Workshop, Nantong, China***
- Organized and presented The Xi’an World Summit on Regenerative Medicine, Xi’an, China****

- Invited Lecture Nanomaterials Workshop, NUS, Singapore ***
 Presented week-long Course “Biomaterials Science” Graduate School of Biomedical Engineering, University of New South Wales, Australia, ***
 Invited Special Plenary Presentation, TERMIS-AM, Atlanta *****
- 2014
 Invited Keynote (By teleconference) International Society for Cellular Therapy; Tracheal Engineering; the Next Steps, Paris*****
 Invited Special Plenary Lecture, TERMIS-EU Genoa *****
 Lecture to Essentials of Regenerative Medicine Course, Winston-Salem**
 Invited Plenary Lecture, European Society for Biomaterials, Liverpool*****
 Invited Lecture, Materials for the Future Symposium, Liverpool*****
 Invited Contribution College of Fellows Symposium Liverpool***
 Invited Special Lecture, TERMS-AP, Daegu, Korea*****
 Invited Lecture, Special Symposium, Taipei Medical University***
 Invited Lecture, Special Symposium, GeorgiaTech, Atlanta***
 Invited paper, TERMIS-America, Washington DC*****
- 2015
 Invited paper, Symposium on Rheumatic Heart Disease, Cape Town***
 Invited seminar, University of Virginia, USA**
 Invited seminar, Virginia Tech, USA**
 Invited seminar, North Carolina State University, USA**
 Lecture to Essentials of Regenerative Medicine Course, Winston-Salem**
 Invited seminar, Clemson University, USA**
 Invited lecture, Nantong University, China***
 Invited Keynote Lecture, Chinese Medical Association Conference, China*****
- 2016
 Organizer and Chair, Termis World Congress Debate, Boston, USA *****
 Presented short course Essential Biomaterials Science, at the University of Technology Sydney, Australia***
 Presented workshop Medical Device Industry, at the University of Technology Sydney, Australia***
 Lecture to Essentials of Regenerative Medicine Course, Winston-Salem**
 Plenary Lecture, Society for Biomaterials, Biomaterials Day, Boston ***
 Invited Keynote Lecture, Conference at Fudan University, China*****
 Invited lectures, East China University of Science, Shanghai***
- 2017
 Presentation to TAVI Workshop, Cape Town **
 Invited seminars, Sichuan University, China**
 Invited seminar, Jiangsu University, China **
 Organizer and Chair, Termis-EU Debate, Davos, Switzerland *****
 Lectures to Essentials of Regenerative Medicine Course, Winston-Salem**
 Presented Workshop on Scientific Publishing, Winston-Salem**
 Presentation to Spinal Cord Injury workshop, Beijing, China***
 Plenary Lecture, TERMIS-AP, Nantong, China*****
 Invited contribution, Chinese Academy of Engineering Forum, Nantong, China***

Invited Keynote Lecture; International Forum on Innovation and Emerging Industries Development, Chinese Academy of Engineering, Shanghai, China*****

16 **BOOKS, AUTHORED AND EDITED**

- 1 Williams, D. F. and Roaf, R., IMPLANTS IN SURGERY, Saunders, London, 1973, pp. 598
- 2 Williams, D. F. and Roaf, R., IMPLANTS IN SURGERY, Russian translation, 1978, pp. 552
- 3 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF IMPLANT MATERIALS, Sector Publishing Co., London, 1976, pp. 215
- 4 Williams, D. F. and Cunningham, J., MATERIALS IN CLINICAL DENTISTRY, Oxford University Press, Oxford, 1979, pp.365
- 5 Williams, D. F. and Cunningham, J., MATERIALES EN LA ODONTOLOGIA CLINICA, Editorial Mundi S.A.I.C.Y.F., 1982, pp. 376
- 6 Hastings, G. and Williams, D. F. (Eds), MECHANICAL PROPERTIES OF BIOMATERIALS, John Wiley, London, 1980, pp. 563
- 7 Williams, D. F. (Ed.), FUNDAMENTAL ASPECTS OF BIOCOMPATIBILITY VOL. I, CRC Press, Boca Raton, 1981, pp. 221
- 8 Williams, D. F. (Ed.), FUNDAMENTAL ASPECTS OF BIOCOMPATIBILITY VOL. II, CRC Press, Boca Raton, 1981, pp. 221
- 9 Williams, D. F. (Ed.), SYSTEMIC ASPECTS OF BIOCOMPATIBILITY, VOL. I, CRC Press, Boca Raton, 1981, pp. 273
- 10 Williams, D. F. (Ed.), SYSTEMIC ASPECTS OF BIOCOMPATIBILITY, VOL. II, CRC Press, Boca Raton, 1981, pp. 307
- 11 Williams, D. F. (Ed.), BIOCOMPATIBILITY IN CLINICAL PRACTICE, VOL. I, CRC Press, Boca Raton, 1982, pp. 173
- 12 Williams, D. F. (Ed.), BIOCOMPATIBILITY IN CLINICAL PRACTICE, VOL. II, CRC Press, Boca Raton, 1982, pp. 216
- 13 Smith, D. C. and Williams, D. F. (Eds.), BIOCOMPATIBILITY IN DENTAL MATERIALS, VOL. I, CRC Press, Boca Raton, 1982, pp. 224
- 14 Smith, D. C. and Williams, D. F. (Eds), BIOCOMPATIBILITY OF DENTAL MATERIALS, VOL II, CRC Press, Boca Raton, 1982, pp. 281
- 15 Smith, D. C. and Williams, D. F. (Eds.), BIOCOMPATIBILITY OF DENTAL MATERIALS, VOL. III, CRC Press, Boca Raton, 1982, pp. 281
- 16 Smith, D. C. and Williams, D. F. (Eds.), BIOCOMPATIBILITY OF DENTAL MATERIALS, VOL. IV, CRC Press, Boca Raton, 1982, pp. 274
- 17 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF CLINICAL IMPLANT MATERIALS, VOL. I, CRC Press, Boca Raton, 1982, pp. 260
- 18 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF CLINICAL IMPLANT MATERIALS, VOL. II, CRC Press, Boca Raton, 1982, pp. 272
- 19 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF ORTHOPAEDIC IMPLANTS, VOL. I, CRN Press, Boca Raton, 1982, pp. 313
- 20 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF ORTHOPAEDIC IMPLANTS, VOL. II, CRN Press, Boca Raton, 1982, pp. 247

- 21 Williams, D. F. (Ed.), RESEARCH IN MEDICAL ENGINEERING, Science and Engineering Research Council, 1985, pp. 92
- 22 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF TISSUE ANALOGS, VOL. I, CRC Press, Boca Raton, 1985, pp. 166
- 23 Williams, D. F. (Ed.), BIOCOMPATIBILITY OF TISSUE ANALOGS, VOL. II, CRC Press, Boca Raton, 1985, pp. 192
- 24 Williams, D. F. (Ed.), TECHNIQUES IN BIOCOMPATIBILITY TESTING, VOL. I, CRC Press, Boca Raton, 1986, pp. 202
- 25 Williams, D. F. (Ed.), TECHNIQUES IN BIOCOMPATIBILITY TESTING, VOL. II, CRC Press, Boca Raton, 1986, pp. 224
- 26 Williams, D. F., DEFINITIONS IN BIOMATERIALS, Elsevier Scientific, Amsterdam, 1987, pp.72
- 27 Williams, D. F. (Ed.), BLOOD COMPATIBILITY, VOL. I, CRC Press, Boca Raton, 1987, pp. 224
- 28 Williams, D. F. (Ed.), BLOOD COMPATIBILITY, VOL. II, CRC Press, Boca Raton, 1987, pp. 224
- 29 Williams, D. F. (Ed.), CURRENT PERSPECTIVES IN IMPLANTABLE DEVICES, VOL. I, JAI Press, Greenwich, Connecticut, 1989, pp. 317
- 30 Williams, D. F. (Ed.), CONCISE ENCYCLOPEDIA ON MEDICAL AND DENTAL MATERIALS, Pergamon Press, Oxford, 1990, pp. 412
- 31 Williams, D. F. (Ed.), CURRENT PERSPECTIVES IN IMPLANTABLE DEVICES, VOL. II, JAI Press, Greenwich, Connecticut, 1989, pp. 291
- 32 Williams, D. F. (Ed), MEDICAL AND DENTAL MATERIALS, VCH, Weinheim, 1991, pp. 469
- 33 Doherty, P., Williams, R.L., Williams, D.F. and Lee, A. C., (Eds) BIOMATERIALS - TISSUE INTERFACES, Elsevier, Amsterdam 1992, pp533.
- 34 Williams, D.F. (Ed) , NOVEL BIOMOLECULES BASED ON HYALURONIC ACID AND ITS DERIVATIVES, Fidia Advanced Biopolymers, Padua, 1995, pp. 62
- 35 Williams, D.F, THE WILLIAMS DICTIONARY OF BIOMATERIALS Liverpool University Press, 1999, pp. 350
- 36 Leng Y and Williams D.F. (Guest Editors) FOCUS ON BIOMATERIALS SCIENCE IN ASIA, Biomaterials Special Issue, Vol 24, number 13, Elsevier,2003
- 37 Williams D.F (Ed) THE BIOMATERIALS SILVER JUBILEE COMPENDIUM, Elsevier, 2006,
- 38 Van Blitterswijk, C, Thomsen P, Lindhal A., Hubbell J, Williams, D, Cancedda R, de Bruijn J and Sohier J (Eds), TISSUE ENGINEERING, Elsevier, Amsterdam, 2008, pp 740.
- 39 The Xi'an Papers, Compiled by David Williams and Peggy O'Donnell, for the Xi'an World Summit on Regenerative Medicine, 2013
- 40 Williams D.F. ESSENTIAL BIOMATERIALS SCIENCE, Cambridge University Press 2014, pp 640.
- 41 Orlando G, Remuzzi G, Williams D.F. KIDNEY TRANSPLANTATION, BIOENGINEERING AND REGENERATION, Elsevier, 2017, pp 1225.

17 **SCIENTIFIC PAPERS**

**** Peer reviewed paper; **seminal contributions in bold**

*** Editorial

** Book chapter

* Non peer reviewed contribution

- 1 **Williams, D.F. A discussion of Schmid Factors for twinning in BCC crystals, Metal Science Journal, 1967, 1, 94-6. ******
- 2 Williams, D.F. Some problems associated with conventional artificial limbs, Biomedical Engineering, 1970, 5, 10-1.****
- 3 **Williams, D.F. and Reid, C.N. A dynamic study of twin-induced brittle fracture, Acta Metallurgica, 1971, 19, 931-7.******
- 4 Williams, D.F. The properties and medical uses of materials; Structure and mechanical properties of materials, Biomedical Engineering, 1971, 6, 62-9.****
- 5 Williams, D.F. The properties and medical uses of materials, Effects of the environment on materials, Biomedical Engineering, 1971, 6, 106-13.****
- 6 Williams, D.F. The properties and medical uses of materials 3 (1), The reaction of tissues to materials, Biomedical Engineering, 1971, 6, 152-6.****
- 7 Williams, D.F. The properties and medical uses of materials 3 (2), The reaction of tissues to materials on blood, Biomedical Engineering, 1971, 6, 205-8.****
- 8 Williams, D.F. The properties and medical uses of materials 4, New materials, Biomedical Engineering, 1971, 6, 260-5.****
- 9 Williams, D.F. The properties and medical uses of materials 5, Fabrication, finishing and selection of materials, Biomedical Engineering, 1991, 6, 300-7.****
- 10 Williams, D.F. The current status of biomedical materials, Metals and Materials, 1972, 6, 287-91.****
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