

Curriculum Vitae



Patrick John Prendergast was in Enniscorthy, Co. Wexford, Ireland on the 23rd of June 1966. Since 2011 he has been Provost & President, Trinity College Dublin, Ireland. Previous officer roles with Trinity include Vice-Provost /Chief Academic Officer (2008-2011) and Dean of Graduate Studies (2004-2007). Prior to his election as Provost he was Professor of Bio-Engineering. His research publications are on the design of medical implants, and on computer simulation of the response of biological tissue to mechanical strain for which he was elected an international Fellow of the Royal Academy of Engineering in 2013. Recent publications are on addressing global research challenges and on university leadership in times of change. He is a member of the Governing Board of the European Institute of Innovation and Technology, a body of the European Union.

For further biography details please visit: <https://www.tcd.ie/provost/biography/>

Education

2016	IMD Singapore
1983-1991	Trinity College Dublin, Ireland
1978-1983	St. Peter's College, Wexford, Ireland

Degrees

2009	ScD, University of Dublin (Higher doctorate by published work)
1991	PhD, University of Dublin (Research doctorate in Bioengineering)
1987	BA, BAI, University of Dublin (Mechanical Engineering Degree)

Professional Qualifications and Fellowships

2013	International Fellow of the Royal Academy of Engineering [FREng]
2011	Fellow, Irish Academy of Engineering [FIAE]
2008	Member of the Royal Irish Academy [MRIA]
2005	Fellow, Institution of Engineers of Ireland [FIEI]
1993	Chartered Engineer (Institution of Engineers of Ireland) [CEng]

Awards/Honours

2016	Honorary Fellow of the Anatomical Society [HonFAS]
2014	Chief Guest & 28 th Convocation Address, Thapar University, Patiala, India
2014	Skalak Memorial Lecture, Columbia University, New York
2012	Honorary Fellow, Oriel College, Oxford, UK
2009	Wartenweiler Lecture, International Society of Biomechanics, Cape Town, South Africa
2008	Haughton Lecture and Silver Medal, Royal Academy of Medicine in Ireland
2007	President, European Alliance of Medical and Biological Engineering and Science
2003	Parsons Medal in Engineering Science, Royal Irish Academy
2002-2004	President, European Society of Biomechanics (www.esbiomech.org)
2002	Norman Gamble Award in Otology, Royal Society of Medicine, UK
1998-2000	President, Section of Bioengineering, Royal Academy of Medicine in Ireland
1998	Elected as a Fellow of Trinity College Dublin
1996	The Research Award (S.M. Perren Award), European Society of Biomechanics

Employment History

2011-	Provost & President, Trinity College Dublin, Ireland
2008-2010	Vice-Provost/Chief Academic Officer, Trinity College Dublin, Ireland
2008	Spanish Government Visiting Professor, University Polytechnic of Catalonia, Barcelona, Spain
2004-2007	Dean of Graduate Studies, Trinity College Dublin, Ireland
2002-2008	Director, Trinity Centre for Bioengineering, Dublin, Ireland
2001-2002	Senior Research Fellow, Technical University of Delft & Erasmus University Rotterdam, The Netherlands
2001	Visiting Professor, Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland
1995-2011	Lecturer (1995 - 2001); Associate Professor (2001 - 2007); Professor (2007 - 2011) Department of Mechanical and Manufacturing Engineering, School of Engineering, Trinity College Dublin, Ireland <ul style="list-style-type: none">▪ College Tutor (1997 - 2004)▪ Course Director for the MSc in Bioengineering (1999 - 2004)
1993-1995	Marie Curie Fellow, Radboud University Hospital, Nijmegen, The Netherlands
1991-1993	Research Fellow, Department of Mechanical Engineering, Trinity College Dublin, Ireland
1990-1991	Council of Europe Scholarship [Ingegnere Straniero], Rizzoli Orthopaedic Institute, University of Bologna, Italy

Board Appointments

2016-	Member of Dublin Chamber of Commerce
2012-	Member of the Governing Board, European Institute of Innovation and Technology <ul style="list-style-type: none">• Chair of the Audit Committee (2014 -
2012-	Non-Executive Director, Science Gallery International, Dublin, Ireland
2011- 2013	Non-Executive Director, Tallaght Hospital, Dublin, Ireland
2009- 2011	Non-Executive Director, ClearStream Technologies Group Ltd, Ireland
2004- 2006	Chair, Trinity Consortium on Ageing
2001- 2007	Non-Executive Director, Eblana Photonics Ltd, Pearse St., Dublin, Ireland

Editorial Boards Of Academic Journals

2007-	Journal of Orthopaedics Trauma Surgery and Related Research
2006-	International Journal of Computational Vision and Biomechanics
2006-	Journal of the Mechanical Behaviour of Biomedical Materials
2004-	Journal of Orthopaedics and Traumatology
2004-2008	Journal of the Royal Society, Interface
2000-	European Cells and Materials (www.ecmjournal.org)
1999-	Journal of Biomechanics
1994-2008	Clinical Biomechanics

Presentations

Recent speeches given at www.tcd.ie/provost/addresses

Appendices to CV

- A. [Publications](#)
- B. [Former graduate students](#)
- C. [Examination of theses in other institutions](#)

Appendix A: List of publications (most recent first in each category)

I. Journal Papers, Book Chapters, and Conference Proceedings

II. Edited Books and Proceedings

III. Published Lectures

IV. Recent Book Reviews, Editorials, Prefaces, etc.

I. JOURNAL PAPERS, BOOK CHAPTERS, CONFERENCE PROCEEDINGS

- 1) The public-private shift in universities: Implications for leadership. In **University Leadership** (L.E. Weber & H. Newby, Eds), London, Paris, Genève: Economica, (in press, 2017) [PJ Prendergast]
- 2) A short history of bioengineering research in Ireland. **Journal of Biomechanical Engineering**, submitted, 2017, [DJ Kelly, FJ O'Brien, PJ Prendergast]
- 3) Predictive modelling in musculoskeletal mechanobiology. In **Mechanobiology. Exploitation for Medical Benefit.** (S.C.F. Rawlinson, ed.), John Wiley & Sons, Inc., pp. 331-346, 2017 [H Kayyheri, H Isaksson, PJ Prendergast]
- 4) Ageing enhances the vulnerability of mesenchymal stromal cells to uniaxial tensile strain induced apoptosis. **Journal of Biomechanics** 2016, 49, 458-462 [K McKayed, PJ Prendergast, VA Campbell]
- 5) Global research questions and institutional research strategies. In **University Priorities and Constraints** (L.E. Weber & Dunderstadt J.J., Eds), London, Paris, Genève: Economica, pp. 143-154, 2015 [PJ Prendergast, M. Hennessy]
- 6) Forging a future: pressures on higher education. In **Perspectives on Manufacturing: Essays in Honour of John Monaghan** (K. Kelly & G.E. O'Donnell, Eds), pp. 33-44, 2015 [PJ Prendergast]
- 7) ^a Four decades of finite element analysis of orthopaedic devices: where are we now and where are we going? **Journal of Biomechanics** 48, 767-778, 2015 [Taylor M & Prendergast PJ]
- 8) Finite element modelling of a normal and aged cell: validation with atomic force microscope indentation and analysis of internal stimulation. **Computer Methods in Biomechanics and Biomedical Engineering** 18, 468-476, 2015 [X Xue, AB Lennon, KK McKayed, VA Campbell & PJ Prendergast]
- 9) Identification of mechanosensitive genes during skeletal development: alteration of genes associated with cytoskeletal rearrangement and cell signalling pathways. **BMC Genomics** 15, article 48, 2014 [RA Rolfe, NC Nowlan, EM Kenny, PJ Prendergast, DJ Kelly & P Murphy]
- 10) Garden parties, kissograms, and non-linear vibration isolation, In **Trinity Tales. Trinity College Dublin in the Eighties** (Katy McGuinness, Ed.), Lilliput Press, Dublin, pp. 160-164, 2013 [PJ Prendergast]
- 11) Application of a mechanobiological simulation technique to stents used clinically, **Journal of Biomechanics** 46, 918-924, 2013 [CJ Boyle, AB Lennon & PJ Prendergast]
- 12) Corroboration of theories for mechanoregulated stem cell differentiation. **Computer Methods in Biomechanics and Biomedical Engineering** 18, 15-23, 2015 [H Khayyeri, H Isaksson & PJ Prendergast]
- 13) The emergence of mechanoregulated endochondral ossification in evolution, **Journal of Biomechanics** 46, 731-737, 2013 [H Khayyeri & PJ Prendergast]
- 14) An automated method for patient-specific hexahedral mesh generation of implanted intramedullary prostheses. **Computer Methods in Biomechanics and Biomedical Engineering** (in press) [PE Galibarov, PJ Prendergast & AB Lennon]
- 15) A probabilistic modelling scheme for analysis of long-term failure of cemented femoral joint replacements. **Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine**, 226, 927-938, 2012 [PE Galibarov, PJ Prendergast & AB Lennon]
- 16) The mechanical effect of the existing cement mantle on the in-cement femoral revision. **Clinical Biomechanics**, 27, 673-679, 2012 [P Keeling, AB Lennon, PJ Kenny, P O'Reilly & PJ Prendergast PJ]
- 17) Biophysical stimuli induced by passive movements compensate for lack of skeletal muscle during embryonic skeletogenesis. **Biomechanics and Modelling in Mechanobiology**, 11, 207-219, 2012 [NC Nowlan, G Dumas, S Tajbakhsh, PJ Prendergast & P Murphy]
- 18) Biomechanical modelling of cells in mechanoregulation. In: **Cellular and Biomolecular Mechanics and Mechanobiology** (A Gefen, Ed.), Springer, Berlin, pp. 297-329, 2011 [AB Lennon, H Khayyeri, F Xue & PJ Prendergast]
- 19) Computational techniques for selection of biomaterial scaffolds for tissue engineering. In: **Advances on**

^a Invited for a special issue in memory of Professor Rik Husikes (Edited by K.Ito)

- Modelling in Tissue Engineering** (PR Fernandes, PR Bartolo, Eds.), Springer, Berlin, pp. 55-69, 2011 [S Checa, C Sandino, DP Byrne, DJ Kelly, D Lacroix & PJ Prendergast]
- 20) Bone cell elasticity and morphology changes during the cell cycle. *Journal of Biomechanics*, 44 (7) 1484-1490, 2011 [GM Kelly, JI Kilpatrick, MH van Es, PP Weafer, PJ Prendergast & SP Jarvis]
 - 21) How can cells sense the elasticity of a substrate? An analysis using a cell tensegrity model. *European Cells and Materials*, 22, 202-213, 2011 [G De Santis, AB Lennon, F Boschetti, B Verheghe, P Verdonck & PJ Prendergast]
 - 22) Computer simulating a clinical trial of a load-bearing implant: example of an intramedullary prosthesis. *Journal of the Mechanical Behaviour of Biomedical Materials* 4, 1880-1887, 2011 [PJ Prendergast, PE Galibarov, C Lowrey & AB Lennon]
 - 23) *In silico* prediction of the mechanobiological response of arterial tissue: an application to angioplasty and stenting. *Journal of Biomechanical Engineering* article nr. 081001, 133, 2011 [CJ Boyle, AB Lennon & PJ Prendergast]
 - 24) Simulation of fracture healing in the tibia: mechanoregulation of cell activity using a lattice modelling approach. *Journal of Orthopaedic Research*, 1496-1503, 29, 2011 [DP Byrne, D Lacroix & PJ Prendergast]
 - 25) Dynamic patterns of mechanical stimulation co-localize with growth and cell proliferation during morphogenesis of the avian embryonic knee joint. *Journal of Biomechanics* 44, 143-149, 2011 [KA Roddy, GM Kelly, MT van Es, P Murphy & PJ Prendergast]
 - 26) Variability observed in mechano-regulated *in vivo* tissue differentiation can be explained by variation in cell mechanosensitivity. *Journal of Biomechanics* 44, 1051-1058, 2011 [H Khayyeri, S Checa, M Tagil, P Aspenberg & PJ Prendergast]
 - 27) Inter-species regulation of the mechano-regulation of bone healing: comparison of secondary bone healing in the sheep and rat. *Journal of Biomechanics* 44, 1237-1245, 2011 [S Checa, PJ Prendergast & GN Duda]
 - 28) Mechanical influences on morphogenesis of the knee joint revealed through morphological, molecular and computational analysis of immobilised embryos, *PLoS One* Vol. 6, Article nr. e17526, 2011 [K Roddy, PJ Prendergast & P Murphy]
 - 29) A method to construct a patient-specific proximal femur from planar pre-operative radiographs. *Medical Engineering and Physics* 32, 1180-1188, 2010 [PE Galibarov, PJ Prendergast & AB Lennon]
 - 30) Predictive modelling in mechanobiology: combining algorithms for cell activities in response to physical stimuli using a lattice-modelling approach, In: *Computer Methods in Mechanics*, (M. Kuczma & K. Wilmanski, Eds.), Springer, Berlin, pp. 423-435, 2010 [S Checa, DP Byrne & PJ Prendergast]
 - 31) Computational models of tissue differentiation, In: *Computational Methods in Biomechanics*, (S. De, F. Guilak & M. Mofrad, Eds.), Springer, Berlin, pp. 353-372, 2010 [Prendergast PJ, Checa S & Lacroix D]
 - 32) Mechanobiology of embryonic skeletal development: insights from animal models. *Birth Defects Research Part C: Embryo Today: Reviews* 90, 203-213, 2010 [Nowlan NC, Roddy KA, Prendergast PJ & Murphy P]
 - 33) The threshold force required for femoral impaction grafting in revision hip surgery. *Acta Orthopaedica* 81, 303-307, 2010 [OM Flannery, JR Britton, P O'Reilly, N Mahony, PJ Prendergast & PJ Kenny]
 - 34) Tensile strain as a regulator of mesenchymal stem cell osteogenesis, *Annals of Biomedical Engineering* 38, 1767-1779, 2010 [EM Kearney, E Farrell, PJ Prendergast & VA Campbell]
 - 35) Simulation of angiogenesis and cell differentiation in a CaP scaffold subjected to compressive stress using a lattice-modelling approach. *Biomaterials* 31, 2446-2452, 2010 [C Sandino, S Checa, PJ Prendergast & D Lacroix]
 - 36) Computational simulation methodologies for mechanobiological modelling: application of a cell-centred approach to neointima development around stents. *Philosophical Transactions of the Royal Society: Section A* 368, 2919-2935, 2010 [CJ Boyle, AB Lennon, M Early, DJ Kelly, C Lally & PJ Prendergast]
 - 37) Developing bones are differentially affected by compromised skeletal muscle formation. *Bone* 46, 1275-1285, 2010 [NC Nowlan, C Bourdon, S Tajbakhsh, G Dumas, PJ Prendergast & P Murphy]
 - 38) Tissue differentiation in an *in vivo* bioreactor: *in silico* investigations of scaffold stiffness. *Journal of Materials Science: Materials in Medicine* 21, 2331-2339, 2010 [H Khayyeri, S Checa, M Tagil, FJ O'Brien & PJ Prendergast]
 - 39) Mechanobiological regulation of the remodelling cycle in trabecular bone and possible biomechanical pathways for osteoporosis *Clinical Biomechanics* 25: 491-498, 2010 [BM Mulvihill & PJ Prendergast]
 - 40) Effect of cell seeding and mechanical loading on vascularization and tissue formation inside a scaffold: a mechanobiological model using a lattice approach to simulate cell activity. *Journal of Biomechanics* 43, 961-968, 2010 [S Checa & PJ Prendergast]
 - 41) Simulation of tissue differentiation in a mechanically loaded bone regeneration chamber, In: *International Federation of Medical and Biological Engineering Proceedings* (Eds: J Vander Sloten, P Verdonck, M Nyssen & J Hauelsen), Springer-Verlag, Berlin, Vol. 22, pp. 2031-2034, 2009 [H Khayyeri, S Checa, M Tagil & PJ

Prendergast]

- 42) The bone-cement interface: is it susceptible to damage-adaptive remodelling? In: **International Federation of Medical and Biological Engineering Proceedings** (Editors: J Vander Sloten, P Verdonck, M Nyssen & J Haueisen), Springer-Verlag, Berlin, Vol. 22, pp. 1990-1993, 2009 [AB Lennon & PJ Prendergast]
- 43) Capillary network formation during tissue differentiation. A mechano-biological model. In: **International Federation of Medical and Biological Engineering Proceedings** (Editors: J Vander Sloten, P Verdonck, M Nyssen & J Haueisen), Springer-Verlag, Berlin, Vol. 22, pp. 2195-2199, 2009 [S Checa & PJ Prendergast]
- 44) ^b “May the force be with you”: 14th Samuel Houghton lecture. **Irish Journal of Medical Science** 177, 289-296, 2008 [PJ Prendergast]
- 45) 3D representation of the developing chick knee joint: a novel approach relating multiple components, **Journal of Anatomy** 214: 374-387, 2009 [KA Roddy, NC Nowlan, PJ Prendergast & P Murphy]
- 46) ^c Innovation in the university: it is time. In: **Proceedings of the 26th International Manufacturing Conference**, (Eds.: G.E. O'Donnell & K Kelly), pp. 3-6, 2009 [PJ Prendergast]
- 47) Corroboration of mechanobiological simulations of tissue differentiation in an in vivo bone chamber using a lattice-modeling approach, **Journal of Orthopaedic Research** 27, 1659-1666, 2009 [H Khayyeri, S Checa, M Tagil & PJ Prendergast]
- 48) Computer-aided design and finite element modelling of biomaterials scaffolds for tissue engineering. **Philosophical Transactions of the Royal Society: Section A** 369: 1993-2009, 2009 [D Lacroix, J. Planel & PJ Prendergast]
- 49) A mechanobiological model of tissue differentiation that includes angiogenesis: a lattice-based modelling approach. **Annals of Biomedical Engineering** 39, 129-145, 2009 [S Checa & PJ Prendergast]
- 50) Cortical and interfacial bone changes around a non-cemented hip implant: Simulations using combined strain/damage remodelling algorithm, **Medical Engineering and Physics** 31, 477-488, 2009 [PT Scannell & PJ Prendergast]
- 51) Stress in peripheral arteries following stent placement: a finite element analysis. **Computer Methods in Biomechanics and Biomedical Engineering** 12, 25-33, 2009 [M Early, C Lally, PJ Prendergast & DJ Kelly]
- 52) Micromechanical modelling of bone using scanning acoustic microscopy and finite element analysis, **8th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering**, Oporto, Portugal, 12 pp, published on CD-Rom, 2008 [PM Wulliamoz, O Kennedy, O Brennan, FJ O'Brien, SM Rackard, TC Lee & PJ Prendergast]
- 53) Identification of in vivo mechanoregulatory genes by correlation with patterns of biophysical stimuli during embryonic bone formation. **PLoS Computational Biology** 4(12), e1000250, 2008, [NC Nowlan, PJ Prendergast & P Murphy]
- 54) A comparison of the involvement of p38, ERK1/2 and PI3K in growth-factor induced chondrogenic differentiation of mesenchymal stem cells. **Biochemical and Biophysical Research Communications** 368, 990-995, 2008 [LA McMahon, PJ Prendergast & VA Campbell]
- 55) A finite element prediction of strain on cell in a highly porous collagen- glycosaminoglycan scaffold. **Journal of Biomechanical Engineering**, 130 (5), Article # 061001, 2008 [AJF Stops, LA McMahon, D O'Mahony, PJ Prendergast & PE McHugh]
- 56) Mechanisms in cell-mediated mesenchymal stem cell apoptosis. **Journal of Biomechanical Engineering** 130, Article # 061004, 2008 [EM Kearney, PJ Prendergast & VA Campbell]
- 57) Introduction to Perspectives in Design and Bioengineering, In: **Perspectives in Design and Bioengineering: A Festschrift in Honour of C.G. Lyons**, (Eds.: C.K. Simms & P.J. Prendergast), Trinity Centre for Bioengineering, Dublin, pp.1-10, 2008 [Prendergast PJ & Simms CK]
- 58) Gene expression by marrow stromal cells in a porous collagen glycosaminoglycan scaffold is affected by pore size and mechanical stimulation, **Journal of Materials Science: Materials in Medicine** 19, 3455-3463, 2008 [EM Byrne, E Farrell, LA McMahon, MG Haugh, FJ O'Brien, VA Campbell, PJ Prendergast & BC O'Connell]
- 59) Life in the machine, In: **What did you do today, Professor?** E.P. O'Neill (Ed.), Living Edition Science: Pöllauberg, Austria, pp. 47-58, 2008 [PJ Prendergast]
- 60) Biomechanics and mechanobiology of osteochondral tissues. **Regenerative Medicine** 3, 743-759, 2008 [LA McMahon, FJ O'Brein & PJ Prendergast]
- 61) Involvement of stretch-activated ion channels in strain-regulated glycosaminoglycan synthesis in mesenchymal stem cell-seeded 3D scaffolds, **Journal of Biomechanics** 41, 2055-2059, 2008 [LA McMahon, VA Campbell &

^b Delivered as the Samuel Houghton Lecture of the Royal Academy of Medicine in Ireland, Sligo, Ireland, in January 2008

^c Delivered as the Opening Address to the 26th Congress of the International Manufacturing Committee, Trinity College Dublin in September 2009

PJ Prendergast]

- 62) An algorithm for bone mechanoresponsiveness: implementation to study the effect of patient-specific cell mechanosensitivity on trabecular bone loss. **Computer Methods in Biomechanics and Biomedical Engineering**, 11, 443-451, 2008 [Mulvihill BM & Prendergast PJ]
- 63) Hypoxia promotes chondrogenesis in rat mesenchymal stem cells: a role for AKT and hypoxia-inducible factor (HIF)-1 α . **Journal of Cell Physiology** 216, 708-715, 2008 [M Kanichai, D Ferguson, PJ Prendergast, VA Campbell]
- 64) Research programmes that promote novel, ambitious, unconventional, and high-risk research: An analysis **Industry and Higher Education** 22, 215-221, 2008 [Prendergast PJ, Brown SH, Britton JR]
- 65) Loss of trabeculae by mechanobiological means may explain rapid bone loss in osteoporosis. **Journal of the Royal Society: Interface** 5, 1243-1251, 2008 [BM Mulvihill, LM McNamara & PJ Prendergast]
- 66) Effect of surface geometry and local mechanical environment on peri-implant tissue differentiation: a finite element study. **Journal of Biomechanical Engineering** 130 (5), article nr 05015, 2008 [A Andreykiv, F van Keulen & PJ Prendergast]
- 67) Experimental investigation of negative pressure intrusion techniques of acetabular cementation in total hip arthroplasty, **Acta Orthopaedica Belgica**, 74, 71-81, 2008 [RF Mac Niocaill, S Guerin, JR Britton, AB Lennon, PJ Prendergast & PJ Kenny]
- 68) Cement-in-cement revision hip arthroplasty: an analysis of clinical and biomechanical literature. **Archives of Orthopaedic and Trauma Surgery** 128, 1193-1199, 2008 [P Keeling, PJ Prendergast, AB Lennon & PJ Kenny]
- 69) Chondrogenic differentiation of mesenchymal stem cells in a collagen- glycosaminoglycan scaffold. Experimental and computational analysis, **Annals of Biomedical Engineering** 36, 185-194, 2008 [LA McMahon, AJ Reid, VA Campbell & PJ Prendergast]
- 70) Simulation of fracture healing incorporating mechanoregulation of tissue differentiation and dispersal/proliferation of cell populations, **Biomechanics and Modelling in Mechanobiology** 7, 443-461, 2008 [A Andreykiv, F van Keulen & PJ Prendergast]
- 71) Tissue differentiation and bone regeneration in an osteotomized mandible: a computational analysis of the latency period, **Medical and Biological Engineering and Computing** 46, 283-98, 2008 [Boccaccio A, Prendergast PJ, Pappalettere C, Kelly DJ]
- 72) A dynamic pattern of mechanical stimulation promotes ossification in avian embryonic long bones. **Journal of Biomechanics** 41, 249-258, 2008 [Nowlan NC, Murphy P & Prendergast PJ]
- 73) Stimulating Nitric Oxide response in single osteoblasts using atomic force microscopy. **Journal of Orthopaedic Research** 26, 513-521, 2008 [McGarry JG, Maguire P, Prendergast PJ, Campbell VA, O'Connell BC & Jarvis SP]
- 74) The influence of ventilation tube design on the magnitude of stress imposed at the implant/tympanic membrane interface, **Medical Engineering and Physics** 30, 154-163, 2008 [Vard JP, Kelly DJ, Blayney AW & Prendergast PJ]
- 75) The effect of patient-specific bone remodelling rates on remodelling/repair in trabecular bone. In: **Proceedings of the 3rd International Conference on Computational Bioengineering**. (Eds.: M. Cerrolaza, H. Rodrigues, M. Doblaré, J. Ambrosio, M. Viceconti), Universidad Central de Venezuela: Caracas, pp. 237-242, 2007 [Mulvihill BM, McNamara LM & Prendergast PJ]
- 76) The effect of loading on bone regeneration in a regular structured scaffold. In: **Proceedings of the 3rd International Conference on Computational Bioengineering**. (Eds.: M. Cerrolaza, H. Rodrigues, M. Doblaré, J. Ambrosio, M. Viceconti), Universidad Central de Venezuela: Caracas, pp. 215-220, 2007 [Byrne DP, Lacroix D, Kelly DJ & Prendergast PJ]
- 77) Increases in elastic modulus of trabecular bone tissue leads to more rapid perforation of trabecular osteoporotic bone. In: **Proceedings of the ASME 2007 Summer Bioengineering Conference**, Keystone Resort & Conference Center, Keystone, Colorado. Paper # SBC2007- 176151, 2007, CD-ROM [Mulvihill BM, McNamara, LM & Prendergast PJ]
- 78) A finite element prediction of cellular strain in a GAG-scaffold. In: **Proceedings of the ASME 2007 Summer Bioengineering Conference**, Keystone Resort & Conference Center, Keystone, Colorado. Paper # SBC2007- 176147, 2007, CD-ROM [Stops AJF, McMahon LA, O'Mahoney D, McHugh PE, Prendergast PJ]
- 79) Automated generation of 3D bone model from planar X-ray image for patient-specific finite element modelling. In: **Computational Modelling of Objects Represented in Images**. Taylor & Francis: London, Eds. J.M.R.S. Tavares, R.M. Natal Jorge, pp. 191-195, 2007 [Galibarov PE, Lennon AB, Prendergast PJ]
- 80) Mechanical stimuli resulting from embryonic muscle contractions promote avian periosteal bone collar formation. In: **Proceedings of the ASME 2007 Summer Bioengineering Conference**, Keystone Resort & Conference Center, Keystone, Colorado. Paper # SBC2007- 172077, 2007, CD-ROM [Nowlan N, Myrphy P, Prendergast PJ]
- 81) The threshold force required for femoral impaction grafting in revision hip surgery: a biomechanical study. In:

- Engineers and Surgeons: Joined at the Hip.** Institution of Mechanical Engineers: London, pp. 191-193, 2007 [Flannery O, Britton JR, O'Reilly P, Mahony N, Kenny PJ, Prendergast PJ]
- 82) Can patient-specific finite element simulation be used for pre-operative assessment of early revision risk? In: **Engineers and Surgeons: Joined at the Hip.** Institution of Mechanical Engineers: London, pp. 21-24, 2007 [Lennon AB, Britton JR, MacNicoill RF, Kenny PJ, Prendergast PJ]
 - 83) Simulation of tissue differentiation in a scaffold as a function of porosity, Young's modulus, and dissolution rate of a scaffold: application of mechanobiological models in tissue engineering. **Biomaterials** 28, 5544-54, 2007 [Byrne DP, Lacroix D, Kelly DJ, Planell J & Prendergast PJ]
 - 84) ^d Direct mechanical measurement of geodesic structures in rat mesenchymal stem cells. **Human Frontiers Science Program Journal** 1(3), 181-191, 2007 [Maguire P, Kilpatrick JI, Kelly G, Prendergast PJ, Campbell VA, O'Connell BC & Jarvis SP]
 - 85) ^e Computational modelling of cell and tissue mechanoresponsiveness. **Gravitational and Space Biology** 20, 43-49, 2007 [Prendergast PJ]
 - 86) Combining mechanoregulation algorithms for bone remodelling and tissue differentiation. In: **Bioengineering Modelling and Computer Simulation** (Ed.: Y. González & M. Cerrolaza), International Center for Numerical Methods in Engineering: Barcelona, pp. 238-248, 2007 [Prendergast PJ]
 - 87) A collagen-based interface construct for the assessment of cell-dependent mechanical integration of tissue surfaces, **Cell and Tissue Research** 327(2), 293-300, 2007 [Marenzana M, Kelly DJ, Prendergast PJ & Brown RA]
 - 88) Mechanobiology of embryonic limb development. **Annals of the New York Academy of Sciences** 1101, 389-411, 2007 [Nowlan NC, Murphy P, Prendergast PJ]
 - 89) Random-walk models of cell dispersal included in mechanobiological models of tissue differentiation, **Journal of Biomechanics** 40: 2244-2253, 2007 [Pérez MA, & Prendergast PJ]
 - 90) Biochemical Markers of the Mechanical Quality of Engineered Hyaline Cartilage. **Journal of Materials Science: Materials in Medicine** 18: 273-281, 2007 [Kelly DJ, Crawford A, Dickinson SC, Sims TJ, Hollander AP, Prendergast PJ & Hatton PV]
 - 91) Cement mantle fatigue failure in total hip replacement: experimental and computational testing. **Journal of Biomechanics** 40: 1525-1533, 2007 [Jeffers JRT, Browne M, Lennon AB, Prendergast PJ, Taylor M.]
 - 92) Stents, In: **Encyclopaedia of Biomedical Engineering**, (Akay M, Ed.), John Wiley & Sons, Vol. 5, pp. 3345-3355, 2007 [Lally C, Kelly DJ & Prendergast PJ]
 - 93) The effect of pore size on permeability and cell attachment in collagen scaffolds for tissue engineering, **Technology and Healthcare** 15, 19-31, 2007 [O'Brien FJ, Waller MA, Harley BA, Yannas IV, Gibson LJ & Prendergast PJ]
 - 94) A comparison of the osteogenic potential of adult mesenchymal stem cells cultured in 2D and 3D collagen glycosaminoglycan scaffolds, **Technology and Healthcare** 15, 19-31, 2007 [Farrell E, Byrne E, Fischer J, O'Brien FJ, O'Connell BC, Prendergast PJ & Campbell VA]
 - 95) Predicting revision risk for aseptic loosening of femoral components in total hip arthroplasty in individual patients - a finite element study, **Journal of Orthopaedic Research** 25, 779-788, 2007 [Lennon AB, Britton JR, MacNicol R, Byrne D, Kenny P & Prendergast PJ]
 - 96) Bone remodelling algorithms incorporating both strain and microdamage stimuli, **Journal of Biomechanics** 40, 1381-1391, 2007 [McNamara LM & Prendergast PJ]
 - 97) The calculation of mechanical stresses in the growing avian embryonic limb using optical projection tomography, **American Society of Mechanical Engineers Summer Bioengineering Meeting** 52, paper BIO2006-151399, 2006, CD-ROM [Nowlan N, Murphy P, Prendergast PJ]
 - 98) Predicting revision risk in a group of total hip replacement patients using finite element analysis, **American Society of Mechanical Engineers Summer Bioengineering Meeting** 52, paper BIO2006-157513, 2006, CD-ROM [Lennon A, Britton J, MacNiocaill R, Byrne D, Kenny P, Prendergast PJ]
 - 99) Differentiation of mesenchymal stem cells along the chondrogenic and osteogenic lineages in a collagen-GAG scaffold under static and dynamic conditions, **American Society of Mechanical Engineers Summer Bioengineering Meeting** 52, paper BIO2006-151938 2006, CD-ROM [McMahon L, Prendergast PJ, Campbell VA]
 - 100) Computational optimization of the mechanical properties for a scaffold used in osteochondral defect repair, **American Society of Mechanical Engineers Summer Bioengineering Meeting** 52, paper BIO2006-157463, 2006, CD-ROM [Kelly D, Prendergast PJ]
 - 101) ^f Failure of biomaterials in implant fixation, **Fracture of Nano and Engineering Materials and Structures. Proceedings of the 16th European Conference on Fracture**, Greece, 2006, pp. 1031-1032, Springer, Berlin,

^d Republished in Virtual Journal *Nanoscale Science and Technology*, October 15, 2007

^e Keynote address to the Annual Congress of American Society of Gravitational and Space Biology, Washington DC, November, 2006

- Ed. E.E. Gdoutos. [Prendergast PJ, Lennon AB, Britton JR, Scannell PT]
- 102) Prosthesis fixation for orthopaedics, In: *Encyclopaedia of Medical Devices and Instrumentation*, (Webster JE, Ed), John Wiley & Sons: New Jersey, Vol. 5, pp. 192-198, 2006 [Prendergast PJ]
 - 103) Walking on water: The biomechanics of Michael A. MacConaill (1902-1985), *Irish Journal of Medical Science* 175, pp. 69-75, 2006 [Prendergast PJ & Lee TC]
 - 104) Simulation of in-stent restenosis for the design of cardiovascular stents, In: *Mechanics of Biological Tissue*, G.A. Holzapfel & R. Ogden, Eds, Springer, pp. 255-269, 2006 [Lally C & Prendergast PJ]
 - 105) Prediction of optimal mechanical properties for a scaffold used in osteochondral defect repair, *Tissue Engineering* 12, 2509-2519, 2006 [Kelly DJ & Prendergast PJ]
 - 106) Strength of cancellous bone trabecular tissue from normal, ovariectomized, and drug-treated rats over the course of ageing, *Bone* 39: 392-400, 2006 [McNamara LM, Ederveen AGH, Lyons CG, Weinans H, Price C, Schaffler MB & Prendergast PJ]
 - 107) Stress-concentrating effect of resorption lacunae in trabecular bone, *Journal of Biomechanics* 39, 734-741, 2006 [McNamara LM, Van der Linden JC, Weinans H, Prendergast PJ]
 - 108) Influence of strong static magnetic fields on primary cortical neurons, *Bioelectromagnetics* 27, 35-42, 2006 [Prina-Mello A, Farrell E, Prendergast PJ, Campbell V, Coey JMD]
 - 109) A collagen-glycosaminoglycan scaffold supports adult rat mesenchymal stem cell differentiation along the osteogenic and chondrogenic routes, *Tissue Engineering* 12, 459-468, 2006 [Farrell E, O'Brien FJ, Doyle P, Fischer J, Yannas I, O'Connell B, Prendergast PJ & Campbell VA]
 - 110) Effect of anisotropic cell proliferation and migration with different gap size on tissue differentiation at bone/implant interfaces, In: *Proceedings of the Second International Congress on Computational Bioengineering*, IST- Press: Lisbon, (Eds.: H. Rodrigues et al.), Vol. 2, 793-804, 2005 [Pérez MA, Doblaré M & Prendergast PJ]
 - 111) Computation of stresses in the growing embryonic chick limb, In: *Proceedings of the Second International Congress on Computational Bioengineering*, IST- Press: Lisbon, (Eds.: H. Rodrigues et al.), Vol. 2, 861-872, 2005 [Nowlan NC, Murphy P & Prendergast PJ]
 - 112) ^g Mechano-regulation algorithms in mechanobiology, In: *Proceedings of the Second International Congress on Computational Bioengineering*, IST Press: Lisbon, (Eds.: H. Rodrigues et al.), Vol. 1, 3-12, 2005 [Prendergast PJ]
 - 113) Tracking the changes in unloaded bone: morphology and gene expression, *European Journal of Morphology* 42, pp. 208-216, 2005 [Hardiman DA, O'Brien FJ, Prendergast PJ, Croke DT, Staines A & Lee TC]
 - 114) Bone tissue material properties are altered during osteoporosis, *Journal of Musculoskeletal and Neuronal Interactions* 5, 342-343, 2005 [McNamara LM, Prendergast PJ & Schaffler MB]
 - 115) Modelling the response of cells to mechanical stimulation, *Lecture Notes of AMAS (Polish Academy of Sciences)* Ed. J.J. Telega, 159-189, 2005 [Prendergast PJ, Kelly DJ & McGarry JG]
 - 116) Effects of static magnetic fields on primary cortical neurons, *Physica Scripta* T118, 205-207, 2005 [Prina Mello A, Farrell E, Prendergast PJ, Campbell VA & Coey JMD]
 - 117) Effects of in vitro pre-culture on the in vivo development of human engineered cartilage, *Tissue Engineering* 11, 1421-1428, 2005 [Moretti M, Wendt D, Dickinson S, Hollander AP, Kelly DJ, Prendergast PJ, Herber M & Martin I]
 - 118) Simulation of the changes in bone around a hip prosthesis, *Engineers Journal* 59, 319-324, 2005 [Scannell PT & Prendergast PJ]
 - 119) The effect of cytoskeletal disruption on fluid flow-induced Nitric Oxide and Prostaglandin E₂ release in osteocytes and osteoblasts, *Biochemical and Biophysical Research Communications* 330, 342-348, 2005 [McGarry JG, Klein-Nulend J & Prendergast PJ]
 - 120) Experiment and computation in mechanobiology, with new applications in cardiology and evolution, In: *Tissue Remodelling*, Centre of Excellence for Applied Biomedical Modelling and Diagnostics: Warsaw (J. Piekarski, ed.), 219-240, 2005 [Prendergast PJ, Nowlan NC & Lally C]
 - 121) Evolution of mechanoregulation of bone growth will lead to non-optimal bone phenotypes, *Journal of Theoretical Biology* 235, 408-418, 2005 [Nowlan NC & Prendergast PJ]
 - 122) Preclinical testing of femoral hip components: an experimental investigation with four prostheses, *Journal of Biomechanical Engineering* 127, 872-880, 2005 [Britton JR & Prendergast PJ]
 - 123) Analysis of joint and muscle loads, In: *Basic Orthopaedic Biomechanics and Mechanobiology*, V.C. Mow & R. Huijskes (Eds), 3rd Edn., Lippincott Williams & Wilkins, 29-89, 2005 [Prendergast PJ, van der Helm FCT & Duda]

^f Invited presentation at the mini-symposium on "Fracture of Biomaterials" at the 16th European Conference on Fracture, Alexandropolis, Greece

^g Opening presentation at the 2nd International Conference on Computational Bioengineering, Venezeula

GN]

- 124) A comparison of strain and fluid shear stress in stimulating bone cell responses - a computational and experimental study, *The FASEB Journal* 19, 482-484, 2005 [McGarry JG, Klein-Nulend J, Mullender MG & Prendergast PJ]
- 125) Perforation of cancellous bone trabeculae by damage-stimulated remodelling at resorption pits: a computational analysis, *European Journal of Morphology* 42, 99-109, 2005 [McNamara LM & Prendergast PJ]
- 126) Cardiovascular stent design and blood vessel stress: a finite element analysis, *Journal of Biomechanics* 38, 1574-1581, 2005 [Lally C, Dolan F & Prendergast PJ]
- 127) Mechano-regulation of stem cell differentiation and tissue regeneration in osteochondral defects, *Journal of Biomechanics* 38, 1413-1422, 2005 [Kelly DJ & Prendergast PJ]
- 128) Acromion-fixation of glenoid components in total shoulder arthroplasty, *Journal of Biomechanics* 38, 1702-1711, 2005 [Murphy LA & Prendergast, PJ]
- 129) Bone ingrowth simulation for concept glenoid component design, *Journal of Biomechanics* 38, 1023-1033, 2005 [Andreykiv A, Prendergast PJ, van Keulen F, Świąszkowski W & Rozing PM]
- 130) The state-of-the-art in cartilage bioreactors, *Topics in Bio-Mechanical Engineering*, Trinity Centre for Bioengineering & the National Centre for Biomedical Engineering Science: Dublin & Galway, 2004, pp. 94-146 [ISBN 0-9548583-01] [McMahon LA, Barron V, Prina-Mello A & Prendergast PJ]
- 131) Bone for life: osteoporosis, bone remodelling, and computer simulation, *Topics in Bio-Mechanical Engineering*, Trinity Centre for Bioengineering & the National Centre for Biomedical Engineering Science: Dublin & Galway, 2004, pp. 58-93 [ISBN 0-9548583-01] [Lee TC, McHugh PE, O'Brien FJ, O'Mahony D, Taylor D, Bruzzi M, Rackard SM, Kennedy OD, Mahony NJ, Harrison N, Lohfield S, Brennan O, Gleeson J, Hazenberg JG, Mullins L, Tyndyk M, McNamara LM, O'Kelly KU & Prendergast PJ]
- 132) Mechanobiology: experiment and computation, *Topics in Bio-Mechanical Engineering*, Trinity Centre for Bioengineering & the National Centre for Biomedical Engineering Science: Dublin & Galway, 2004, pp. 41-57 [ISBN 0-9548583-01] [Prendergast PJ]
- 133) Measurement of the relative motion between an implant and bone under cyclic loading, *Strain* 40, 193-202, 2004 [Britton JR, Lyons CG & Prendergast PJ]
- 134) Elastic behaviour of porcine coronary arteries under uniaxial and equibiaxial tension, *Annals of Biomedical Engineering* 32, 1355-1364, 2004 [Lally C, Reid AJ & Prendergast PJ]
- 135) Computational mechanobiology, In: *Computational Bioengineering: Current Trends and Applications*, M. Cerrolaza, M. Doblaré, G. Martínez, & B. Calvo (Eds), Imperial College Press, pp. 117-133, 2004 [Prendergast PJ]
- 136) A three-dimensional computational model of an adherent eukaryotic cell, *European Cells and Materials* 7, 27-34, 2004 [McGarry JG & Prendergast PJ]
- 137) Endothelial cell alignment on cyclically-stretched silicone surfaces, *Journal of Materials Science: Materials in Medicine* 15, 1159-1164, 2004 [Moretti M, Barron V, Prina Mello A, Reid AJ & Prendergast PJ]
- 138) Effect of a degraded core on the mechanical behaviour of tissue-engineered cartilage constructs: a poro-elastic finite element analysis, *Medical and Biological Engineering and Computing* 42, 9-13, 2004 [Kelly DJ & Prendergast PJ]
- 139) Modelling damage growth and failure in elastic materials with random defect distributions, *Mathematical Proceedings of the Royal Irish Academy* 104A, 155-171, 2004 [Lennon AB & Prendergast PJ]
- 140) ^h Preclinical testing of prostheses and implants - the interplay of computational and experimental methods, In: *Proceedings of the XXXII Convegno Nazionale dell'Associazione Italiana per l'Analisi delle Sollecitazioni*. Università di Salerno, CD-ROM, paper # 2, 2003. [Prendergast PJ]
- 141) A finite element model of an adherent cell: comparison of simulated cell indentation with atomic force microscopy experiments, In: *Proceedings of the International Congress on Computational Bioengineering*, University of Zaragoza, Spain, (Eds.: M. Doblaré, M. Cerrolaza, H. Rodrigues), 2003, 552-559 [McGarry JG & Prendergast PJ]
- 142) An investigation into the applicability of the Mooney-Rivlin constitutive equation for modelling vascular tissue in cardiovascular stenting procedures, In: *Proceedings of the International Congress on Computational Bioengineering*, University of Zaragoza, Spain, (Eds.: M. Doblaré, M. Cerrolaza, H. Rodrigues), 2003, 542-550. [Lally C & Prendergast PJ]
- 143) ⁱ Some problems in computational mechanobiology, in *Proceedings of the VII Congresso de Mecânica Aplicada e Computacional*. Universidade de Évora, Portugal. (Ed. J.I. Barbosa), 2003, 23-32 [Prendergast PJ]

^h Plenary Presentation at the Conference of L'AIAS, Associazione Italiana per l'Analisi delle Sollecitazioni, Salerno, 2003

ⁱ Opening Plenary at the 7th Portuguese Conference on Theoretical and Applied Mechanics, Evora, Portugal

- 144) Comparative locomotory behaviour of T lymphocytes and T lymphoma cells on flat and grooved surfaces, *Annals of Biomedical Engineering* 31, 1106-1113, 2003 [Prina Mello A, Volkov Y, Kelleher D & Prendergast PJ]
- 145) Biomechanics of ossiculoplasty, *CME Bulletin Otorhinolaryngology Head and Neck Surgery* 7, 64-66, 2003 [Kelly DJ, Blayney AW & Prendergast PJ]
- 146) The relationship between cement fatigue damage and implant surface finish in proximal femoral prostheses, *Medical Engineering and Physics* 25, 833-841, 2003 [Lennon AB, McCormack BAO & Prendergast PJ]
- 147) Mechanical simulation of muscle loading on the proximal femur: analysis of cemented femoral component migration with and without muscle loading, *Clinical Biomechanics* 18, 637-646, 2003 [Britton JR, Walsh LA & Prendergast PJ]
- 148) Multi-axial fatigue of orthopaedic bone cement - experiments with tubular specimens, *Journal of Materials Science: Materials in Medicine* 14, 857-861, 2003 [Murphy BP & Prendergast PJ]
- 149) Can finite element models detect clinically inferior cemented hip implants?, *Clinical Orthopaedics and Related Research* 409, 138-160, 2003 [Stolk J, Maher SA, Verdonschot N, Prendergast PJ & Huiskes R]
- 150) Analysis of prolapse in cardiovascular stents: a constitutive equation for vascular tissue and finite element modelling, *Journal of Biomechanical Engineering* 125, 692-699, 2003 [Prendergast PJ, Lally C, Daly S, Lee TC, Quinn D & Dolan F]
- 151) Contact stresses in the glenoid component in total shoulder arthroplasty, *Journal of Engineering in Medicine; Proceedings I. Mech. E.: Part H* 217, 49-57, 2003 [Świąszkowski W, Bednarz P & Prendergast PJ]
- 152) Finite element simulation of anisotropic damage accumulation and creep in acrylic bone cement, *Engineering Fracture Mechanics* 71, 513-528, 2003 [Stolk J, Verdonschot N, Murphy BP, Prendergast PJ & Huiskes R]
- 153) The effect of prosthesis design on vibration of the reconstructed ossicular chain: a comparative finite element analysis of four prostheses, *Otology and Neurotology* 24, 11-19, 2003 [Kelly DJ, Prendergast PJ & Blayney AW]
- 154) ^j Mechanics applied to skeletal ontogeny and phylogeny, *Meccanica* 37, 317-334, 2002 [Prendergast PJ]
- 155) A mechano-regulation model for tissue differentiation during fracture healing: analysis of gap size and loading, *Journal of Biomechanics* 35, 1163-1171, 2002 [Lacroix D & Prendergast PJ]
- 156) Fracture of an Exeter stem 3 years after impaction allografting - a case report, *Acta Orthopaedica Scandinavica* 73, 111-113, 2002 [van Doorn WJ, van Biezen FC, Prendergast PJ & Verhaar JAN]
- 157) A comparison of Eximer laser etching and dry etching process for surface fabrication of biomaterials, *Journal of Materials Processing Technology* 124, 284-292, 2002 [Prina Mello A, Bari MA & Prendergast PJ]
- 158) Three-dimensional simulation of fracture repair in the human tibia, *Computer Methods in Biomechanics and Biomedical Engineering* 5, 369-376, 2002 [Lacroix D & Prendergast PJ]
- 159) Discarding specimens for fatigue testing of orthopaedic bone cement: a comment on Cristofolini et al. (2000), *Fatigue and Fracture of Engineering Materials and Structures* 25, 315-316, 2002 [Prendergast PJ, Murphy BP & Taylor D]
- 160) Biomechanical model to simulate tissue differentiation and bone regeneration: application to fracture healing, *Medical and Biological Engineering and Computing* 40, 14-21, 2002 [Lacroix D, Prendergast PJ, Li G & Marsh D]
- 161) The relationship between stress, porosity, and non-linear damage accumulation in acrylic bone cement, *Journal of Biomedical Materials Research* 59, 646-654, 2002 [Murphy BP & Prendergast PJ]
- 162) Residual stress due to curing can initiate damage in porous bone cement: experimental and theoretical evidence, *Journal of Biomechanics* 35, pp. 311-321, 2002 [Lennon AB & Prendergast PJ]
- 163) Discriminating the loosening behaviour of cemented hip prostheses using measurements of migration and inducible displacement, *Journal of Biomechanics* 35, 257-265, 2002 [Maher SA & Prendergast PJ]
- 164) ^k The 'platform' for pre-clinical testing of prostheses and implants, In: *Proceedings of the 8th Dutch Annual Conference on BioMedical Engineering* Institute for Biomedical Technology: Twente (W.M.G.F. Pontenagel, J. Feijen, Eds.), pp. 132-134, 2001 [ISBN 09-365-1669-2]. [Prendergast PJ]
- 165) A mechanical analysis of lymphatic cell migration: experimental analysis and modelling, In: *Proceedings of the 15th Conference of the Italian Association of Theoretical and Applied Mechanics*, published on CD-ROM, 2001 [Prina Mello A, Moretti M, Volkov Y & Prendergast PJ]
- 166) Mechanotransduction during fracture healing: the effect of cell proliferation, In: *Mechanotransduction*,

^j Keynote Address to the 15th Congress of the Italian Association of Theoretical and Applied Mechanics, Taormina, Sicily

^k Invited Plenary Presentation at the 8th Annual Dutch Conference on Biomedical Engineering, Lunteren, The Netherlands

- published by GAMAC: Paris, 2001 [ISBN 2-84107-432-3], 39-46 [Lacroix D & Prendergast PJ]
- 167) Selection of glenoid prosthesis-type based on an assessment of glenoid bone quality, in *Proceedings of the 3rd Conference of the International Shoulder Group*, [ISBN 90-407-2268-4], (Chadwick, E.K.J., Veeger, H.E.J., van der Helm, F.C.T., Nagels, J., Eds.), DUP Science, 2001, 83-86 [Prendergast PJ & Murphy LA]
 - 168) An investigation of middle-ear biomechanics using finite element modelling, *American Society of Mechanical Engineers Summer Bioengineering Meeting* 50, 369-370, 2001 [Kelly DJ & Prendergast PJ]
 - 169) Design of a system for applying complex muscle loading during dynamic experimental testing of implanted femurs, *American Society of Mechanical Engineers Summer Bioengineering Meeting* 50, 4907-908, 2001 [Britton JR, Maher SA & Prendergast PJ]
 - 170) Finite element modelling of the formation of pre-load damage in cement mantles of orthopaedic joint replacements, *American Society of Mechanical Engineers Summer Bioengineering Meeting* 50, 41-42, 2001 [Lennon AB & Prendergast PJ]
 - 171) Mechanics of bone regeneration, In: *Bone Mechanics Handbook*, S.C. Cowin (Ed.), CRC Press, Boca Raton, Chapter 32, pp. 32.1-32.19, 2001 [Prendergast PJ & van der Meulen MCH]
 - 172) Bone prostheses and implants, In: *Bone Mechanics Handbook* S.C. Cowin (Ed.), CRC Press, Boca Raton, Chapter 35, pp. 35.1-35.39, 2001 [Prendergast PJ]
 - 173) ^l An analysis of theories in biomechanics, *Engineering Transactions (Rozprawy Inżynierskie)* 49, 117-133, 2001 [Prendergast PJ]
 - 174) The functional performance of orthopaedic bone cement, *Key Engineering Materials* 198, 291-300, 2001 [Prendergast PJ]
 - 175) Evaluation of cement stresses in finite element analyses of cemented orthopaedic implants, *Journal of Biomechanical Engineering* 123, 623-628, 2001 [Lennon AB & Prendergast PJ]
 - 176) Structural analysis of an offset-keel design glenoid component compared with a centre-keel design, *Journal of Shoulder and Elbow Surgery* 10, 568-579, 2001 [Murphy LA, Prendergast PJ & Resch H]
 - 177) Skeletal structure: synthesis of mechanics and cell biology, In: *Visions of the Future: Chemistry and Life Science*. J.M.T. Thompson (Ed.), Cambridge University Press, 113-125, 2001 [van der Meulen MCH & Prendergast PJ]
 - 178) Issues in pre-clinical testing of implants, *Journal of Materials Processing Technology* 118, 337-342, 2001 [Prendergast PJ & Maher SA]
 - 179) Measurement of the migration of a cemented hip prosthesis in an *in vitro* test, *Clinical Biomechanics* 16, 307-314, 2001 [Maher SA, Prendergast PJ & Lyons CG]
 - 180) Use of grating interferometry to validate finite element models and investigate of residual strain in PMMA, In: *Computer Methods in Biomechanics & Biomedical Engineering-3*, [ISBN: 90-5699-321-6], J. Middleton, M.L. Jones, N.G. Shrive, G.N. Pande, Eds., Gordon and Breach Science Publishers, London 75-80, 2000 [Lennon AB, Prendergast PJ, Whelan M & Forno C]
 - 181) ^m Biomechanics in Ireland and Europe, In: *Proceedings of the 12th Conference of the European Society of Biomechanics*, Royal Academy of Medicine in Ireland: Dublin, 1-4, 2000 [Prendergast PJ]
 - 182) On the magnitude and variability of fatigue strength in acrylic bone cement, *International Journal of Fatigue* 22, 855-864, 2000 [Murphy BP & Prendergast PJ]
 - 183) Three-dimensional finite element analysis of glenoid replacement prostheses: a comparison of keeled and pegged anchorage systems, *Journal of Biomechanical Engineering* 123, 430-436, 2000 [Lacroix D, Murphy LA & Prendergast PJ]
 - 184) Design and validation of a machine for reproducible precision insertion of femoral hip prostheses for pre-clinical testing, *Journal of Biomechanical Engineering* 122, 203-207, 2000 [Maher SA, Prendergast PJ, Reid AJ, Waide DV & Toni A]
 - 185) Middle-ear dynamics before and after ossicular replacement, *Journal of Biomechanics* 33, 581-590, 2000 [Ferris P & Prendergast PJ]
 - 186) ⁿ Mechanics in skeletal growth, adaptation and disease, *Philosophical Transactions of the Royal Society [Series A]* 358, 565-578, 2000 [van der Meulen MCH & Prendergast PJ]
 - 187) A finite element analysis of a healthy middle-ear and a middle-ear reconstructed with prostheses, In: *Advances in Bioengineering* [ISBN 0-7918-1640-0], J. S. Wayne, (Ed.), American Society of Mechanical

^l Invited for a special issue on *Modelling in Biomechanics* published by the Polish Academy of Sciences and edited by Professor J. J. Telega

^m Opening presentation at the 12th biennial conference of the European Society of Biomechanics held in Dublin in July, 2000

ⁿ Invited for the Millennium Issue of *Philosophical Transactions of the Royal Society* (Edited by Prof. J.M.T. Thompson, FRS)

- Engineers, Nashville, 1999, 245-246 [Prendergast PJ, Rice HJ & Blayney AW]
- 188) Development of an experimental procedure for pre-clinical testing of cemented hip replacements, In: **Advances in Bioengineering**, [ISBN 0-7918-1640-0], J. S. Wayne, (Ed.), American Society of Mechanical Engineers, Nashville, 1999, 139-140 [Maher SA, Prendergast PJ, Waide DV, Reid AJ & Lyons CG]
 - 189) ° The effect of ventilation tubes on stresses and vibration motion in the tympanic membrane: A finite element analysis, **Clinical Otolaryngology** 24, 542-548, 1999 [Prendergast PJ, Kelly DJ, Rafferty M & Blayney AW]
 - 190) An investigation of the performance of Biostop G and Hardinge bone plugs, **Journal of Engineering in Medicine** 213, 361-365, 1999 [Prendergast PJ, Birthistle P, Waide DV & Girish Kummar NV]
 - 191) Measurement of non-linear micro-crack accumulation rates in polymethylmethacrylate bone cement under cyclic loading, **Journal of Materials Science: Materials in Medicine** 10, 779-781, 1999 [Murphy BP & Prendergast PJ]
 - 192) Modelling medical devices: The application of bioengineering in surgery, **Irish Journal of Medical Science** 168, 3-7, 1999 [Prendergast PJ, Beverland D, Blayney AW, Dunne NJ, Gorey TF, Grace PA, McCormack BAO, McGloughlin T, O'Connell PR & Orr JF]
 - 193) Tissue adaptation as a discrete-dynamical process in time and space, In: **Synthesis in Bio Solid Mechanics**. P. Pedersen & M. Bendsøe (Eds.), Kluwer Academic Publishers: Dordrecht, pp. 321-332, 1999 [Prendergast PJ & Weinans H]
 - 194) Fatigue of cemented hip replacements under torsional loads, **Fatigue and Fracture of Engineering Materials and Structures** 22, 33-40, 1999 [McCormack BAO, Prendergast PJ & O' Dwyer B]
 - 195) Vibroacoustic modelling of the outer and middle ear using the finite element method, **Audiology and Neuro-Otology**, 4, 185-191, 1999 [Prendergast PJ, Ferris P, Rice HJ & Blayney AW]
 - 196) Damage accumulation in the cement layer of hip replacements under flexural loading, **Journal of Biomechanics** 32, 467-475, 1999 [McCormack BAO & Prendergast PJ]
 - 197) On a wing and a prayer: The biomechanics of the Rev. Dr. Samuel Haughton (1821-1897), **Journal of the Irish Colleges of Physicians and Surgeons**, 28, 38-43, 1999 [Prendergast PJ & Lee TC]
 - 198) A regulatory model for tissue differentiation using poroelastic theory, In: **Poromechanics: A Tribute to Maurice A. Biot**. [ISBN 90 5809 003 5] J.-F. Thimus, Y. Abousleiman, A.H.-D. Cheng, O. Coussy, E. Detournay (Eds), A.A. Balkema: Rotterdam, 1998, 409-413 [van Driel WD, Huiskes R & Prendergast PJ]
 - 199) Structural analysis of physical models of total hip replacements using analytical and finite element methods, In: **Computer Methods in Biomechanics & Biomedical Engineering-2** [ISBN 90-5699-206-6] J. Middleton, M.L. Jones & G.N. Pande (Eds), Gordon and Breach Science Publishers: Amsterdam, pp.87-94, 1998 [Lennon AB, McCormack BAO & Prendergast PJ]
 - 200) A statistical analysis of microcrack accumulation in PMMA under fatigue loading: applications to orthopaedic implant fixation, **International Journal of Fatigue** 20, 581-593, 1998 [McCormack BAO, Walsh CD, Wilson SP & Prendergast PJ]
 - 201) The use of quantitative computed tomography to generate a finite element model of the scapula bone, In: **Proceedings 14th Irish Manufacturing Conference: Sustainable Technology for Manufacturing Industries**. [ISBN 1 897606 16 8] J. Monaghan and G. Lyons (Eds). pp. 257-264, Trinity College: Dublin, 1997 [Lacroix D, Prendergast PJ, Murray R, McAlinden S & d'Arcy E]
 - 202) A non-linear dynamical analysis of the bone-remodelling equations, In: **1997 ASME/AIChE/ASCE Bioengineering Conference**. [ISBN 0-7918-1805-5] K.B. Chandran, R. Vanderby, Jr., Hefzy, M.S. (Eds.), American Society of Mechanical Engineers: New York, BED Vol. 35, 493-494, 1997 [Prendergast PJ]
 - 203) Quantification of damage accumulation in the cement layer of total hip reconstructions, In: **1997 ASME/AIChE/ASCE Bioengineering Conference**. [ISBN 0-7918-1805-5] K.B. Chandran, R. Vanderby, Jr., Hefzy, M.S. (Eds.), American Society of Mechanical Engineers: New York, BED Vol. 35, 385-386, 1997 [McCormack BAO & Prendergast PJ]
 - 204) A biomechanical regulatory model for peri-prosthetic fibrous tissue differentiation, **Journal of Materials Science: Materials in Medicine** 8, 785-788, 1997 [Huiskes R, van Driel WD, Prendergast PJ & Søballe K]
 - 205) A model of fatigue crack propagation and repair in compact bone, **Journal of Engineering in Medicine; Proceedings I. Mech. E.: Part H** 211, 369-375, 1997 [Taylor D & Prendergast PJ]
 - 206) Stress analysis of glenoid component design for shoulder arthroplasty, **Journal of Engineering in Medicine; Proceedings I. Mech. E.: Part H** 211, 467-474, 1997 [Lacroix D & Prendergast PJ]
 - 207) Computer prediction of adaptive bone-remodelling around noncemented femoral prostheses: The relationship between damage-based and strain-based algorithms, **Medical Engineering and Physics** 19, 454-463, 1997 [McNamara BP, Taylor D & Prendergast PJ]
 - 208) The Bioengineering Design Forum: developing an innovation network, **Industry and Higher Education** 11, 116-

° Winner the Norman Gamble Award in Otolaryngology from the Royal Society of Medicine (U.K.) in 2002.

- 119, 1997 [Prendergast PJ]
- 209) Finite element analysis in tissue mechanics and orthopaedic implant design, *Clinical Biomechanics* 12, 343-368, 1997 [Prendergast PJ]
 - 210) ^P Biophysical stimuli on cells during tissue differentiation at implant interfaces, *Journal of Biomechanics* 30, 539-548, 1997, [Prendergast PJ, Huiskes R & Søballe K]
 - 211) Interface failure in implants cemented with different bone-cements: a fracture mechanics analysis, In: *Computer Methods in Biomechanics and Biomedical Engineering*. [ISBN 2-919865 00-0] J. Middleton, G. Pande, M. Jones, (Eds.), Gordon & Breach: Amsterdam, 35-45, 1996 [McCormack BA & Prendergast PJ]
 - 212) An analysis of crack propagation paths at the bone-cement/implant interface, *Journal of Biomechanical Engineering: Transactions of the American Society of Mechanical Engineers* 118, 579-585, 1996 [McCormack BA & Prendergast PJ]
 - 213) Tissue adaptation as a dynamical process far from equilibrium, *Bone* 19, 143-149, 1996 [Weinans H & Prendergast PJ]
 - 214) A comparison of finite element codes for the solution of biphasic poroelastic problems, *Journal of Engineering in Medicine; Proceedings I. Mech. E.: Part H* 210, 124-130, 1996 [Prendergast PJ, van Driel WD & Kuiper J-H]
 - 215) Microdamage and osteocyte-lacuna strain in bone: a microstructural finite element analysis, *Journal of Biomechanical Engineering: Transactions of the American Society of Mechanical Engineers* 118, 240-246, 1996 [Prendergast PJ & Huiskes R]
 - 216) Experimental study of damage accumulation in cemented hip prostheses, *Clinical Biomechanics* 11, 214-219, 1996 [McCormack BA, Prendergast PJ & Gallagher DG]
 - 217) Finite element analysis of fibrous tissue morphogenesis: A study of the 'osteogenic index' using a biphasic approach, *Mechanics of Composite Materials* 32, 209-218, 1996 [Prendergast PJ & Huiskes R]
 - 218) Damage accumulation in compact bone - A fracture mechanics approach to estimate damage and repair rates, In: *Advances in Bioengineering*. [ISBN 0-7918-1722-9], M.L. Hull (Ed.), American Society of Mechanical Engineers: New York, BED-Vol. 31, pp. 337-338, 1995 [Prendergast PJ & Taylor D]
 - 219) Crack propagation from cement/prosthesis interface defects, In: *29th ASME Summer Bioengineering Conference*. [ISBN 0-7718-1326-6] R.M. Hochmuth, N.A. Langrana, M.S. Hefzy, (Eds.), American Society of Mechanical Engineers: New York, BED-Vol. 29, pp. 275-276, 1995 [McCormack BA & Prendergast PJ]
 - 220) Mathematical modelling of microdamage in bone remodelling and adaptation, In: *Bone Structure and Remodelling* A. Odgaard & H. Weinans (Eds.), pp. 213-224, World Scientific Publishers: Singapore, 1995 [Prendergast PJ & Huiskes R]
 - 221) The biomechanics of Wolff's law: recent advances, *Irish Journal of Medical Science* 164, 152-154, 1995 [Prendergast PJ & Huiskes R]
 - 222) The influence of mechanical factors on tissue differentiation: investigations using biphasic finite element models, In: *Proceedings of an International Symposium on Cartilage Metabolism*. F. Suzuki, (Ed.), Osaka University Faculty of Dentistry: Osaka, 121-124, 1994 [Prendergast PJ & Huiskes R]
 - 223) The osteon-debonding hypothesis of Haversian bone remodelling: osteocytes or bone-lining cells as sensors? In: *Advances in Bioengineering*. [ISBN 0 7918 1430 0], M.J. Askew, (Ed.), American Society of Mechanical Engineers: New York, BED Vol. 28, 263-264, 1994 [Prendergast PJ & Huiskes R]
 - 224) Prediction of bone adaptation using damage accumulation, *Journal of Biomechanics* 27, 1067-1076, 1994 [Prendergast PJ & Taylor D]
 - 225) Finite element analysis and experimental testing of external fixator frame designs, *Journal of Engineering in Medicine, Proceedings I. Mech. E.: Part H*. 208, 103-110, 1994 [Prendergast PJ, Toland SJ & Corrigan JP]
 - 226) Problems associated with experimental accelerated fatigue testing of the artificial hip joint, In: *Proceedings 8th Irish Materials Forum: Key Engineering Materials* [ISBN 0 87849 665 3], Vol. 86-87, pp. 199-205, 1993 [Culleton TP, Prendergast PJ & Taylor D]
 - 227) Fatigue crack growth in an experimental model of the artificial hip joint, In: *Proceedings 8th Irish Materials Forum: Key Engineering Materials* [ISBN 0 87849 665 3], Vol. 86-87, pp. 179-185, 1993 [Gallagher D, McCormack B & Prendergast PJ]
 - 228) Bone structure and the dynamics of bone adaptation in response to accumulative damage, In: *Proceedings 8th Irish Materials Forum: Key Engineering Materials* [ISBN 0 87849 665 3], Vol. 86-87, pp. 187-192, 1993 [Prendergast PJ, Weinans H, Huiskes R & Taylor D]
 - 229) A computer simulation of bone adaptation in response to an accumulative damage stimulus, In: *IVth International Symposium on Computer Simulation in Biomechanics*. B. Landjerit (Ed.) Section BOAFE. 110-113, Ecole Nationale Supérieure d'Arts et Métiers: Paris, 1993 [McNamara BP, Prendergast PJ, Toni A & Taylor

^P Winner of the European Society of Biomechanics Research Award (now called the S.M. Perren Award) in 1996.

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- 230) Preliminary investigation of knowledge engineering to optimize hip prosthesis design, In: **IVth International Symposium on Computer Simulation in Biomechanics**. B. Landjerit (Ed.) Section BOAFE 11-15, Ecole Nationale Supérieure d'Arts et Métiers: Paris, 1993 [Cogan JA & Prendergast PJ]
- 231) Fatigue and repair processes in human bone, In: **Fatigue 93** [ISBN 09 47817 638], J.-P. Bailon & J.I. Dickson (Eds.), Vol. III, 1435-1440, EMAS Publishers: Birmingham, 1993 [Taylor D & Prendergast PJ]
- 232) Fatigue failure in the cement mantle of an artificial hip joint, **Clinical Materials** 12, 95-102, 1993 [Culleton TP, Prendergast PJ & Taylor D]
- 233) The design of intramedullary prostheses to prevent bone loss: predictions based on damage-stimulated remodelling, **Journal of Biomedical Engineering** 14, 499-506, 1992 [Prendergast PJ & Taylor D]
- 234) Prediction of bone adaptation in an ulnar-osteotomised sheep forelimb using an anatomical finite element model, **Journal of Biomedical Engineering** 14, 209-216, 1992 [McNamara BP, Prendergast PJ & Taylor D]
- 235) Le previsione computerizzata del remodellamento dell'osso nelle protesi intra-medolari usando una sollecitazioni micro-meccanica, In: **Atti del VII Congresso della Società Italiana di Biomeccanica**, p.31, Ferrara, 7-8 Giugno, 1991 [Prendergast PJ, Marcacci M & Fadda M]
- 236) The effect of prosthesis orientation on stress shielding using finite element analysis: indications as to bone remodelling, In: **INTERFACES in Medicine and Mechanics II**. [ISBN 1 851665 38 8], K.R. Williams, A. Toni, J. Middleton & G. Pallotti (Eds.), 329-339, Elsevier Applied Science: London, 1991 [Prendergast PJ, McCormack B, Gunawardhana T & Taylor, D]
- 237) An assessment of a particulate composite for use in hip joint prostheses, In: **Advanced Engineered Materials**, 283-300, Parsons Press: Dublin, 1990 [Henn G, Prendergast PJ & Taylor D]
- 238) A continuum damage approach to bone remodelling, In: **Advanced Engineered Materials**, 301-327, Parsons Press: Dublin, 1990 [Prendergast PJ & Taylor D]
- 239) Fatigue in the artificial hip joint: improvements through fibre reinforcement of bone cement, In: **Fatigue 90**, H. Kitagawa & T. Tanaka (Eds.), Vol. II, 827-832, MCE: Birmingham, 1990 [Taylor D, Prendergast PJ & McArdle JV]
- 240) A stress analysis of the proximo-medial femur after total hip arthroplasty, **Journal of Biomedical Engineering** 12, 379-382, 1990 [Prendergast PJ & Taylor D]
- 241) Materials selection in the artificial hip joint using finite element stress analysis, **Clinical Materials** 4, 361-376, 1989 [Prendergast PJ, Monaghan J & Taylor D]

II. EDITED BOOKS AND PROCEEDINGS

- 8) **Perspectives on Design and Bioengineering: Essays in honour of C.G. Lyons**. Trinity Centre for Bioengineering: Dublin, 2008, 208 + xv pp. [Simms CK & Prendergast PJ, Eds.]
- 7) **Finite Element Analysis of Medical Devices** (Published as a Special Issue of *Medical Engineering & Physics*), Vol. 31, Issue Nr. 4, pp. 419-494, 2009 [Prendergast PJ, Lally C & Lennon AB, Eds.]
- 6) **Finite Element Modelling in Biomechanics and Mechanobiology**, European Society of Biomechanics: Dublin, 2007, xiv + 212 pp, ISBN 0-9548583-1-X [Lennon AB & Prendergast PJ, Eds.]
- 5) **Micro-damage in Bone**, (Published as a Special Issue of the *European Journal of Morphology*, Vol. 42, Issue Nr. 1/2, 2005) [Lee TC & Prendergast PJ, Eds.]
- 4) **Topics in Bio-Mechanical Engineering**, Trinity Centre for Bioengineering & the National Centre for Biomedical Engineering Science: Dublin & Galway, 2004, 252 + viii pp. [Prendergast PJ & McHugh PE, Eds.]
- 3) **Mechanics of Tissues and Implants**, (Published as a Special Issue of *Meccanica* Vol. 35, Issue Nr. 4/5, 2002) [Prendergast PJ & Contro R, Eds.]
- 2) **Proceedings of the 12th Conference of the European Society of Biomechanics**. Royal Academy of Medicine in Ireland: Dublin, 2000, 476 + xvii pp [Prendergast PJ, Lee TC & Carr AJ, Eds.]
- 1) **Proceedings of Bioengineering in Ireland/The Ulster Biomedical Engineering Society Scientific Meeting**, Trinity College: Dublin, 1998, 73 + viii pp. [Prendergast PJ & Dickson GR, Eds.]

III. PUBLISHED LECTURES

- 4) **What Matters in Bioengineering: An Inaugural Lecture for the Chair of Bioengineering** [Published by the School of Engineering, Trinity College: Dublin, 2008, 70 pp.]
- 3) **May the force be with you: 14th Samuel Haughton lecture of the Royal Irish Academy**. [Published in the

Irish Journal of Medical Science Vol. 177, pp. 289-296, 2008]

- 2) ***Life and Limb: The Bioengineering of Prostheses and Implants. Parsons Medal Lecture of the Royal Irish Academy*** [Published by the Trinity Centre for Bioengineering: Dublin, 2003, 25 pp.]
- 1) ***Biomechanical Techniques for Pre-Clinical Testing of Prostheses and Implants*** [Published by the Institute of Fundamental Technological Research: Warsaw, 2001, 67 pp.]

IV. RECENT BOOK REVIEWS, EDITORIALS, ETC.

- 1) Trinity 425. An Anniversary Volume. Trinity College Dublin Press, 2017, pp. 150
- 2) Foreword to ***Frozen in Time: The Fagel Collection in the Library of Trinity College Dublin***, (ed. T.R. Jackson), pp. xiii-xiv, The Lilliput Press, Dublin, 2016
- 3) European Research Council grants: A game changer for Irish research. In ***Education Matters. Yearbook 2015-2016. Shaping Ireland Education Landscape***. (Ed.: Brian Mooney), pp. 239-241, 2016
- 4) Reflection on 'Grace Weir. 3 different nights recurring', Irish Museum of Modern Art, pp. 7-8, 2016
- 5) Foreword to ***Steaming to Kingstown and Sucking up to Dalkey. The Story of the Dublin and Kingstown Railway***, by Garrett Lyons, Londubh Books, Dublin, pp. 9-10, 2015
- 6) "Address at Mount Jerome Cemetery", In ***Thomas Davis. A Bi-Centenary Commemorative Journal 1814-2014***, pp. 189-193, 2015
- 7) Foreword to ***Trinity College Dublin. The Provosts 1592-1927***, by Peter Boyle; Hinds, Dublin, pp. xi-xiv, 2015
- 8) Foreword to ***Trinity in War and Revolution: A History of Trinity College Dublin 1912 -1923***, by Tomás Irish; Royal Irish Academy, Dublin, pp. ix-xi, 2015
- 9) Foreword to ***How Irish Scientists Changed the World***, by Seán Duke; Londubh Books, Dublin, pp. 11-12, 2013
- 10) Preface to ***An Illustrated collection of Limericks for Engineers and Physicists***, by Annraoi de Paor; Tyndall Press, Carlow, p. I, 2013
- 11) Foreword to ***Trinity Hall, 1908-2008. Trinity College Dublin Residence***, by Rosa Pilcher; Hinds, Dublin, pp. ix-x, 2013
- 12) Foreword to ***Princes, Prelates, and Poets in Medieval Ireland: Essays in Honour of Katherine Simms***, Edited by Sean Duffy, Four Courts Press, pp. ix-x, 2012
- 13) Review of ***The Fiery Trial: Abraham Lincoln and American Slavery***, *Irish Times*, Saturday 16th April, 2011
- 14) Obituary - "In Memoriam Rik Huiskes", ***European Society of Biomechanics Newsletter***, pp. 3-4, Spring, 2011

Appendix B: Graduate students

Current Graduate Students

- 1) S Whelan MSc, in progress - Finite element modelling of cardiovascular stents

Former Graduate Students

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|----------------------------------|-----|------|--|
| 2) S Toland | MSc | 1993 | A study of external fixation frame design |
| 3) B McCormack ^(a) | PhD | 1997 | On damage accumulation in hip cemented hip replacements. |
| 4) D Lacroix | MSc | 1998 | Finite element analysis of the scapula bone and design of glenoid prostheses |
| 5) P Ferris | MSc | 1998 | Finite element analysis of the normal and surgically reconstructed middle-ear |
| 6) S Maher | PhD | 2000 | Development of a pre-clinical test for cemented femoral hip replacements |
| 7) P Connolly ^(b) | MCh | 2000 | An investigation of the biomedical effects of retaining a cancellous bone margin around cemented femoral total hip replacements |
| 8) D Lacroix | PhD | 2001 | Computer simulation of tissue differentiation during fracture healing |
| 9) B Murphy | PhD | 2001 | Aspects of the fatigue behaviour of acrylic bone cement |
| 10) D Kelly | MSc | 2001 | A study of middle-ear biomechanics using the finite element method |
| 11) M Moretti | MSc | 2001 | Endothelial cell movement on deforming silicone surfaces |
| 12) L Murphy | PhD | 2002 | Hypothesis testing of glenoid component innovation in total shoulder arthroplasty. |
| 13) A Lennon | PhD | 2003 | A stochastic model of damage accumulation in acrylic bone cement. |
| 14) A Prina-Mello ^(c) | PhD | 2003 | Migration of lymphoma and lymphocyte T cells on flat and grooved microfabricated surfaces |
| 15) P Kenny ^(b) | MCh | 2003 | An evaluation of the role of the ligamentum flavum to pressure changes within the spinal canal. |
| 16) C Lally | PhD | 2004 | Finite element modelling and design of cardiovascular stents. |
| 17) L McNamara | PhD | 2004 | Biomechanical origins of osteoporosis. |
| 18) J Britton | PhD | 2004 | Failure of cemented hip implants under complex loading: experimental and numerical analysis |
| 19) D Kelly | PhD | 2004 | Mechanobiology of tissue differentiation during osteochondral defect repair |
| 20) M Waller ^(d) | MSc | 2004 | Mechanical characterization of tissue engineering scaffolds and constructs |
| 21) J Vard | MSc | 2004 | Automated finite element mesh generation for patient-specific prosthesis analysis. |
| 22) L Walsh | MSc | 2004 | Measurement of loosening in cemented and uncemented hip prostheses. |
| 23) J McGarry ^(e) | PhD | 2005 | Computational and experimental investigation of bone cell response to mechanical forces. |
| 24) P Scannell | PhD | 2006 | Mechanoregulation algorithms predicting peri-prosthetic bone adaptations |
| 25) L McMahon ^(f) | PhD | 2007 | The effect of cyclic tensile loading and growth factors on the chondrogenic differentiation of bone-marrow derived mesenchymal stem cells in a collagen-glycosaminoglycan scaffold |
| 26) O Flannery ^(g) | MCh | 2007 | The threshold force required for femoral impaction grafting in revision hip surgery: a biomechanical study |
| 27) N Nowlan | PhD | 2007 | Mechanoregulation of embryonic bone formation. From embryogenesis to evolution |
| 28) R MacNicol ^(g) | MCh | 2008 | Cementing of acetabular cups |
| 29) R McLoughlin | MSc | 2008 | Tensile fatigue behaviour of bovine coronary artery tissue in the longitudinal and circumferential directions |
| 30) B Mulvihill | PhD | 2009 | Computational; investigation into the mechanoregulation of osteoporosis |
| 31) D Byrne | PhD | 2009 | Computational modelling of bone regeneration using a three dimensional lattice-modelling approach |
| 32) P Keeling | MCh | 2009 | Cement-in-cement revision arthroplasty: a biomechanical study |
| 33) C Lowrey | MSc | 2010 | Parametric evaluation of a bone remodelling algorithm in an intramedullary implant system |
| 34) K Roddy ^(h) | PhD | 2010 | Mechanoregulation of joint morphogenesis; investigating the role of muscle induced mechanical forces in the regulation of differentiation and growth in the avian knee |

35) P Galibarov ⁽ⁱ⁾	PhD	2010	Stochastic failure modelling of total hip replacement
36) C Boyle	PhD	2011	Computational simulation of the mechanobiological response of arterial tissue
37) H Khayyeri	PhD	2011	Computational investigations of variability in mechanobiological simulations of tissue differentiation
38) P Wulliamoz	PhD	2012	Micromechanical modelling of normal, drug treated and osteoporotic bone using scanning acoustic microscopy and finite element analysis
39) F Xue	PhD	2014	Computational investigations of mesenchymal stem cells; ageing in mechanobiological simulations of tissue differentiation

- a) External Supervisor under UCD regulations for the PhD degree (Nominating Professor: D.F. Moore);
- b) Co-advisor: Mr J. MacElwaine, FRCSI, School of Medicine, Tallaght Hospital
- c) Co-supervisor: Prof. Y. Volkov, School of Medicine, St. James's Hospital
- d) Co-supervisor: Prof. Fergal O'Brien, Department of Anatomy, RCSI
- e) Co-supervisor: Prof. Suzi Jarvis, SFI Nanoscience Laboratory
- f) Co-supervisor: Prof. Veronica Campbell, Department of Physiology
- g) Co-Advisor, Mr Paddy Kenny, FRCSI, James Connolly Memorial Hospital, Blanchardstown
- h) Joint supervision with Dr Paula Murphy, Department of Zoology
- i) Co-supervisor: Dr Alex Lennon, Trinity Centre for Bioengineering

Appendix C: Examination of theses in other institutions

<i>Name</i>	<i>Degree (Institution), Year</i>
T. Hourigan	MEng (University of Limerick), 2000
D. Ryder	MEngSc (N.U.I., Galway), 2000
G.H. van Lenthe	PhD (University of Nijmegen), 2001
R.M. Lord	PhD (University of Dundee), 2002
J. Stolk	PhD (University of Nijmegen), 2003
M. Colombo	Dottorato di Ricerca in Meccanica delle Strutture (Università degli Studi di Trento), 2003
K. Kuribayashi	DPhil (University of Oxford), 2004
J.R.T. Jeffers	PhD (University of Southampton), 2005
M. Moretti	Dottorato di Ricerca in Bioingegneria (Politecnico di Milano), 2005
P.-A. Keevy	MSc(Med.) (University of Cape Town), 2005
M. Bacabac	PhD (Faculty of Dentistry of the University of Amsterdam and the Free University of Amsterdam), 2006
S. Janda	PhD (Technical University of Delft), 2006
E. Verhulp	PhD (Technical University of Eindhoven), 2006
A. Boccaccio	Dottorato di Ricerca (VIII cycle) Scuola Interpolitecnica di Dottorato, Politecnico di Milano), 2006
A. Andreykiv	PhD (Technical University of Delft), 2006
E. Waarsing	PhD (Erasmus University Rotterdam), 2006
H.Y.-C. Huang	PhD (University of New South Wales), 2007
S. Mellon	PhD (Queen Mary University of London), 2007
L. Geris	PhD (Katholieke Universiteit Leuven), 2007
H. Issakson	PhD (Technical University of Eindhoven), 2007
M.P.H. Hoole	MSc(Eng) (University of Cape Town), 2007
E. McCummiskey	PhD (University of Strathclyde), 2008
J.A. Sanz Herrera	PhD (University of Zaragoza), 2008
R. Van Oers	PhD (Technical University of Eindhoven), 2010
C. Sandino	PhD (University Politechnic of Catalonia), 2010
H. Zahedmanesh	PhD (Dublin City University), 2010
C. Egan	MCh (University College Cork), 2012