

CURRICULUM VITAE

James (Jim) Robert Potvin

ACE – Education symposium
ACE – MMH tools symposium

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June 9, 2008

BUSINESS ADDRESS:

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EDUCATION BACKGROUND

<u>Designation</u>	<u>Institution</u>	<u>Department</u>	<u>Year</u>
Ph.D.	University of Waterloo	Kinesiology	1992
M.Sc.	University of Waterloo	Kinesiology	1988
B.HK.	University of Windsor	Human Kinetics	1986

CURRENT STATUS

2008 Associate Professor, Department of Kinesiology, McMaster University, tenured

PROFESSIONAL ORGANIZATIONS

American College of Sports Medicine
Association of Canadian Ergonomists
Canadian Society of Biomechanics
International Society of Biomechanics

EMPLOYMENT HISTORY

1992-97 Assistant Professor, School of Human Biology, University of Guelph
1997-98 Assistant Professor, Department of Kinesiology, University of Windsor
1998-06 Associate Professor, Department of Kinesiology, University of Windsor
2006-08 Assistant Professor, Department of Kinesiology, McMaster University
2008 Associate Professor, Department of Kinesiology, McMaster University, tenured

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Editorial Boards

Human Movement Science
Journal of Electromyography and Kinesiology

Grant and Personnel Committees

Personnel Committee (2004-06), Department of Kinesiology, University of Windsor

Journal Referee (latest review)

Canadian Journal of Applied Physiology (2004)
Clinical Biomechanics (2007)
Dynamic Medicine (2005)
Ergonomics (2005)
European Journal of Applied Physiology (2007)
Human Factors (2005)
Journal of Applied Biomechanics (2007)
Journal of Applied Physiology (2004)
Journal of Biomechanics (2006)
Journal of Electromyography and Kinesiology (2008)
Journal of Human Movement Science (2007)
Medicine and Science in Sports and Exercise (2005)
Medicine Engineering and Physics (2006)
Spine (2007)
Transactions in Biomedical Engineering (1999)

External Grant Reviews

National Science and Engineering Research Council (Canada) (2008)
Workplace Safety and Insurance Board (Ontario): Research Advisory Board (2007)
Ontario Centre for Research Expertise on Musculoskeletal Disorders: Research Advisory Board (2007)
CIHR (2008)

AREAS OF INTEREST

Biomechanics, Ergonomics, Electromyography, Muscle Fatigue, Spine Modelling, Joint Stability

HONOURS

1985	NSERC Undergraduate Scholarship
1986	Board of Governor's Medal, Faculty of Human Kinetics, University of Windsor
1986/87	Ontario Graduate Scholarship
1988-91	NSERC Postgraduate Scholarship
1989	Christiensen Award - Human Factors Conference 1989
1992	Outstanding Achievement in Doctoral Studies, Faculty of Applied Health Sciences, University of Waterloo.
1997	Co-winner with Department of Human Biology faculty of the College of Biological Sciences Outstanding Teacher Award, University of Guelph.

COURSES TAUGHT (total = 40)

Undergraduate

University of Guelph

05-215	Engineering Biomechanics (1996)
75-227	Principles of Human Biomechanics (1994, 1995, 1996)

75-420 Literature Research: supervised 39 students (1993, 94, 95, 96, 97)
75-423 Lab Research: supervised 3 student (1993, 94, 95, 96, 97)
75-424 Occupational Biomechanics (1993, 94, 95, 96, 97)
75-436 Lab Research (2 semester): supervised 8 students (1993, 94, 95, 96, 97)

University of Windsor

95-465 Ergonomics and Injury Prevention (1997, 98, 99, 00, 01, 03, 04, 05)
95-475 Individual study: supervised 14 students (1997 to 2005)
95-480 Advanced Biomechanics (1998, 99, 00, 01)
95-462 Research methods (1998)
95-280 Fundamental Mechanics of Human Motion (2004, 05, 06)

McMaster University

Kin-2A03 Biomechanics (2006, 2007)
KIN-3N03 Ergonomics (2006, 2007)

Graduate

University of Guelph

75-603 Advanced Biomechanics (co-taught) (1995, 1997)
75-626 Independent research course (1996)

University of Windsor

95-524 Biomechanics in the Workplace (1998, 1999)
95-565 Instrumentation and Modelling in Kinesiology (2000, 01, 02, 03, 04, 05, 06)

McMaster University

Kin-708 Biomechanics (2006, 2007)

SUPERVISORSHIPS

Masters: 55 completed, 5 in progress
Doctoral: 2 in progress
Supervisory Committees: 5 PhD, 15 Masters

RESEARCH FUNDING: (last 5 years)

Year(s)	Source	Co-Recipients	Allotment
2000-04	Auto21 NCE (total = \$800,000 with Snowdon, Howard, Polgar et al) Vehicular safety for vulnerable populations (my portion was \$88,345)		\$ 88,345
2001-02	Ford Motor Company (Dearborn, MI) Biomechanical assessment of transducerized hand tools		\$ 117,000
2003-04	Ford Motor Company (Dearborn, MI) Biomechanical and psychophysical research to establish acceptable forces for common automotive assembly tasks		\$ 125,000
2005	Ford Motor Company (Dearborn, MI) Psychophysical and biomechanical study to determine acceptable hand forces in a variety of postures simulating hose insertions	D Andrews	\$ 75,000
2005	Ford Motor Company (Dearborn, MI) Assessment of anthropometry assumptions using Virtual Reality in ergonomic assessments		\$ 37,500
2005	Ontario Workplace Safety and Insurance Board (WSIB): Center for Research Expertise: MSD A biomechanical analysis of the potential contributions of spine instability to low back injury		\$ 10,000
2005-08	Ford Motor Company (Dearborn, MI) Arm strength in a wide variety of postures and hand positions		\$ 125,000
2005-07	Ford Motor Company (Dearborn, MI) Optimizing the use of Virtual Reality in proactive ergonomic assessments and solutions		\$ 140,000
2005	Natural Sciences and Engineering Research Council (NSERC) Research Tools and Instruments Grant	J. Jakoby, D Andrews, P. Weir	\$ 60,500
2005	WSIB Center for Research Expertise: MSD Multi-task Jobs and Job Rotation	J.Dickey	\$ 9,934
2006-11	NSERC Discovery Grant		\$ 83,500
2006	WSIB Center for Research Expertise: MSD Multi-task Jobs and Job Rotation		\$ 5,900
2008	Ford Motor Company (Dearborn, MI) Arm Strength in Overhead Postures		\$ 35,000
2008	Canadian Foundation of Innovation – Leaders Opportunity Fund: Digital Human Modeling and Simulation In Occupational Biomechanics and Ergonomics	P. Keir	\$ 225,000
Total			\$ \$1,052,679

LIFETIME PUBLICATIONS

Peer Reviewed

Book Chapters

1. Dieën JHV, Staudenmann D, Potvin JR, Kingma I, Stegeman DF (2006) Effects of EMG filtering on outcomes of trunk muscle models. In: Grieshaber R, Stadler M, Scholle HC (eds) Prävention von arbeitsbedingten Gesundheitsgefahren und Erkrankungen, vol 12. Berufsgenossenschaft Nahrungsmittel und Gaststätten und Friedrich-Schiller-Universität, Jena, pp 319-330

Journal Articles

1. Potvin, J.R., Norman, R.W., McGill, S.M. Reduction in anterior shear forces on the L4/L5 disc by the lumbar musculature. *Clinical Biomechanics* 6:88-96, 1991.
2. Potvin, J.R., McGill, S.M., Norman, R.W. Trunk muscle and lumbar ligament contributions to dynamic lifts with varying degrees of trunk flexion. *Spine*, 16(9):1099-1107, 1991.
3. Potvin, J.R., Norman, R.W., Eckenrath, M.F., McGill, S.M., Bennett, G.W. Regression models for the prediction of dynamic L4/L5 compression forces during lifting. *Ergonomics*, 35(2):187-201, 1992.
4. Potvin, J.R., Norman, R.W. A method for quantifying erector spinae muscle fatigue during prolonged, dynamic lifting. *European Journal of Applied Physiology*, 67(6):554-562, 1993.
5. Wells, R., Moore, A., Potvin, J., Norman, R. Assessment of risk factors for development of work-related musculoskeletal disorders (RSI). *Applied Ergonomics*, 25(3):157-164, 1994.
6. Potvin, J.R., Norman, R.W., McGill, S.M. Mechanically Corrected EMG for the Continuous Estimation of Erector Spinae Muscle Loading during Repetitive Lifting. *European Journal of Applied Physiology*, 74:119-132, 1996.
7. Potvin, J.R. Effects of muscle kinematics on surface EMG amplitude and frequency during fatiguing dynamic contractions. *Journal of Applied Physiology*, 82(1):144-151, 1997.
8. Potvin, J.R., Bent, L.R. NIOSH equation horizontal distances associated with the Liberty Mutual (Snook) lifting table box widths. *Ergonomics* 40(6):650-655, 1997.
9. Potvin, J.R., Bent, L.R. A validation of techniques using surface EMG signals from dynamic contractions to quantify muscle fatigue during repetitive tasks. *Journal of Electromyography and Kinesiology*, 7:131-139, 1997.
10. Potvin, J.R. Using NIOSH equation inputs to calculate lumbosacral compression forces. *Ergonomics*, 40(7):691-707, 1997.
11. O'Brien, P.R., Potvin, J.R. Fatigue related responses of trunk muscles to a prolonged, isometric twist exertion. *Clinical Biomechanics*, 12(5):306-313, 1997.
12. Potvin, J.R., O'Brien, P.R. Trunk muscle co-contraction increases during fatiguing, isometric lateral bend exertions to enhance spine stability. *Spine*, 23(7):774-780, 1998.
13. Krajcarski, S., Potvin, J., Chiang, J. The in vivo dynamic response of the human spine to flexion

- perturbations: Effects of pre-load and step input magnitude. *Clinical Biomechanics*, 14(1):54-62, 1999.
14. McIlroy, W.E., Bent, L.E., Potvin, J.R., Brooke, J.D., Maki, B.E. Preparatory balance adjustments precede withdrawal response to noxious stimulation in standing humans. *Neuroscience Letters*, 267:197-200, 1999.
 15. Potvin, J.R., Chiang, J., McKean, C., Stephens, A. A psychophysical study to determine acceptable limits for repetitive hand impact severity during automotive trim installation. *International Journal of Industrial Ergonomics*. 26:625-637, 2000.
 16. Chiang, J. Potvin, J.R. The in vivo dynamic response of the human spine to rapid lateral bend perturbations: Effects of pre-load and step input magnitude. *Spine* 26:1457-1464, 2001.
 17. McKean, C., Potvin, J.R. Effects of a simulated industrial bin on lifting and lowering mechanics. *International Journal of Industrial Ergonomics*.28:1-15, 2001.
 18. Bent, L.R., Potvin, J.R., Brooke, J.D., McIlroy, W.E. Medio-lateral balance adjustments preceding reflexive limb withdrawal are modified by postural demands. *Brain Research*, 914: 100-105, 2001.
 19. Marchand, I., Chorneyko, K., Tarnopolski, M., Hamilton, S., Shearer, J., Potvin, J., Graham, T.E. Quantification of subcellular glycogen in resting human muscle: granule size, number and location. *J Appl Physiol* . 93: 1598-1607, 2002.
 20. Brown, S.H.M., Haumann, M.L., Potvin, J.R. The responses of leg and trunk muscles to sudden unloading of the hands: implications for balance and spine stability, *Clinical Biomechanics* 18(9): 812-820, 2003.
 21. Goble, D.J., Marino, G.W., Potvin, J.R. The influence of horizontal velocity on interlimb symmetry in normal walking. *Human Movement Science*, 22:271–283. 2003.
 22. Dickey, J., McNorton, S., Potvin, J.R. Repeated spinal flexion modulates the flexion-relaxation phenomenon, *Clinical Biomechanics* 18(9): 783-789. 2003.
 23. Potvin, J.R., Brown, S.H.M, Less is more: High pass filtering out up to 99% of the surface EMG signal power improves EMG-based biceps brachii muscle force estimates. *Journal of Electromyography and Kinesiology*, 14 389–399, 2004.
 24. Potvin, J.R. Agnew, M.J., Ver Woert, C. An ergonomic comparison of pneumatic and electrical pistol grip hand tools, *International Journal of Industrial Ergonomics*, 34:467-478, 2004.
 25. Brown, S.H.M., Potvin, J.R. Constraining spine stability levels in an optimization model leads to the prediction of trunk muscle co-activity and improved predictions of spine compression. *Journal of Biomechanics*, 38(4): 745-754, 2005.
 26. Potvin, J.R., Brown, S.H.M., An equation to calculate individual muscle contributions to joint stability, *Journal of Biomechanics*, 38(5): 973-980, 2005.
 27. Cort, J.A., Stephens, A., Potvin, J.R. A biomechanical and psychophysical examination of fastener initiations in automotive assembly. *International Journal of Industrial Ergonomics*.36: 837-845. 2006
 28. Potvin, J.R. Calder, I.C., Cort, J.A, Agnew, M.J., Stephens, A. Maximal acceptable forces for manual insertions using a pulp pinch, oblique grasp and finger press. *International Journal of Industrial Ergonomics*. 36:779-787, 2006
 29. Brown, S.H.M., Potvin, J.R. Exploring the geometric and mechanical characteristics of the spine

musculature to provide rotational stiffness to two spine joints in the neutral posture. 26:113–123. *Human Movement Science*. 2007

30. Brown, S.H.M., Potvin, J.R. The effect of reducing the number of EMG channel inputs on loading and stiffness estimates from an EMG-driven model of the spine. *Ergonomics*. 50(5):743-751, 2007.
31. Staudenmann, D, Potvin, J.R., Kingma, I., Stegeman, D.F., van Dieën, J.H. Effects of EMG processing on biomechanical models of muscle joint systems: sensitivity of trunk muscle moments, spinal forces and stability. *Journal of Biomechanics*, 40(4):900-9, 2007.
32. Andrews, D.M., Potvin, J.R., Calder, I.C., Cort, J., Agnew, M., Stephens, A. Acceptable peak forces and impulses during manual hose insertions in the automobile industry. 38(2):193-201. *International Journal of Industrial Ergonomics*. 2008
33. Brown, S.H.M., Grondin, D.E., Potvin, J.R. Strength limitations to proper child safety seat installation: Implications for child safety. *Applied Ergonomics*, In Press.
34. Grondin, D.E., Potvin, J.R. Effects of trunk muscle fatigue and load timing on spinal responses during sudden hand loading. *Journal of Electromyography and Kinesiology*. In Press.
35. **JEK Keynote paper**

Unpublished Technical Reports

1. Norman, R.W., Sharratt, M., Eckenrath, M., Potvin, J. "Development of tests of employee physical abilities," submitted to Mr. R. Typliski, Hudson Bay Mining and Smelting, Flin Flon, Manitoba, 1986 (74 pages).
2. McGill, S.M., Norman, R.W., Potvin, J.R. "Analysis of Biomechanical Demands of Selected Tasks Performed by Emergency Ambulance Attendees," submitted to Ergo Systems Canada Inc. 1989 (55 pages).
3. Potvin, J.R., Szlapetis, I. "Biomechanical analysis of the demands on the low back resulting from the use of two types of snow shovels: The assessment of a new shovel design", submitted to Mr. J.R. Stecyk, 1991 (34 pages).
4. Norman, R., Wells, R., Moore, A., Potvin, J., Bennett, G., Brawley, L., Gibson, E., Husted, J., Ranney, D., Sharratt, M. "The feasibility of assessing whether job modifications are cost effective in reducing work site injuries," submitted to the Ontario Work Place Health and Safety Agency, 1992 (98 pages).
5. Potvin, J., Lambert, C. "The biomechanical assessment of low back and upper limb loads when comparing a novel snow scoop design with a traditional snow shovel, submitted to J.R. Stecyk, 1992 (21 pages). O'Brien, P.,
6. Lafortune, M., Potvin, J.R. "The traction properties of construction footwear" submitted to the Construction Safety Association of Ontario, 1994 (45 pages).
7. Chiang, J., Potvin, J.R. "The EMG responses of neck and shoulder muscles to repetitive and prolonged contractions: A normative database" submitted to the Clinic of Injury and Disease Response, 1996 (25 pages).
8. Potvin, J.R., Chiang, J., McKean, C., Drouin D. "A psychophysical study to determine acceptable limits for

tasks involving repetitive hand impacts: with specific applications to the door trim panel installation process" submitted to Ford Motor Company, 1998 (39 pages)

9. Potvin, J.R., Parcero, B., Villalta, D. Quantitative analysis of the physical demands associated with Blackjack dealing: Interim report. submitted to Casino Windsor, 1999 (15 pages)
10. Potvin, J.R., Fraser, D., Murphy, M. An evaluation of the hand impact severities associated with various trim installation tasks. submitted to Ford Motor Company, 1999 (16 pages)
11. Potvin, J.R. Quantitative analysis of the physical demands associated with the buffing of bumpers at Chromeshield. submitted to Chromeshield, 1999 (12 pages).
12. Potvin, J.R. Evaluation of vibration exposure for Dualflex M12000 and M10000 model sanders. submitted to Karmax, 1999 (10 pages)
13. Potvin, J.R., Marino, G.W. Impact Characteristics of RAITA vs Standard Hockey Arena Boards. submitted to Raita Sport, 1999 (12 pages)
14. Potvin, J.R., Villalta, D. Ergonomic Analysis of the Upper Limb and Low Back Demands Associated with Craps Dealing. submitted to Casino Windsor, 2000 (20 pages).
15. Potvin, J.R. Ergonomic Analysis of the Evening Office Clerk Task. submitted to USF Holland Inc. 2000 (8 pages).
16. Potvin, J.R., Dawson, D., MacPherson, M., Jones, J. Low Force/High Frequency Work: Evaluating the ACGIH TLV Guideline. Submitted to Ford Motor Company, 2001 (60 pages).
17. Potvin, J.R., Agnew, M., Ver Woert, C., Cercone, A., Schuster, M. An Ergonomic Comparison of Air and DC Pistol Grip Hand Tools: Effects of Tool Type, Joint Hardness, Torque and Gender on Upper Extremity Muscle Loads and Hand. Submitted to Ford Motor Company, 2001 (32 pages)
18. Potvin, J.R., Agnew, M., Siffer, L. An Ergonomic Evaluation of Pistol Grip Hand Tools: Part II: Establishing Maximum Torque Limits for Dc Tools. Submitted to Ford Motor Company, 2003 (31 pages)
19. Potvin, J.R., Calder, C., Cort, J., Agnew, M.J. Tolerance Limit Values for Manual Electrical Connector Tasks. Submitted to Ford Motor Company, 2004 (27 pages)
20. Andrews, D.M., Potvin, J.R., Calder, C., Cort, J., Agnew, M.J., Loree, H. Tolerance Limits for Manual Hose Insertions. Submitted to Ford Motor Co. via Sandalwood Enterprises Inc., 2004 (25 pages)
21. Cort, J.A., Potvin, J.R., Acceptable human tolerance limits for maximal finger pull force. submitted to Ford Motor Company, 2005
22. Cort, J.A., Potvin, J.R., Acceptable human tolerance limits for manual initiation of fasteners in automotive assembly. submitted to Ford Motor Company, 2004
23. Cort, J.A., Potvin, J.R., Electromyography investigation of ingress & egress tasks during assembly of the Ford Econoline Van. submitted to Ford Motor Company, 2005
24. Cort, J.A., Potvin, J.R., Ergonomic analysis and recommendations for the redesign courtroom Clerk and Recorder workstations. submitted to Architectura Inc. 2006
25. Cort, J.A., Potvin, J.R., Ergonomic analysis and design recommendation for the Superior & Ontario Court

of Justice Client & Judicial Support Office. submitted to Architecttura Inc. 2006

26. Cort, J.A., Potvin, J.R., Ergonomic analysis and design recommendation for the Ontario Court of Justice Client & Court Support Office. submitted to Architecttura Inc. 2006
27. Potvin, J.R. Chiang, J., Haumman, M., McInnes, B., Houston, A., Stephens, A. Proactive Ergonomic Analyses with Virtual Reality and Static Jack and Motion Capture: A Validation Study. Submitted to Ford Motor Company, 2007 (61 pages)
28. AIAG: Automotive Industry Action Group. OHS-5: Ergonomics Guidelines for Small Lot Delivery Systems. (Committee of seven authors), 2007 (39 pages)

Presentations at Meetings

Contributed (Peer Reviewed) (students under my supervision are underlined)

1. Eckenrath, M.F., Norman, R.W., McGill, S.M., Bennett, G.W., Potvin, J.R. A field usable stochastic model which predicts L4/L5 disc compression. European Society of Biomechanics, Bristol, England, Sept. 1988.
2. Marino, G.W., Potvin, J.R. The effects of anaerobic fatigue on biomechanical features of the ice skating stride. VIIIth International Symposium of the Society of Biomechanics in Sports, Footscray, Australia, 1989.
3. McGill, S.M., Potvin, J.R., Norman, R.W. Estimating low back demands in ambulance attendants using a hybrid anatomical model. Proceedings of the Annual Conference of the Human Factors Association of Canada, Ottawa, Ontario, Sept. 1990.
4. Moore, A.E., Potvin, J.R., Norman, R.W., Wells, R.P. Quantifying jobs with long cycle times for ergonomic change. Human Factors Association of Canada, Hamilton, Ontario, Oct. 1992.
5. Norman, R.W., Wells, R.P., Moore, A.E., Potvin, J.R. Towards the assessment of costs and benefits of ergonomic job modification: A case study. Human Factors Association of Canada, Hamilton, Ontario, Oct. 1992.
6. Fraser, M., Norman, R.W., Wells, R., Potvin, J., Moore, A. The need to quantify the effectiveness of ergonomic interventions. Submitted to the International Ergonomics Association '94 Conference, Toronto, Ontario, Aug. 1994
7. O'Brien, P.R., Potvin, J.R. Fatigue response of the trunk musculature to an isometric trunk twist exertion. American Society of Biomechanics conference, Stanford University, Aug. 1995.
8. Ursulak, D.C., Potvin, J.R. The relationship of muscle activity to the interaction of spine flexion and pelvis rotation during dynamic lifting tasks. American Society of Biomechanics conference, Stanford University, Aug. 1995.
9. Bradshaw, P.L., Potvin, J.R. Trunk extensor muscle fatigue and spine mechanics while holding a constrained load in a symmetric posture. American Society of Biomechanics conference, Stanford University, Aug. 1995.
10. O'Brien, P.R., Potvin, J.R., Lafortune, M.A. Mechanical versus subjective assessments of footwear traction. Human Factors Association of Canada, Waterloo, Ontario, Canada, Oct. 1996

11. Bent, L.R., Mcllroy, W.E., Howey, J.A., Potvin, J.R., Brooke, J.D. The organization of postural adjustments in conjunction with rapid stepping elicited by noxious stimuli. Neuroscience, New Orleans, Oct. 1997
12. Chiang, J., Potvin, J.R. The in vivo dynamic response of the spine to perturbations causing rapid lateral bending: effects of pre-load and step input magnitude, North American Congress on Biomechanics, Waterloo, Aug 1998
13. Krajcarski, S.R., Potvin, J.R., Chiang, J. The in vivo dynamic response of the spine to perturbations causing rapid flexion: effects of pre-load and step input magnitude, North American Congress on Biomechanics, Waterloo, Aug 1998
14. Swales, M., Strik, T., Dutta, S., Potvin, J.R. Assigning safety functions to products during design - A cultural perspective. International Workshop on Internationalization of Products and Systems, Rochester, NY, May 1999
15. McKean, C.M., Potvin, J.R. Manual material handling to and from of a simulated industrial bin: effects on rotational contributions from the lumbar spine and pelvis. International Society of Biomechanics, Calgary, Alberta, Aug 1999
16. Sanford, J., Potvin, J.R., Villalta, D., Coughlin, R. Case study of the effects of an ergonomics intervention program on injury statistics in an automotive sub-assembly plant. Assoc. of Canadian Ergonomists, Hull, Quebec, 1999
17. Fraser, D., Potvin, J.R., Jones, J. Effects of trunk muscle fatigue on spine mechanics. Int Ergonomics Assoc., San Diego, CA, 2000
18. McNorton, S., Potvin, J., Dickey, J. The effects of repeated spine flexion on the flexion-relaxation response. Canadian Society of Biomechanics, Montreal, Quebec, Aug 2000
19. Parcero, B., Potvin, J. The in vivo dynamic fatigue response of the spine to sudden loading in the sagittal plane: effects of pre-load and step input magnitude. International Society of Biomechanics, Zurich, Switzerland, Aug 2001
20. Murphy, M., Potvin, J., Stephens, A. Effects of hand posture and impact gloves on maximal acceptable hand impact forces in automotive manufacturing. International Society of Occupational Ergonomics and Safety, Toronto, Ontario, June 2002
21. MaPherson, M., Grondin, D., Potvin, J. Determination of the optimal forearm muscles to monitor with EMG in ergonomic studies. World Congress on Biomechanics, Calgary, Alberta, August 2002.
22. Marino, W. & Potvin, J. Impact Characteristics of Two Types of Hockey Arena Boards. ISBS XX. Caceres, Spain, 2002
23. Haumann, M., Brown, S., Potvin, J. Whole-body postural control and trunk stability during sudden hand loading. World Congress on Biomechanics, Calgary, Alberta, August 2002
24. Brown, S., Haumann, M., Potvin, J. Effects of expectation during sudden unloading of the hand. World Congress on Biomechanics, Calgary, Alberta, August 2002.
25. Longo, N., Potvin, J.R., Stephens, A. A psychophysical analysis to determine acceptable forces for repetitive thumb insertions. Association of Canadian Ergonomist. Banff, 2002.

26. Shephard, D.J., Potvin, J.R., A system to incorporate ergonomics into product design and processes for manufacturing assembly, Assoc. of Canadian Ergonomists, London, Ontario, 2003
27. Tolmie, S., Potvin, J.R. An evaluation of the validity and reliability of an ergonomic risk factor checklist, Assoc. of Canadian Ergonomists, London, Ontario, 2003
28. Agnew, M.J., Andrews, D.M., Potvin, J.R., Callaghan, J.P. Dynamic 2-D measurements of cumulative spine loading using an electromagnetic tracking device, Assoc. of Canadian Ergonomists, London, Ontario, 2003
29. Callaghan, J.P., Jackson, J.A., Albert, W.J., Andrews, D.M., Potvin, J.R. The design and preliminary validation of '3D-Match' – a posture matching tool for estimating three dimensional cumulative loading on the low back. Assoc. of Canadian Ergonomists, London, Ontario, 2003
30. Brown, S.H.M., Potvin, J.R. Stabilizing potential of trunk muscles. American Society of Biomechanics, Toledo, Ohio, September 2003
31. Brown, S.H.M., Potvin, J.R. Importance of selecting an appropriate q value for analyses of spine stability. International Society of Electromyography and Kinesiology 15th Congress, Boston, Mass, June 2004.
32. Brown, S.H.M., Potvin, J.R. Antagonist muscle forces predicted by an optimization model of the spine using stability as a constraint factor. Canadian Society of Biomechanics Conference, Halifax, Nova Scotia, August 2004
33. Fox, M., Sarno, S., Potvin, J.R. A Biomechanical evaluation of child safety seat installation: Rear and forward facing. Canadian Society of Biomechanics Conference, Halifax, Nova Scotia, August 2004
34. Grondin, D.E., Potvin, J.R. Effects of trunk muscle fatigue and load timing on spine mechanics during sudden hand loading. Canadian Society of Biomechanics Conference, Halifax, Nova Scotia, August 2004
35. Derouin, A., Potvin, J.R., Knee stability: mechanical contributions of individual muscles. International Society of Biomechanics, Cleveland, Ohio, August 2005
36. Cort, J.A., Potvin, J.R., Stephens, A., An electromyographic and psychophysical examination of fastener initiations in automotive assembly. International Society of Biomechanics, Cleveland, Ohio, August 2005.
37. Andrews, D., Potvin, J.R., Calder, I.C., Cort, J.A., Loree, H., Agnew, M., Stephens, A.. Acceptable peak forces and impulses during manual hose insertions. International Society of Biomechanics, Cleveland, Ohio, August 2005.
38. Teigrob, K., Cort, J.A., Stephens, A., Potvin, J.R. Maximal hose installation force. Proceedings of International Society of Ergonomics 2006 Congress. Edited by R.N. Pikaar, E.A.P. Koningsveld and P.J.M. Settels. Elsevier Ltd.
39. Cort, J.A., Stephens, A., Potvin, J.R. Maximal finger pull strength. Proceedings of International Society of Ergonomics 2006 Congress. Edited by R.N. Pikaar, E.A.P. Koningsveld and P.J.M. Settels. Elsevier Ltd.
40. Staudenmann, D, Potvin, J.R., Kingma, I., Stegeman, D.F., van Dieën, J.H. Effects of EMG processing on outputs of EMG-driven muscle joint systems. Proceedings of International Society of Ergonomics 2006 Congress. Edited by R.N. Pikaar, E.A.P. Koningsveld and P.J.M. Settels. Elsevier Ltd. 2006
41. Cort, J.A., Cashaback, J., Potvin, J.R. Processing to improve EMG-based force estimates from fatigued muscles. XVI Int. Soc. EMG and Kinesiology Conference, Torino, Italy, 2006.
42. Godin, C., Chiang, J., Stephens, A., Potvin, J.R. Assessing the accuracy of ergonomic analyses when human anthropometry is scaled in a virtual environment. SAE Digital Human Modelling Conference, Lyon France, 2006

43. Chiang, J., Stephens, A., Potvin, J.R. Retooling Jack's Static Strength Prediction tool. SAE Digital Human Modelling Conference, Lyon France, 2006
44. Derouin, A., Potvin, J.R. Muscle contributions to knee joint stability: Effects of ACL injury and knee brace use. American College of Sports Medicine Meeting, New Orleans, LA, 2007
45. Kanne, C., Cort, J.A., Potvin, J.R. The effects of job rotational on trunk muscle activation. Prevention of Musculoskeletal Disorders Conference, Boston, MA, 2007
46. Godin, C.A., Cort, J., Cashaback, J. Stephens, A., Potvin, J.R. An estimation of supporting hand forces for common automotive assembly tasks. Accepted Society of Automotive Engineers – Digital Human Modeling, Pittsburgh 2008
47. Jones, M., Chiang, J., Stephens, A., Potvin, J.R. The use of physical props in automotive assembly motion capture studies. Accepted Society of Automotive Engineers – Digital Human Modelling, Pittsburgh 2008

Presented (Peer Reviewed)

1. Potvin, J.R., Ball, K., McGill, S.M., Norman, R.W. A test of the assumption of rigidity in a linked segment biomechanical lifting model. Proceedings of the Fifth Biennial Conference of the Canadian Society of Biomechanics, Ottawa, Ontario, Aug. 1988.
2. Potvin, J.R., Norman, R.W., McGill, S.M., Eckenrath, M.F. L4/L5 shear force reduction by low back musculature during lifting. Proceedings of the XIIth International Congress of Biomechanics, Los Angeles, California, June 1989.
3. Potvin, J.R., Norman, R.W., McGill, S.M., Eckenrath, M.F. Prediction of L4/L5 disc compression during dynamic stoop and squat lifts. Proceedings of the Annual Conference of the Human Factors Association of Canada, Toronto, Ontario, Nov. 1989.
4. Potvin, J.R., Norman, R.W., McGill, S.M., Eckenrath, M.E. Internal and external "lifting effectiveness" during dynamic manual materials handling tasks. Proceedings of the Sixth Biennial Conference of the Canadian Society of Biomechanics, Quebec City, Quebec, Aug. 1990.
5. Potvin, J.R., Norman, R.W., Wells, R. A field method for continuous estimation of dynamic compressive forces on the L4/L5 disc during the performance of repetitive industrial tasks. Proceedings of the Annual Conference of the Human Factors Association of Canada, Ottawa, Ontario, Sept. 1990. p 51-55.
6. Potvin, J.R., McGill, S.M., Norman, R.W. Individual trunk muscle and ligament force contributions to dynamic lifting. XIII International Congress of Biomechanics, Perth Australia, Dec. 1991.
7. Potvin, J.R., Norman, R.W. Does fatigue compromise lifting safety? NACOB II, North American Congress on Biomechanics, Chicago, USA, Aug. 1992.
8. Potvin, J.R., Norman, R.W., McGill, S.M. A method for continually estimating instantaneous bilateral erector spinae muscle loads during prolonged, dynamic lifting. International Society of Biomechanics, Paris, France, July 1993.
9. Potvin, J.R., Norman, R.W. An evaluation of trunk extensor muscle fatigue throughout prolonged, dynamic lifting tasks. Canadian Society of Biomechanics, Calgary, Alberta, Aug. 1994.
10. Potvin, J.R. A model for calculating lumbar compression forces with the NIOSH equation's "H" and "V" Factors. American Society of Biomechanics conference, Stanford University, Aug. 1995.
11. Potvin, J.R., Bent, L.R. A validation of techniques using surface EMG signals from dynamic contractions to quantify muscle fatigue during repetitive tasks. Canadian Society of Biomechanics conference, Simon Fraser University, Burnaby, B.C., Aug. 1996.

12. Potvin, J.R. Effects of muscle kinematics on surface EMG frequency during fatiguing dynamic contractions, International Society of Electromyography and Kinesiology, Montreal, June 1998.
13. Potvin, J.R., Marino, G.W. Biomechanical testing of impact severity characteristics for two types of hockey arena boards. International Society of Biomechanics, International Society of Biomechanics, Calgary, Alberta, Aug 1999
14. Potvin, J.R. Chiang, J., Stephens, A., Vitek, M. A psychophysical study to determine acceptable limits for hand impact severity during automotive trim installation. Assoc. of Canadian Ergonomists, Hull, Quebec, 1999
15. Potvin J.R., Brown S., Dowling J., Tolmie S. High pass filtering beyond 100 Hz improves surface EMG-based force predictions for the biceps brachii. Canadian Society of Biomechanics, Montreal, Quebec, Aug 2000
16. Potvin, J., Dawson, D., MacPherson, M., Joseph, B. Evaluating the ACGIH TLV guideline for low force/high frequency work, International Society of Occupational Ergonomics and Safety, Toronto, Ontario, June 2002
17. Potvin, J., Dawson, D., Jones, J., MacPherson, M., Joseph, B. Comparing Risk Scores from the ACGIH TLV Guideline When Obtained from Live Observation and Video Records. International Society of Occupational Ergonomics and Safety, Toronto, Ontario, June 2002
18. Potvin, J., Agnew, M., Ver Woert, C. Muscle demands and torque reactions associated with air and electric hand tools. World Congress on Biomechanics, Calgary, Alberta, August 2002.
19. Potvin, J.R., Brown, S.H.M., Grondin, D., Gonzalez, M. Physical demands of installing forward facing child safety seats into vehicles. Assoc. of Canadian Ergonomists, London, Ontario, 2003
20. Potvin, J.R., Agnew, M.J., Siffer, L. The ergonomic demands of using pistol grip transducerized electric tools up to 12 Nm, Assoc. of Canadian Ergonomists, London, Ontario, 2003
21. Potvin, J.R., Brown, S.H.M. Comparing the use of signal whitening and extreme highpass filtering to improve surface EMG-based muscle force estimates. International Society of Electromyography and Kinesiology 15th Congress, Boston, Mass, June 2004.
22. Potvin, J.R., Brown, S.H.M. A simplified equation for quantifying muscle contributions To 3D joint stability. European Society of Biomechanics Conference, Den Bosch, Netherlands, July 2004
23. Potvin, J.R., Brown, S.H.M. Energy vs moment approach for calculating individual muscle contributions to joint stability. Canadian Society of Biomechanics Conference, Halifax, Nova Scotia, August 2004
24. Potvin, J.R., Cort, J.A., Calder, I.C., Agnew, M.J. Tolerance limit values for manual electrical connector tasks. Canadian Society of Biomechanics Conference, Halifax, Nova Scotia, August 2004.
25. Potvin, J.R. The NIOSH lifting equation accommodates more than 95% of females. Association of Canadian Ergonomists, Windsor, Ontario, October 2004.
26. Potvin, J.R., Derouin, A.J. Hip stability: potential contributions of individual muscles. International Society of Biomechanics, Cleveland, Ohio, August 2005
27. Potvin, J.R., Agnew, M.J., Ver Woert, C., Siffer, L., Stephens, A. A method for assessing the ergonomic demands of pistol grip hand tools. Proceedings of International Society of Ergonomics 2006 Congress. Edited by R.N. Pikaar, E.A.P. Koningsveld and P.J.M. Settels. Elsevier Ltd.
28. Potvin, J. Respecting industrial partners' wants and "think they need"s in upper limb ergonomics research. Canadian Society of Biomechanics, Waterloo, Ontario, 2006.

29. Potvin, J.R. HandPak ergonomics software: Quantifying maximal acceptable loads for hand intensive tasks. Prevention of Musculoskeletal Disorders (PREMUS) Conference, Boston, MA, 2007
30. Potvin, J.R. Correcting strength data to estimate maximum acceptable forces for repetitive tasks. Association of Canadian Ergonomists, Toronto, Ontario, 2007

Invited Lectures

1. Faculty of Human Kinetics, University of Windsor (Nov. 1992)
2. Ontario Association of Applied Kinesiologists Annual Conference (Kitchener, Oct., 1994)
3. Laurentian University, Kinesiology Seminar Series (Sudbury, Feb., 1995)
4. Ontario Farrier's Association Annual Conference (Kingston, Mar., 1996)
5. University of Waterloo, Department of Kinesiology graduate biomechanics seminar series (Nov., 1997)
6. Department of Kinesiology Seminar Series, McMaster University, Jan 1997
7. Dept of Industrial & Manuf. Systems Engineering student seminar, University of Windsor, May 1998
8. University of Michigan, Centre for Ergonomics, Nov. 1998.
9. IAPA Essex County Conference, Windsor, Nov. 1998 and 1999
10. WSIB Ergonomists meeting, Toronto, Feb. 2000.
11. Workshop for Association of Canadian Ergonomists, Oct, 2000
12. McMaster University, Department of Kinesiology, Sept, 2000
13. Ford/CAW Joint Ergonomics Conference, May, 2001
14. IAPA Ergonomics Workshop, Windsor, May, 2001
15. WSIB Ergonomists meeting, Toronto, June 2001
16. Ontario Kinesiology Association (two day workshop), Toronto, Oct 2001
17. Ontario Kinesiology Association (two day workshop), Mississauga, June 2002
18. Vrije University, Amsterdam, Netherlands, student seminar, Oct 2002
19. University of Liverpool, Liverpool, England, student seminar, Oct 2002
20. Alberta Health and Safety Conference, Calgary, Nov 2003
21. Ontario Biomechanics Conference, Keynote, Barrie, Ont, Nov 2003
22. Virtual Manufacturing & Ergonomics Panel Discussion, Applied Ergo., Orlando, Florida, March 2003
23. Ottawa Region Association of Canadian Ergonomists, Ottawa, May 2004
24. Ergonomics of Upper Limb Injuries, Ontario Kinesiology Association Workshop
25. Keynote lecture, Association of Canadian Ergonomists Conference, Oct 2004
26. Industrial Accident Prevention Association Annual Meeting, Toronto, April 2005
27. Auto21 Scientific Conference Panel Discussion, Toronto, June 2005
28. Jack Software User's Group Meeting, Sudbury, July 2005
29. Netherlands PDBO Ergonomics Course 10th Anniversary Celebration, Utrecht, Netherlands, August 2005
30. DCX-UAW Ergonomics Conference, Sterling Heights, MI, October 2005
31. Industrial Accident Prevention Association Annual Meeting, Toronto, April 2006
32. DaimlerChrysler Ergonomics Group, Detroit, Michigan June 2006
33. McMaster University, MSc (PT) Professional Issues in Physiotherapy Practice lecture, Jan 2007
34. Association of Canadian Ergonomists (8 full day seminars across Canada) 2007
35. WSIB Ergonomists Annual Technical Meeting, April 2007
36. Ryerson Industrial Engineering Course lecture, Toronto, Ontario May 2007
37. HumanTech Ergonomics Consulting, Ann Arbor, Michigan, July 2007
38. Association of Canadian Ergonomists Conference, Toronto, Ontario, Education Symposium, Oct 2007
39. Assoc. of Canadian Ergonomists Conference, Toronto, Ontario, Ergonomic Tools Symposium, Oct 2007
40. University of Montreal School of Medicine, Distance Education Seminar Nov 2007
41. Advanced Design and Manufacturing Institute (ADMI), full day course Nov 2007
42. **Keynote: ISEK**
- 43.

Other

- Co-hosted the 39th Annual Brouha Symposium, University of Windsor, Windsor, Ontario, Aug 1999.
- Chair of session at ACE Conference, Hull, Quebec, Oct 1999
- Chair of the International Society of Occupational Ergonomics and Safety Conference, Toronto, 2002
- invited Academic Advisor to the Automotive Industry Action Group (AIAG) Small Lot Delivery Project

ADMINISTRATIVE RESPONSIBILITIES

- Undergraduate Student, Faculty Council, Human Kinetics, University of Windsor, Sept. 83 - May 86.
- Promotion, Tenure and Renewal Committee, Human Kinetics, University of Windsor, Sept. 85 - May 86.
- Decanal Search Committee, Faculty of Human Kinetics, University of Windsor, Sept. 1985 - May 1986.
- President - Kinesiology Graduate Students Association, Sept. 1988 - Sept. 1989.
- Departmental Graduate Affairs Committee, Kinesiology, University of Waterloo, Sept. 1988 - Sept. 1990.
- Undergraduate Curriculum Committee: Human Biology and of Nutritional Sciences, May 1995 - Dec 1995
- Library liaison, School of Human Biology, University of Guelph, May 1993 -May 1997
- Graduate Affairs Committee, Department of Kinesiology, University of Windsor, Sept 1997 - present
- Co-op Liason Committee, Department of Kinesiology, University of Windsor, Jan 1998 - present
- College Coordinating Committee for the Faculty of Science and Engineering, 1998 - 2000.
- Industrial Research and Technology Centre Committee, University of Windsor, 1999
- President's Research Advisory Council, University of Windsor, 1999
- Library Liason, Department of Kinesiology, University of Windsor, 2001- present
- Graduate Committee, Department of Kinesiology, University of Windsor, 2002-05
- Personnel Committee, Department of Kinesiology, University of Windsor, 2004-05
- Undergraduate Committee, Department of Kinesiology, University of Windsor, 2005-06
- Equity Committee, Department of Kinesiology, University of Windsor, 2005-06
- Graduate Curriculum Committee, Department of Kinesiology, McMaster University, 2006-
- Undergraduate Committee, Department of Kinesiology, McMaster University, 2007-
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