

CURRICULUM VITAE

Stuart Michael McGill

**Spine Biomechanist and
Professor**

September 2011

Spine Biomechanics Laboratories
Department of Kinesiology
Faculty of Applied Health Sciences
University of Waterloo
Waterloo, Ontario, Canada
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Other Appointments

Member:

University of Waterloo
Research Institute for Aging

University of Waterloo
Centre for Research Excellence: Musculoskeletal Disorders

Chief Scientific Officer:

Backfitpro Inc.

STUART MICHAEL McGILL

Brief Description

Stuart McGill is a Professor of Spine Biomechanics at the University of Waterloo where he has a laboratory that explores low back mechanics of both intact humans (both normal and injured people) and harvested tissues (where specific injuries are created and analysed). He has been the author of many scientific journal papers that address the issues of lumbar function, low back injury mechanisms, investigation of tissue loading during rehabilitation programs, the formulation of work-related injury avoidance strategies and high performance training. He has mentored over 30 graduate students. This work has received several international awards including the “Volvo Bioengineering Award for Low Back Pain Research” in 1986. As a consultant, he has provided expertise on low back injury to various government agencies, many corporations and legal firms and professional/international athletes and teams world wide. He is regularly referred special patient cases from the medical community for opinion. At the University of Waterloo he has taught courses in Occupational Biomechanics (reducing the risk of occupationally related musculoskeletal disorders), General Biomechanics, Injury Biomechanics, Low Back Disorders, and a graduate level Instrumentation and Signal Processing course. He currently holds an NSERC research operating grant entitled “Towards Reducing Low Back Injury: Ensuring Sufficient Spine Stability”, was the President of the Canadian Society for Biomechanics for 1999-2000, was an elected member of the executive for the International Society for Biomechanics 1999-2001, and was Chair of the Department of Kinesiology 2003-2009. He sits on the editorial boards of the journals SPINE, Clinical Biomechanics, and Journal of Applied Biomechanics. He has recently authored three textbooks “Low Back Disorders: Evidence Based Prevention and Rehabilitation” and “Ultimate Back Fitness and Performance.” He is married, has two children, and lives in Waterloo, Ontario.

Degrees

Ph.D. (Kinesiology (Biomechanics))
University of Waterloo, 1986

M.Sc. (Kinanthropology (Biomechanics))
University of Ottawa, 1982

BPHE, University of Toronto, 1980

Certification

C.K. Certified Kinesiologist, Ontario Kinesiology Association, 2002 - present

Professional Positions Held

2002-Present	Chief Scientific Officer - Backfitpro Inc.
2003-May-2009 July	Chair – Department of Kinesiology
2002-July-2003-April	Associate Chair for Graduate Studies, Department of Kinesiology, University of Waterloo

1999-2009	Graduate Faculty, University of Toronto, Institute of Medical Science
1998-2006	Graduate Faculty, Southern California University of Health Sciences, Los Angeles
1996-Present	Professor, Department of Kinesiology, University of Waterloo
1995-Present	Cross-Appointed, Dept. of Mechanical Engineering, University of Waterloo
1994	“Guest Professor” - Faculty of Medicine, University of Bern, Switzerland
1991-1996	Associate Professor (tenured), Department of Kinesiology, University of Waterloo
1987-1991	Assistant Professor - Biomechanics, University of Waterloo
1986-1987	Research Assistant Professor - Biomechanics, University of Waterloo
1986	Research Associate - Occupational Biomechanics, University of Waterloo
1985-Present	Part time consultant, S.M. McGill and Associates

Academic Awards and Honors

2010	Research Excellence Award, Ontario Kinesiology Association
2010	Appointed “University Professor” at University of Waterloo- one of 14 active professors university-wide
2009	Appointed by the Minister of Health to form the College of Kinesiology for professional practice
2009	Listed in Global Directory of Who’s Who
2009	Best Presentation Award, International Society for Study of the Lumbar Spine
2008	President’s Award, Ontario Kinesiology Association
2008	Outstanding Performance Award, University of Waterloo
2007	Awarded designation “Speaker of the Royal College of Physicians and Surgeons of Canada”
2005	Outstanding Performance Award, University of Waterloo
2005	R. Tait McKenzie Award, AAPHERD, USA
2004	Elected Fellow, Canadian Society for Biomechanics
2004	Career Award: Canadian Society for Biomechanics
2002	“Richard W. Stow Visiting Lectureship”, Ohio State University College of Medicine, Department of Phys. Med. And Rehab.
2002	“Presidents Circle Lecture for 2002”, University of Waterloo
2002	Hallman Professorship – University of Waterloo
2002	“Inaugural Professor”, Opened the first Masters in Physical Therapy Program in Portugal, Technical University of Lisbon.
2001	“Steven Rose Lecturer”, Washington University School of Medicine, Program in Physical Therapy, St. Louis, U.S.A.
2001	“President’s Lecturer”, American College of Sports Medicine, Baltimore, U.S.A.

2001	Ontario Innovation Trust Award - for the “Live Fire Research Facility” P.I. Dr. E. Weckman, with Drs. A. Strong, D. Johnson, M. Sharratt, R. Hughson and S. McGill.
1998	Wood Distinguished Visiting Lectureship in Joint Injury Research, Dept. of Orthopaedics, Faculty of Medicine, University of Calgary
1997	EJ Wells Bequest Lecturer - University of Queensland, Australia
1989	3M Award for Presentation Excellence (top paper - Human Factors Association of Canada)
1988	Listed in Canadian Who's Who
1986	Volvo Bioengineering Award for Low Back Pain Research (International Society for Study of the Lumbar Spine)
1986	Waterloo Alumni Gold Medal (top graduating Ph.D. student, university-wide)
1986	Julian Christensen Award for Ph.D. level ergonomics research (Human Factors Association of Canada)
1985-1986	University of Waterloo Graduate Scholarship
1983-84/1984-85	NSERC Postgraduate Scholarship
1983-84, 1984-85	Ontario Graduate Scholarship
1982	University of Waterloo Entrance Scholarship
1978-1979	Alumni Prize, University of Toronto (top male student in class)

Scholarly and Professional Activities

a) Professional Activities:

Canadian Society of Biomechanics:

Fellow	2004-Present
President	1999-2000
Member	1981-2004
Elected member at large - executive council	1994-1996
Conference Chair	1996-1998

International Society for Study of the Lumbar Spine (Closed Membership)

Member	1996-Present
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Association of Canadian Ergonomists
(formerly: Human Factors Association of Canada)

Full Member	1985-2008
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International Society of Biomechanics

Member	1983-Present
Elected to the Executive Board (Awards Portfolio)	1999-2001

International Sport and Spine Society – Board of Directors 2005-Present

Member of the International Advisory Board – The New Zealand Centre

for Physiotherapy Research	2005-Present
Member of Advisory Board – Ontario Kinesiology Association	2007-2011
Member of Advisory Board – Boston Sports Medicine and Performance Group	
Basketball Advisory Board	2010 - Present

b) Refereeing:

Journal of Biomechanics
Spine
Clinical Biomechanics
Journal of Biomedical Engineering
International Journal of Industrial Ergonomics
Ergonomics
Canadian Journal of Rehabilitation
Journal of Orthopaedic Research
Gait and Posture
Journal of Applied Biomechanics
American Industrial Hygiene Association Journal
Occupational Medicine
IEEE Transactions on Rehabilitation Engineering
European Spine Journal Applied Ergonomics
Physical Therapy
CRC Press
Journal of Biomechanical Engineering
Research Quarterly for Exercise and Sport
Human Factors
Applied Mechanics Reviews
Journal of Applied Physiology
Human Kinetics Publishers
Journal of Neurophysiology
Lancet
Medical Engineering and Physics
Journal Physiology
Journal of Orthopaedic and Sports Physical Therapy
Medicine Science Sports and Exercise
Physiotherapy Theory and Practice
European Spine Journal
Archives of Physical Medicine and Rehabilitation

c) International Review Panels:

1. NIOSH-NIH Grant Review Panel	2002
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d) National Review Panels:

1. CIHR (Canadian Institute for Health Research), Movement and Exercise Grants Review Panel 2008-2009

e) Grant Reviews:

1. Netherlands organization for Health Research and Development, Holland
2. National Health and Medical Research Council, Australia
3. National Institute for Health (NIH), USA
4. Natural Sciences and Engineering Research Council of Canada
5. Health and Welfare Canada
6. Science Council of British Columbia
7. Medical Research Council, Canada
8. Alberta Heritage Foundation for Medical Research
9. Whitaker Foundation for Medical Research, U.S.A.
10. Réseau provincial de research en adaptation - réadaptation - IRRST, Quebec
11. Canadian Institutes for Health Research
12. Workplace Safety and Insurance Board, Ontario
13. National Institute of Occupational Safety and Health, U.S.A.
14. The Wellcome Trust, England.

f) Editing:

1. Member of Editorial Board - SPINE 1993-Present
2. Member of Editorial Board - Clinical Biomechanics 1990-Present
3. Consulting Editor – Journal of Applied Biomechanics 2002-Present

g) External Reviewer for Tenure, Promotion and Program Review:

1. University of Massachusetts, Dept. of Kinesiology 2010
2. University of Pennsylvania, Dept. of Bioengineering 2010
3. University of Bristol, Medical Sciences 2010
4. University of Vermont, Rehabilitation Sciences 2008
5. University of Alberta, Dept. of Physical Therapy 2008
6. University of Vermont, School of Physical Therapy 2008
7. Washington University at St. Louis, School of Physical Therapy 2007
8. University of Delaware, Dept. of Mechanical Engineering 2007
9. University of Calgary, Civil Engineering 2007
10. University of Regina, Faculty of Kinesiology 2007
11. University of Dayton, Dept. of Biomedical Engineering 2006
12. University of Utah, Dept. of Physical Therapy 2005
13. Program Review – University of Queensland – School of Human Movement Studies 2005
14. University of Pittsburg, Dept. of Physical Therapy 2005
15. University of Southern California, Department of Kinesiology 2005
16. University of Vermont, Dept. of Mechanical Engineering 2004
17. Ohio State University, College of Medicine and Public Health 2003
18. University of Delaware, Dept. of Physical Therapy 2003

19. University of Cincinnati, Dept. of Environmental Health 2003
20. University of Southern California, Dept of Biokinesiology and Physical Therapy 2003
21. University of Calgary, Department of Mechanical Engineering 2002
22. University of Vermont, Department of Mechanical Engineering 2002
23. University of Texas, School of Medicine 2002
24. Southern Cross University, School of Exercise Science & Sports Management, Australia 2002
25. University of Queensland, School of Human Movement Studies 2002
26. Program Review – Department of Kinesiology, University of Calgary 2002
27. University of Washington, Department of Mechanical Engineering 2002
28. University of Calgary, Faculty of Engineering 2002
29. University of Virginia, School of Medicine 2001
30. University of Iowa, Department of Biomedical Engineering 2001
31. University of British Columbia 2000
32. Arizona State University, U.S.A., Department of Exercise Science 2000
33. British Guidelines - Occupational Health Guidelines for management of low back pain - Evidence review 2000
34. Program Review - Danish National Institute of Occupational Health- Department of Physiology 2000
35. Ohio State University, USA, Dept. of Industrial Engineering 1998
36. University of Alberta, Department of Physical Therapy 1997
37. Ohio State University, USA, Department of Industrial and Welding Engineering 1996
38. Queen’s University, Department of Mechanical Engineering 1995

h) Expert Knowledge Source

1. American Physical Therapy Association Subject Matter Expert: “Low Back Assessment, Injury Mechanisms and Therapeutic Exercise Prescription” 2011
2. American Physical Therapy Association Content Expert Reviewer: “Clinical practice guidelines linked to the international classification of functioning, disability, and health.”

a) Government:

1. Ontario College of Kinesiology: Transitional Council to establish the professional college 2009 - 2011
2. Institute for Occupational Medicine, U.K. 2001
3. National Research Council - Commission on Behaviour and Social Sciences and Education, Washington, U.S.A. 2000
4. Danish National Institute of Occupational Health, Copenhagen, Denmark 2000
5. National Institute for Occupational Safety and Health, Morgantown, West Virginia, U.S.A. 1996
6. Government of Manitoba, Labour, Winnipeg 1994
7. Government of Alberta, Occupational Health and Safety, Edmonton 1993
8. Province of British Columbia, Workers Compensation Board 1993, 1998

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| 9. | Ontario Ministry of Labour, Toronto, Ontario | 1991 |
| 10. | Ontario Ministry of Health, Toronto, Ontario | 1991 |

b) Industry

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| 1. | Comfort Solutions | 2007 |
| 2. | Hydro One | 2005 |
| 3. | American Council on Exercise | 2003 |
| 7. | Samarit Medical | 2003 |
| 8. | Volvo Canada | 2002 |
| 9. | Emergency Responders, Hydro One, Ontario | 2001 |
| 10. | Innotec, Orillia, Ontario | 1999 |
| 11. | Dr. Ho's Muscle Therapy | 1999, 2001 |
| 12. | Ontario Hydro | 1998, 1999 |
| 13. | Consumer Reports on Health, Consumer Union, Yonkers, New York | 1997 |
| 14. | Nightline, NBC Television | 1996 |
| 15. | 20/20, ABC Television | 1996 |
| 16. | Global Entrepreneurship Centre – Waterloo | 1995 |
| 17. | Ontario Hydro | 1995 |
| 18. | Natura Beds – Cambridge | 1995 |
| 19. | Canadian Pacific Rail - Ontario South Division | 1995 |
| 20. | Ontario Hydro, Toronto, Ont | 1986, 1988, 1989, 1990, 1991, 1992, 1993 |
| 21. | Noranda Forest Recycled Papers, Thorold, Ontario | 1992 |
| 22. | Canadian Industrial Innovation Centre, Waterloo, Ont. | 1990 |
| 23. | Noranda Forest Products, Montreal, Que. | 1990 |
| 24. | Paperboard Products, Trenton, Ont. | 1990 |
| 25. | Imperial Tobacco, Montreal, Que. | 1989 |
| 26. | Lifestyles Fitness, Waterloo, Ont. | 1988 |
| 27. | Humansystems, Guelph, Ont. | 1987 |
| 25. | Ergosystems Inc., Vancouver, B.C. | 1986-1987 |

c) Legal:

Ongoing – provided expertise in many legal cases involving low back injury, medical malpractice, and compensation issues.

d) Clinical:

Ongoing - evaluations of many referred patients, opinions requested on medical management. These tend to be for patients who have not responded to any type of therapy or they are elite athletes.

e) Military:

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| 1. | Defense and Civil Institute of Environmental Medicine,
Toronto, Ont. | 1988, 1989 |
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Major Conference Organization:

1. Program Committee, Fifth Interdisciplinary World Congress on Low Back and Pelvic Pain – Effective Diagnosis, and Treatment, Melbourne, Australia, November 2004.
2. Conference Chair, North American Conference on Biomechanics, Waterloo, ON, August 14-19, 1998.
3. Program Chair, Human Factors Association of Canada Annual Conference, Waterloo, ON, October 23-26, 1996.

National and International Committees:

1. Canadian Chiropractic Association - Research Committee, March 1997 - March 2001.
2. National Institute for Occupational Safety and Health (NIOSH), USA, Review of Back Belts, 1996.

Other:

Producer of Video “Low Back Exercises for Seniors”,
University of Waterloo, 1996.

PUBLICATIONS

Summary: Books = 3
Chapters in books = 25
Full refereed journal papers = >170
Refereed conference papers = >140
Keynote addresses = >60
Other invited addresses = 400 plus
Self-initiated addresses = 150 plus

A) **Books**

1. Augaitis, R. Kell, R. Kourtis, G. McGill, S. Whitmarsh, L. Springle, N. Personal Fitness: Faster, Stronger, Smarter. Textbook for High School Curriculum, Thompson Books, Toronto, 2012
2. McGill, S.M. Ultimate back fitness and performance, Backfitpro Inc., Waterloo, Canada, 2004. ISBN 0-9736018-0-4 (www.backfitpro.com). Fourth edition 2009.
3. McGill, S.M. Low back disorders: Evidence based prevention and rehabilitation, Human

Kinetics Publishers, Champaign, IL, U.S.A., 2002. ISBN 0-7360-4241-5, Second Edition, 2007.

Now also printed in Japanese, 2003

Now also printed in Chinese, 2009.

B) Clinical DVD's

1. McGill, S.M., The Ultimate Back: Enhancing Performance (www.backfitpro.com), 2010
2. McGill, S.M., Clinical Techniques for the Ultimate Back: Assessment and Therapeutic Exercise (www.backfitpro.com), 2007.

C) Commissioned Papers and Position Papers

1. **McGill, S.M.** There is no such thing as non-specific back pain. A position paper written for the Centre of Research Excellence: Musculoskeletal Disorders. Faculty of Applied Health Sciences, University of Waterloo, 2009.
2. **McGill, S.M.** On the link between occupationally related musculoskeletal loading and low back injury. Commissioned paper for the Commission on Behavioral and Social Sciences and Education, National Research Council and Institute of Medicine, USA, March, 2000.

D) Full Refereed Journal Papers

*Indicates first authors who were students at time of development of the paper.

1. Frost*, D.M., Beach, T.A.C., Callaghan, J.P., **McGill, S.M.** (Accepted Aug 2011) Using a movement screen to evaluate the effectiveness of training. J. Strength and Conditioning Res.
2. Frost*, D. Andersen, J. Lam, T, Findlay, T., Darby, K., **McGill, S.M.** (Accepted Aug 2011) The relationship between general measures of fitness, passive range of motion and whole body movement quality. Am. J. Sports. Med.
3. Vera Garcia, F.J., Moreside, J.M., **McGill, S.M.** (Accepted June 2011) Abdominal muscle activation changes if the purpose is to control pelvis motion or thorax motion. J EMG & Kinesiology.
4. Moreside*, J. and **McGill, S.M.**, (2011) Quantifying normal 3D hip range of motion in healthy adult males with clinical and laboratory tools: Hip mobility restrictions appear to be plane specific. Clin. Biomech. 26:824-829.

5. **McGill, S.M.**, (2011) Is a postural-structural-biomechanical model, within manual therapies, viable: AJBMT debate. Invited Response J. Bodywork and Movement Therapy 15(2):150-152.
6. **McGill, S.M.**,(2010) <Invited Review> Core training: Evidence translating to better performance and injury prevention. Strength and Conditioning Journal 32(3):33-46.
7. Brown*, S.H.M. and **McGill, S.M.** (2010) The relationship between trunk muscle activation and trunk stiffness: Examining a non-constant stiffness gain. Computer Methods Biomech Biomed Engng. 13(6): 829-835.
8. **McGill, S.M.**, (2010) <Invited Review> Quick Tip: Wearing a weight belt, Journal of the National Strength and Conditioning Association.
9. Yates*, J.P. and **McGill, S.M.**, (Accepted Jan 2010) The effect of vibration and posture on the progression of intervertebral disc herniation. SPINE.
10. **McGill, S.M.**, Chaimberg, J., Frost, D., Fenwick, C. (2010) The double peak: How elite MMA fighters develop speed and strike force. Journal of Strength and Conditioning Research. 24(2): 348-357.
11. Depalma, M., **McGill, S.M.** (2010) Does sustained hip flexion and pelvic rock predict the etiology of low back pain? Phys. Med. and Rehab.
12. Brown*, S.H.M. and **McGill, S.M.** (2010) A comparison of ultrasound and electromyography measures of force and activation to examine the mechanics of abdominal wall contraction. Clin.Biomech. 25:115-123.
13. Yates*, J.P., Giangregorio, L. and **McGill, S.M.** (2010) The influence of intervertebral disc shape on the pathway of posterior/posterior lateral partial herniation. SPINE. 35 (7):734-739.
14. **McGill, S.M.**, Belore, M., Crosby, I., Russell, C. (2010) Comparison of two methods to quantify torso flexion endurance. Occup. Ergonmics. 9:55-61
15. **McGill, S.M.**, Rehabilitation of the painful back: IDEA Fitness Journal, January 2010.
16. Marshall, L., **McGill, S.M.** (2010) The role of axial torque/twist in disc herniation. Clin.Biomech. 25(1): 6-9.
17. Brown*, S., **McGill, S.M.** (2009) The intrinsic stiffness of the invivo lumbar spine in response to a variety of quick releases: Implications for reflexive requirements, J. EMG Kinesiol. 19(5):727-736

18. Fenwick, C.M.J., Brown, S.H.M., **McGill, S.M.** (2009) Comparison of different rowing exercises: Trunk muscle activation, and lumbar spine motion, load and stiffness. Journal of Strength and Conditioning Research. 23(5):1408-1417.
19. **McGill, S.M.**, Karpowicz, A., Fenwick, C. (2009) Ballistic abdominal exercises: Muscle activation patterns during a punch, baseball throw, and a torso stiffening manoeuvre. J. Strength and Cond. Res. 23(3): 898-905.
20. **McGill, S.M.**, Karpowicz, A., Fenwick, C. (2009) Exercises for the torso performed in a standing posture: Motion and motor patterns. J. Strength and Conditioning Res. 23(2): 455-464.
21. **McGill, S.M.**, There is no such thing as non-specific back pain. A position paper written for the Centre of Research Excellence: Musculoskeletal Disorders. www.cre-msd.uwaterloo.ca
22. Liebenson, C., Karpowicz, A., Brown, S., Howarth, S., **McGill, S.M.** (2009) The active straight leg raise test and lumbar spine stability. Physical Medicine and Rehabilitation. 1 (6): 530-535.
23. **McGill, S.M.** and Fenwick, C.M.J. (2009) Using a pneumatic support to correct sitting posture in airline seats. Ergonomics. 52(9):1162-1168.
24. Vera Garcia, F., Moreside, J., **McGill, S.M.** (2009) MVC techniques to normalize trunk muscle EMG in healthy women. J. Electro. Kines. 20:10-16
25. Sanchez-Zuriaga, D., Vera-Garcia, F.J., Moreside, J., **McGill, S.M.** (2009) Trunk muscle activation patterns and spine kinematics when using the body blade: Influence of different postures and blade orientations. Arch. Phys. Med. Rehab. 90 (6): 1055-1060.
26. Banerjee*, P., Brown S., Howarth, S., **McGill, S.M.** (2009) Torso and hip muscle activity and resulting spine load and stability while using the Profitter 3-D Cross Trainer. J. Appl. Biomech., 25: 73-84.
27. **McGill, S.M.** (2009) <Invited Paper> Evolving Ergonomics? Ergonomics, 52(1): 80-86.
28. **McGill, S.M.**, Karpowicz, A. (2009) Exercises for spine stabilization: Motion/Motor patterns, stability progressions and clinical technique. Arch. Phys. Med. and Rehab., 90: 118-126.
29. Scannell*, J.P., **McGill, S.M.** (2009) Disc prolapse: Evidence of reversal with repeated extension. SPINE, 34(4): 344-350.
30. Brown*, S., **McGill, S.M.** (2009) Transmission of muscularly generated force and stiffness between layers of the rat abdominal wall. SPINE, 34(2): E70-E75.

31. Brown*, S., **McGill, S.M.** (2008) An ultrasound investigation into the morphology of the human abdominal wall uncovers complex deformation patterns during contraction. Eur. J. Appl. Physiol. 104(6): 1021-1030.
32. **McGill, S.M.**, McDermott, A., Fenwick, C. (2008) Comparison of different strongman events: Trunk muscle activation and lumbar spine motion, load and stiffness, Journal of Strength and Conditioning Research. 23(4): 1148-1161
33. Grenier*, S.G., **McGill, S.M.** (2008) When exposed to challenged ventilation, those with a history of LBP increase spine stability relatively more than healthy individuals. Clin. Biomech. 23(9): 1105-1111.
34. **McGill, S.M.** (2008) <Invited Review> On the use of weightbelts. NSCA Hot Topics Series, www.nscs-lift.org ((Hot Topics).
35. **McGill, S.M.** (2008) <Invited Review> Therapeutic exercise for the painful lumbar spine: Where does one begin, Orthop. Div. Review CPA, pp. 12-18, March/April 2008.
36. Brown*, S., **McGill, S.M.** (2008) How the inherent stiffness of the in-vivo human trunk varies with changing magnitude of muscular activation. Clin. Biomech., 23(1): 15-22.
37. Bereznick*, D., Pecora, C., Ross, K. and **McGill, S.M.** (2008) The refractory period of the audible “crack” following lumbar manipulation. J. Manip. Physiol. Therapeutics., 31(3): 199-203.
38. Wang*, S., **McGill, S.M.** (2008) Links between the mechanics of ventilation and spine stability. J. App. Biomech., 24(2): 166-174.
39. Brown*, S., **McGill, S.M.** (2008) Co-activation alters the linear versus non-linear impression of the EMG-Torque relationship of trunk muscles. J. Biomech., 41: 491-497.
40. Brown*, S., Gregory, D., **McGill, S.M.** (2008) Vertebral and plate fractures as a result as a result of high rate pressure loading in the nucleus of the young porcine spine. J. Biomech., 41(1): 122.-127.
41. Moreside*, J.M., Vera-Garcia, F., **McGill, S.M.** (2008) Neuromuscular independence of abdominal wall muscles as demonstrated by middle-eastern style dancers. J. Electromyography and Kines., 18: 527-537.
42. Tampier*, C., Drake, J., Callaghan, J., **McGill, S.M.** (2007) Progressive disc herniation: An investigation of the mechanism using radiologic, histochemical and microscopic dissection techniques. SPINE, 32(25): 2869-2874.
43. **McGill, S.M.** (2007) <Invited Review> The painful lumbar spine: Thoughts for Kinesiologists. Can. Kin. J., 1(2): 5-13.

44. **McGill, S.M.** (2007) <Invited Review> The painful low back: Mechanical causes can often be identified when specifically tested for. Parkhurst Exchange 15(8): 62-66.
45. Vera-Garcia, F., Moreside, J., Flores-Parodi, B., **McGill, S.M.** (2007) Trunk muscular activity during situations requiring stabilization of the spine: A case study (in Spanish) Apunts. Educacion Fisica y Deportes, 87(1):14-26.
46. Santana, J.C., Vera-Garcia, F.J., **McGill, S.M.**, (2007) A kinetic and electromyographic comparison of standing cable press and bench press. Journal of Strength and Conditioning Research, 21(4): 1271-1279.
47. Grenier*, S.G., and **McGill, S.M.** (2007) Quantification of lumbar stability using two different abdominal activation strategies. Arch. Phys. Med. & Rehab., 88(1):54-62.
48. Moreside*, J.M., Vera-Garcia, F.J., **McGill, S.M.** (2007) Trunk muscle activation patterns, lumbar compressive forces and spine stability when using the body blade. Physical Therapy, 87(2):153-163.
49. Vera-Garcia, F., Elvira, J.L.L., Brown, S.H.M., **McGill, S.M.** (2007) Effects of abdominal stabilization manoeuvres on the control of spine motion and stability against sudden trunk loading perturbations. J. EMG and Kines., 17:556-567.
50. Brown*, S.H.M., Vera-Garcia, F.J., **McGill, S.M.** (2007) Effects of abdominal bracing on the externally pre-loaded trunk: Implications for spine stability. SPINE, 31:E387-398.
51. **McGill, S.M.** <Invited Feature Article> The painful and unstable lumbar spine: A foundation and approach for restabilization. Orthopaedic Division Reviews, March/April. Canadian Physiotherapy Association, pp. 56-59, 2006.
52. Lett*, K. and **McGill, S.M.** (2006) Pushing and pulling: Personal mechanics influence spine loads, Ergonomics, 49(9): 895-908.
53. Brown*, S.H.M., Vera-Garcia, F.J., **McGill, S.M.** (2006) Effects of abdominal muscle coactivation on the externally pre-loaded trunk: Variations in Motor Control and its effects on spine stability. SPINE, 31(13): E387-393.
54. Vera-Garcia, F.J., Brown, S.H.M., Gray, J.R., and **McGill, S.M.** (2006) Effects of different levels of torso coactivation on trunk muscular and kinematic responses to posteriorly applied sudden loads. Clinical Biomechanics, 21(5): 443-455.
55. Freeman*, S., Karpowicz, A., Gray, J., and **McGill, S.M.** (2006) Quantifying muscle patterns and spine load during various forms of the pushup. Med. Sci: Sports and Exerc., 38(3): 570-577.

56. **McGill, S.M.**, Kavcic, N., and Harvey, E. (2006) Sitting on a chair or an exercise ball: Various perspectives to guide decision making. Clin. Biomech., 21(4): 353-360.
57. Kavcic*, N., Lehman, G., and **McGill, S.M.** (2005) Effect of Modulated TENS on muscle oxygenation, muscle spasm and pain: Searching for a physiological mechanism. J.M.S. Pain, 13(2): 19-30.
58. Preuss*, R., Grenier, S., and **McGill, S.M.** (2005) Postural control of the lumbar spine in unstable sitting. Arch. Phys. Medicine, 86: 2309-2315.
59. Brown*, S.H. and **McGill, S.M.** (2005) Muscle force-stiffness characteristics influence joint stability. Clin. Biomech., 20(9): 917-922.
60. Drake*, J.D., Aultman, C.D., **McGill, S.M.**, and Callaghan, J.P. (2005) The influence of static axial torque in combined loading on intervertebral joint failure mechanics using a porcine model, Clin. Biomech., 20(10): 1038-1045.
61. Hicks, G.E., Fritz, J.M., Delitto, A., and **McGill, S.M.** (2005) Preliminary development of a clinical prediction rule for determining which patients with low back pain will respond to a stabilization exercise program. Arch. Phys. Med. and Rehab., 86(9): 1753-1762.
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D) Full Refereed Journal Papers Submitted

1. Freeman, S, Mascia, A, **McGill, S.M.** Induced hip capsule pain and pressure inhibit gluteal muscle contributions to extension and external rotation. J. Biomech. (submitted)
2. Ikeda, D, **McGill, S.M.** Understanding the eigenvalue in Euler stability analysis of the spine: Can it guide clinical intervention? J. Biomech. (submitted)
3. Ross, J.K., Gage, B., and **McGill, S.M.** Comparison of the electromyographic response to a simple impact and spinal manipulation. Can Chiro J.
4. Bereznick, D., Ross, K. and **McGill, S.M.** Location of applied forces during side posture lumbar manipulation: Where should forces be applied to produce cavitation? Spine.

5. Wang*, S., Sharratt, M., Hentschel, E. and **McGill, S.M.** Changes in breathing mechanics of COPD patients. A study of adaptive compromised motor strategies. Resp. Physiol. Of Neurobiol.
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17. Moreside*, J.M., **McGill, S.M.** comparing the elliptical trainer to walking: Lumbar angles and forces and associated muscle activity. Journal of Applied Biomechanics (submitted).

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21. Frost*, D., Fenwick, S., Callaghan, J., **McGill, S.M.** Is there a low back cost to hip centric exercise? Examining the L4/L5 joint compression and shear forces during movements used to overload the hips. J. Sport Sci.
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1. **McGill, S.M.** and Chaimberg, J. Strike like a pro. Inside MMA, Blitz Martial Arts Magazine, Australia, August 2009. Vol 1 Number 1.
2. **McGill, S.M.** Super stiffness, article for “The Magazine” by Perform Better, Issue: Spring 2006.
3. **McGill, S.M.** Building the ultimate back: Progressing from corrective exercise to high performance training, Part II, American Council on Exercise – Certified News II(2): 3-5, 2005.
4. **McGill, S.M.** Super stiffness, article for Dragon Door Com.
5. **McGill, S.M.** Ultimate back fitness and performance, Part I, American Council on Exercise, Certified News Vol. II, Number 1, pp: 10-13, December 2004.
6. Ross, J.K., Bereznick, D.E. **McGill, S.M.** The use of accelerometers to locate the source of cavitation during spinal manipulation. Bruel and Kjaer Monthly Publication, 2003.
7. **McGill, S.M.** Update on backbelts in industry: more data, same conclusion. Article in CAHR News, Summer, No. 15, 1996.
8. **McGill, S.M.** Update on the use of back belts in industry: more data - same conclusion. Lead article in Communique, Newsletter of the Human Factors Association of Canada, October, vol. 25(6), 1995.
9. Norman, R.W., and **McGill, S.M.** WATBAK - USER'S MANUAL, Version 3.0, 1989. 46 pages. Also WATBAK - Version 5.1, 1993.
10. Norman, R.W., and **McGill, S.M.** 3D WATBAK - USER'S MANUAL, Version 1.0, 35 pages.
11. **McGill, S.M.** Lifting sense and nonsense. In Ergonomics '88: Attacking workplace issues, Department of Kinesiology Continuing Education, University of Waterloo, June, 1988. 12 pages. Also updated for 1989-1996.

12. **McGill, S.M.** Issues in biomechanical modelling of the low back to determine the safe task. Lead article in *Communique*, Newsletter of the Human Factors Association of Canada, February, 1987.
13. Norman, R.W., and **McGill, S.M.** Back to back problems in industry. Article in *CAHR News* (3), July 1987.
14. **McGill, S.M.** Low Back Pain: A Biomechanical Approach. Teaching Resources and Continuing Education, University of Waterloo, May, 1987. 41 pages.

Presentations

A. Invited Presentations to Scholarly Groups

1. **McGill, S.M.** <Keynote Lecture> How do great athletes optimize their backs? National Strength and Conditioning Association, Las Vegas, July 6-10, 2011.
2. **McGill, S.M.** <Keynote Lecture> Producing elite back performance, United Kingdom Strength and Conditioning Association. Stirling, Scotland, June 17-19, 2011.
3. **McGill, S.M.** <Keynote Lecture> What I have learned from the great athletes IUTAM Symposium on Human Body Dynamics: From multi body systems to biomechanics, Waterloo, June 5-8, 2011
4. **McGill, S.M.** Links between spine radiological findings and specific injury mechanisms, and pain patterns. Neuroradiology Group, London University Hospital, November 25, 2010.
5. **McGill, S.M.** <Keynote Lecture> Stability or stiffness: Linking the lab and the clinic, International Symposium on Musculoskeletal pain and motor control: Assessment and management, Naples, Florida, The Central Institute for Human Performance, January 8-10, 2010.
6. **McGill, S.M.** The disconnect between the lab based science and clinical practice, State of the art Symposium on low back pain and Motor Control, Toronto, August 28, Montreal August 29, 2010
7. **McGill, S.M.** Spine Stability- Let's clear the air. Canadian Physiotherapy Association, St. John's, July 23, 2010
8. **McGill, S.M.** Challenges of longitudinal trials: wish I knew then what I know now. Centre for Research Expertise in Musculoskeletal Disorders, Queen's University. Kingston, Ontario, June 9, 2010

9. **McGill, S.M.**, There is no such thing as non-specific back pain, My Aching Back- Strategies for the family practitioner in the care of back pain. Trillium Spine Institute. Port Credit, Ontario, April 17, 2010
10. **McGill, S.M.** <Keynote Lecture>Thoughts on the links between ventilation and spine function, International Symposium on Musculoskeletal pain and motor control: Assessment and management, Naples, Florida, The Central Institute for Human Performance, January 8-10, 2010.
11. **McGill, S.M.** There is no such thing as non-specific back pain. Philadelphia Spine Research Society, Dec , 2009.
12. **McGill, S.M.** The disconnect between back pain science and clinical practice, State of the art Spine Symposium of Research Leaders, Brisbane Australia, Nov 13-15, 2009.
13. Frost, D.M., Beach, T.A.C., **McGill, S.M.**, Callaghan, J.P. Injury prevention in the occupational athlete. John P. Redmond Symposium-Occupational Health and hazards in the fire service. Los Angeles, Nov. 8-12, 2009
14. **McGill, S.M.** Therapeutic and corrective exercise for the painful back. Am. Assoc. Neuromuscular & Electrodiagnostic Medicine 56th Annual Meeting, San Diego, Oct 7-10, 2009.
15. **McGill, S.M.** Corrective Exercise Workshop. Am. Assoc. Neuromuscular & Electrodiagnostic Medicine 56th Annual Meeting, San Diego, Oct 7-10, 2009.
16. **McGill, S.M.** Building the ultimate back: from rehabilitation to high performance. Distinguished Lecture Series in Sports Medicine, Northeastern University, Boston, June 5-6, 2009
17. **McGill, S.M.** Back and spine health for the dental team. 153rd Annual Meeting of the North Carolina Dental Society, May 14-17, 2009
18. **McGill, S.M.** <Keynote Lecture> Reducing back pain: Myths, Truths and Therapeutic Exercise, 4th Annual Control Virginia Spine Symposium, Virginia Commonwealth University Medical Centre, Richmond, Virginia, April 17, 2009.
19. **McGill, S.M.** <Keynote Lecture> Lumbar mobilization vs stabilization: Which patient, why and how. British Chiropractic Association Conference, Bournemouth, England, April 4, 2009.
20. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance. Anglo European Chiropractic College Continuing Professional Development Course, 3.5 hours, Bournemouth, England, April 3, 2009.

21. **McGill, S.M.** <Keynote Lecture> Building the ultimate back: From rehabilitation to high performance. Canadian Society for Exercise Physiology: Banff, October 16-18, 2008.
22. **McGill, S.M.** Low back disorders: Assessment and design of appropriate corrective exercise. Int. Soc Clin. Rehab. Specialists, National University of Health Sciences, Chicago, Sept 6-7, 2008.
23. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance, 1 day course, British Association of Sport and Exercise Medicine, Kilmarnock, Scotland, July 19, 2008.
24. **McGill, S.M.** The ultimate back: From rehabilitation to high performance, 1 day course, Trinity College, Centre for Health Sciences, Dublin, Ireland, July 10, 2008.
25. **McGill, S.M.** Rehabilitating low back disorders: Considering corrupted motor patterns. Int. Soc. Electrophysiological Kinesiology, Niagara Falls, June 19, 2008.
26. **McGill, S.M.** Cutting edge spinal stabilization, 4 hour course, Chiropractic Orthopaedists of North America, Palm Springs, USA, June 7, 2008.
27. **McGill, S.M.** Building the ultimate back: from rehabilitation to high performance, 1 day course, Canadian Physiotherapy Association Annual Meeting, Ottawa, May 28, 2008.
28. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance, Medical Commission, Spanish Olympic Committee, Madrid, September 29, 2007.
29. **McGill, S.M.** Inestabilidad lumbopelvica, Espalda, mitos y realidades, Centro de Estudios, Investigacion y Medicina del Deporte, Pamplona, Spain, September 28, 2007.
30. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance, Ontario Kinesiology Association Annual Conference, Waterloo, October 19-21, 2007.
31. **McGill, S.M.** <Keynote Lecture> Low back disorders: Clinical decision making, Quebec Orthopaedic Division – Canadian Physiotherapy Association, November 10, 2007.
32. **McGill, S.M.** The ultimate back: From rehabilitation to high performance, 1 day course, Quebec Orthopaedic Division – Canadian Physiotherapy Association, November 11, 2007.
33. **McGill, S.M.** Low back disorders: Making better clinical decisions, 1 day course for the New Zealand Manipulative Physiotherapy Association, Rotorua, New Zealand, August 27, 2007.

34. **McGill, S.M.** <Keynote Address> Appropriate back exercise: Myths and truths. New Zealand Manipulative Physiotherapy Association, Rotorua, New Zealand, August 24-26, 2007.
35. **McGill, S.M.** The seated worker, CRE-MSD Researcher Day, U. of Waterloo, June 28, 2007.
36. **McGill, S.M.** <Keynote: Royal College of Physicians and Surgeons of Canada Speaker> Back Pain: Biomechanical perspectives on etiology and treatment. Can. Assoc. of Physical Medicine and Rehabilitation, London, June 13-16, 2007.
37. **McGill, S.M.** Beyond Ergonomics: Evolving to achieve fewer back injuries in the future. Human Factors and Ergonomics Society, 50th Annual Meeting, San Francisco, October 16-22, 2006.
38. **McGill, S.M.** Choosing safer work methods to reduce back injury, Occupational Biomechanics Symposium: Celebrating 35 Years of Progress and Looking Toward the Future, University of Michigan, Ann Arbor, November 16-17, 2006.
39. **McGill, S.M.** <Keynote Address> Low back disorders: Dispelling the myths, Joint meeting of the Society of Orthopaedic Medicine, and British Institute of Musculoskeletal Medicine, London, England, December 2, 2006.
40. Vera-Garcia, F.J., Flynn, J.M., **McGill, S.M.** Activación independiente de diversas porciones de los músculos rectus y obliquus externus abdominis en Bailarinas del Vientre. Proceeding of the IVth Congress of the Spanish Association of Sport Sciences. La Coruña, Spain, October 24-27, 2006.
41. Vera-Garcia, F.J., Flynn, J.M., **McGill, S.M.** Activación muscular, estabilidad raquídea y compresión lumbar durante la utilización de un instrumento de acondicionamiento muscular: El Body-Blade. Proceeding of the IVth Congress of the Spanish Association of Sport Sciences. La Coruna, Spain, October 24-27, 2006.
42. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance, 14 hour course, British Association of Sport and Exercise Medicine, Kilmarnock, Scotland, May 20-21, 2006.
43. **McGill, S.M.** <Keynote Lecture> Restabilization of the unstable lumbar spine: From rehabilitation to ultimate performance, clinical symposium on low back pain. University of Washington, School of Medicine, Seattle, April 1-2, 2006.
44. **McGill, S.M.** Stabilization exercise progressions. 7 hour course, Orthopaedic Division, Canadian Physiotherapy Association, London, October 31, 2005.
45. **McGill, S.M.** <Keynote Lecture> Designing spine stabilization exercise. Orthopaedic Division, Canadian Physiotherapy Association, London, October 28-30, 2005.

46. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Evaluating the mechanistic assumptions of spinal manipulation. Invited lecture 11th Annual Conference on Advancement in Chiropractic October 15-16, 2005.
47. Ross, J.K., Bereznick, D.E., **McGill, S.M.** 1. Evaluating the mechanistic assumptions of spinal manipulation. 2. Core stability exercises: An evidence-based approach. 3. The reflex responses associated with spinal manipulation. Are they part of the mechanism or simply a consequence of manipulation. Invited lectures at the Annual Swiss Chiropractors Continuing Education Conference, September 10-11, 2005, Montreux, Switzerland.
48. **McGill, S.M.** Spine stability: From rehabilitation to ultimate performance, American College of Sports Medicine, Nashville, June 1-4, 2005.
49. **McGill, S.M.** <**R. Tait McKenzie Award Lecture**> Low back exercise – dispelling the myths, AAAPHERD, Chicago, April 12, 2005.
50. **McGill, S.M.** <**Keynote Lecture**> Low back exercise: From rehabilitation to ultimate performance, Northland Chapter of the American College of Sports Medicine, St. Cloud, Minnesota, April 1, 2005.
51. Ross, J.K., Bereznick, D.E., **McGill, S.M.** “How Specific are Chiropractic Adjustments?” Invited lecture at the Association of Chiropractic Colleges/Research Agenda Conference in Las Vegas, March 17, 2005.
52. Ross, J.K., Bereznick, D.E., **McGill, S.M.** The accuracy and specificity of lumbar and thoracic spinal manipulation. Lecture for The Association of Chiropractic Colleges/Research Agenda Conference in Las Vegas, March 12, 2004.
53. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Evaluating the mechanistic assumptions of spinal manipulation. Invited lecture at the American Chiropractic Association Council on Rehabilitation February 27, 2005.
54. **McGill, S.M.** Ultimate back fitness: An evidence based approach to back pain management through rehabilitation. 8 hour course to the Society of Musculoskeletal Manual Practitioners, Regina, Feb. 9, 2005.
55. **McGill, S.M.** <**Keynote Lecture**> The functional anatomy of lumbar stability – what are the critical components? In the proceedings of the 5th Interdisciplinary World Congress on Lumbopelvic Pain, Melbourne, Nov. 10-13, 2004.
56. **McGill, S.M.** Appropriate back exercise: From rehabilitation to high performance, In the proceedings of the 5th Interdisciplinary World Congress on Lumbopelvic Pain, Melbourne, Nov. 10-13, 2004.

57. **McGill, S.M. <Career Award Lecture>** Building the ultimate back: A Journey in progress. Canadian Society for Biomechanics, Halifax, NS, August 4-8, 2004.
58. **McGill, S.M. <Keynote Lecture>** Back fitness myths and truths. National Strength and Conditioning Association, Minneapolis, July 14-17, 2004.
59. **McGill, S.M., and Gray, J.R.** Ultimate back fitness and performance. National Strength and Conditioning Association, Minneapolis, July 14-17, 2004.
60. **McGill, S.M. <Keynote Lecture>** Back rehabilitation to performance enhancement – Background for exercise design and the need for attention to detail. National Academy of Sports Medicine, Functional Training: From reactivation to performance enhancement, Calabasas, California, April 2-4, 2004.
61. **McGill, S.M.** Low back disorders: Improving prevention strategies and rehabilitation approaches. Belfast, Ireland, October 8, 2003.
62. **McGill, S.M. <Keynote Lecture>** Low back pain: What happens and why? British Association for Sports and Exercise Medicine, Belfast, Ireland, October 7, 2003.
63. **McGill, S.M.** A reasoned approach to rehabilitation, British Association for Sports and Ex. Med., Belfast, Ireland, October 7, 2003.
64. **McGill, S.M. <Keynote Clinic Workshop>** Low back rehabilitation, British Association for Sports and Exercise Medicine, Belfast, Ireland, October 7, 2003.
65. **McGill, S.M.** Low back disorders: Improving prevention strategies and rehabilitation approaches. 8 Hour course for the British Association for Sports and Exercise Medicine, Glasgow, Scotland, October 5, 2003.
66. **McGill, S.M.** Low back disorders: Improving prevention strategies and rehabilitation approaches. 12 Courses for The Canadian Chiropractic Association Annual Meeting, Maritimes, Charlottetown, PEI, September 13-14, 2003.
67. **McGill, S.M. <Keynote Lecture>** Using biomechanical evidence to prevent and rehabilitate back disorders, International Society for Biomechanics, XIXth Congress, Dunedin, New Zealand, July 6-11, 2003.
68. **McGill, S.M.** Improving strategies and rehabilitation approaches for low back disorders, American Kinesiotherapy Association Annual Meeting, 8 hour course, San Diego, July 26, 2003.
69. **McGill, S.M.** The pathways of low back disorders and evidence based prevention. State of Art Research Symposium: Perspectives on musculoskeletal disorders causation and control. Ohio State University, Columbus, USA, May 21-22, 2003.

70. **McGill, S.M.** The scientific basis of low back stability: Minimal pain, maximal performance, 2 hours, American College of Sports Medicine Summit, Reno, USA, April 9-12, 2003.
71. **McGill, S.M.** <**Keynote Lecture**> Spine Stability: Myths and Realities, The Calgary Pain Conference: Trends and Treatments, Calgary, December 6, 2002.
72. **McGill, S.M.** Progressive low back stabilization exercise, The Calgary Pain Conference, Calgary, December 6, 2002.
73. **McGill, S.M.** Evidence based prevention of low back disorders, Ministry of Transportation Safety Conference, Toronto, November 14, 2002.
74. **McGill, S.M.** Clinical Workshop: Evaluation and decision making for low back disorders, British Association for Sports and Exercise Medicine. Windermere England, October 11, 2002.
75. **McGill, S.M.** <**Keynote Lecture**> Evidence based low back exercise, British Association for Sports and Exercise Medicine. Windermere England, October 10, 2002.
76. **McGill, S.M.** Low back stabilization - myths, realities and an evidence based program, Ontario Association of Kinesiologists, London, Ontario, September 29, 2002.
77. **McGill, S.M.,** Grenier. S., Kavcic, N., Cholewicki, J., Howarth, S. Coordination of muscle activation to assure stability of the lumbar spine, IV World Congress on Biomechanics, Calgary, August 4-9, 2002.
78. **McGill, S.M.** Cumulative load - toward the metric for optimal occupational health-CSB symposium comments and conclusions, IV World Congress on Biomechanics, Calgary, August 4-9, 2002.
79. **McGill, S.M.** <**Inaugural Speech**> Evidence based practice for low back therapy, Opening the new Master's Program in Physical Therapy, Technical University of Lisbon, Portugal, January 21, 2002.
80. **McGill, S.M.** Scientific basis for low back rehabilitation exercises, 3rd Annual International Weight Training Injury Symposium, Toronto, Canada, November 16-18, 2001.
81. **McGill, S.M.** <**Keynote Address**> Achieving Spine Stability: bending engineering and clinical approaches, 4th Interdisciplinary World Congress on Low Back and Pelvic Pain, Montreal, November 8-10, 2001.
82. **McGill, S.M.** Myths and realities: preventing and rehabilitating low back troubles, Occupation Hygiene Association Symposium, Black Creek Pioneer Village, Ontario, October 25, 2001.

83. **McGill, S.M.** Low back injury: Improving prevention strategies and rehabilitation approaches, 8 hour course, Schwann Medical Centre, University of Regina, Regina, Saskatchewan, October 19, 2001.
84. **McGill, S.M.** Reducing low back disorders, 8 hour course, Rural Community Therapy Association, Saskatoon, Saskatchewan, October 18, 2001
85. **McGill, S.M.** <**Guest Lecturer**> Myths and realities for lumbar spine stabilization, 8th Annual Academic Day for Ontario Physiatrists, Toronto, October 12, 2001.
86. **McGill, S.M.** What really causes low back injury - A mechanical basis, 19th Conference - Ontario Inter-Urban Pain Association, Freeport Health Centre, Kitchener, Ontario, October 12, 2001.
87. **McGill, S.M.** <**Steven Rose Lecture**> Low back stability, Washington University, St. Louis, September 28, 2001.
88. **McGill, S.M.** <**President's Lecture**> Low back exercise: the scientific foundation for building the best program. American College of Sports Medicine, Baltimore, May 30-June 2, 2001.
89. **McGill, S.M.** Myths and realities of lumbar spine stabilization. 13th Annual Orthopaedic symposium, Canadian Physical Therapy Association, Ottawa, May 13, 2001.
90. **McGill, S.M.** < **Keynote Lecture** > Preventing low back troubles in athletes. Rehabilitation Sports Medicine XIII - The role of manual medicine and exercise in sports and industry. December 7-9, Chicago, 2000.
91. **McGill, S.M.** < **Keynote Lecture** > Progressive spine stabilization training for elite sports specific function. Rehabilitation Sports Medicine XIII - The role of manual medicine and exercise in sports and industry. December 7-9, Chicago, 2000.
92. **McGill, S.M.** Physical exercise in low back pain. Inter Urban Pain Association of Ontario, London, October 27, 2000.
93. **McGill, S.M.** <**Keynote Lecture**> Regional spine biomechanics - where to from here. Canadian Consortium of Chiropractic Research, Toronto, October 19, 2000.
94. Norman, R.W., Wells, R., Neumann, P., **McGill, S.M.**, and Frazer, M. Predictions of low back pain reporting in industry from estimates of cumulative loading on the spine. International Ergonomics Association, San Diego, August, 2000.
95. **McGill, S.M.** < **Keynote Lecture** > Low back injury biomechanics: Is there a "proper" way to lift, sit and work. Irish Ergonomics Society, Dublin, June 13, 2000.

96. Bereznick, D., Ross, K., and **McGill, S.M.** Is the thoracic skin-fascial interface frictionless: Implications for live of drive, Research Day, Canadian Memorial Chiropractic College, Toronto, February 2, 2000.
97. **McGill, S.M.** Towards reducing low back injury through better prevention and rehabilitation - invited as a grant awardee. Connecting occupational health and safety research to the workplace: Focus on Priorities, Research Advisory Council - Workplace Safety Insurance Board, Toronto, November 16, 1999.
98. **McGill, S.M.** <Featured Speaker> The science of low back exercise. 13th World Congress of the International Federation of Physical Medicine and Rehabilitation, and American Academy of Physical Medicine and Rehabilitation, Washington, DC, November 11-14, 1999.
99. **McGill, S.M.** <Invited Topic Lecture> Low back exercise: the scientific foundation for building the best program. American College of Sports Medicine (New England Chapter), Providence, Rhode Island, October 27-29, 1999.
100. **McGill, S.M.** <Keynote Lecture> Exercise - State of the Science, Functional Approach to Musculoskeletal Medicine, Buffalo, New York, October 15-17, 1999.
101. **McGill, S.M.** Challenging biomechanical spine models to enhance healthy backs. International Society for Biomechanics XVIIth Congress, Calgary, Canada, August 8-13, 1999, p. 37.
102. **McGill, S.M.** New perspectives in low back injury prevention and rehabilitation. University of Pittsburgh, Physical Therapy Education Series, March 13, 1999.
103. **McGill, S.M.** Prescribing exercise for the low back: Issues, evidence and a program. Perspectives in Exercise Testing and Prescription Conference, Banff, Alberta, March 5-7, 1999.
104. **McGill, S.M.**, Lehman, G., Vernon, H, Bereznick, D., and Ross, K. Keynote Lecture Chiropractic research: musings from an outsider, with the help of his friends. 1st Scientific Conference of the Canadian Chiropractic Association, Calgary, November 14-15, 1998.
105. **McGill, S.M.** Techniques for low back stabilization exercises. IVth Scandinavian Congress on Medicine and Science in Sports. Lahti, Finland, November 5-8, 1998.
106. **McGill, S.M.** Keynote Lecture Low back injury: recent developments in prevention and rehabilitation. IVth Scandinavian Congress on Medicine and Science in Sports. Lahti, Finland, November 5-8, 1998.

107. **McGill, S.M. Wood Distinguished Lectureship in Joint Injury Research** Back Pain: Causes, Prevention and Treatment. Department of Orthopaedics, University of Calgary, October 29, 1998.
108. **McGill, S.M.** Low back injury: Laying the foundation for prevention and rehabilitation. Biomedical Engineering Seminar, Dept. of Orthopaedics, University of Calgary, October 18, 1998.
109. **McGill, S.M. Keynote Address** Designing work to reduce the risk of low back injury. Human Factors Association of Canada 30th Annual Conference, Mississauga, Ontario, October 19-22, 1998.
110. **McGill, S.M.** Exercise: Scientifically justifiable low back exercises incorporating functional anatomy, injury mechanics, intra-muscular EMG and spine loading, The Lumbar Spine “State of the art in effective assessment and treatment approaches”, Visiting Scholar’s Program, Los Angeles College of Chiropractic, Los Angeles, October 9-11, 1998.
111. **McGill, S.M.** Research Symposium: Low Back Exercise - Issues and Evidence. American Physical Therapy Association, Orlando, June 5-8, 1998.
112. **McGill, S.M. Keynote Lecture** Scientifically justifiable low back exercises. Annual Research Day, Canadian Memorial Chiropractic College, Toronto, February 18, 1998.
113. **McGill, S.M. EJ Wells Bequest Lecture (An endowed public lecture)**. Low back injury: Causes, prevention and conservative treatment. University of Queensland, Australia, November 27, 1997.
114. **McGill, S.M. Keynote Address** Occupational low back injury: Using biomechanics to reduce the risk. Ergonomics Society of Australia, Gold Coast, November 25, 1997.
115. **McGill, S.M.** Linking biomechanics with a better clinical practice. Advancements in Chiropractic “Spinal Pain”, Toronto, October 25, 1997.
116. **McGill, S.M. Keynote Address** Low back injury: The contribution of biomechanics for prevention and rehabilitation. American Society of Biomechanics, 21st Annual Meeting, Clemson University, South Carolina, September 24-27, 1997.
117. **McGill, S.M.** Low back biomechanics. 3 hour Conference Course for the International Society for Biomechanics, Tokyo, Japan, 24 August, 1997.
118. **McGill, S.M.** Using biomechanical models to reduce occupationally related low back injury. International Ergonomics Association, Tampere, Finland, June 29-July 4, 1997.

119. **McGill, S.M. Keynote Address** Reducing the risk of low back injury, at “What’s New in Workplace Health and Safety”, University of Alberta Hospitals - Capital Health, Edmonton, 28 November, 1996.
120. **McGill, S.M.** Treat thyself: A guide for self reduction of low back pain, at “What’s New in Workplace Health and Safety”, University of Alberta Hospitals - Capital Health, Edmonton, 28 November, 1996.
121. **McGill, S.M.** Back Belts - Should we be prescribing them to workers? Low Back Pain Prevention, Control and Treatment Symposium, St. Louis, March 11-13, 1996.
122. **McGill, S.M.** Searching for the safe biomechanical envelope for maintaining health tissue, Biomechanics Symposium, International Society for Study of the Lumbar Spine, Burlington, Vermont, June 24-29, 1996.
123. **McGill, S.M.** Occupational low back injury: Using biomechanics to reduce the risk, in the panel discussion on: Biomechanics in the Workplace - chair S. McGill. Canadian Society for Biomechanics - IX Biennial Conference, Simon Fraser University, Vancouver, August 21-24, 1996.
124. **McGill, S.M.** Low back injury from sitting at work - as part of roundtable entitled “The Seated Worker” - chair S. McGill. Human Factors Association of Canada, 28th Annual Conference, Kitchener, 23-26 October, 1996.
125. **McGill, S.M. Keynote Address:** Role of workers and management in successful ergonomics, Human Factors Association of Canada - Effective application of ergonomics in the workplace, Vancouver, June 9, 1995.
126. **McGill, S.M. Keynote Address:** Biomechanics of low back injury, International Society for Biomechanics, Jyväskylä, Finland, July 2-8, 1995.
127. **McGill, S.M. Keynote Address:** Biomechanics of low back injury. Australian conference of Science and Medicine in Sport, Hobart, Australia, Oct. 17-20, 1995.
128. **McGill, S.M. Keynote Workshop:** Reducing the risk of low back injury, Australian conference of Science and Medicine in Sport, Hobart, Australia, Oct. 17-20, 1995.
129. **McGill, S.M. Keynote Workshop:** Choosing the optimal low back rehabilitation exercise based on indwelling and surface EMG, Australian conference of Science and Medicine in Sport, Hobart, Australia, Oct. 17-20, 1995.
130. **McGill, S.M. Keynote Lecture:** What actually causes low back injury? at “A practical approach to the management of mechanical low back pain”, Musculoskeletal health council (University of Ottawa), Ottawa, Oct 27, 1995.

131. **McGill, S.M.** Keynote Lecture: Reducing low back injury: Strategies for the Kinesiologist. 14th Annual Conference, Ontario Kinesiology Association, Burlington, Ontario, Nov. 3-4, 1995.
132. **McGill, S.M.** Biomechanics of the Lumbar Spine: Toward reduction of the risk of injury. Los Angeles Chiropractic College 7th Interdisciplinary Symposium. "New Insights into the Clinical Application of Biomechanics in Spinal Manipulation". March 5-6, Los Angeles, 1994.
133. **McGill, S.M.**, Norman, R.W., and Cholewicki, J. Using EMG to predict tissue loads: An example using the low back, 12th Triennial Congress of the International Ergonomics Association, Toronto, August 15-19, 1994.
134. **McGill, S.M.** Back Belts: Should we be prescribing them? The Inter-Urban Pain Conference, Kitchener, October 14, 1994.
135. **McGill, S.M.** Keynote Address: Reducing the risk of low back injury using biomechanics. Ontario Physiotherapy Association '93 Convention. Ottawa, March 8, 1993.
136. **McGill, S.M.** Dynamic modelling of the low back, State-of-the-art symposium on low back injury. Ohio State University, Columbus, Ohio, April 14-15, 1993.
137. **McGill, S.M.** Biomechanics of back belts, State-of-the-art symposium on low back injury. Ohio State University, Columbus, Ohio, April 14-15, 1993.
138. **McGill, S.M.** 1½ hr workshop: Biomechanics of the low back: Recent research on form, function and injury mechanisms. 1993 International Conference on Spinal Manipulation. Montreal, Quebec, April 29-May 1, 1993.
139. Norman, R.W., Wells, R.P., and **McGill, S.M.** 3 hr. workshop: Biomechanical assessment of worksite tasks. Pre-congress course, XIVth International Society for Biomechanics, Paris, France, July 3, 1993.
140. **McGill, S.M.** Modelling of the Low Back: Reducing the Risk of Injury. Delivered at Biomechanics of Spinal System, International Centre for Biocybernetics, Polish Academy of Sciences, Warsaw, Poland, November 15-20, 1993.
141. **McGill, S.M.** Keynote Address: The role of biomechanics in the prevention of work related low back disorders. Nordic Conference on Occupational Health, Nyborg, Denmark, September 1991.
142. **McGill, S.M.** Using biomechanics to reduce low back injury. Fourth International Conference of the Physical Medicine Research Foundation, Toronto, September 26-29, 1991.

143. **McGill, S.M.** Biomechanics of the Spine, Annual Meeting of the Canadian Association of Sports Science (CASS), Kingston, October 24-26, 1991.
144. **McGill, S.M.** Recent advances in lumbar mechanics, delivered at the Symposium: "The Scientific Basis of Back Injury Prevention, Queen's University, Kingston, October 26, 1991.
145. **McGill, S.M.** Low Back Mechanics: Recent advances and implications for therapists, 3 Hr. workshop, Florida Physical Therapy Association, Tampa, March 10, 1990.
146. **McGill, S.M.** Clinical Implications of Loads on Low Back Tissues, First North American Orthopaedic Symposium, Ottawa, May, 1990.
147. Norman, R.W., and **McGill, S.M.** An EMG driven low back model, First World Congress on Biomechanics. San Diego, August, 1990.
148. McGill, S.M. Recent Advances in Lumbar Mechanics with Relevance to Chiropractic. 9th International Conference on Back Pain and Manipulative Sciences. Toronto, October, 1990.
149. **McGill, S.M.** **Keynote Address**: Recent Advances in Spinal Mechanics: Clinical Applications, Wisconsin Physical Therapy Association Conference. Madison, Wisconsin, October, 1989.
150. **McGill, S.M.** **Keynote Address** - Biomechanics of the Spine. Biannual Conference of the Canadian Society of Biomechanics, Ottawa, Canada, August, 1988.
151. **McGill, S.M.** Anatomy and Biomechanics of the Lumbar Spine. Symposium: Managing Low Back Pain, St. Joseph's Hospital, London, Canada, November, 1988.
152. **McGill, S.M.** Mathematical Modelling of the Lumbar Spine, 6th Annual Conference of the Ontario Association of Applied Kinesiology, Toronto, Canada, November, 1987.
153. **McGill, S.M.**, and Norman, R.W. **Volvo Award Lecture** - Partitioning of the L4/L5 Dynamic Moment into Disc, Ligamentous and Muscular Forces During Lifting. International Society for Study of the Lumbar Spine, Dallas, Texas, June, 1986.
154. **McGill, S.M.** **Keynote Presentation** - A Biomechanical Theory of Sacroiliac Pain. 5th International Low Back Pain and Manipulative Sciences Conference, Toronto, Canada, August, 1986.

B. Invited Presentations to University Groups

1. **McGill, S.M.** Training the back: Myths and truths, Department of Athletics, University of Waterloo, March 22, 2011

2. **McGill, S.M.** Enhancing Chiropractic with spine biomechanics. Canadian Memorial Chiropractic College, Toronto May 13, 2010.
3. **McGill, S.M.** Advanced training methods to enhance performance of the back. Anglo European Chiropractic College, Bournemouth, England march 26, 2010.
4. **McGill, S.M.** Back pain-Myths and truths. Canadian Federation of University Women, Waterloo, January 19, 2010
5. **McGill, S.M.** Optimal performance from the back. Southern California University for Health Sciences, Los Angeles, October 6, 2009.
6. **McGill, S.M.** What I have learned from the great athletes about back performance, Canadian Memorial Chiropractic College, Toronto, March 18, 2009
7. **McGill, S.M.** The ultimate back, All School Assembly, Palmer College of Chiropractic, Davenport, Iowa, December 7, 2007.
8. **McGill, S.M.** Building the ultimate back, Queen's University, Kingston, October 31, 2007.
9. **McGill, S.M.** Therapeutic exercise for the low back, Otago University, Dunedin, New Zealand, August 18, 2007.
10. **McGill, S.M.** Designing low back therapeutic exercise, Canadian Memorial Chiropractic College, Toronto, April 18, 2006.
11. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Invited lecture at CMCC New Building Opening Ceremonies, September 18, 2005. Evaluating the mechanistic assumptions of spinal manipulation.
12. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Invited lecture MacQuarie University, Sydney, Australia, August 8, 2005. Evaluating the mechanistic assumptions of spinal manipulation.
13. **McGill, S.M.** Recent developments in spine function and manual approaches for rehabilitation. Logan University of Health Sciences, St. Louis, May 20, 2005.
14. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Lecture at Western States Chiropractic College, Portland Oregon Guest Lecturer Invited by Dr. David Peterson DC March 15, 2005.
15. Ross, J.K., Bereznick, D.E., **McGill, S.M.** Invited lecture at the University of Toronto Clinical Rounds on Low Back injury, February 4, 2005. Evaluating the mechanistic assumptions of spinal manipulation.

16. **McGill, S.M.** Designing low back exercise progressions: From rehabilitation to performance training. McMaster University, Medical School, September 29, 2004.
17. **McGill, S.M.** Designing ultimate exercise for the back, University of Waterloo, Dept. of Athletics, March 8, 2004.
18. **McGill, S.M.** Evidenced based low back disorder prevention and rehabilitation. Canadian Memorial Chiropractic College, Toronto, April 15, 2003.
19. **McGill, S.M.** <**Richard W. Snow Visiting Lecturship**> Evidence based rehabilitation for the low back, Ohio State University College of Medicine, Department of Physical Medicine and Rehabilitation, November 8, 2002.
20. **McGill, S.M.** <**President's Circle Lecture for 2002**> Myths and realities in preventing and rehabilitating low back troubles, University of Waterloo, March 25, 2002.
21. **McGill, S.M.** Myths and realities – preventing and rehabilitating low back troubles, Occupational Health, Hygiene and Toxicology Rounds, McMaster University Medical School, Hamilton, February 13, 2002.
22. **McGill, S.M.** <**Inaugural Professor**> Evidence Based Practice in Low Back Therapy - series of 5 lectures, 15 hrs. total, new Master's Program in Physical Therapy, Technical University of Lisbon, Portugal, January 21-25, 2002.
23. **McGill, S.M.** Invited as "Visiting Scholar", Southern California University of Health Sciences for 2 lectures, March 5, 2001:
 - Functional aspects of low back anatomy
 - The foundation for low back stabilization exercise
24. **McGill, S.M.** What really causes low back injury: The scientific foundation for evidence based rehabilitation, RIC - Northwestern University Medical School, Chicago, November 3, 2000.
25. **McGill, S.M.** Building a scientific foundation for better low back injury prevention and rehabilitation. Dept. of Physical Therapy, SUNY-Buffalo, Buffalo, New York, April 13, 1999.
26. **McGill, S.M.** Biomechanics and Human Performance in the workplace. Faculty of Engineering Science, University of Western Ontario, M.Eng. Program., London, May 9, 1996.
27. **McGill, S.M.** Biomechanics and Motor control issues in low back injury. University du Quebec a Montreal, Montreal, May 16, 1996.

28. **McGill, S.M.** Invited as a "Visiting Scholar", Los Angeles College of Chiropractic, June 10, 1996 for 3 lectures:
 - What causes low back injury?
 - Scientifically based back exercises
 - A commentary on Chiropractic - from the outside
29. **McGill, S.M.** Integrating recent developments in lumbar mechanics - the challenge for rehabilitation specialists. Alberta Heritage Foundation for Medical Research, University of Alberta, September 12, 1996.
30. **McGill, S.M.** What really causes low-back injury? Alberta Heritage Foundation for Medical Research, University of Alberta, September 13, 1996.
31. **McGill, S.M.** Recent advances in low back injury biomechanics: Implications for rehabilitation and prevention. Neuromuscular Research Center, Boston University, Boston, October 11, 1996.
32. **McGill, S.M.** Biomechanics of Low Back Injury, University of Michigan, Ann Arbor, April 14, 1995.
33. **McGill, S.M.** The physics of low back injury, Department of Physics, University of Waterloo, Oct. 10, 1995.
34. **McGill, S.M.** The lumbar spine: Normal and Injury Mechanics, School of Medicine and Department of Physical Therapy, University of Pittsburgh, Pittsburgh, Nov. 18, 1995.
35. **McGill, S.M.** Invited as a "Visiting Scholar" Los Angeles College of Chiropractic, March 4-8, Los Angeles, 1994 for four lectures:
 - Abdominal Belts - Assets, Liabilities and a formula for prescription
 - Safe Lifting Techniques - Recent Developments
 - Lumbar Tissue Failure Mechanics: Injuries to discs, vertebral bodies and ligaments
 - Lumbar Mechanics - Muscle and ligament interplay and tissue loading
36. **McGill, S.M.** Integration of computer methods in Reducing Low Back Injury. Institute of Applied Mathematics, University of Bern, March 19, Bern, 1994.
37. **McGill, S.M.** Quantitative Electromyography: Modelling tissue loading to assess musculoskeletal function. Physiology Institute, University of Bern, March 23, Bern, 1994.
38. **McGill, S.M.** Using Electromyographic signals to assess lumbar function. Anatomical Institute - Faculty of Medicine, University of Bern, April 20, Bern, 1994.
39. **McGill, S.M.** Spine tolerance and modelling, Ohio State University, Columbus, Ohio, October 7, 1994.

40. **McGill, S.M.** Workplace evaluation: Recent biomechanical evidence to reduce the risk of low back injury. Rehabilitation Engineering Centre, University of Vermont, Burlington, Vermont, December 14, 1994.
41. **McGill, S.M.** Biomechanical behaviour of the spine and its musculature: A challenge to equilibrium and stability. Department of Orthopaedics, University of Vermont, Burlington, Vermont, December 15, 1994.
42. **McGill, S.M.** Modelling of the low back: Critical components to reduce the risk of injury. University of Bern-Institute for Information and Applied Mathematics. Bern, Switzerland, July 12, 1993.
43. **McGill, S.M.** Clinical considerations of sophisticated low back biomechanical models, Department of Orthopaedic Surgery, McGill University, December 14, Montreal, 1993.
44. **McGill, S.M.** Instrumentation in Biomechanics, Danish National Institute for Occupational Health, Copenhagen, September 12, 1991.
45. **McGill, S.M.** Modelling in Biomechanics - Assets and Liabilities, Danish National Institute of Occupational Health, Copenhagen. September 14, 1991.
46. **McGill, S.M.** Using biomechanics to reduce work-related low back injury, August Krogh Institute, University of Copenhagen, Copenhagen, September 17, 1991.
47. **McGill, S.M.** Intra-abdominal pressure and its relationship to the lumbar spine, August Krogh Institute, University of Copenhagen, Copenhagen, September 19, 1991.
48. **McGill, S.M.** Understanding your back: Anatomy, Biomechanics and Physiology, presented to Faculty and Graduate students, School of Human Biology, University of Guelph, April, 1989.
49. **McGill, S.M.** Recent developments in lumbar mechanics, presented to medical students, Faculty of Medicine, University of Toronto, April 1989.
50. **McGill, S.M.** Knowing your back - Lumbar mechanics. Presented to Faculty and Graduate students at the University of Toronto, October, 1988.
51. **McGill, S.M.** Biomechanical Techniques in Ergonomics. Presented to Faculty and Graduate Students from the University of Guelph, February, 1987.

C) Invited Presentations to Professional Groups

1. **McGill, S.M.** Assessment and Therapeutic exercise for the athletic back. Canadian Sport Massage Therapist's Association, 8 hour course, Ottawa, October 21, 2011.

2. **McGill, S.M.** Assessment and corrective exercise of the painful back, 2 day course, Mount St. Mary's College, Los Angeles, October 15-16, 2011.
3. **McGill, S.M.**, Frost, D., Crosby, I. Functional Fitness: Reaching retirement with a healthy back, Int. Association of Firefighters, 2011 Redmond Health and Safety Symposium, New York, August 14-17, 2011
4. **McGill, S.M.** Building the Ultimate Back, 16 hour clinical course. Manchester, UK, June 11-12, 2011
5. **McGill, S.M.** Training maximum performance , Perform Better Summit, Providence, Rhode Island, June 3-5, 011
6. **McGill, S.M.** Painful backs: Addressing the cause with corrective exercise, Perform Better Summit, Providence, Rhode Island, June 3-5, 011
7. **McGill, S.M.** Building the ultimate back: 16 hour course, MSK Plus, Toronto, February 5-6, 2011.
8. **McGill, S.M.** The new science of low back pain, Central Institute for Human Performance, St. Louis, January 21, 2011
9. **McGill, S.M.** Building the ultimate back: From rehabilitation to ultimate performance, 16 hour course, Institute for Human Performance, St. Louis, January 22-23, 2011
10. **McGill, S.M.** Preparing the Olympic Gymnast/Trampoline athlete, A day course for the Canadian National Team, March 5, 2011.
11. Beach, T.A.C., Frost, D.M., **McGill, S.M.**, Callaghan, J.P. Developing an evidence based approach to physical preparation of firefighters: Ontario Professional Firefighters Association Annual Health & Safety Seminar, Toronto 2010
12. **McGill, S.M.** Building the ultimate back: 16 hour course, MSK Plus, Toronto, November 20-21, 2010.
13. **McGill, S.M.** Low back disorders: From clinical presentation to Kinesiological intervention: Ontario Kinesiology Association, Niagara Falls, October 15-17, 2010
14. **McGill, S.M.** Building the ultimate back: 2 day course Colorado Chiropractic Annual Convention, Denver, September 10-11, 2010
15. **McGill, S.M.** 2 Lectures: 1) Therapeutic exercise design for the painful back and 2) What I have learned from great athletes: Perform Better Summit, Long Beach, USA August 6-7, 2010

16. **McGill, S.M.** Rehabilitation of the painful back: 8 hour course for the Canadian Physiotherapy Association, July 22, 2010
17. **McGill, S.M.** Building the ultimate back: 9 hour course , Certified Professional Trainers Network, Toronto May 14, 2010
18. **McGill, S.M.** Building the ultimate back: 12 hour course, Anglo European Chiropractic College, Bournemouth, England March 27-28.
19. **McGill, S.M.** Building the ultimate back: 12 hour course, Hamar Norway March 23-24, 2010.
20. **McGill, S.M.** Building the ultimate back: 7 hour course, Toronto Athletic Club, Toronto, February 6, 2010.
21. **McGill, S.M.** Building the ultimate back: 16 hour course, Ottawa General Hospital, October 24-25, 2009
22. **McGill, S.M.** Preventing and rehabilitating low back pain: The kinesiological approach, St John, NFLD, December 12, 2009
23. **McGill, S.M.** Building the ultimate back: From rehabilitation to performance, 16 hour course. Star Rehabilitation Clinics, Nashville, October 17-18, 2009
24. **McGill, S.M.** Building the ultimate back, Central Institute for Human Performance, 16 hour course. St. Louis, October 3-4, 2009
25. **McGill, S.M.** Building the ultimate back. Buffalo Sport and Spine Center, 12 hour course. September 26-27, 2009
26. **McGill, S.M.** There is no such thing as non-specific back pain: Enhancing clinical efficacy. Cambridge Family Doctors, Cambridge Memorial Hospital, September 8, 2009
27. **McGill, S.M.** Building the ultimate back, 12 hour course sponsored by the Nova Scotia Workers Compensation Board and Nova Scotia Chiropractic Association, Halifax, May 23-24, 2009
28. **McGill, S.M.** Enhancing back health of elite skaters. Sport Canada – Olympic Skaters and Coaches, Toronto, May 21, 2009.
29. **McGill, S.M.** 1. Exercises for the painful back, 2. What I have learned about performance from the great athletes. Perform Better Summit, Providence, Rhode Island, May 9-10, 2009

30. **McGill, S.M.** Mastercourse: Low Back Disorders: Dispelling the myths and reducing the risks. Industrial Accident Prevention Association Conference, Toronto, April 20-22, 2009.
31. **McGill, S.M.** Low Back Disorders: Dispelling the myths and reducing the risks, 3 Hour course, Workers Compensation Board Institute Annual Meeting, Saskatoon, March 23-24, 2009.
32. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance, 9 Hour course, University of Saskatchewan, Saskatchewan Kinesiology and Exercise Science Association, Saskatoon, March 22, 2009.
33. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance (Lecture), Connexion, 8th Annual Fitness Conference, Ottawa, February 28, 2009.
34. **McGill, S.M.** Corrective exercise for the back, (Clinical Workshop), Connexion, 8th Annual Fitness Conference, Ottawa, February 28, 2009.
35. **McGill, S.M.** Spine stability and strength, (Clinical Workshop), Connexion, 8th Annual Fitness Conference, Ottawa, February 28, 2009.
36. **McGill, S.M.** Low back disorders: Dispelling the myths and reducing the risks, 3 Hours, Saskatchewan Safety Council, Regina, February 3, 2009.
37. **McGill, S.M.** Building the ultimate back <2 day course>, Montreal, QC, November 15-16, 2008.
38. **McGill, S.M.** Building the ultimate back <2 day course>, Moncton, NB, October 25-26, 2008.
39. **McGill, S.M.** Low back injury: Patient assessment, rehabilitation, prevention and performance training <2 day course>, Solihull, England, July 12-13, 2008.
40. **McGill, S.M.** Super stiffness, Perform better functional training summit, Long Beach, USA, June 14, 2008.
41. **McGill, S.M.** Designing exercise for the painful low back. Perform better functional training summit, Long Beach, USA, June 13, 2008.
42. **McGill, S.M.** Master course – Low back disorders: Prevention and rehabilitation, Industrial Accident Prevention Association, Toronto, April 21, 2008.
43. **McGill, S.M.** Building the ultimate back <1 day course>, University of Waterloo, April 19, 2008.

44. **McGill, S.M.** A regional approach to rehabilitation: Lumbar spine <14 hour course>, Anglo European Chiropractic College, Bournemouth, England, March 8-9, 2008.
45. **McGill, S.M.** Enhancing back injury prevention with personal work technique. Canadian Society of Safety Engineering, Kitchener, February 20, 2008.
46. **McGill, S.M.** Low back disorders: The foundation for evidence-based clinical decision making <16 hour course>, BRPT-Lake Rehabilitation Centres, Baton Rouge, LA, USA, February 16-17, 2008.
47. **McGill, S.M.** Building the high performance back <10 hour course>, Central Institute for Human Performance,, St. Louis, USA, January 19, 2008.
48. **McGill, S.M.** Building the ultimate back: From rehabilitation to high performance <8 hour course>, Palmer College of Chiropractic Continuing Education, Davenport, Iowa, December 8, 2007.
49. **McGill, S.M.** Building the ultimate back, <one day course>, Connecticut Chiropractic Association, Hartford, October 12, 2007.
50. **McGill, S.M.** Building the ultimate back, <one day course>, English Institute for Sport, Bisham Abbey, England, October 1, 2007.
51. **McGill, S.M.** Building the runners back: Corrective exercise, <two day course>, UK Athletics and Olympic Medical Group, Lee Valley, England, October 2-3, 2007.
52. **McGill, S.M.** Building the ultimate back, stabilization: From science to the clinic, A Rehab Summit, National University of Health Sciences, Chicago, September 15-16, 2007.
53. Marshall, L., and **McGill, S.M.** The effect of axial torsion on disc herniation injury mechanisms, Centre for Research Excellence in the Prevention of Musculoskeletal Disorders Research Day, Waterloo, June 28, 2007.
54. **McGill, S.M.** Building the ultimate back: From rehabilitation and prevention to performance, 2 day 16 hour course, Vancouver, June 2-3, 2007 and Calgary, May 5-6, 2007.
55. **McGill, S.M.** “Designing exercise for the painful low back” and “Super stiffness: Transitional exercise for ultimate performance”, Perform Better Summit, Chicago, May 11-13, 2007.
56. **McGill, S.M.** Building the ultimate back, 14 hour, 2 day course, University of Edinburgh, Edinburgh, April 20-21, 2007.

57. **McGill, S.M.** Prevention and rehabilitation of occupational low back disorders, 14 hour course, St. Vincent's Hospital, Dublin, April 17-18, 2007.
58. **McGill, S.M.** Enhancing back injury prevention with personal work techniques, advanced 3.5 hour course, Ohio Safety Congress, Cleveland, March 20-22, 2007.
59. **McGill, S.M.** Assessment, rehabilitation and prevention of low back disorders, 8 hour course, The Jackson Clinics, Virginia, February 24, 2007.
60. **McGill, S.M.** Reducing occupation low back disorders: Occupational Health Nurses, Kitchener, November 23, 2006.
61. **McGill, S.M.** Making better clinical decisions, Lexington, USA, November 18, 2006.
62. **McGill, S.M.** Treating and preventing low back disorders, 16 hour course for physicians and physical therapists, Genesee Grand Hotel, Syracuse, NY, October 14-15, 2006.
63. **McGill, S.M.** Fusion of stabilization and mobilization, 8 hour course, Canadian Memorial Chiropractic College, Toronto, September 23-24, 2006.
64. **McGill, S.M.** Designing exercise for the painful low back. Perform Better Symposium, Rhode Island, July 21-23, 2006.
65. **McGill, S.M.** Superstiffness: Transitional exercise for ultimate performance. Perform Better Symposium, Rhode Island, July 21-23, 2006.
66. **McGill, S.M.** Ultimate Back Fitness, 8 hour course, Certified Professional Trainers Network, International Center, Toronto, June 16, 2006.
67. **McGill, S.M.** <Keynote Lecture> Low back exercise – Separating myth from fact. Certified Professional Trainers Network, International Center, Toronto, June 17, 2006.
68. **McGill, S.M.** Lingering back troubles: Where is the failure – What is the solution? Occupational Health: Continuing Medical Education, sponsored by WSIB-Ontario and Goodyear. Cranberry Inn, Collingwood, June 13, 2006.
69. **McGill, S.M.** Mastercourse – Low back disorders: Dispelling the myths and reducing the risks. Industrial Accident Prevention Association, Toronto, May 1-3, 2006.
70. **McGill, S.M.** Lower back exercise: From rehabilitation to ultimate performance, 7 hour course, Low back shoulder and nutrition symposium, Poliquin Performance Centre East, Woburn, Massachusetts, March 11-12, 2006.
71. **McGill, S.M.** A regional approach to rehabilitation: Lumbar spine, 12 hour course, Anglo-European Chiropractic College, Bournemouth, England, February 25-26, 2006.

72. **McGill, S.M.** Clinical biomechanics of the low back, 8 hour course, Southern California University of Health Sciences, Austin, TX, January 21, Hartford, CT, March 11, 2006.
73. **McGill, S.M.** Ultimate back fitness and performance, 2 day course, Hamar, Norway, November 17-18, 2005.
74. **McGill, S.M.** Building the ultimate back—from rehab to high performance, Chambersberg, PA. Hospital-Summit Health, 7 hr. course. September 24, 2005.
75. **McGill, S.M.** Designing back exercise: From rehabilitation through to ultimate performance, CanFitPro Fitness Conference, 6 hr. course, Toronto, August 18-21, 2005.
76. **McGill, S.M.** Evidence based back exercise: From stability to ultimate performance, Central Institute for Human Performance, St. Louis, May 21, 2005.
77. **McGill, S.M.** Progressive spine stabilization exercise, functional training Summit, Los Angeles, April 29, Repeated June 2, Rhode Island, 2005
78. **McGill, S.M.** Santana, J.C. Functional training: From science to practice, Pre Summit Course, Functional training Summit, Los Angeles, April 29, Repeated June 2, Rhode Island, 2005.
79. **McGill, S.M.** Master course – Low back disorders – Dispelling the myths and reducing the risks, Industrial Accident Prevention Association, Toronto, April 4, 2005.
80. **McGill, S.M.** Low back disorders: The foundation for evidence based clinical decision making, 2 day course, Nova Scotia Orthopaedic Division, Canadian Physiotherapy Association, Halifax, March 5-6, 2005.
81. **McGill, S.M.** Low back biomechanics, 8 hr. course, Southern California University of Health Sciences Graduate Program, Pittsburg, Feb. 12, 2005, Nashville, December 3, 2005.
82. **McGill, S.M.** Low back disorders: Dispelling the myths and reducing the risks, Saskatchewan Safety Council Industrial Safety Seminar, Regina, Feb. 8, 2005.
83. **McGill, S.M.** Designing low back exercise: From rehabilitation to performance training, Palmer Chiropractic Fountainhead Experience, Daytona Beach, January 2005.
84. **McGill, S.M.** Low back Symposium, 8 hr. course, Virginia State Chiropractic Association, Richmond, Dec. 4, 2004.
85. **McGill, S.M.** Low back exercise: From rehabilitation to ultimate performance, 8 hr. course, World Congress on Lumbopelvic Pain. Melbourne, Australia, Nov. 14, 2004.

86. McGill, S.M. Training the high performance back. 8 hr. course, Australian Institute for Sport, Canberra, Australia, Nov. 8-9, 2004.
87. **McGill, S.M.** Evidence based decision making to rehabilitate back injury, 16 hr. course, Hammar, Norway, Oct. 28-29, 2004.
88. **McGill, S.M.** Low back Symposium, 8 hr. course, Washington State Chiropractic Association, Seattle, Sept 11, 2004.
89. **McGill, S.M.** Designing back exercise: From rehabilitation through ultimate performance, 6 hr. course, Canfitpro Conference, Toronto, Aug. 19, 2004.
90. **McGill, S.M.** Low back disorders: Evidence based clinical decision making, 8 hr. course, Peterboro, ON, June 12, 2004.
91. **McGill, S.M.** Low back disorders: Improving prevention strategies and rehabilitation approaches, University due Quebec a Trois Rivieres, 8 hr. course, May 8, 2004.
92. **McGill, S.M.** Preventing low back disorders. Dispelling the myths. Pulp and Paper Health and Safety Conference, Toronto, May 4-6, 2004.
93. **McGill, S.M.** Prescribing low back exercise: From rehabilitation to ultimate performance, at Functional Training and Rehabilitation Symposium – North East Seminars, Boston, April 30-May 2, 2004.
94. **McGill, S.M.** Mastercourse: Low back disorders: Dispelling the myths and reducing the risks. 3 hr. course, IAPA, Toronto, April 26-28, 2004.
95. **McGill, S.M.** Low back disorders: Evidence based prevention and rehabilitation, 8 Hour Course, Association of Canadian Ergonomists, Toronto, Feb. 25, 2004.
96. **McGill, S.M.** Stability training: How to groove functional motor patterns, LA Sport and Spine, Los Angeles, Jan. 23, 2004.
97. **McGill, S.M.** Low back function, rehab and performance, 8 Hour Clinical Course, Southern California University of Health Sciences, Los Angeles, Jan. 24, 2004.
98. **McGill, S.M.** Prevention and Treatment of Lumbar Spine Disorders. Southern California University of Health Sciences Graduate Program, 8 Hour course, Chicago, IL November 8, 2003.
99. **McGill, S.M.** Low Back Disorders: Improving Prevention Strategies and Rehabilitation Approaches, Northeast Seminars, 16 Hour course, Chicago, October 25-26, 2003.

100. **McGill, S.M.**, Kavcic, N., and Gray, J. Evidence Based Low Back Exercise – Protecting the Technique (Part II – Practical Workshop), The Canadian Association of Fitness Professionals, Toronto, August 14-17, 2003.
101. **McGill, S.M.** Evidence Based Low Back Exercise – Dispelling the Myths (Part I – Lecture). The Canadian Association of Fitness Professionals, Toronto, August 14-17, 2003.
102. **McGill, S.M.** Low Back Disorders: Evidence based prevention and rehabilitation, 8 hr. course, Brisbane, Australia, July 11, 2003.
103. **McGill, S.M.** Low Back Disorders: Evidence based prevention and rehabilitation, 8 hr. course, Association of Canadian Ergonomists, Windsor, ON., June 19, 2003.
104. **McGill, S.M.** Low Back Disorders: Evidence based prevention and rehabilitation, 8 hr. course, Association of Canadian Ergonomists, Halifax, N.S., June 7, 2003.
105. **McGill, S.M.** Low Back Disorders: Evidence based prevention and rehabilitation, 8 hr. course, Association of Canadian Ergonomists, Victoria, B.C., April 25, 2003. Repeated in Vancouver April 26, 2003.
106. **McGill, S.M.** Low back disorders and seated work. Industrial Accident Prevention Association (IAPA) Conference, Toronto, Canada, April 14-16, 2003.
107. **McGill, S.M.** Low Back Disorders: Evidence based prevention and rehabilitation, 6 hr. course, Laurentian University and the Ontario Mines Association, Sudbury, ON., March 6, 2003.
108. **McGill, S.M.** Low Back Disorders – Evidence based prevention and rehabilitation, 8 hr. course, St. John's, Newfoundland, November 23, 2002.
109. **McGill, S.M.** Low Back Disorders. Improving prevention strategies and rehabilitation approaches, 8 hour Course. Accredited by Canadian Physical Therapy Association, Toronto Orthopaedic and Arthritic Hospital, November 2, 2002.
110. **McGill, S.M.** Low Back Disorders. Improving prevention strategies and rehabilitation approaches, 8 hr. course for the Association of Canadian Ergonomists, Ottawa, ON., September 27, 2002.
111. **McGill, S.M.** Low Back Disorders: Evidence based prevention, 4 hr. update course for Workplace Safety and Insurance Board (Ontario) Ergonomists, Minet, Ontario, September 18, 2002.

112. **McGill, S.M.** <**Hallman Professor Lecture**> Clinical approaches for low back disorders, 4 hr. course delivered to clinical staff at University of Waterloo, April 27, 2002.
113. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine, 7 hr. course delivered for the Southern California University of Health Sciences - Graduate Program, St. Louis, January 13, Raleigh, February 10, 2002, San Francisco, March 9, 2002, Newark, September 21, 2002.
114. **McGill, S.M.** The Scientific Foundation for Presentation and Treatment of Low Back Pain, 8 hr. course, Association of Canadian Ergonomists, Edmonton, December 5, Calgary, December 6, 2001.
115. **McGill, S.M.** A scientific foundation to guide decisions in low back exercise prescription, Profitness, Toronto, November 11, 2001.
116. **McGill, S.M.** Preventing low back troubles, Saskferco, Moose Jaw, Saskatchewan, June 21, 2001.
117. **McGill, S.M.** Myths and realities for preventing low back troubles, Saskatchewan Association of Health Organizations, Delivered in Regina June 19 and in Saskatoon June 20, 2001.
118. **McGill, S.M.** Low back injury: improving prevention strategies and rehabilitation approaches. Ontario Kinesiology Association 8 hr credit course, Toronto, Ontario, May 12, 2001.
119. **McGill, S.M.** Clinical biomechanics of the lumbar spine. 7 hour course delivered for the Southern California University of Health Sciences - Graduate Program, Long Island, New York, April 22, 2001.
120. **McGill, S.M.** <**Keynote Lecture**> Guidelines for back injury prevention. Newfoundland and Labrador Employer's Council, Annual Spring Conference, St. John's, Newfoundland, April 6, 2001.
121. **McGill, S.M.** Preventing and rehabilitating occupational low back injury. Kruger Pulp and Paper Mill, Cornerbrook, Newfoundland, April 5, 2001.
122. **McGill, S.M.** Myths and realities for preventing low back injury. Newfoundland and Labrador Employer's Council, Cornerbrook, Newfoundland, April 5, 2001.
123. **McGill, S.M.** Myths and realities - preventing and rehabilitating low back troubles. Industrial Accident Prevention Association 2001 Conference, Toronto, Ontario, April 2-4, 2001.

124. **McGill, S.M.** Reducing the risk of low back troubles in firefighters. Ontario Professional Firefighters Association Annual Health and Safety Meeting, Collingwood, Ontario, February 8, 2001.
125. **McGill, S.M.** Low back injury prevention. 28th Annual Industrial Safety Seminar, Saskatchewan Safety Council, Regina, Saskatchewan, February 6, 2001.
126. **McGill, S.M.** Occupational Biomechanics and low back injury prevention and management, 7 hr course for Los Angeles Chiropractic College, Philadelphia, January 20, 2001.
127. **McGill, S.M.** Can firefighters retire with better low back health? Section 21 Meeting - Ontario Firefighters, Collingwood, Ontario, January 11, 2001.
128. **McGill, S.M.** Developing rehabilitation protocols for low back injured workers. Workplace Safety and Insurance Board, Toronto, Ontario, January 4, 2001.
129. **McGill, S.M.** Low back injury research initiatives related to fire fighter health, Fire Training Officers Seminar, Ontario Firefighters Training Facility, Gravenhurst, November 22, 2000.
130. **McGill, S.M.** Low back injury: Improving prevention strategies and rehabilitation approaches, 8 hr course, St. Thomas-Elgin General Hospital, June 24, 2000.
131. **McGill, S.M.** The scientific foundation of low back exercise and rehabilitation approaches - Special 3 hr Symposium, Workers Compensation Board of Manitoba, and Manitoba Public Insurance, Winnipeg, June 2, 2000.
132. **McGill, S.M.** Workshop - prescribing low back exercise, Workers Compensation Board of Manitoba, Winnipeg, June 2, 2000.
133. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 7 hr course delivered for the Los Angeles College of Chiropractic Postgraduate Program in Rehabilitation, New York City, February 27, and Pittsburgh, July 23, 2000.
134. **McGill, S.M.** Low back injury: Improving presentation strategies and rehabilitation approaches, 8 hour clinic course. University of Regina, February 2, 2000.
135. **McGill, S.M.** Optimizing Low Back Health, 8 hour clinical course, Columbia Rehabilitation Centre, Calgary, February 19, 2000.
136. **McGill, S.M.** Preventing and Rehabilitating Low Back Troubles. "Chew on this". Series for co-op employers, University of Waterloo, October 21, 1999.

137. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 7 hr course delivered for the Los Angeles College of Chiropractic Postgraduate Program in Rehabilitation, Toledo, February 27, Chicago, June 27, 1999.
138. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 6 hr course delivered for the University of Waterloo - Professional Development, Waterloo, 26 September 1998.
139. **McGill, S.M.** Scientifically justified low back exercises: Issues, evidence and a low tech program. Future Recovery Centres, Kitchener, Ont., March 25, 1998.
140. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 7 hr course delivered for the Los Angeles College of Chiropractic Postgraduate Program in Rehabilitation, Oakland, February 21, Denver, March 21, 1998.
141. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 7 hr course delivered for Advanced Masters in Clinical Practice, School of Health and Rehabilitation Science: University of Pittsburgh, March 14, 1998.
142. **McGill, S.M.** Workshop - Manual Handling and the Spine. Ergonomics Society of Australia, Gold Coast, November 26, 1997.
143. **McGill, S.M.** A balanced view on back belt prescription to workers. One of the 4 debators at the National Safety Council. Chicago, Illinois, October 27-29, 1997.
144. **McGill, S.M.** <Keynote Address>: Reducing low back injury: Strategies for the Kinesiologist, British Columbia Association of Kinesiologists, Vancouver, March 1, 1997.
145. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 6 hr course delivered for the University of Waterloo - Professional Development, Waterloo, March 22 (also September 13), 1997.
146. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 6 hr course delivered for the Los Angeles College of Chiropractic - Postgraduate Program in Rehabilitation: Atlanta, February 8; Austin, March 8; Las Vegas, May 3, 1997.
147. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine - 7 hr course delivered for Advanced Masters in Clinical Practice, School of Health and Rehabilitation Science: University of Pittsburgh, April 5, 1997.
148. **McGill, S.M.** Low Back Injury, Considerations for disability management. Canada Life Insurance Company, Toronto, April 8, 1997.
149. **McGill, S.M.** Clinical Biomechanics of the Lumbar Spine, Human Factors Association of Canada - Manitoba-Saskatchewan Chapter, University of Manitoba, Winnipeg, April 19, 1997.

150. **McGill, S.M.** Presentation 1: Latest developments to reduce low back injuries; Presentation 2: Should workers wear abdominal belts? Adding value with Ergonomics - Industrial research assistance program - NRC, Waterloo, February 18-19, 1997.
151. **McGill, S.M.** Strategies for reducing low back problems from prolonged sitting. The Women's Association of University of Waterloo, November 27, 1996.
152. **McGill, S.M.** Ergonomic failures and how to prevent them. Alberta chapter of the Human Factors Association of Canada, Edmonton, November 28, 1996.
153. **McGill, S.M.** The senior's spine: Avoiding low back pain and loss of function, Kitchener-Waterloo Retired Businessman's Association, Kitchener, Ontario, March 28, 1996.
154. **McGill, S.M.** Clinical Biomechanics of the lumbar spine - 6 hr course delivered for the Los Angeles College of Chiropractic - Graduate Program: San Jose, April 13; Los Angeles, June 8; Philadelphia, Sept. 28; Boston, Oct. 12; Seattle, Nov. 2, 1996.
155. **McGill, S.M.** Reducing Low Back Problems for the Seated Worker, Seminar delivered to the University Community at large, University of Waterloo, April 25, 1996.
156. **McGill, S.M.** Update on biomechanics of low back injury and rehabilitation, Occupational Medicine Practitioners, Campbell River, BC, August 26, 1996.
157. **McGill, S.M.** Reducing the risk of low back injury at work, Fletcher Challenge, Campbell River, BC, August 26, 1996.
158. **McGill, S.M.** Low Back Mechanics: How does it work and how does it become injured? 11th Annual CFA Conference, Kananaskis, Alberta, January 20-22, 1995.
159. **McGill, S.M.** Reducing the risk of low back injury, 11th Annual CFA Conference, Kananaskis, Alberta, January 20-22, 1995.
160. **McGill, S.M.** Avoiding Low Back Pain, Third Age Learning Series, Illness and Injury Prevention: The Quality of our lives, Kitchener, Ontario, March 2, 1995.
161. **Juker, D., and McGill, S.M.** Psoas Major: Stabilizer or challenger of the lumbar spine. Rehabilitationszentrum, Valens, Switzerland, March 7, 1995.
162. **McGill, S.M.** Abdominal Belts in industry - should they be prescribed? Human Factors Association of Canada - Effective application of ergonomics in the workplace. Vancouver, June 9, 1995.

163. **McGill, S.M.** Scientific applications to reduce low back injury. Human Factors Association of Canada - Effective application of ergonomics in the workplace. Vancouver, June 9, 1995.
164. **McGill, S.M.** Clinical Biomechanics of the lumbar spine - 6 hour course delivered for Los Angeles College of Chiropractic - Graduate Program, University of Pittsburgh, June 3, 1995. (Also repeated in Chicago Oct. 14, 1995).
165. **McGill, S.M.** Cause and prevention of low back injury. Ottawa Ergonomics Group, Ottawa, Oct. 26, 1995.
166. **McGill, S.M.** The senior's spine: Avoiding low back pain. Victoria Park - Fergus Seniors, Fergus, Ontario, Nov. 23, 1995.
167. **McGill, S.M.** Clinical implications of recent developments in low back biomechanics. Leukerbad Hospital, April 14, Leukerbad, Switzerland, 1994.
168. **McGill, S.M.** Biomechanics, Ergonomics and Your Future. Lord Elgin High School, Burlington, May 24, 1994.
169. **McGill, S.M.** 4 Hour Workshop, A workshop to identify strategies for reducing occupationally-related low back injuries. For the Occupational Health and Safety Forum of Metropolitan Toronto, Toronto East General Hospital, Toronto, October 4, 1994.
170. **McGill, S.M.** Choosing movement strategies to reduce the risk of low back pain and injury. The Inter-Urban Pain Conference, Waterloo. Feb. 5, 1993.
171. **McGill, S.M.** Low back biomechanics to reduce the risk of injury, 3 hour course in Sudbury, Ontario, May 28, 1993.
172. **McGill, S.M.** Abdominal belts in industry: should they be prescribed? Sudbury, Ontario, May 28, 1993.
173. **McGill, S.M.** Reducing the risk of low back injury during automotive assembly, 3 1/2 hour course for General Motors, Oshawa, Ontario, August 17, 1993.
174. **McGill, S.M.** Evaluating the risk of occupationally related low back injuries, 3 hr. course at "Ergonomics at work - A Canadian Perspective - HFAC", Winnipeg, October 4-5, 1993.
175. **McGill, S.M.** Strategies to reduce the risk of occupational low back injuries, 3 hr. course at "Ergonomics at work - A Canadian Perspective - HFAC", Winnipeg, October 4-5, 1993.
176. **McGill, S.M.** Back Injury Prevention, Federal Mogul Health and Safety Conference, Southfield, Michigan, November 2-3, 1993.

177. **McGill, S.M.** Developing strategies to reduce the risk of low back injury, Waterloo County-Home Care Division, Waterloo, March 5, 1992.
178. **McGill, S.M.** Reducing the risk of low back injury during manual handling of patients, Sunbeam Residential Centre, Waterloo, April 15, 1992.
179. **McGill, S.M.** Lifting sense and nonsense: Reducing the risk of work-related low back injury. St. Michael's Hospital, Ontario Physiotherapy Association, Toronto. May 23, 1992.
180. **McGill, S.M.** Low back biomechanics and the prevention of injury. Canadian Memorial Chiropractic College (Department of postgraduate and continuing education). Toronto, December 5, 1992.
181. **McGill, S.M.** Recent advances in spine biomechanics and their implications, part of BACK PAIN - Continuing Medical Education, McMaster University, Hamilton, Jan. 9, 1991. (Approved for credit by the College of Family Physicians of Canada).
182. **McGill, S.M.** Professional Update for Ministry of Labour Ergonomics Consultants: Estimating the risk of low back injury. 6 Hours. Kitchener, Feb. 14, 1991.
183. **McGill, S.M.** Advances in Lumbar Biomechanics, Ontario Physiotherapy Association, Convention '91, Kitchener, March 8, 1991.
184. **McGill, S.M.** Lifting sense and nonsense, St. Joseph's Hospital, Hamilton, April 3, 1991. 4 Hours.
185. **McGill, S.M.** Use your head-not your back, University of Waterloo Employees Association, Waterloo, June 11, 1991.
186. **McGill, S.M.** The Ergonomics degree option at University of Waterloo, Ontario Meat Council, Toronto, June 18, 1991.
187. **McGill, S.M.** Lifting Sense and Nonsense, North Western Ontario District of the Canadian Physiotherapy Association, Thunder Bay, November 16, 1991, 4 Hour Workshop.
188. **McGill, S.M.** Low Back Pain: A Mechanical basis for assessing the risk of injury and understanding prevention, 6 hour workshop, Department of Kinesiology professional development symposium. Waterloo, May 3, 1990.
189. **McGill, S.M.** Low Back Biomechanics Applied to Work and Exercise, Department of Kinesiology Professional Development Symposium. Waterloo, Canada, May 13, 1988.

190. **McGill, S.M.** Lifting Sense and Nonsense, presented at Ergonomics '88; Attacking Workplace Issues. Waterloo, Canada, June, 1988. (also 1990, 1991, 1992, 1993).
191. **McGill, S.M.** Low Back Pain: A Biomechanical Approach. Invited seminar delivered to the participants of the Department of Kinesiology Professional Development Symposium, Waterloo, Ontario, May, 1987.
192. **McGill, S.M.** Program Costs and Impacts of Back Disability, presented at the Corporate Benefits of Health Promotion Workshop. Toronto, Canada, November, 1987.
193. **McGill, S.M.** Muscle, Ligament and Disc Forces During Lifting of Loads. Invited lecture delivered at the Defence and Civil Institute of Environmental Medicine (DCIEM), Toronto, Ontario, February 27, 1986.
194. **McGill, S.M.** Biomechanics in Bioengineering. Presented to the Shad Valley Summer Program in Bioengineering, Waterloo, Canada, July, 1986.
195. **McGill, S.M.** Watch Your Muscles Work. Invited lecture delivered to Women and Science in Engineering, Seminar Day Workshop, Waterloo, Ontario, October, 1986.
196. Norman, R.W., and **McGill, S.M.** Biomechanical Models in the Estimation of Lumbar Stress. Invited presentation to the Ontario Chiropractic Association, Kitchener, Ontario, September, 1985.

D) Self-initiated Presentations to Scholarly Groups

1. Moreside, J. and **McGill, S.M.** Newfound joint movement obtained from stretching protocols may not translate to range of motion in functional tasks. Int. Society for Biomech. Brussels July 2011.
2. Frost, D., Beach, T., **McGill, S.M.**, Callaghan, J. Protecting our public protectors: A worker centred approach to injury prevention and job performance. CRE-MSD, Annual Meeting of the Centre for Research Excellence in Musculoskeletal Disorders, Windsor, ON June 1, 2011.
3. Balkovec, C., Vernengo, J., **McGill, S.M.** Preliminary mechanical evaluation of a novel hydrogel as a viable nucleus pulposus replacement in a disc following injury. Ontario Biomechanics Conference, Barrie, ON, March 11-13, 2011.
4. Cambridge, E., Sidorkewicz, N., Ideda, D., **McGill, S.M.** Progressive hip rehabilitation: the effects of resistance band placement on gluteus medius activation. Ontario Biomechanics Conference, Barrie, ON, March 11-13, 2011.

5. Sidorkewicz, N., Cambridge, E., **McGill, S.M.** Altering the hip angle in common non weight-bearing gluteus medius rehabilitation exercises. Ontario Biomechanics Conference, Barrie, ON, March 11-13, 2011.
6. Moreside, J. and **McGill, S.M.** Back mechanics and the elliptical. Canadian Physiotherapy Association, St John's, July 22-25, 2010.
7. Frost, D.M., Beach, T.A.C., Callaghan, J.P., **McGill, S.M.** How should we best use a movement screen to guide long-term athletic development? NSCA National Conference, Orlando, Florida, July 14-17, 2010.
8. Moreside, J., **McGill, S.M.** Lumbar motion and muscle activity on the elliptical trainer differs from walking: 16th Biennial Conference of the Canadian Society for Biomechanics, Kingston, Ontario, June 9-12, 2010.
9. McGill, S.M., Frost, D.M., Hubrecht, T. Muscle activation/relaxation and the speed/strength paradox. 16th Biennial Conference of the Canadian Society for Biomechanics, Kingston, Ontario, June 9-12, 2010.
10. Frost, D.M., Beach, T.A.C., Callaghan, J.P., **McGill, S.M.** Should a movement screen be used to guide exercise prescription? 16th Biennial Conference of the Canadian Society for Biomechanics, Kingston, Ontario, June 9-12, 2010.
11. Frost, D.M., Beach, T.A.C., Fenwick, C.M., Callaghan, J.P, **McGill, S.M.** Hip-centric mini-band exercise: Spine friend or foe? Proceeding of the 7th Annual Ontario Biomechanics Conference, Barrie, Ontario, March 12-14, 2010.
12. Frost, D.M., Beach, T.A.C., **McGill, S.M.**, Callaghan, J.P. Injury prevention in the occupational athlete. Proceeding of the John P. Redmond Symposium- Occupational Health & Hazards of the Fire Service, Los Angeles, California, USA, November 8-12, 2010.
13. Moreside, J., **McGill, S.M.** Improving hip mobility in young "tight" males: A clinical trial. American Physical Therapy Association, San Diego, February 2010.
14. Frost, D.M., Beach, T.A.C., Fenwick, C.M., Callaghan, J.P, **McGill, S.M.** Is there a low back cost to hip-centric exercises? Examining the L4/L5 joint compression during movements prescribed to overload the hips. Submitted to present at the Annual Meeting for the American Society of Biomechanics, University Park, Pennsylvania, USA, August 26-29, 2009
15. Brown, S.M.H. and **McGill, S.M.** Are ultrasound measures of muscle thickness representative of muscle activation in the abdominal wall. American Society for Biomechanics, Penn State U, 2009.
16. **McGill, S.M.** 1. How great athletes use their back and torso muscles to achieve high performance: A series of case studies. 2. * Motion and Load determines the pattern of

annulus disruption. 3. Reducing partial herniation with static and repeated extension. International Society for Study of the Lumbar Spine Annual Meeting, Miami, May 4-8, 2009. *Awarded top presentation for conference.

17. S.H.M. Brown, **McGill, S.M.** Are ultrasound measures of muscle thickness representative of muscle activation in the abdominal wall? American Society of Biomechanics, Penn State University, 2009.
18. Yates, J.P., Giangregorio, L., **McGill, S.M.** Disc herniation: Concordance between contrast enhanced computed tomography, plane film discogram and a 'gold standard' dissection technique. Ontario Biomechanics Conference, Barrie, March 13-15, 2009.
19. Moreside, J., **McGill, S.M.** Clinical measurements of hip internal/external rotation: Supine or prone. Am. Phys. Ther. Assn., Las Vegas, February 9-12, 2009.
20. Vera-Garcia, F.J., Pamblanco-Valero, M.A., Moreside, J.M., **McGill, S.M.** Differences in neuromuscular control of thorax and pelvis motion. Spanish Association of Sport Science Congress, 2008.
21. Pamblanco-Valero, M.A., Vera-Garcia, F.J., Moreside, J.M., **McGill, S.M.** Analysis of spine kinematics and trunk muscular activation during two movements of belly dance. Spanish Association of Sport Science Congress, 2008.
22. Marshall, L., **McGill, S.M.** Dynamic axial torque/twisting: An investigation on spine injury mechanisms. Ontario Biomechanics Conference, Barrie, 2008.
23. Brown, S., **McGill, S.M.** Force and stiffness transmission through layers of the rat abdominal wall. Ontario Biomechanics Conference, Barrie, 2008.
24. Yates, J., **McGill, S.M.** Linking tissue damage with the CT image: Tracking progressive intervertebral disc herniations. Ontario Biomechanics Conference, Barrie, 2008.
25. Brown, S., **McGill, S.M.** Transmission of actively generated force and stiffness through layers of the rat abdominal wall. North American Congress on Biomechanics, Ann Arbor, USA, August 2008.
26. Brown, S., **McGill, S.M.** Ultrasound analysis of in-vivo connective tissue deformations of the human abdominal wall. North American Congress on Biomechanics, Ann Arbor, USA, August 2008.
27. Brown, S.M.H., **McGill, S.M.** Revisiting the EMG-torque relationship of the trunk musculature: Effects of antagonistic co-contraction. Am. Soc. Biomech., Palo, Alto, August 2007.
28. Brown, S.M.H., **McGill, S.M.** Muscle activation patterns change the inherent stiffness of the human trunk. Am. Soc. Biomech., Palo, Alto, August 2007.

29. Tampier, C., Drake, J., Callaghan, J.C., **McGill, S.M.** Modelo animal de mecanismo de producción de hernias discales anteriores, IV Jornadas Chileno-Argentinas de Orthopedia Y Traumatología, San Martín de los Andes, Argentina, May 25-26, 2007.
30. Marshall, L., and **McGill, S.M.** The effect of dynamic axial torsion on the injury mechanism of cervical porcine spines. Ont. Biom. Conf., Ontario Biomechanics Conference, Barrie, Canada, March 2007.
31. Howarth, S.J., **McGill, S.M.** Coordinated activation of multisegmental and intersegmental fascicles is beneficial for generating stability of the lumbar spine. Ontario Biomechanics Conference, Barrie, Canada, March 2007.
32. Brown, S., **McGill, S.M.** An examination of the EMG-moment relationship of the trunk flexor musculature. Ontario Biomechanics Conference, Barrie, Canada, March 2007.
33. Brown, S., Vera-Garcia, F., **McGill, S.M.** Robust muscular girdles ensure stability of the lumbar spine. 18th Annual Symposium of the Orthopaedic Division of the Canadian Physiotherapy Association, Calgary, Canada, October 2006.
34. Brown, S.H.M., Gregory, D.E., **McGill, S.M.** Vertebral end-plate fractures as a result of high rate pressure loading in the nucleus of young porcine spines, 14th Conference of the Canadian Society for Biomechanics, Waterloo, Canada, August, 2006.
35. Vera-Garcia, F., Flynn, J.M., **McGill, S.M.** Activación muscular, estabilidad raquídea y compresión lumbar durante la utilización de un instrumento de acondicionamiento muscular: El Body-Blade. IV Congreso de la Asociación Española de Ciencias del Deporte, octubre 2006.
36. Vera-Garcia, F., Flynn, J.J., **McGill, S.M.** Activación independiente de diversas porciones de los músculos rectos y la habilidad física percibida en nadadores brasileños. IV Congreso de la Asociación Española de Ciencias del Deporte, octubre 2006.
37. Moreside, J.M., Vera-Garcia, F.J., **McGill, S.M.** Neuromuscular independence and synergies of the abdominal wall as demonstrated by middle-eastern style dancers, 2006 Orthopaedic Symposium, Calgary, Canada, October, 2006.
38. Brown, S.H.M., **McGill, S.M.** Analysis of the signal and noise of an electromagnetic tracking device in monitoring the frequency response of the human trunk to quick load releases. 14th Conference for the Canadian Society of Biomechanics, Waterloo, Canada, August, 2006.
39. Brown, S.H., Vera-Garcia, F.J., **McGill, S.M.** Muscular girdles rather than single muscle activation patterns enhance lumbar spine stability. 18th Annual Orthopaedic Symposium of the Canadian Physiotherapy Association, Calgary, Canada, August, 2006.

40. Flynn, J.M., Vera-Garcia, F.J., **McGill, S.M.** Middle-eastern style dance motions give insight into neuromuscular independence and synchronizations of the abdominal wall. Poster presentation at the CSB Convention, Waterloo, August 2006.
41. Flynn, J.M., Vera-Garcia, F.J., **McGill, S.M.** MVC's: are you getting the maximum from the torso muscles? Poster presentation at the CSB Convention, Waterloo, August, 2006.
42. Howarth, S., Brown, S., Liebensen, C., **McGill, S.M.** Does abdominal bracing improve performance on the active straight leg raise test? Canadian Society for Biomechanics, Waterloo, Canada, August 16-19, 2006.
43. Howarth, S., **McGill, S.M.** A case for establishing vertebral coordinate systems for evaluating muscle contributions to spine stability. World Congress of Biomechanics, Munich, Germany, July 29-August 4, 2006.
44. Flynn, J.M., Vera-Garcia, F.J., **McGill, S.M.** Neuromuscular independence of the abdominal wall as demonstrated by middle-eastern style dancers. Podium presentation at the ISEK Conference, Turino, Italy, July, 2006.
45. Brown, S.H.M., Vera-Garcia, F.J., **McGill, S.M.** Difficulties in adjusting muscle activation patterns to stabilize the spine under externally loaded situations. XVI Congress of the International Society of Electrophysiology and Kinesiology, Torino, Italy, June, 2006.
46. Vera-Garcia, F.J., Elvira, J.L., Brown, S.H.M., **McGill, S.M.** Effect of abdominal bracing and abdominal hollowing maneuvers on the control of spine stability. XVI Congress of the International Society of Electrophysiology and Kinesiology, Torino, Italy, June, 2006.
47. Howarth, S., **McGill, S.M.** Choice of local coordinate system orientation influences muscular contributions to stability: A spine example. Ont. Biomech Conf., Barrie, March 2006.
48. Brown, S., Vera-Garcia, F., **McGill, S.M.** Difficulties in altering muscle activation patterns to stabilize the spine under externally loaded situations. Ont. Biomech Conf., Barrie, March 2006.
49. Flynn, J., Vera-Garcia, F., **McGill, S.M.** Neuromuscular independence of the abdominal wall as demonstrated by middle-eastern style dancers. Ont. Biomech Conf., Barrie, March 2006.
50. Flynn, J., Vera-Garcia, F.J., **McGill, S.M.** Trunk muscle activation patterns when using the body blade: How they vary with positioned level of coordination. Orthopaedic Division, Canadian Physiotherapy Association, London, Oct 2005, pres. 1A-1.
51. Brown, S., **McGill, S.M.** Muscle force-stiffness characteristics influence joint stability, A spine example. Int. Soc. for Biomech., Cleveland, USA, Aug. 1-5, 2005.

52. Flynn, J.M. Vera-Garcia, F.J., Brown, S.M.H., **McGill, S.M.** Trunk muscle activation patterns comparing cable press and body blade exercises, Int. Soc. for Biomech., Cleveland, Aug. 1-5, 2005.
53. Howarth, S., **McGill, S.M.** Using the eigenvector approach to locate spinal instability, Int. Soc. for Biomech., Cleveland, USA, Aug. 1-5, 2005.
54. Vera-Garcia, F.J., Santana, J.C., Gray, J.R., **McGill, S.M.** Trunk and shoulder muscle response comparing one repetition maximum bench and standing cable press, Int. Soc. Biomech., Cleveland, Aug. 1-5, 2005.
55. Gray, J.R., Vera-Garcia, F.J., Karpowicz, A., **McGill, S.M.** Load and velocity effects on torso EMG during the back squat exercise, National Strength and Conditioning Association, Las Vegas, July 6-9, 2005.
56. Gray, J.R., Vera-Garcia, F.J., Karpowicz, A., **McGill, S.M.** Lower extremity EMG response to unilateral and bilateral leg exercises, National Strength and Conditioning Association, Las Vegas, July 6-9, 2005.
57. Santana, J.C. Vera-Garcia, F.J., Gray, J.R., **McGill, S.M.** A biomechanical comparison of the one-arm standing press and bench press including muscle response, National Strength and Conditioning Association, Las Vegas, July 6-9, 2005.
58. Flynn, J.M., Vera-Garcia, F., **McGill, S.M.** Comparing three dimensional spine motion and trunk muscle activation during cable press and body blade exercises. Canadian Physiotherapy Association Annual Meeting, Victoria, May 26-29, 2005.
59. Scannell, J., **McGill, S.M.** Spinal disc prolapse caused by flexion can be reduced by extension – an in vitro study of disc mechanics. Canadian Biomaterials Society, Waterloo, May 26-28, 2005.
60. Brown, S., **McGill, S.M.** Diverging mechanisms of spine stability at both high and low loading. International Society for Study of Lumbar Spine, New York, May 10-14, 2005.
61. Flynn, J., Vera-Garcia, F.J., **McGill, S.M.** Trunk muscle activation patterns obtained from cable pulleys compared to the body blade, Ontario Biomechanics Conference, Barrie, Feb. 19, 2005.
62. Howarth, S., **McGill, S.M.** Determining the location of potential spinal instability: Analysis of the eigenvector, Ontario Biomechanics Conference, Barrie, Feb. 19, 2005.
63. Gray, J.R., Skaggs, C.D., **McGill, S.M.** Diaphragmatic muscle activity: Evidence for a role in neck flexion? Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
64. **McGill, S.M.** Building the ultimate back: A journey in progress, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.

65. Drake, J.D.M., Aultman, C.D., **McGill, S.M.**, Callaghan, J.P. The role of torsion in intervertebral joint failure mechanics, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
66. Scannell, J., Aultman, C.D., **McGill, S.M.** The direction of disc prolapse is predicable knowing the repeated bending motion causing the prolapse. Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
67. Kavcic, N., Grenier, S., **McGill, S.M.** Quantifying tissue loads and spine stability while performing commonly prescribed low back stabilization exercises, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
68. Howarth, S., **McGill, S.M.** Shear instability of the L4-L5 joint: Examination of spinal musculature reinforcement potential, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
69. Gregory, D., Kavcic, N., Dunk, N., **McGill, S.M.**, Callaghan, J. The lumbar responses of sitting on a stability ball and in an office chair, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
70. Wang, S., Hentschel, E.P., **McGill, S.M.** Linking ventilation mechanics with spine stability: Normals and patients, Can. Soc. Biomech, Halifax, NS, Aug. 4-7, 2004, paper in Conference CD.
71. Skaggs, C.D., Gray, J.R., **McGill, S.M.** Orofacial contraction does not affect neck muscle activity in a clinical test. Int. Soc EMG and Kinesiol., Boston, USA, June 18-21, 2004.
72. Drake, J., Aultman, C., **McGill, S.M.**, Callaghan, J. <**CSB Student Award Paper**> The role of torsion in intervertebral joint failure mechanics, Ontario Biomechanics Conference, Barrie, Feb. 28-29, 2004.
73. Wang, S.S., and **McGill, S.M.** The links between ventilation mechanics, trunk motor patterns, and spine stability, Canadian Physiological Society, Vernon, B.C., Jan. 28-Feb. 1, 2004.
74. Hicks, G.E., Fritz, J.M., Delitto, A., **McGill, S.M.** Preliminary clinical prediction role for determining response to a lumbar stabilization program. Combined sections meeting for the American Physical Therapy Association, February, 2003,
75. Scannell, J.P., and **McGill, S.M.** Torso positions of minimum passive tissue strain-where do we sit, stand and walk? Proceedings of The IV World Congress on Biomechanics, Calgary, August 4-9, 2002.

76. Kavcic, N., Grenier, S., and **McGill, S.M.** Quantifying the contribution of individual muscles to lumbar spine stability. Proceedings of The IV World Congress on Biomechanics, Calgary, August 4-9, 2002.
77. Grenier, S., and **McGill, S.M.** The role of transverse abdominis in spine stability. Proceedings of The IV World Congress on Biomechanics, Calgary, August 4-9, 2002.
78. **McGill, S.M.**, Grenier, S., Bluhm, M., and Brown, S. Previous history of LBP with work loss is related to lingering deficits in fitness, personal, motor control, work technique, and psychosocial characteristics, International Society for Study of the Lumbar Spine, May 14-18, Cleveland, 2002.
79. Grenier, S.G., Preuss, R.A., Scannell, J., Brown, S., and **McGill, S.M.** Correlates of occupational low back troubles: Clues for better prevention and rehabilitation, Association of Canadian Ergonomists, Montreal, October, 2001.
80. **McGill, S.M.**, Grenier, S., Preuss, R., and Brown, S. Asymmetries in torso endurance and strength parameters are associated with a history of low back troubles. In the proceedings of the XVIIIth Congress of the International Society of Biomechanics, July 8-13, Zurich, Switzerland 2001.
81. Grenier, S., and **McGill, S.M.** Muscle activation and intra-abdominal pressure independently affect torso stiffness even at low activation levels. In the proceedings of the XVIIIth Congress of the International Society of Biomechanics, July 8-13, Zurich, Switzerland 2001.
82. Preuss, R., and **McGill, S.M.** Improved lumbar spine position sense and sitting balance following a six-week rehabilitation program in individuals with a history of low back pain, McGill University Research Colloquium on Rehabilitation, May, 2001.
83. Grenier, S., Preuss, R.A., and **McGill, S.M.** Increased ventilation and injury history appear to modulate spine stability. Proceedings of the 24th annual meeting of the American Society for Biomechanics, University of Illinois at Chicago, July 19-22, 2000.
84. Grenier, S.G., Preuss, R.A., and **McGill, S.M.** Abdominal muscle patterns change with a history of back troubles. Proceedings of the XIth Congress of the Canadian Society for Biomechanics, Montreal, August 23-26, 2000. Also published in Arch. Physiol. Biochem. 108(1/2): 188, 2000.
85. Preuss, R.A., Grenier, S., and **McGill, S.M.** Lumbar spine position sense in pain-free individuals: Does a previous history of low back pain affect lumbar spine position sense. Proceedings of the XIth Congress of the Canadian Society for Biomechanics, Montreal, August 23-26, 2000. Also published in Arch. Physiol. Biochem. 108(1/2): 203, 2000.
86. Bereznick, D.E., Ross, J.K., and **McGill, S.M.** The friction between the thoracic skin-fascia interface: Implications in spine manipulation. Proceedings of the XIth Congress of the

- Canadian Society for Biomechanics, Montreal, August 23-26, 2000. Also published in Arch. Physiol. Biochem. 108(1/2): 204, 2000.
87. Bereznick, D.E., Ross, J.K., and **McGill, S.M.** L4/L5 facet joint asymmetry: Implications for manual palpation. International Society for Biomechanics XVIIth Congress, Calgary, Canada, August 8-13, 1999.
 88. Callaghan, J.P., and **McGill, S.M.** Studies on intervertebral disc damage from highly repetitive flexion/extension motions with compressive force. International Society for Biomechanics XVIIth Congress, Calgary, Canada, August 8-13, 1999.
 89. Grenier, S.G., Vera-Garcia, F.J., and **McGill, S.M.** Abdominal response during curl-ups on both stable and labile surfaces. International Society for Biomechanics XVIIth Congress, Calgary, Canada, August 8-13, 1999.
 90. Gunning, J.L., and **McGill, S.M.** Intervertebral disc hydration modulates the injury process. International Society for Biomechanics XVIIth Congress, Calgary, Canada, August 8-13, 1999.
 91. **McGill, S.M.**, Hughson, R., and Parks, K. Lumbar extensor oxygenation during prolonged contractions. International Society for Study of the Lumbar Spine, Hawaii, June 21-25, 1999.
 92. **McGill, S.M.**, Norman, R.W., Yingling, V.R., Wells, R.P., and Neumann, P. Shear Happens! Suggested guidelines for ergonomists to reduce the risk of low back injury from shear loading. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.
 93. Callaghan, J.P., and **McGill, S.M.** <**Julian Christian Award - Best Graduate Student presentation and Ontario HFAC Chapter Award** > Sitting, Standing and Walking: Potential for Low Back Injury from Sedentary Situations in the Workplace. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.
 94. Mientjes, M.I.V., Norman, R.W., Wells, R.P., and **McGill, S.M.** Evaluation of a continuous estimation technique of low back compression during simulated occupational jobs. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.
 95. **McGill, S.M.** Designing work to reduce the risk of low back injury: Let's address the specific causes of tissue damage. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.
 96. Callaghan, J.P., and **McGill, S.M.** Impact Forces From Falling: Implications for low back injury. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.

97. Honsa, K., Vennettelli, M., Mott, N., Silvera, D., Niechwiej, E., Wagar, S., Howard, M., Zettel, J., and **McGill, S.M.** < **Winner of Best Undergraduate Presentation and HFAC Ontario Chapter Award** > The Efficacy of the NIOSH (1991) Hand-to-Container Coupling Factor. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998.
98. Frazer, M., Norman, R.W., and **McGill, S.M.** (1998) EMG to muscle force. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
99. Brereton, L.C., and **McGill, S.M.** Frequency response of spine extensors during rapid isometric contractions: Effects of muscle length and tension. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
100. Callaghan, J.P., and **McGill, S.M.** Time varying postures, muscular activity, and low back joint loading during unsupported sitting. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
101. Cholewicki, J., Juluru, K., Panjabi, M.M., Radebold, A., and **McGill, S.M.** Can an abdominal belt and/or intra-abdominal pressure increase spine stability? In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
102. Gunning, J.L., Callaghan, J.P., and **McGill, S.M.** Spine load and muscular activity during exercise back extensor exercises. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
103. Lehman, G., Vernon, H., and **McGill, S.M.** Influence of chiropractic manipulation on trunk kinematics and associated trunk muscle EMG. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
104. McGowan, B., Callaghan, J.P., and **McGill, S.M.** The effects of cadence on lumbar spine kinematics during gait. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
105. Peach, J., Gunning, J., and **McGill, S.** Kinematics and trunk muscle myoelectric activity in the chronic low back pain patient. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
106. Ross, K., Bereznik, D., and **McGill, S.** Atlas-axis facet asymmetry: Implications for manual palpation. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.

107. Yingling, V.R., and **McGill, S.M.** The response of the intervertebral disc, the pars interarticularis and the posterior ligaments to external anterior shear loading. In The Proceedings of the Third North American Congress on Biomechanics, University of Waterloo, Waterloo, August 14-18, 1998.
108. Cholewicki, J., and **McGill, S.M.** Can lumbar stability be augmented with an abdominal belt and/or increased intra-abdominal pressure? International Society for Study of the Lumbar Spine, Brussel, Belgium, June 9-13, 1998.
109. Peach, J., Gunning, J., and **McGill, S.M.** Kinematics and trunk muscle myoelectric activity in the chronic low back pain patient. European Society for Biomechanics, Toulouse, France, July 8-11, 1998.
110. Peach, J., Gunning, J., and **McGill, S.M.** Reliability of spectral EMG parameters during isometric contractions of the spine extensors. European Society for Biomechanics, Toulouse, France, July 8-11, 1998
111. Kippers, V., and **McGill, S.M.** Effects of abdominal belts on back muscle activity and range of vertebral flexion. Ergonomics Society of Australia, Gold Coast, November 24-27, 1997.
112. **McGill, S.M.**, Axler, C., Callaghan, J., Gunning, J., Juker, D., Kropf, P., and Steffen, T. Spine loading during rehabilitation exercises: Identifying the safest method. International Society for Study of the Lumbar Spine, Burlington, Vermont, USA, June 24-29, 1996.
113. Little, C.E., Patla, A.E., and **McGill, S.M.** Evaluation of the rigid linked segment model assumption for the lower extremity. Canadian Society for Biomechanics - IX Biennial Conference, Simon Fraser University, Vancouver, August 21-24, 1996.
114. Stothart, J.P., and **McGill, S.M.** Stadiometry: Sources of variability in spine shrinkage measurement. Canadian Society for Biomechanics - IX Biennial Conference, Simon Fraser University, Vancouver, August 21-24, 1996.
115. Yingling, V.R., and **McGill, S.M.** Mechanical properties and injuries resulting from anterior and posterior shear loading of the spine. Canadian Society for Biomechanics - IX Biennial Conference, Simon Fraser University, Vancouver, August 21-24, 1996.
116. Callaghan, J.P., Patla, A.E., and **McGill, S.M.** An examination of rigid link segment models for gait analysis. Canadian Society for Biomechanics - IX Biennial Conference, Simon Fraser University, Vancouver, August 21-24, 1996.
117. Yingling, V.R., and **McGill, S.M.** Mechanical properties and injuries resulting from anterior and posterior shear loading of the spine at different loading rates. 20th Annual meeting of the American Society for Biomechanics, Georgia Tech, Atlanta, October 17-19, 1996.

118. Callaghan, J.P., Patla, A.E., and **McGill, S.M.** 3D Analysis of spine loading during gait. 20th Annual meeting of the American Society for Biomechanics, Georgia Tech, Atlanta, October 17-19, 1996.
119. Kinney, S.E., Callaghan, J., **McGill, S.M.** Lumbar spine movement and muscle activity using the golfer's listing technique. In Evidence Based Ergonomics, 28th Annual Conference of the Human Factors Association of Canada, Kitchener, 23-26 October, 1996.
120. Whiteside, R.A., and **McGill, S.M.** **Awarded J. Christiansen Award for best-undergraduate presentation.** A comparison of the effects of static and dynamic sitting postures on spinal shrinkage and perceived discomfort. In Evidence Based Ergonomics, 28th Annual Conference of the Human Factors Association of Canada, Kitchener, 23-26 October, 1996.
121. Frazer, M.B., Norman, R.W., and **McGill, S.M.** EMG to force calibration in dynamic movements, International Society for Biomechanics, Jyväskylä, Finland, July 2-8, 1995.
122. **McGill, S.M.**, Juker, D., and Kropf, P. (Finalist in Clinical Biomechanics Award). Indwelling EMG of Psoas: Clinical implications for low back injury and rehabilitation. Proceedings of the American Society for Biomechanics, Stanford University, USA, August 24-26, 1995.
123. Axler, C.T., and **McGill, S.M.** Abdominal exercises: Searching for the optimal muscle challenge with minimal spine loading. Proceedings of the American Society for Biomechanics, Stanford University, USA, August 24-26, 1995.
124. Callaghan, J.P., and **McGill, S.M.** Muscle activity and low back loads under external shear and compressive loading. Proceedings of the American Society for Biomechanics, Stanford University, USA, August 24-26, 1995.
125. Yingling, V.R., Callaghan, J.P., and **McGill, S.M.** The effect of load rate on the mechanical properties of porcine spinal motion segments. Proceedings of the American Society for Biomechanics, Stanford University, USA, August 24-26, 1995.
126. **McGill, S.M.**, Norman, R.W., and Cholewicki, J. (1995). Predicting low back compression during complex 3-D tasks: developing a simple polynomial for routine industrial use. Proceedings of the Second International Scientific Conference on Prevention of Musculoskeletal Disorders, Montreal, Sept. 24-28, 1995.
127. Cholewicki, J., and **McGill, S.M.** Mechanical stability of the in vivo lumbar spine, Annual meeting of the Biomedical Engineering Society (BMES), Boston, USA, Oct. 6-8, 1995.
128. Kippers, V., and **McGill, S.M.** Effects of extrinsic support on vertebral stabilization in flexed trunk postures. Anatomical Society of Australia and New Zealand, Sydney. Feb. 1-2, 1994.

129. Kippers, V., and **McGill, S.M.** Effects of abdominal belts on back muscle activity, Australian Sports Medicine Federation, Queensland Australia, 4-6 March, 1994.
130. Norman, R.W., **McGill, S.M.**, Lu, W., and Frazer, M. Improvements in biological realism in an industrial low back model: 3D WATBAK, 12th Triennial Congress of the International Ergonomics Association, Toronto, August 15-19, 1994.
131. **McGill, S.M.** A review of the assets and liabilities of abdominal belts in industry, 12th Triennial Congress of the International Ergonomics Association, Toronto, August 15-19, 1994.
132. Callaghan, J.P., and **McGill, S.M.** Compressive tolerance of a porcine vertebral fracture model exposed to physiological pressures, 8th Biennial Conference of the Canadian Society for Biomechanics, Calgary, August 1994.
133. **McGill, S.M.**, and Sharratt, M.T. Loads on spinal tissues during simultaneous lifting and ventilatory challenge, 8th Biennial Conference of the Canadian Society for Biomechanics, Calgary, August 1994.
134. Axler, C.T., and **McGill, S.M.** Studiometry of sitting and standing postures: Does all Shrinkage occur in the spine? 8th Biennial Conference of the Canadian Society for Biomechanics, Calgary, August 1994.
135. Sutarno, C.G., and **McGill, S.M.** Creating a normative kinematic data base for 3-D movements of the lumbar spine, 8th Biennial Conference of the Canadian Society for Biomechanics, Calgary, August 1994.
136. Sutarno, C.G., and **McGill, S.M.** Comparison of electromyographic activity patterns in normal subjects and low back pain patients, 8th Biennial Conference of the Canadian Society for Biomechanics, Calgary, August 1994.
137. Juker, D., and **McGill, S.M.** Quantitative intramuscular myoelectric activity of lumbar portions of psoas and the abdominal wall, Noraxon - Neurodata EMG Meeting, Berlin 94, Berlin, Dec. 10, 1994.
138. Sharratt, M.T., and **McGill, S.M.** The effect of variable breathing pattern on spinal loading during lifting, 1993 American College of Sports Medicine Annual Meeting. Seattle, Washington, June 2-5. Abstract published in Med. Sci. Sports Exerc. 25(5). Suppl. 1993.
139. Cholewicki, J., **McGill, S.M.**, and Norman, R.W. Solving the problem of mathematical indeterminacy in a lumbar spine model using EMG intelligent optimization, XIVth 27 June 2000 Congress of the International Society for Biomechanics, Paris, France, July 4-8, 1993.

140. Potvin, J.R., Norman, R.W., and **McGill, S.M.** A Method for continually estimating instantaneous bilateral erector spinae muscle loads during prolonged dynamic lifting, XIVth Congress of the International Society for Biomechanics, Paris, France, July 4-8, 1993.
141. Sutarno, C.G., and **McGill, S.M.** Force-velocity investigation of the erector spinae muscles, XIVth Congress of the International Society for Biomechanics, Paris, France, July 4-8, 1993.
142. Santaguida, P., and **McGill, S.M.** Three dimensional mechanical study of the psoas major muscle with respect to the spine. Second North American Congress on Biomechanics, Chicago, USA, Aug. 24-28, 1992.
143. **McGill, S.M.**, and Norman, R.W. Loading of the low back during 3-D moment generation, 25th Annual Conference of the Human Factors Association of Canada, Hamilton, October 25 - 28, 1992.
144. Seguin, J., and **McGill, S.M.** The effect of abdominal belts on passive stiffness of the trunk about three axes, 25th Annual Conference of the Human Factors Association of Canada, Hamilton, October 25 - 28, 1992.
145. Li, Y., Bishop, P.J., Wells, R.P., and **McGill, S.M.** A quasi-static analytical sagittal plane model of the cervical spine in extension and compression, 35th Stapp Car Crash Conference, SAE, San Diego, November 18-20, 1991.
146. Potvin, J.R., Norman, R.W., and **McGill, S.M.** Individual trunk muscle and ligament forces during dynamic lifting, XIIIth International Congress on Biomechanics, Perth, Australia, 9-13 December, 1991.
147. Cholewicki, J., and **McGill, S.M.** Lumbar spine kinematics obtained from videofluoroscopy. XIIIth International Congress on Biomechanics, Perth, Australia, 9-13 December, 1991.
148. **McGill, S.M.** Lumbar loads from moments about three orthopaedic axes: Developing the architecture of a 3-D occupational low back model. XIIIth International Congress on Biomechanics, Perth, Australia, 9-13 December, 1991.
149. Naus, F., Sharratt, M., **McGill, S.**, and Hughson, R. EMG confirmation of active expiration. Federation of American Society for Experimental Biology, Washington, D.C., April, 1990.
150. Bone, B.C., Norman, R.W., **McGill, S.M.**, and Ball, K.A. Comparison of 2D and 3D model predictions in analyzing asymmetric lifting postures. Annual International Industrial Ergonomics and Safety Conference, Montreal, June 10-13, 1990.

151. Potvin, J.R., Norman, R.W., **McGill, S.M.**, and Eckenrath, M.E. Internal and external "Lifting Effectiveness" during dynamic manual materials handling tasks. Sixth Biennial Conference of the Canadian Society for Biomechanics, Quebec City, August, 1990.
152. Cholewicki, J., **McGill, S.M.**, Wells, R.P., and Vernon, H. A method for measuring vertebral kinematics from fluoroscopy. Sixth Biennial Conference of the Canadian Society for Biomechanics. Quebec City, August, 1990.
153. **McGill, S.M.** Loads in lumbar spinal tissues during dynamic lateral bending. Sixth Biennial Conference of the Canadian Society for Biomechanics. Quebec City, August, 1990.
154. **McGill, S.M.**, Potvin, J., and Norman, R.W. Estimating low back demands in ambulance attendants using a hybrid anatomical model. 23rd Annual Conference of the Human Factors Association of Canada, Ottawa, September, 1990.
155. **McGill, S.M.**, and Kane, S.L. Torsional strength and muscle activity of the trunk during axial twisting. International Society for Biomechanics, Los Angeles, June, 1989.
156. Potvin, J.R., Norman, R.W., **McGill, S.M.**, and Eckenrath, M.F. L4/L5 shear force reduction by low back musculature during lifting. International Society for Biomechanics, Los Angeles, June, 1989.
157. **McGill, S.M.**, Norman, R.W., and Sharratt, M.T. Lifting with an abdominal belt: Effects on trunk muscle activity and intra-abdominal pressure. 22nd Annual conference of the Human Factors Association of Canada, Toronto, Nov., 1989.
158. Sullivan, A., and **McGill, S.M.** Changes in the height of the spine from seated vibration exposure. 22nd Annual Conference of the Human Factors Association of Canada, Toronto, November, 1989.
159. Hoodless, K.P., and **McGill, S.M.** Isometric and dynamic torsional trunk strength in women. 22nd Annual conference of the Human Factors Association of Canada, Toronto, November, 1989.
160. Brisland, C.E., and **McGill, S.M.** The effects of a mechanical suspension seat on spinal vibrocreep responses. 22nd Annual conference of the Human Factors Association of Canada, Toronto, November, 1989.
161. Potvin, J.R., Norman, R.W., **McGill, S.M.**, and Eckenrath, M.F. Prediction of L4-L5 disc compression during dynamic stoop and squat lifts. 22nd Annual Conference of the Human Factors Association of Canada, Toronto, November, 1989.
162. Potvin, J., Ball, K., **McGill, S.**, and Norman, R. A test of the assumption of rigidity in a linked segment biomechanical lifting model. Canadian Society for Biomechanics, Ottawa., August, 1988.

163. Lafortune, D., Norman, R., and **McGill, S.** Ensemble averages of linear enveloped EMG's during lifting. Canadian Society for Biomechanics, Ottawa, August, 1988.
164. Eckenrath, M.F., Norman, R.W., **McGill, S.M.**, and Bennett, G.W. A field usable stochastic model which predicts L4/L5 disc compression. European Society for Biomechanics, Bristol, England, September, 1988.
165. **McGill, S.M.**, Norman, R.W., and Sharratt, M.T. The relationship of IAP to ventilatory and low back mechanics. 21st Annual Conference of the Human Factors Association of Canada, Edmonton, September, 1988.
166. Thorstensson, A., Norman, R.W., and **McGill, S.M.** Force Transmission Through the Arms and Trunk During Different Loading Conditions. Eleventh International Congress on Biomechanics, Amsterdam, Holland, July, 1987.
167. **McGill, S.M.**, Thorstensson, A., and Norman, R.W. Mechanical Response of the Human Trunk Under Dynamic Axial Load. Eleventh International Congress on Biomechanics, Amsterdam, Holland, July, 1987.
168. **McGill, S.M.**, and Norman, R.W. The Contribution of Lumbodorsal Fascia Forces to Extensor Moment Generation During Lifting. Twentieth Annual Meeting, Human Factors Association of Canada, Montreal, Canada, October, 1987.
169. **McGill, S.M.**, and Norman, R.W. A Critical Look at Intra-abdominal Pressure as a Viable Mechanism to Reduce Spinal Compression. 19th Annual Meeting of Human Factors Association of Canada, August, 1986, Vancouver, Canada. This presentation was awarded the Julian Christensen Award for Ph.D. level ergonomics research.
170. **McGill, S.M.**, Norman, R.W., and Patt, N. Estimations of Force and Moment Generating Capacity of Trunk Musculature from CT Scan Measures. North American Congress on Biomechanics, Montreal, Canada, August, 1986.
171. **McGill, S.M.**, and Norman, R.W. A Revised Model of the Erector Spinae Muscle. 10th Congress of the International Society for Biomechanics, Umea, Sweden, June, 1985.
172. **McGill, S.M.**, and Norman, R.W. Static vs. Dynamic Modelling of Lumbar Moments Induced During Lifting. Third Biannual Conference of the Canadian Society for Biomechanics, Winnipeg, Manitoba., August, 1984.
173. **McGill, S.M.** A Computer Analysis of Swing Through Crutch Gait. Second Biannual Conference of the Canadian Society of Biomechanics, Kingston, Ontario, September, 1982.

174. Dainty, D.A., **McGill, S.M.**, Mason, M., Cotton, C., and Morrison, W. The Evaluation of Window Opening Capabilities of Physically Handicapped Adults. 8th Congress of the International Society for Biomechanics, Nagoya, Japan, June, 1981.

Research Grants and Contracts

Researcher	Agency	Amount	Tenure	Short Title
S.M. McGill	Powerhoops	\$50,000	Sep 2011- May 2012	Assessment of the powerhoop.
S.M. McGill	TRX	\$65,000	Sep 2011- Aug 2012	Assessment of joint load and stability from TRX exercises.
S.M. McGill	NSERC-Engage	\$25,000	Mar 2011- Mar 2012	Surgical repair technique for intervertebral disc herniation
	Bayliss Medical	\$53,900		
S.M. McGill		\$25,000- \$30,000/yr	Ongoing	Patient Assessments
J. McPhee, S.M. McGill, J. Kofman	NSERC Equipment	\$91,380	2010	Purchase of a Movement Suit to map full body 3D motion.
D.M. Frost, J.P. Callaghan S.M. McGill, T.A.C. Beach	CRE-MSD	\$10,000	2010	Seed Grant: Towards the establishment of a movement-based approach to the physical preparation of occupational athletes- Is there a relationship between job-specific fitness and whole body movement patterns/strategies:
D.M. Frost, T.A.C. Beach, S.M. McGill, J.P. Callaghan	Athletes' Performance	\$172,000 (in kind)	2009	Towards the establishment of an evidence-based approach to the physical preparation of occupational athletes.
D.M. Frost, T.A.C. Beach, S.M. McGill, J.P. Callaghan	The Andrews-Paulos Research and Educational Institute	\$72,000 (in kind)	2009	Towards the establishment of an evidence-based approach to the physical preparation of occupational athletes.
S.M. McGill	GM Legacy Fund	\$23,000	2009-2016	8 yr. trial linking movement patterns to predicting onset of back disorders
J. Yates and S.M. McGill	CRE-MSD	\$9,850.	2008	Seed Grant, Establishing Loads and Posture Variables for Disc Herniation
McGill, Callaghan, Frost, Beach	CRE-MSD	\$10,000.	2008	Seed Grant: Establishing the foundation for a novel musculoskeletal injury prediction and prevention approach
S.M. McGill	NSERC	\$310,375.	2007-2012	Reducing back injury: Expanding fundamental knowledge of spine function

Stuart M. McGILL

S.M. McGill	CRE-MSD	\$13,000.	2007	Funding for Graduate Student
S.M. McGill	Comfort Solutions	\$72,900.	2006	Evaluation of new mattress technology
S.M. McGill	Samarit Medical	\$20,000	2003	Evaluation of roll board patient transfer device
S.M. McGill	American Council on Exercise	\$5,000 US	2003	Consequences of sitting on a gym ball vs conventional chair
R.Wells, S.McGill, M.Frazer, H.Green, N.Theberge, D.Ranney, J.Medley, C.MacGregor, D.Cole, P.Keir, A.Moore, J.Callaghan, T.Haines, M.Kerr, S.Naqvi, J.Potvin	WSIB	\$2,035,000	April '03- April '08	Action centre for the prevention of work related musculoskeletal disorders
S.M. McGill	NSERC	\$276,660	April '02- '06	Reducing low back injury by ensuring sufficient spine stability
S.M. McGill	WSIB	\$101,208	Sept. '01- Sept. '03	Finding the causes of low back troubles
S.M. McGill	Tekscan Inc.	\$140,000	January '01	System development - equipment gift in kind
H. Vernon, S. Mior, S.M. McGill, W. Herzog, G. Kawchuk, J. Boucher, P. Cote, Peterson	MRC	\$64,000	September '00	Spinal pain and disability - a workshop
E. Weckman, D. Johnson, S.M. McGill, M. Sharratt, R. Hughson, A. Strong	CFI	\$2,135,415	August '00	Live fire research facility
S.M. McGill	WSIB	\$108,709	Sept. 99- Sept 01	Towards developing better rehabilitation protocols for low back

				injured workers
S.M. McGill	NSERC	\$182,600	Apr '98- Apr '02	Towards understanding low back injury from repeated and prolonged loads
S.M. McGill (Chair of NACOB Conference)	Whitaker Foundat'n	\$14,000	August '98	Funding for students to attend NACOB Conference
S.M. McGill	NSERC	\$140,000	Apr '94- Apr '98	Low Back Injury: Toward understanding function and injury mechanisms
P.J. Bishop, S.M. McGill, R.P. Wells	Sports Canada	\$22,369	July '93- July '94	The Development of an Anatomically Detailed Computer Model of the Human Cervical Spine
S.M. McGill, R.P. Wells	NSERC	\$60,077	Apr '93	Materials Testing Machine
S.M. McGill	NSERC	\$99,000	Apr '91- Apr '94	Towards the Reduction of Low Back Injury via Biomechanical Modelling
P.J. Bishop, S.M. McGill, R.P. Wells	Rich Hansen Main in Motion Legacy Fund	\$20,000	July '91- June '92	The Effectiveness of Off-Axial Blows in Reducing Cervical Compression in Head First Collisions
R.W. Norman S.M. McGill	DCIEM	\$76,000	Feb '88 – Feb '89	Development of an Objective Method of Evaluating Safety of Lifting Tasks
S.M. McGill	NSERC	\$68,145	Apr '88- Apr '91	Reduction of Low Back Injury via Biomechanical Modelling
S.M. McGill	U of Waterloo Health and Safety	\$300	Sept '87	Evaluation of the slip resistance of kitchen staff shoes
S.M. McGill	Ergosystems Inc.	\$8,000	Dec '86- Feb '87	Evaluation of Ambulance Attendant Spine Loads

Graduate Student Supervision (GS - Graduating Status)

a) **As Supervisor: M.Sc.**

1. **E. Cambridge**, “In Progress”, MSc
2. **N. Sidorkewicz**, “In Progress”, MSc
3. **C. Balkovec**, “In Progress”, MSc
4. **D. Ikeda**, “In Progress”, MSc
5. **S. Freeman**, MSc.
6. **R. Patel**, “Performance of a two-foot vertical jump: what is more important hip or knee dominance”, MSc. GS Lab technician and scientist.

7. **J. Yates**, MSc. 2009. Establishing the effect of vibration and postural constraint loading on the progression of intervertebral disc herniation, GS. Teaching Demonstrator. Department of Kinesiology.
8. **L. Marshall**, MSc. 2008. An Investigation of the Role of Dynamic Axial Torque and Twist on the Disc Herniation Mechanism. GS: Lab Technician.
9. **C. Tampier**, M.Sc. 2006. Progressive disc herniation: An investigation of the mechanism using histochemical and microscopic techniques, GS: Surgeon in Chile.
10. **S. Howarth**, MSc. 2006. Locating instability in the lumbar spine: Characterizing the eigenvector. GS: Ph.D. Candidate, University of Waterloo.
11. **K. Walker**, M.Sc. 2004. Mechanics of pushing and pulling tasks, GS: Ergonomist at GE.
12. **S. Wang**, M.Sc. 2004. The links between ventilation mechanics, spine mechanics and stability. GS: Student at CMCC.
13. **N. Kavcic**, M.Sc. 2002. Determining the stabilizing role of the torso musculature during rehabilitation exercise, GS: Scientist, Spine Laboratory, U. of Waterloo.
14. **R. Pruess**, M.Sc. 2001. Testing and training the proprioception in the lumbar spine. GS: Ph.D. Candidate - Dept. of Physical Therapy, McGill University.
15. **J. Scannell**, M.Sc. 2001, Lumbar posture - should it be modified? A study of passive tissue strain and muscle activation patterns. GS: Ph.D. Candidate, University of Waterloo.
16. **J. Gunning**, M.Sc. 1999. Spinal injury: the role of prior loading history using a porcine trauma model. GS: Project Manager - Injury Reduction with Garment Workers' Union.
17. **G. Lehman**, M.Sc. 1998. The influence of spinal manipulative therapy on lumbar spinal range of motion and associated trunk muscle EMG. GS: Scientist, UW-CMCC Research Clinic.
18. **L. Brereton**, M.Sc. 1998. Effects of physical fatigue and cognitive challenges on the potential for low back injury during low external load, end range of motion conditions. GS: Ergonomist, General Motors Diesel Division, London.
19. **J. Peach**, M.Sc. 1997. Objective measurement of the spine kinematics and muscle activity in low back patients and normals. GS: Ph.D. Candidate - Dept. of Mechanical Engineering, Univ. of Vermont.
20. **C. Axler**, M.Sc. 1995. Low back loads over a variety of abdominal exercises: Searching for the safest abdominal challenge. GS: Ergonomist - Occupational Health Clinics for Ontario Workers.
21. **J. Callaghan**, M.Sc., 1994, Compressive strength of a porcine vertebral fracture model exposed to physiologic pressures. GS: Ph.D. Candidate - U. Waterloo.
22. **C. Sutarno**, M.Sc., 1993, Objective measurement of the kinematics of the lumbar spine in normal and patient populations. GS: Ergonomist - ATT Global Information Systems, Atlanta.
23. **M. Mullender**, M.Sc., July 1991. The relationship between electromyography of trunk muscles and torque in the lumbar spine, in the Faculty of Human Movement Sciences, Free University, Amsterdam, Holland. GS: Ph.D. Candidate - Holland.
24. **L. Santaguida**, M.Sc., October, 1991. The Psoas Major Muscle: A three-dimensional anatomical and mechanical study with respect to the spine. GS: Research Director, Dept. of Physical Therapy, Wellesley Hospital, Toronto.

25. **J. Cholewicki**, M.Sc., August, 1990. Evaluation of the lumbar discs and ligaments during extremely heavy lifts via dynamic fluoroscopy. GS: Ph.D. Candidate - U. Waterloo.

As Supervisor: Ph.D.

1. **D. Frost**, "In Progress", Ph.D.
2. **J. Flynn/Moreside**, Ph.D., 2010. The effect of limited hip mobility on the lumbar spine in a young adult population. Visiting Scientist Spain.
3. **S. Brown**, Ph.D., 2008. Examining the Neuromuscular and Mechanical Characteristics of the Abdominal Musculature and Connective Tissues: Implications for Stiffening the Lumbar Spine. GS: Assistant Professor, U. Guelph.
4. **J. Scannell**, Ph.D., 2007. In Vitro and In Vivo Biomechanical Investigation of the Clinical Practice of Disc Prolapse Prevention and Rehabilitation. GS: own business
5. **D. Bereznick**, Ph.D., 2005. Lumbar Manipulation: Quantification and Modification of the External Kinetics Affecting the Presence and Site of Cavitation. GS: Professor - CMCC
6. **K. Ross**, Ph.D., 2003. Spinal Manipulative Therapy Techniques: Evaluating the Mechanistic Assumptions. GS: Professor - CMCC
7. **S. Grenier**, Ph.D., 2002. Stabilization strategies of the lumbar spine invivo. GS: Assistant Professor, Laurentian University.
8. **J. Callaghan**, Ph.D., January 1999. Low back injury from repeated and prolonged loads. GS: Assistant Professor, School of Human Biology, University of Guelph.
9. **V. Yingling**, Ph.D., June 1997. Shear loading of the lumbar spine: modulators of motion segment tolerance and the resulting injuries. GS: Post doctoral Fellow, George Washington University School of Medicine.
10. **J. Cholewicki**, Ph.D., October 1993, Mechanical Stability of the in vivo lumbar spine. GS: Assistant Professor, Yale University School of Medicine.

b) **As Committee Member**

1. **S. Howarth**, PhD., 2011 Mechanical response of the porcine spine to acute and repetitive anterior-posterior shear.
2. **J. Byrne**, Ph.D., An investigation of the biomechanical factors influencing knee joint function following total knee replacement. September 2009.
3. **D. Gregory**, Ph.D., The influence of the tensile material properties of single annulus fibrosus lamellae and interlamellar matrix strength on disc herniation and progression. 2009.
4. **N. Dunk**, Ph.D., Time-varying changes in the lumbar spine from exposure to sedentary tasks and their potential effects on injury mechanics and pain generation. June 2009.
5. **J. Drake**, Ph.D., Axial twist loading of the spine. 2009.
6. **S. Purkiss**, Ph.D., Institute of Medical Science, University of Toronto, In progress.
7. **R. Parkinson**, Ph.D., Refining the Relationship between the Mechanical Demands on the Spine and Injury Mechanisms through Improved Estimates of Load Exposure and Tissue Tolerance, September 2008.

8. **G. Hicks**, Ph.D., Predictive validity of clinical variables used in the determination of patient prognosis following a lumbar stabilization program. University of Pittsburgh, September, 2002.
9. **M. Mientjes**, Ph.D., On a “55/5 second minute” of “light” assembly: Effects on risk factors for low back pain reporting. June, 2000.
10. **M. Reid**, M.Sc. Adaptation mechanisms associated with altered segment parameters during voluntary gait modification. 2001.
11. **S. Murphy**, Ph.D., Three-dimensional dynamic model of the ice hockey stick during the stationary slap shot. April, 2001.
12. **B. McGowan**, M.Sc. Influence of available response time on arresting forward momentum during the termination of gait. February, 2001.
13. **E. Weiss**, M.Sc. Modelling the thoracic response to blunt chest impact and methods to predict and prevent resulting injury. December, 1997.
14. **M. Frazer**, Ph.D., The assessment of spine movement dysfunction by a commercial dynamometer, EMG and an EMG assisted model. May, 1997.
15. **Dave Andrews**, Ph.D., Biomechanical methods for low back physical demands assessment. August, 1996.
16. **M. Mientjes**, An EMG based continuous low back load estimation technique for three-dimensional workplace related jobs and tasks. M.Sc. May, 1996.
17. **M. Kho**, M.Sc., Bone-on-bone forces at the ankle and knee in figure skaters during loop jumps: Clinical implications. M.Sc., Sept. 1996.
18. **P. Keir**, Functional implications of the musculoskeletal anatomy and passive tissue properties of the forearm. Ph.D. April, 1995.
19. **W. Lu**, An analytical computer model of the human cervical spine under axial compression and lateral bending. Ph.D. November, 1994.
20. **J. Potvin**, The influences of fatigue on hypothesized mechanisms of injury to the low back during repetitive lifting. Ph.D. March 1992.
21. **N. Wieman**, Electromyography of the trunk and lower limb muscles during gait of elderly and younger subjects: Implications for the control of balance. M.Sc., August 1991.
22. **B. Bone**. An evaluation of a static three-dimensional biomechanical model of the low back in analyzing asymmetric lifting postures. M.Sc., Jan 1990.
23. **Y. Li**, Evaluating cervical spine loading in head first collisions with the head and neck initially extended. M.Sc., Dec. 1990.
24. **S. Taylor**, The effects of Whole-body vibration on neural motor control during pursuit tracking, M.Sc., Sept 1989.
25. **F. Naus**, An EMG confirmation of active expiration, M.Sc, Dec. 1989.
26. **J.R. Potvin**, An analysis of the variables related to L4/L5 compression and shear forces during squat lifting, M.Sc., June, 1988.
27. **M.E. Eckenrath**, A model to predict the low-back demands experienced during stooped lifting, M.Sc., June 1988.
28. **D. Lafortune**, The variability of EMG amplitude and frequency measures obtained from selected trunk musculature during sagittal plane and twisting lifts, M.Sc., July 1988.

c) **Awards to Students - As Supervisor**

1. **Priyanka Banerjee**, NSERC undergraduate student scholarship, 2006.
2. **Steve Brown**, OGS Graduate Student Scholarship, NSERC Graduate Scholarship, 2003-2004.
3. **Simon Wang**, OGS Graduate Student Scholarship, 2001-2002, NSERC Graduate Scholarship, 2003-2004.
4. **David Bereznick**, CIHR Fellowship, 2002-2004
5. **Sam Howarth**, NSERC Undergraduate Student Scholarship, 2002, 2003.
6. **David Bereznick**, MRC Fellowship Award, \$45,000 per annum, 2000-2002.
7. **Matthew Clarke**, NSERC undergraduate student scholarship, 2000, also 2001.
8. **Jason Green**, NSERC undergraduate student scholarship, 2000, also 2001.
9. **Richard Preuss**, OGS graduate student scholarship, 1999-2000.
10. **Kim Ross**, FCER chiropractic research grant, 1998, 1999, 2000.
11. **Jack Callaghan**, Christensen Award (best graduate presentation) from Human Factors Association of Canada and Ontario HFAC Chapter Award. Callaghan, J., McGill, S.M. Sitting, Standing and Walking: Potential for low back injury from sedentary situations in the workplace. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998, pp. 163-168.
12. **Katya Honsa**, (best undergraduate paper) from Human Factors Association of Canada and Ontario HFAC Chapter Award. Honsa, K., Vennettelli, M., Mott, N., Silvera, D., Niechwiej, E., Wagar, S., Howard, M., Zettel, J., and McGill, S.M. The Efficacy of the NIOSH (1991) Hand-to-Container Coupling Factor. Proceedings of the 30th Annual Conference of the Human Factors Association of Canada, 1998, pp. 253.
13. **Greg Lehman**, NSERC graduate scholarship, 1997-98.
14. **Lisa Brereton**, NSERC graduate scholarship, 1997, 1998.
15. **Jennifer Gunning**, OGS graduate student scholarship, 1997, 1998.
16. **John Peach**, OGS graduate student scholarship, 1996.
17. **Robert Whiteside**, Christensen Award (best undergraduate paper) from the Human Factors Association of Canada; Whiteside, R., McGill, S.M. (1996). A comparison of the effects of static postures on spinal shrinkage and perceived discomfort. pp.189-193.
18. **Jack Callaghan**, OGS graduate student scholarship, 1995, 1996, 1997, 1998.
19. **Craig Axler**, NSERC undergraduate student research award, Summer 1993.
20. **Jacek Cholewicki**, NSERC Postdoctoral Fellowship, 1993.
21. **John Seguin**, NSERC undergraduate student research award, Summer 1992.
22. **Sheri Brown**, NSERC undergraduate student research award, Summer 1990.
23. **Jacek Cholewicki**, M.Sc. Outstanding Achievement in Graduate Studies, University of Waterloo, 1990. Thesis title: Evaluation of the lumbar discs and ligaments during extremely heavy lifts via dynamic fluoroscopy.
24. **Karen Hoodless**, NSERC undergraduate student research award, Summer 1989.
25. **Aileen Sullivan**, Christensen Award (best Undergraduate paper) from the Human Factors Association of Canada; Sullivan, A. and McGill, S.M. (1989). Changes in spinal height during and following seated whole body vibration, pp. 245-250.
26. **Jim Potvin**, Christensen Award (best Graduate paper) from the Human Factors Association of Canada; Potvin, J.R., Eckenrath, M.E., Norman, R.W. (supervisor), McGill, S.M. (committee member), Bennett, G.W., (1989). The prediction of L4/L5

disc compression forces during stoop and squat lifts using regression models, pp. 223-228.

27. **Sheri-Lyn Kane**, NSERC undergraduate student research award, Summer 1988.

d) **Supervisor of Visiting Students**

1. **Francisco Vera-Garcia**, Valencia University, Spain, September-December, 1998.
2. **Juanfran Lison**, Valencia University Medical School, Spain, Sept.-Dec., 1997.
3. **Marc J. van Wijk**, Free University, Amsterdam, Sept. '92 - Feb '93.
4. **Lotta Finsen**, National Institute of Occupational Health, Denmark, Sept. '92-Dec. '92.
5. **Karen Sogaard**, National Institute of Occupational Health, Denmark, May 1991.
6. **Margriet Mullender**, Free University, Amsterdam Sept. '90-Jan '91.

e) **External MSc Examiner**

1. **Stephen White**, Auckland Institute of Technology, New Zealand, November 1999.

f) **External PhD Examiner**

1. **Susan Morris**, University of Western Australia 2010
2. **Barry Donaldson**, University of Otago 2008.
3. **Craig Good**, University of Calgary, January 2007.
4. **Paul Marshall**, University of Auckland, New Zealand, August 2006.
5. **Greg Hicks**, University of Pittsburgh, September 2002.
6. **Rotsalai Kanlayanaphotporn**, University of South Australia, May 2002.
7. **Cynthia Thompson**, PhD Comprehensive Exam Examiner, McGill University, 2001.
8. **Stephan Riek**, Simon Fraser University, Canada, January 1996.
9. **Angus Burnett**, University of Western Australia, Australia, July 1996.

g) **Host of Visiting Scholars (Sabbatical Leaves)**

1. **Professor Vaughan Kippers**, University of Queensland, 1994.
2. **Professor Peter Stothart**, University of Ottawa, 1998.
3. **Professor Linda Van Dillen**, Washington University at St. Louis, 2002.
4. **Dr. Qinguo Wang**, PRC, 2002.
5. **Dr. Francisco Vera Garcia**, (Post Doctoral Fellow), Valencia University, Spain, September 2004-August 2005.
6. **Dr. Aleks Dejaniovic**, Serbia, September 2010- August 2011

Service

A) Committees

1. Kinesiology Graduate Committee June '10 – June '12
2. Advisory Committee on Continuing Education (University) March '06 – March '07

3. Kinesiology Department – Chair May '03 – June '09
4. Ex officio, AHS Faculty Graduate Committee July '03 – June '09
5. Kinesiology Graduate Committee – Associate Chair July '02 – April 2003
6. Kinesiology Web Committee July '02 – June '09
7. Tenure and Promotion Committee (Department of Kinesiology) July '01 – June '09
8. Executive Committee (Department of Kinesiology) July '01 – June '09
9. University of Waterloo Joint Health and Safety Committee 1991 – 2003
10. Kinesiology Committee on Planning (AdHoc) (KINCOP) Dec. '01 – Sept. '02
11. Chair, Kinesiology Committee on Planning (AdHoc) (KINCOP) Sept. '02 – 2003
12. Department Committee on Faculty Appointments (Kinesiology) (DACA) - Chair Jan. '00 – June '09
13. UW Interdisciplinary Grants Review Committee May '00 – May '09
14. Math Service Course Development Committee Jan. - March '02
15. Kinesiology department subcommittee on student recruitment July '00 - Jan. '01
16. UW Health and Safety subcommittee: Multidisciplinary committee for NH Health March '00 – Sept. '01
17. Senator - University of Waterloo July '98 - June '99
18. AHS Faculty Tenure and Promotion Committee July '98 – July '01
19. Management Committee, Health and Lifestyles Connections, Applied Health Sciences Jan. '96 - July '00
20. Steering Committee, Chiropractic Research Clinic Jan. '96 - July '00
21. Tenure and Promotion Committee (Department of Kinesiology) May '96 - June '98
22. AHS Faculty Committee for Graduate Studies Sept. '95 - July '98
23. AHS Faculty Committee on Student Appeals Sept. '95 - July '98
24. Co-Chair, University of Waterloo Joint Health and Safety Committee Sept. '94 - June '95
May '96 - June '97
June '01 - '02
25. Executive Committee (Department of Kinesiology) July '95 - June '97
July '98 - June '00
26. Selection Board, Ontario Graduate Scholarship Program, Ministry of Education and Training Sept. '95 - Sept. '96
27. Ad Hoc Committee to develop department vision (Department of Kinesiology) Dec. '94 - Dec. '95
28. Member, University of Waterloo Joint Health and Safety Committee June '93 - Sept. '94
June '95 - May '96
May '97 - Sept. '01
29. Chair, Faculty Council, Applied Health Sciences Sept. '93 - Dec. '93
Sept. '94 - May '95
30. Technology Transfer and Licencing Office Coordinating Committee (University of Waterloo) Oct. '92 - Dec. '93
31. Engineering Faculty Council (Representative for the Faculty of Applied Health Sciences) July '91 - July '92
32. Vice President's Advisory Council on Academic Human Resources (University of Waterloo) June '89 - July '90
33. Graduate Committee June '89 - June '93

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| (Department of Kinesiology) | June '97 - June '00 |
| 34. Undergraduate Affairs Committee | June '89 - Sept. '90 |
| (Department of Kinesiology) | |
| 35. Science Faculty Council | Sept. '88 - June '91 |
| (Representative for the Faculty of Applied Health Sciences) | |
| 36. Planning Committee (Department of Kinesiology) | June '87 - June '89
June '93 - June '95 |
| 37. Canadian Chiropractic Association Research Committee | March '97 - March '01 |

B) Other

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| 1. Undergraduate Stream Advisor for Occupational Kinesiology | June '88 - June '09 |
| 2. Co-op Ergonomics Degree Coordinator | Feb. '91 - Dec. '96 |
| Department of Kinesiology | |
| 3. Undergraduate First Year Advisor | Sept. '90 - Feb. '91 |
| 4. Director, UW-CMCC Chiropractic Research Clinic | April '97 - Dec. '00 |

Courses Taught

- | | |
|---------|--|
| KIN 104 | Kinesiology: Issues and Approaches |
| KIN 427 | Low Back Disorders: Evidence Based Prevention and Rehabilitation |
| KIN 221 | Advanced Biomechanics of Human Movement |
| KIN 121 | Introduction to Biomechanics |
| KIN 321 | Biomechanics of Human Movement |
| KIN 340 | Injuries in Work and Sport (shared course) |
| KIN 420 | Occupational Biomechanics |
| KIN 612 | Instrumentation and Signal Processing in Biomechanics Research |
| KIN 727 | Low Back Disorders: Optimizing Prevention, Rehabilitation and Performance. |
| KIN 611 | Issues in Biomechanics |

Current Research

1. 3-D modelling of the lumbar spine to obtain insight into function and injury mechanisms.
2. Predicting tendon force via the electromyogram augmented with muscle geometry, length and velocity relations.
3. Evaluation of low back injury prevention and rehabilitation strategies.
4. Determining mechanical properties of low back tissues particularly disc mechanics.
5. Evaluation of low back exercises to optimize spine performance.