

Curriculum Vitae

MARTIN FERGUSON-PELL, PHD

GENERAL INFORMATION

Name: Martin William Ferguson-Pell
Address: Office of President
2-24 South Academic Building
University of Alberta
Edmonton, Alberta, Canada, T6G 2G7
Office Telephone: 780 492 4383
Fax: 780 492 3212
Email: martin.ferguson-pell@ualberta.ca
Citizenship:
United Kingdom, United States, Canada: Permanent Resident

EDUCATIONAL BACKGROUND

University of Strathclyde, Glasgow, Scotland, 1977
Doctor of Philosophy – Biomedical Engineering

University of Exeter, Devon, United Kingdom, 1973
Bachelor of Science – Physics

HONORS AND AWARDS

Honorary Fellow, Rehabilitation Engineering Society of North America
Hall of Fame Rehabilitation Engineering Society of North America
Honorary Vice President, Foundation for Assistive Technology

REGISTRATIONS

Registered Clinical Scientist, Health Professions Council, UK
Chartered Physicist, Institute of Physics, UK

PROFESSIONAL MEMBERSHIPS

Member, Institute of Physics
Fellow, Rehabilitation Engineering Society of North America
Member European Optics Society

JOURNAL EDITORSHIPS

Tissue Viability (formally Care Science and Practice), Founding Editor
Medical Engineering and Physics
Journal Rehabilitation Research and Development

PROFESSIONAL POSITIONS AND EMPLOYMENT

Academic Positions

TITLE	INSTITUTION	DATES OF APPOINTMENT
Senior Advisor to President	University of Alberta Edmonton, Alberta, Canada	February 1, 2014 – December 31, 2014
Acting Provost	University of Alberta Edmonton, Alberta, Canada	July 1, 2012 – January 31, 2014
Dean	Faculty of Rehabilitation Medicine, University of Alberta	October 2007 ¹ -
ASPIRE Chair² and Director³	Institute of Orthopaedics, University College London, London, UK., Centre for Disability Research and Innovation	December 1995 – October 2007
Director of Research	Royal National Orthopaedic Hospital, NHS Trust Stanmore, London, UK	June 1999 – October 2007
Director³	Center for Rehabilitation Technology Helen Hayes Hospital, New York State Dept. Health West Haverstraw NY, USA	June 1987 – December 1995
Chief	Rehabilitation Engineering, Orthopaedic Engineering and Research Center, Helen Hayes Hospital, New York State Dept. Health, West Haverstraw, NY, USA	April 1982 – June 1987
Associate Clinical Professor⁴	Columbia University, New York City, NY, USA	February 1993 – December 1995
Associate Research Scientist⁴	Columbia Presbyterian Hospital, New York City, NY, USA	June 1985 – December 1992
Adjunct Associate Professor	Department of Bioengineering, Rensselaer Polytechnic Institute, Troy, NY, USA	September 1987 - December 1995
Lecturer	Department of Biomedical Engineering, University of Strathclyde, Glasgow, Scotland	June 1978 – April 1982
Temporary Lecturer	Department of Biomedical Engineering, University of Strathclyde, Glasgow, Scotland	October 1976 – June 1978

Notes:

¹ Successfully completed first term review starting second 5-year term as Dean January 1, 2015 – June 30, 2020.

² Founding appointment to endowed chair

³ Founded this Center

⁴ Non-salaried institutional affiliation

COMMITTEE AND ADMINISTRATIVE RESPONSIBILITIES

Academic Committees

ROLE	COMMITTEE	DATES
Member	Board of Governors, University of Alberta	July 2012 – January 2014
Member	Board Human Resources and Compensation Committee	July 2012 – January 2014
Member	Board Audit Committee	July 2012 – January 2014
Member	Board Finance Property Committee	July 2012 – January 2014
Member	Board University Relations Committee	July 2012 – January 2014
Member	Board Safety Health and Environment Committee	July 2012 – January 2014
Member	Board Learning and Discovery Committee	July 2012 – January 2014
Member Alumnus	Senate University of Alberta	February 2014 -
Member	Senate University of Alberta	July 2012 – January 2014
Chair	Deans' Council University of Alberta	July 2012 – January 2014
Member	General Faculty Council	October 2007 -
Member	Deans' Council University of Alberta	October 2007 -
Chair	General Faculty Council Executive	July 2012 – January 2014
Chair	Chairs' Council University of Alberta	July 2012 – January 2014
Co-Chair	Council on Aboriginal Initiatives, University of Alberta	July 2012 – January 2014
Member	President's Executive Committee (Strategic), University of Alberta	July 2012 – January 2014
Chair	President's Executive Committee (Operational), University of Alberta	July 2012 – January 2014
Chair	Vice Provosts' Council, University of Alberta	July 2012 – January 2014
Chair	Academic Policy and Process Review Task Force, University of Alberta	July 2012 – January 2014
Chair	Tuition Budget Advisory Committee and Mandatory Non-Instructional Fee Budget	July 2012 – January 2014

	Advisory Committee, University of Alberta	
Chair	Academic Planning Committee, University of Alberta	July 2012 – January 2014
Chair	Crisis Management Team, University of Alberta	July 2012 – January 2014
Member	U-15 Provosts Committee, University of Alberta	July 2012 – January 2014
Chair	Universities Initiatives Committee	July 2013 – January 2014
Chair	Faculty Evaluation Committee (Rehabilitation Medicine), University of Alberta	October 2007 -
Chair	Health Sciences Council, University of Alberta	July 2009 - July 2012
Member	Board, Women and Children’s Health Research Institute, University of Alberta	October 2007 - July 2012
Chair	Board, Institute for Stuttering Treatment and Research, University of Alberta	October 2007 - July 2012

Corporate and Not-for Profit Organizations

ROLE	ORGANIZATION	DATES
Director	Board, Institute for Reconstructive Sciences in Medicine	2013 -
Director	Board, Alberta Health Industry Association	2009 -
Member	Board, Glen Sather Sports Medicine Clinic, University of Alberta	2007 - 2012
Director	Board, ATCare Ltd. Assistive Technology Design and Development, London UK	2008 - 2010
Member	Board, Royal National Orthopaedic Hospital NHS Trust, Stanmore, UK	1999 - 2007
Director	Stanmore Clinical Research Facility Ltd., London UK	2006 - 2007
Academic Advisor	FlexNLock Ltd, London UK	2006 - 2008
Chair	Foundation for Assistive Technology, London, UK	2002 - 2007
Member	Development Forum Guy's and St Thomas' Charitable Foundation	2005 - 2007
Chair	Killam Trust Committee, University of Alberta	July 2012 – January 2014
Chair	President's Review Committee	July 2012 – January 2014
Chair	President's Academic Awards Committee	July 2012 – January 2014
Member	Alberta SPOR SUPPORT Unit – Steering Committee	July 2012 – January 2014
Member	Alberta Academic Health Network	March 2010 -

Government Committees

ROLE	ORGANIZATION	DATES
Chair	Scottish Executive Review of Wheelchair Services in Scotland	2006 - 2007
Member	Steering Group for UK Health Technologies Knowledge Transfer Network	2004 - 2005
Member	Board NHS London Innovation Hub	2006 - 2007
Chair	North Central London NHS Innovation Hub	2004 - 2006
Member	Board London Clinical Research Network	2003 - 2007
Member	Foresight Healthcare Panel Older People Task Force 2000	1999 - 2000
Member	ISO Wheelchair Standards Chair Wheelchair Seating	1985-2007
Member	Governor's Task Force on Technology and Disability, New York State	1985
Chair	New York State Disability Council, Sub-committee on Prevention of Secondary Conditions in Persons with Spinal Cord Injury	1989 - 1995
Member	New York State Science and Technology Foundation, Advisory Group for Rehabilitation Technology	1992- 1995
Regional Chair	National Search for Computing and Disabilities, John's Hopkins University/National Science Lab. USA	1991- 1992
Chair	NIH Special Study Section Small Business and Innovations Research Grants Program – Orthopedics and Rehabilitation	1992 - 1995
Panel Member	FDA General and Plastic Surgery Devices Panel of the Medical Devices Advisory Committee,	1993 - 1995
Member	Alberta Health Services Strategic Clinical Network	September 2010 -
Member	Alberta Innovates Health Solutions HQP Sub-committee	January 2011 – July 2011

Selection Committees

ROLE	ORGANIZATION	DATES
Chair of Selection Committee	Dean of Law, University of Alberta	October 2013 – February 2014
Chair of Selection Committee	Dean of School of Business, University of Alberta	November 2012 – May 2013
Chair of Selection Committee	Dean of School of Public Health, University of Alberta	October 2012 – March 2013
Chair of Selection Committee	Director China Institute, University of Alberta	July 2013 – November 2013
Chair of Selection Committee	Chief Librarian	October 2012 – March 2013
Chair of Review Committee	Dean of Pharmacy	November 2012 – May 2013
Member of Selection Committee	Associate Vice President - Advancement	February 2010 – May 2010
Member Review Committee	President, University of Alberta	February 2010 – May 2010
Chair of Selection Committee	Canadian Forces and Veterans Chair in Rehabilitation Medicine, University of Alberta	September 2011 – December 2011
Chair of Selection Committee	David Magee Chair in Musculoskeletal Rehabilitation, University of Alberta	September 2010 – April 2011
Member of Selection Committee	Chair in Orthopaedics, University College London	2004 - 2005

PEER REVIEWED PUBLICATIONS

ORCID (<http://orcid.org/>): 0000-0003-0321-6256

Journal Articles

1. **Ferguson-Pell, M.**, Ferguson-Pell, G., Mohammadi, F., and E. Call. Applying the ISO 16840-2 Standard to differentiate the impact force dissipation characteristics of a selection of commercial wheelchair cushions (2014). *Accepted for Publication J. Rehab. Res. Devel.*
2. Mushahwar V, Stein R B, Ho C, **Ferguson-Pell M**, Dukelow S, Isaacson G, Chong S L, Sommer R, Ahmetovic A, Kawasaki L, Warwaruk Rogers R, Barlott T, Kim S. (2014) Safety and feasibility of intermittent electrical stimulation for the prevention of deep tissue injury. *Advances in Wound Care*. DOI: 10.1089/wound.2014.0569.
3. Qi, L., J. Wakeling, S. Grange, **M. Ferguson-Pell** (2014) Patterns of Shoulder Muscle Coordination Vary Between Wheelchair propulsion techniques. *Transactions on Neural Systems & Rehabilitation Engineering IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 22(3), 1-8.
4. Hamaluik, K., W. Moussa, and **M. Ferguson-Pell**. (2014) Numerical Characterization of Quasi-Static Ultrasound Elastography for the Detection of Deep Tissue Injuries. *IEEE Transactions on Medical Imaging*. *March 16, 2014*
5. Qi L, Wakeling J, Grange S, Ferguson-Pell M (2013) Coordination patterns of shoulder muscles during level-ground and incline wheelchair propulsion. *J Rehabil Res Dev* 50: 651-662.
6. Call E., Pederson J., Bill B., Oberg C., **Ferguson-Pell M.**, (2013) Microclimate impact on prophylactic dressings using *in vitro* body analog method. *Wounds* 25(4): 94-103.
7. Arao, H., Shimada, T., Hagisawa, S., & **M. Ferguson-Pell**, (2013). Morphological characteristics of the human skin over posterior aspect of heel in the context of pressure ulcer development. *J Tissue Viability*, 22(2), 42-51.
8. Boninger, M., French, J., Abbas, J., Nagy, L., **Ferguson-Pell, M.**, Taylor, S. J., Sherwood, A. (2012). Technology for mobility in SCI 10 years from now. *Spinal Cord*, 50(5), 358-363.
9. McCarthy, I, D, Bloomer, Z, Gall, A, Keen, R, & **Ferguson-Pell, M.** (2012). Changes in the structural and material properties of the tibia in patients with spinal cord injury. *Spinal Cord*, 50(4), 333-337.
10. Qi, L., Wakeling, J., Grange, S., & **M. Ferguson-Pell**, (2012). Changes in surface electromyography signals and kinetics associated with progression of fatigue at two speeds during wheelchair propulsion. *J Rehabil Res Dev*, 49(1), 23-34.
11. Qi, L., Wakeling, J., Grange, S., & **M. Ferguson-Pell**,. (2012). Effect of velocity on shoulder muscle recruitment patterns during wheelchair propulsion in nondisabled individuals: pilot study. *J Rehabil Res Dev*, 49(10), 1527-1536.

12. Bubbear, J. S., Gall, A., Middleton, F. R., **Ferguson-Pell, M.**, Swaminathan, R., & Keen, R. W. (2011). Early treatment with zoledronic acid prevents bone loss at the hip following acute spinal cord injury. *Osteoporosis International*, 22(1), 271-279.
13. Qi, L., Wakeling, J. M., & **Ferguson-Pell, M.** (2011). Spectral properties of electromyographic and mechanomyographic signals during dynamic concentric and eccentric contractions of the human biceps brachii muscle. *J. Electromyography and Kinesiology*, 21(6), 1056-1063.
14. Qi, L., Wakeling, J. M., Green, A., Lambrecht, K., & **Ferguson-Pell, M.** (2011). Spectral properties of electromyographic and mechanomyographic signals during isometric ramp and step contractions in biceps brachii. *J. Electromyography and Kinesiology*, 21(1), 128-135.
15. Bubbear, J. S., Gall, A., Middleton, F. R., **Ferguson-Pell, M.**, Swaminathan, R., & Keen, R. W. (2011). Early treatment with zoledronic acid prevents bone loss at the hip following acute spinal cord injury. *Osteoporos Int*, 22(1), 271-279.
16. Forhan, M., Bhambhani, Y., Dyer, D., Ramos-Salas, X., **Ferguson-Pell, M.**, & Sharma, A. (2010). Rehabilitation in bariatrics: opportunities for practice and research. *Disabil Rehabil*, 32(11), 952-959.
17. **Ferguson-Pell, M.**, Hirose, H., Nicholson, G., & Call, E. (2009). Thermodynamic rigid cushion loading indenter: A buttock-shaped temperature and humidity measurement system for cushioning surfaces under anatomical compression conditions. *J. Rehab. Res. & Devel.*, 46(7), 945-956.
18. Retsa MP, Down, K. Guhl, A. **Ferguson-Pell, M.** (2008). Bridging the gap of evidence and cost effectiveness: the pragmatic approach using economic modeling to assess the cost effectiveness for assistive technologies (AT) in the UK – both pre and post market. *Value in Health*, 11,6.
19. Hagsisawa, S., & **Ferguson-Pell, M.** (2008). Evidence supporting the use of two-hourly turning for pressure ulcer prevention. *J. Tissue Viability*, 17(3), 76-81.
20. Bousdras, V. A., Cunningham, J. L., **Ferguson-Pell, M.**, Bamber, M. A., Sindet-Pedersen, S., Blunn, G., & Goodship, A. E. (2006). A novel approach to bite force measurements in a porcine model in vivo. *International J. Oral and Maxillofacial Surgery*, 35(7), 663-667.
21. **Ferguson-Pell, M.** (2006). Funding technology transfer for medical technologies in UK: Harnessing academic "push" and clinical "pull". *Austral. Phys. & Eng. Sc.Med.*, 29(1), 42-3.
22. **Ferguson-Pell, M.**, Bain, D., & Nicholson, G. (2006). Pressure mapping: Pitfalls and opportunities for standardized testing of support surfaces. *Austral. Phys. & Eng. Sci. Med.*, 29(1), 43-4.
23. **Ferguson-Pell, M.**, Rose, A., Kallumadil, M., Bain, D., & Nicholson, G. (2006). A neural network based instrument for assessment of pressure ulcer susceptibility. *Austral. Phys. & Eng. Sci. Med.*, 29(1), 44.
24. Khakha, R., S., Bloomer, Z., Bain, D. S., Nicholson, G., & **Ferguson-Pell, M.** (2006). Differences in the reactive hyperaemia response of bone in able-bodied and spinal injured persons using near infrared spectroscopy. *Brit. J. Bone and Joint Surgery*, 88-B(Supplement II), 305.
25. Liang, Q. L., Nicholson, G. P., Knight, S. L., Chelvarajah, R., Gall, A., Middleton, F. R. I. Craggs, M. D. (2006). Interface pressure and cutaneous hemoglobin and oxygenation changes under ischial tuberosities during sacral nerve root stimulation in spinal cord injury. *J. Rehab. Res. Devel.*, 43(4), 553-564.

26. Liu, L. Q., Nicholson, G. P., Knight, S. L., Chelvarajah, R., Gall, A., Middleton, F. R. I., Craggs, M. D. (2006). Pressure changes under the ischial tuberosities of seated individuals during sacral nerve root stimulation. *J. Rehab. Res. Devel.*, 43(2), 209-218.
27. **Ferguson-Pell, M.**, Nicholson, G., Bain, D., Call, E., Grady, J., & De Vries, J. (2005). The role of wheelchair seating standards in determining clinical practices and funding policy. *Assistive Technology*, 17(1), 1-6.
28. Bain, D., **Ferguson-Pell, M.**, & McLeod, A. (2003). Evaluation of mattresses using interface pressure mapping. *J. Wound Care*, 12(6), 231-235.
29. Nicholson, G., **Ferguson-Pell, M.**, Smith, K., Edgar, M., & Morley, T. (2003). Development of an instrumented spinal brace for measuring compliance and skin microclimate in the conservative treatment of adolescent idiopathic scoliosis. *Br. J. Bone and Joint Surgery*, 85-B (Supplement III), 191.
30. Nicholson, G. P., **Ferguson-Pell, M. W.**, Smith, K., Edgar, M., & Morley, T. (2003). The objective measurement of spinal orthosis use for the treatment of adolescent idiopathic scoliosis. *Spine*, 28(19), 2243-50.
31. Bain, D. S., & **Ferguson-Pell, M.** (2002). Remote monitoring of sitting behavior of people with spinal cord injury. *J. Rehab. Res. & Develop.*, 39(4), 513.
32. Rose, L. S., & **Ferguson-Pell, M.** (2002). Wheelchair provision for people with spinal cord injury: 2. *British J. Therapy & Rehab.*, 9(11), S9.
33. Rose, L. S., & **Ferguson-Pell, M.** (2002). Wheelchair provision for people with spinal chord injury: 1. *Br. J. Therapy & Rehab.*, 9(10), 392.
34. Bain, D. S., **Ferguson-Pell, M.**, & Burgess, L. A. (2001). Skin blood content and oxygenation in the residual limb while wearing a compression shrinker. *J. Vascular Surgery*, 38(4), 398-399.
35. Bain, D. S., **Ferguson-Pell, M. W.**, & Davies, P. (2001). An instrument for in-service testing of mattresses. *J. Tissue Viability*, 11(4), 161-165.
36. **Ferguson-Pell, M.**, Hagisawa, S., & Bain, D. (2000). Evaluation of a sensor for low interface pressure applications. *Med. Eng. & Phys.*, 22(9), 657-663.
37. Bain, D. S., & **Ferguson-Pell, M. W.** (1999). Fluorescent strip-lights as a source of error in tissue reflectance spectroscopy. *Med. Eng. & Phys.*, 21(4), 241-245.
38. **Ferguson-Pell, M.** (1998). An age of reason for assistive technology? *Assistive Technology*, 10(2), 148.
39. **Ferguson-Pell, M.**, & Hagisawa, S. (1995). An empirical technique to compensate for melanin when monitoring skin microcirculation using reflectance spectrophotometry. *Med. Eng. & Phys.*, 17(2), 104-110.
40. **Ferguson-Pell, M.**, Hagisawa, S., & Masiello, R. D. (1994). A skin indentation system using a pneumatic bellows. *J. Rehab. Res. Devel.*, 31(1), 15-19.

41. Hagisawa, S., & **Ferguson-Pell, M.** (1994). Instrument calibration in-vitro using a reflectance spectrometer. *Jap. J. Med. Instrum.*, 64, 299-304.
42. Hagisawa, S., **Ferguson-Pell, M.**, Cardi, M., & Miller, S. D. (1994). Assessment of skin blood content and oxygenation in spinal cord injured subjects during reactive hyperemia. *J. Rehab. Res. Devel.*, 31(1), 1-14.
43. Hagisawa, S., **Ferguson-Pell, M.**, & Herbert, J. (1994). Reactive hyperemia response to pressure-induced localized ischemia in patients with multiple sclerosis. *J. Neurorehab. & Neural Repair*, 8(4), 193.
44. Dempster, D. W., **Ferguson-Pell, M. W.**, Mellish, R. W., Cochran, G. V., Xie, F., Fey, C., Lindsay, R. (1993). Relationships between bone structure in the iliac crest and bone structure and strength in the lumbar spine. *Osteoporosis International*, 3(2), 90-96.
45. **Ferguson-Pell, M.**, & Cardi, M. (1993). Prototype development and comparative evaluation of wheelchair pressure mapping system. *Assistive Technology*, 5(2), 78.
46. Malagodi, M. S., **Ferguson-Pell, M.**, & Masiello, R. D. (1993). A functional electrical stimulation exercise system designed to increase bone density in spinal cord injured individuals. *IEEE Trans. Rehab. Eng.*, 1(4), 213-19.
47. **Ferguson-Pell, M.**, Cardi, M. (1991). Evaluation of three advanced pressure mapping systems for clinical applications in seating and positioning. *Annals of Biomedical Engineering*, 19(5) 643.
48. **Ferguson-Pell, M.**, Hagisawa, S., & Masiello, R. (1991). Development of a system for in-vivo monitoring of tissue SO₂ and blood content following prolonged indentation. *Annals of Biomedical Engineering*, 19(5) 642-643.
49. Mellish, R. W. E., **Ferguson-Pell, M.**, Cochran, G. V. B., Lindsay, R., & Dempster, D. W. (1991). A new manual method for assessing two-dimensional cancellous bone structure: Comparison between iliac crest and lumbar vertebra. *J. Bone Mineral Research*, 6(7), 689.
50. Levine, S., Kett, R., & **Ferguson-Pell, M.** (1990). Tissue shape and deformation versus pressure as a characterization of the seating interface. *Assistive Technology*, 2(3), 93.
51. **Ferguson-Pell, M.**, & Hagisawa, S. (1988). Biochemical changes in sweat following prolonged ischemia. *J. Rehab. Res. Dev.*, 25(3), 57-62.
52. Hagisawa, S., **Ferguson-Pell, M. W.**, Palmieri, V. R., & Cochran, G. V. (1988). Pressure sores: A biochemical test for early detection of tissue damage. *Arch. Phys. Med. Rehab.*, 69(9), 668-671.
53. Barbenel, J. C., **Ferguson-Pell, M. W.**, & Kennedy, R. (1986). Mobility of elderly patients in bed. measurement and association with patient condition. *Journal of the American Geriatrics Society*, 34(9), 633-636.
54. **Ferguson-Pell, M.**, Cochran, G. V., Palmieri, V. R., & Brunski, J. B. (1986). Development of a modular wheelchair cushion for spinal cord injured persons. *Journal of Rehabilitation Research and Development*, 23(3), 63-76.

55. **Ferguson-Pell, M.** (1986). Seat cushion selection. *J. Rehab. Res. Dev, Special Supplement*, 23(3) 49-73.
56. Barbenel, J. C., **Ferguson-Pell, M.**, & Beale, A. Q. (1985). Monitoring the mobility of patients in bed. *Medical and Biological Engineering and Computing*, 23(5), 466-468.
57. Cochran, G. V., Johnson, M. W., Kadaba, M. P., Vosburgh, F., **Ferguson-Pell, M. W.**, & Palmieri, V. R. (1985). Piezoelectric internal fixation devices: A new approach to electrical augmentation of osteogenesis. *J. Orthop Res.* 3(4), 508-513.
58. Hurwitz, D., **Ferguson-Pell, M.**, Burn, T., & Cardi, M. (1985). Integrated Approach To Pressure Sore Prevention For The Spinal Cord Injured. *Proceedings of the Eighth Annual Conference on Rehabilitation Technology: Technology - A Bridge to Independence.* 142-144.
59. Barbenel, J. C., Davies, P., & **Ferguson-Pell, M.** (1984). Movements of the paraplegic patients in wheelchairs *Care Science Practice*, 3, 60-64.
60. Kadaba, M. P., **Ferguson-Pell, M. W.**, Palmieri, V. R., & Cochran, G. V. (1984). Ultrasound mapping of the buttock-cushion interface contour. *Archives of Physical Medicine and Rehabilitation*, 65(8), 467-469.
61. Le, K. M., Madsen, B. L., Barth, P. W., Ksander, G. A., Angell, J. B., & Vistnes, L. M. (1984). An in-depth look at pressure sores using monolithic silicon pressure sensors. *Plastic and Reconstructive Surgery*, 74(6), 745-756. Letter to editor and published review.
62. Reid, W. H., McLeod, P. J., Ritchie, A., & **Ferguson-Pell, M.** (1983). Q-switched ruby laser treatment of black tattoos. *British Journal of Plastic Surgery*, 36(4), 455-459.
63. Crewe, R., **Ferguson-Pell, M.**, Robertson, J. C., & Glanville, H. J. (1980). Seating the disabled. *British Medical Journal*, 281(6237), 455-456.
64. **Ferguson-Pell, M.** (1980). Design criteria for the measurement of pressure at body/support interface. *Engineering in Medicine*, 9(4), 209-214.
65. **Ferguson-Pell, M. W.**, Wilkie, I. C., Reswick, J. B., & Barbenel, J. C. (1980). Pressure sore prevention for the wheelchair-bound spinal injury patient. *Paraplegia*, 18(1), 42-51. doi:10.1038/sc.1980.7
66. Wheatley, D.,C., Berme, N., & **Ferguson-Pell, M.** (1980). A low profile load cell for measuring movements during sleep. *Experimental Mechanics*.

Journal Articles Submitted or in Preparation for Publication

1. Liu, L. Q., **M. Ferguson-Pell**, and A. Gall Pressure Changes under the Ischial Tuberosities during Gluteal neuromuscular stimulation in spinal cord injury: a comparison of sacral nerve root stimulations against surface functional electrical stimulation. *Submitted: Arch Phys Med*
2. Sharifi, M., Zohreh Salimi, M. Sadeghimehr, D. Naderi, **M. W. Ferguson-Pell**. Estimating the Optimum Muscle Activities in 3D Musculoskeletal Model of Human Arm, Using Kane Formulation. In preparation.

3. Sharifi M., Z. Salimi, M. Sadeghimehr, D. Naderi, **M. W. Ferguson-Pell**. Mathematical Modeling of the Musculotendon Actuators. In preparation.
4. Sharifi M., Z. Salimi, M. Sadeghimehr, D. Naderi, **M. W. Ferguson-Pell**. Comparison of Two Methods for Modeling of the Musculoskeletal Actuators. In preparation.
5. Salimi, Z., M. Sadeghimehr, **M. W. Ferguson-Pell**. Force Tracking in a normal foot during gait: Bio-mechanical model is presented. In preparation.
6. Salimi, Z., **M. W. Ferguson-Pell**. How trunk swing in wheelchair propulsion is affected by fatigue? In preparation.
7. Salimi, Z., **M. W. Ferguson-Pell**, (2014) A description and classification of different types of validity in Rehabilitation. In preparation.

Peer Reviewed Conference Proceedings

1. Salimi Z., **Ferguson-Pell M.**, Ramadi A., Haennel R., Mohammadi F., Qi L., Investigating validation of physiological cost index for wheelchair users. Annual Alberta Biomedical Engineering Conference, Banff, Alberta, Canada, Oct. 24-26, 2014
2. Khare J., Gawronski, J., De Souza, L., Middleton, F.R.I., and **M. Ferguson-Pell**. Incidence and impact of delays in referral and admission of newly injured patients to a spinal cord injury centre. 3rd ISCoS Annual Scientific Meeting September 2-4 2014.
3. Khaneghah, P.A., Ludwick, D., and **M. Ferguson-Pell**. Use of Online Personal Health Records in Monitoring and Management of Patients with Type II Diabetes. eHealth Conference. Vancouver BC. June 3, 2014.
4. Salimi, Z., and **M. W. Ferguson-Pell**. Physical environment: Why is it important to measure? And how to measure it? International Journal of Arts & Sciences (IJAS) conference, Dec 3-6, 2013, Freiburg, Germany.
5. P.M. Pilarski, L. Qi, **M. Ferguson-Pell**, and S. Grange, "Determining the Time until Muscle Fatigue using Temporally Extended Prediction Learning," *Proc. 18th International Functional Electrical Stimulation Society Conference (IFESS)*, Donostia-San Sebastian, Spain, June 6–8, pp. 37–40, 2013.
6. Qi, L, Frank, C, **Ferguson-Pell, M.**, Smitham, P., Holloway, C., Taylor, S., Tyler, N., Wills, G., Grange, S., (2012) Establishing Translational Research Pipelines for Smart Devices using EMG analysis to validate the stages to technological maturation of a Manual Wheelchair lightweight sensing handrim. IFESS.
7. Salimi, Z., and **M. W. Ferguson-Pell**. Ergometers Can Now Bio-mechanically Replicate Straight-Line Floor Wheelchair Propulsion: Three Models Are Presented, 2013 ASME international mechanical engineering congress and exposition (IMECE), Nov. 15-21, San Diego, CA, USA.
8. Salimi, Z., and **Martin W. Ferguson-Pell**. A Simple 2D Wheelchair Positioning: Correcting IMU's Data Using One Encoder and Applying Kalman Filtering. 2013 ASME international mechanical engineering congress and exposition (IMECE), Nov. 15-21, San Diego, CA, USA.
9. Salimi, Z., and **M. W. Ferguson-Pell**. Assessment of Trunk Swing during Wheelchair Propulsion. 14th Annual Alberta Biomedical Engineering Conference, Banff, Alberta, Canada, Oct, 25-27, 2013.

10. Salimi, Z., and **M. W. Ferguson-Pell**. How wheelchair users move their trunks during wheelchair propulsion in Everyday Outdoor Activities? Glenrose Rehabilitation Hospital, Spotlight on Research Breakfast & Symposium, Oct, 23, 2013.
11. Khare J., Gawronski, J., De Souza, L., Middleton, F.R.I., and M Ferguson-Pell. Incidence and impact of delays in referral and admission of newly injured patients to a spinal cord injury centre. 3rd ISCoS Annual Scientific Meeting September 2-4 2014.
12. Khaneghah, P.A., Ludwick, D., and **M. Ferguson-Pell**. Use of Online Personal Health Records in Monitoring and Management of Patients with Type II Diabetes. eHealth Conference. Vancouver BC. June 3, 2014. *Oral Presentation*.
13. Rose, L. S. and **M. Ferguson-Pell** Wheelchair type and should pain in full-time, manual wheelchair users with spinal cord injury. European Seating Symposium, November 2013, Dublin Ireland.
14. J. Khare, Dr J. Gawronski, Dr F. Middleton, L. DeSouza and **M. Ferguson-Pell**. Situation on admission and discharge of a group of newly injured patients admitted to a spinal cord injury centre. International Spinal Cord Society Annual Meeting, October 2013. Istanbul, Turkey
15. Salimi, Z. and **M. Ferguson-Pell**, "A Simple 2D Wheelchair Positioning: Correcting IMU's Data Using One Encoder and Applying Kalman Filtering", 2013 ASME International Mechanical Engineering Congress and Exposition, Nov. 15-21, San Diego, CA, USA
16. Salimi, Z. and **M. Ferguson-Pell**, "Ergometers Can Now Biomechanically Replicate Straight-Line Floor Wheelchair Propulsion: Two Models Are Presented", 2013 ASME international mechanical engineering congress and exposition, Nov. 15-21, San Diego, CA, USA.
17. **Ferguson-Pell, M.** (2012). Keynote: Bring real world contexts into the laboratory: assistive technologies for mobility. Australian Academy of Cerebral Palsy and Developmental Medicine Conference Brisbane, Australia.
18. **Ferguson-Pell, M.** (2012). Smart technologies and advanced analytics: their potential to enhance function and provide the evidence to support decision-making. in Proc. Australian Academy of Cerebral Palsy and Developmental Medicine Conference, Brisbane, Australia.
19. **Ferguson-Pell, M.** (2012). Assistive Technology environmental controls and customized technologies for children with developmental disabilities. Australian Academy of Cerebral Palsy and Developmental Medicine Conference. Brisbane 30 May-June 2.
20. **Ferguson-Pell, M.** (2012). Future directions in mainstream and customized technologies for children with developmental disabilities. Australian Academy of Cerebral Palsy and Developmental Medicine Conference. Brisbane 30 May-June 2 2012.
21. **Ferguson-Pell, M.** (2012). Wheelchair type and shoulder pain in full-time, manual wheelchair users with spinal cord injury *Annual Conference of ISCoS (International Spinal Cord Society)*, London.
22. **Ferguson-Pell, M.** (2012). Saving time and money through an integrated approach of collaborative care serving diabetic patients through alberta primary care network and AHS home care. *E-Health Conference*, Vancouver.

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25. **Ferguson-Pell, M.**, & Guo, M. (2011). Tissue status monitoring using infrared spectroscopy. 12th Annual Alberta Biomedical Engineering Conference, Banff.
26. Hamaluik, K., Wu, J., & **Ferguson-Pell, M.** (2011). Development of a long-term wheelchair propulsion instrument device for using in evaluating community ambulation parameters. 12th Annual Alberta Biomedical Engineering Conference Banff.
27. Hamaluik, K., Wu, J., & **Ferguson-Pell, M.** (2011). Development of a long term wheelchair propulsion instrumentation device for use in evaluating community ambulation parameters. 12th Annual Alberta Biomedical Engineering Conference Proceedings, Banff.
28. Kollias, S., Kajner, R., **Ferguson-Pell, M.**, McFarlane, L., Parker, S., Pollock, K., . . . Drefs, S. (2011). Communication accessibility: Speech-language pathology consulting services in seniors health edmonton zone. Covenant Health Research Day 2011, Edmonton, AB.
29. Liping, Q., Walkeling, J., Grange, S., & **Ferguson-Pell, M.** (2011). Kinetics and coordination patterns of shoulder muscles on wheelchair propulsion for different propulsion techniques. 12th Annual Alberta Biomedical Engineering Conference Banff.
30. Qi, L., Walkeling, J., Grange, S., & **Ferguson-Pell, M.** (2011). Pushrim kinetics and coordination patterns of shoulder muscle on wheelchair propulsion for different propulsion techniques 12th Annual Alberta Biomedical Engineering Conference Proceedings, Banff.
31. Wu, J., Azadi, M., Qi, L., & **Ferguson-Pell, M.** (2011). A variable resistance wheelchair ergometer for propulsion biomechanical studies. 12th Annual Alberta Biomedical Engineering Conference, Banff.
32. Wu, J., Azadi, M., Qi, L., & **Ferguson-Pell, M.** (2011). A variable resistance wheelchair ergometer for propulsion biomechanical studies. 12th Annual Alberta Biomedical Engineering Conference Proceedings, Banff.
33. Drefs, S., Kollias, S., Kajner, R., **Ferguson-Pell, M.**, McFarlane, L., Pollock, K., Cleary, S. A novel approach in providing SLP services to adults. Poster Presentation at CASLPA/ACOA Conference, Communication: A Question of Balance, Montreal, Quebec.
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35. **Ferguson-Pell, M.** (2009). Wheelchair provision to people with spinal cord injury before and after the voucher scheme Annual Conference of Posture and Mobility Group.
36. Holloway C. Tully J. **Ferguson-Pell M.** Tyler N. Carer wheelchair propulsion: factors affecting a carer's capacity. International Seating Conference, Vancouver (2008).

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38. **Ferguson-Pell, M.** (2007). The workshop for optimization of wheelchair selection and user performance(WOWSUP). European Seating Conference, Dublin.
39. **Ferguson-Pell, M.** (2007). Performance: Capacity ratio- a new clinical tool? Annual Conference of ISCoS (International Spinal Cord Society), Reykjavik, Iceland.
40. **Ferguson-Pell, M.** (2006). The workshop for optimization of wheelchair selection and user performance. Annual Guttmann Conference Southport.
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50. **Ferguson-Pell, M.** Nicholson, G. P. (2000). Biomaterials challenge: Advancing custom prosthetics and orthotics with improved materials and fabrication methods. Action for Biomaterials, , 5 10-11.
51. **Ferguson-Pell, M.** (1999-2000). Assistive technology: Promoting best practice. Long Term Health Management 111-114.
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Book Chapters and Government Reports

1. Houghton P.E., Campbell K.E. and **CPG Panel** (2013). Canadian Best Practice Guidelines for the Prevention and Management of Pressure Ulcers in People with Spinal Cord Injury. A resource handbook for Clinicians. (Contributor)
2. Hobson, D., Cooper, R., & **Ferguson-Pell, M.** (2007). Standards for assistive technology. In R. Cooper, H. Ohnabe & D. Hobson (Eds.), An introduction to rehabilitation engineering () CRC Press.
3. **Ferguson-Pell, M.** (2006). "Moving forward" review of wheelchair services in Scotland.
4. **Ferguson-Pell, M.** (2005). Imaging modalities. In D. L. Bader, C. V. C. Bouten, D. Colin & C. W. J. Oomens (Eds.), Pressure ulcer research: Current and future perspectives (pp. 301)
5. Bain, D., **Ferguson-Pell, M.**, & Nicholson, G. (2004). Pressure reducing mattresses. (No. MHRA 03129-0). UK: Department of health.
6. **Ferguson-Pell, M.** (2004). Specialist wheelchair seating In M. Marks (Ed.), National clinical guidelines British society of rehabilitation medicine.
7. **Ferguson-Pell, M.**, & Cardi, M. (1992). Pressure mapping systems. Team Rehab Report.
8. **Ferguson-Pell, M.** (1990). Computer applications for evaluating persons at high risk of pressure sores. In Graitcer and F. Maynard (Ed.), First colloquium on preventing secondary disabilities among people with spinal cord injuries.
9. **Ferguson-Pell, M.** (1990). Remote monitoring of wheelchair sitting behavior In D. L. Bader (Ed.), Pressure sores: Clinical practice and scientific approach () Macmillan.
10. **Ferguson-Pell, M.** (1989). Expert systems: A promising tool for patient monitoring. In J. Paul P., J. C. Barbenel, J. Courtney M., R. Kenedi M. & A. Hilger (Eds.), Progress in bioengineering.
11. **Ferguson-Pell, M.** Cardi, M. (1989) Preliminary results of a salary survey for rehabilitation technology specialists. Proc. Annual Conference RESNA, New Orleans.
12. **Ferguson-Pell, M.** (1984). Establishing a pressure sore prevention service. In B. Lee Y. (Ed.), Chronic ulcers of the skin (pp. 203-212)
13. **Ferguson-Pell, M.**, Reddy, M.P., Stewart, S.,F.,C., Palmieri, V.,R., & Cochran,G.,V.,B. (1983). Measurement of physical parameters at the patient support interface. In Whittle and Harris (Ed.), Biomechanical measurement in orthopaedic practice. England: Oxford.
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15. Barbenel, J. C., **Ferguson-Pell, M.**, & Evans, J., H. (1981). The chief scientist reports: Pressure produced on hospital mattresses Health Bullitein, 39(1), 62-68.
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PATENTS

1. U.K. #8123536
2. Wheelchair Cushion Monitor and Alarm
3. WO 0060349 Skin evaluation apparatus
4. WO 00051470 Apparatus for the assessment of mattresses
5. Tactile fingertip force sensor. Application filed March 1999
6. Ischemia Mapping system for tissue support characterization. Application filed June 2001
7. Differential tissue integrity assessment probe. Application filed June 2001
8. WO2004GB04710 20041105; GB20030025970 20031106 Articulated structures and modules
9. WO2004GB04942 20041122; GB20030027138 20031121 Mattress protection
10. GB20010015331 20010622 Optoelectronic device for characterizing tissue perfusion in dermis

RESEARCH SUPPORT

Current/pending research grants

FUNDING AGENCY <i>PROJECT TITLE</i>	AMOUNT FUNDED (CAD)	TERM	ROLE
Mitacs Accelerate Cluster – <i>Technologies for living independently: A technology case study on remote patient monitoring</i>	\$403,000	2013-2015	Principal Investigator
Canadian Foundation for Innovation - <i>Centre for Neural Interfaces and Rehabilitation Neuroscience</i>	\$500,000 (lab share)	2013-2014	Co-Investigator
TELUS Health Solutions – <i>A consumer health living laboratory community</i>	\$1,300,000	2012-2015	Principal Investigator
Alberta Innovates Health Solutions: <i>Osteoarthritis Team Grant</i>	\$5,000,000	2009-2014	Investigator
Alberta Innovates Health Solutions: <i>Smart Neural Prosthetics</i>	\$5,000,000	2009-2014	Investigator
Alberta Paraplegia Foundation: <i>Best Practices Implementation Project: Pressure Ulcer Management, Bladder Management and Pain</i>	\$528,400	2011-2014	Principal Investigator

Completed Funding (Last 5 years)

FUNDING AGENCY <i>PROJECT TITLE</i>	AMOUNT FUNDED (CAD)	TERM	ROLE
Glenrose Foundation: A randomized controlled cross-over trial comparing the functional outcomes of a manual wheelchair skills training program offered with or without feedback on push biomechanics.	\$10,000	2011-13	Principal Investigator
Alberta Paraplegia Foundation: Rating perceived exertion to prescribe training in wheelchair users.	\$15,200	2012-13	Principal Investigator
Alberta Paraplegia Foundation: <i>Early detection of deep tissue injury.</i>	\$199,908	2010-2012	Principal Investigator
Government of Alberta: <i>A Collaboration to Increase Clinical Placements with Adults for Speech Language Pathology Students.</i>	\$505,035	2008-2011	Principal Investigator
Alberta Innovates Health Solutions: <i>AiiMiT Phase 1</i>	\$30,000	2011-12	Principal Investigator
Action Medical Research (UK): <i>Disuse Osteoporosis Following Spinal Cord Injury</i>	\$240,000	2007-2009	Principal Investigator
CECR - CIPI: Tissue Reflectance –NIR : Non-Invasive Assessment of Metabolic Status in Muscle.	\$79,800	2008-2009	Principal Investigator
CIHR: <i>Planning and Dissemination Grant: Bariatric Rehabilitation Workshop</i>	\$15,000	2009	Principal Investigator

GRADUATE STUDENT SUPERVISION

In Progress

University of Alberta

Zohreh Salimi	Primary	PhD. Rehab. Med
Nutan Srivastava	Committee	PhD. Rehab. Med
Kenton Hamaliuk	Co-supervisor	MSc. Mech. Eng

External

Janine Khare	Co-supervisor	MSc. Brunel University
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Completed (last 5 years)

Alisa Ahmetovic (2012)	Committee	MSc. Cell Biology, U. of Alberta
Leandro Rafael Solis Aguilar (2012)	Co-supervisor	PhD. U. of Alberta Rehab. Med.
Jiajie Wu (2012)	Primary	MSc. U. of Alberta Rehab. Med.
Lone Rose (2012)	Primary	MPhil. University College London
Catherine Holloway (2011)	Co-supervisor	Ph.D. University College London
Lynne Hills (2010)	Primary	MPhil. University College London
Liping Qi (2010)	Primary	PhD. University College London
Rachael Cowan (2009)	Committee	PhD. University of Pittsburgh
Sanna Gaspard (2011)	Committee	PhD. Carnegie Mellon University
Jutikarn Charoensuk (2010)	Committee	MSc. University of Alberta
Selina Gyawali (2010)	Committee	MSc University of Alberta
Manu Singla (2010)	Committee	MSc. University of Alberta

Post Doctoral Fellows (completed)

Duncan Bain (2006)	Kings College London
Graham Nicholson (2006)	deceased
Amir A Mohagheghi (2008)	Brunel University
Mojtaba Azadi (2011)	Research Fellow, MIT
Usukuma Eukere PhD MBA (2012)	VP Global Operations Alpha Global Xperts
Liping Qi, PhD (2012)	Assistant Professor Dalian University of Technology, China

Clinical Fellows

Simon Grange (2010-2012)	practicing orthopaedic surgeon UK
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