

CURRICULUM VITAE

REED FERBER

Ph.D., CAT(C), ATC

Assistant Professor

Faculties of Kinesiology and Nursing

Director: Running Injury Clinic

AHFMR Population Health New Investigator

Faculty of Kinesiology

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PERSONAL INFORMATION

Name: Reed Ferber

Place of Birth: Calgary, Canada

Date of Birth: September 22, 1970

Nationality: Canadian

EDUCATION

- 2001 Ph.D. University of Oregon, Eugene, Oregon Biomechanics
- 1998 M.S. University of Oregon, Eugene, Oregon Sports Medicine
- 1993 B.P.E. University of Calgary, Calgary, Alberta Physical Education

PROFESSIONAL EXPERIENCE

- 2008 - present **Research Associate**
Institute of Sport and Recreation Research New Zealand
- 2007 - present **Assistant Professor**
Faculties of Kinesiology and Nursing, University of Calgary, Canada
- 2005 - 2007 **Adjunct Assistant Professor**
Faculty of Kinesiology, University of Calgary, Canada
- 2004 - present **Director: Running Injury Clinic**
Faculty of Kinesiology, University of Calgary, Canada
- 2003 - 2004 **Post-Doctoral Research Fellow**
Faculty of Kinesiology, University of Calgary, Canada
- 2001 - 2003: **Post-Doctoral Research Fellow**
Department of Physical Therapy, University of Delaware
- 1999 - 2000: **Instructor of Sports Medicine**
Department of Exercise and Sport Science, Oregon State University
- 1995 - 2001: **Graduate Teaching Fellow**
Department of Exercise and Movement Science, Univ. of Oregon
- 1994 - 1995: **Head Athletic Therapist / Head of Basketball Operations**
Calgary Outlaws Professional Basketball, Canada

PROFESSIONAL MEMBERSHIPS / CERTIFICATIONS

- Canadian Athletic Therapists Association (certified CAT(C) 1997)
- National Athletic Trainers Association (certified ATC 1997)

GRANTS / AWARDS AND SCHOLARSHIPS

Title: The effect of hip stabilizer muscle strengthening on pain and disability for patients with non-specific low back pain: an outcome-based RCT

Funding Agency: Workers Compensation Board -Alberta

Role: Principal Investigator

Date: Oct 2010 - Oct 2012

Amount: \$86,000 Direct funding

Title: Commercialization of 3D gait analysis technology for use in a clinical setting

Funding Agency: Alberta Ingenuity Fund, Commercialization Associates Program

Role: Principal Investigator

Date: June 2010 - June 2012

Amount: \$124,000 Direct funding

Title: Development of 3D gait analysis technology for use in a clinical setting

Funding Agency: Alberta Ingenuity Fund, r&D Associates Program

Role: Principal Investigator

Date: Nov 2009 - Nov 2011

Amount: \$124,000 Direct funding

Title: The role of orthotic devices for treatment of running-related injuries.

Funding Agency: SOLE (Industry Partnership)

Role: Principal Investigator

Date: Jan 2010 - Dec 2014

Amount: \$450,000 Direct funding

Title: Optimal rehabilitation protocols for the treatment of patellofemoral pain syndrome: an outcome-based RCT multi-centered study

Funding Agency: National Athletic Trainers Association: Research and Education Foundation Outcomes Grant Program

Role: Principal Investigator

Date: Jan 2009 - Jan 2013

Amount: \$476,833 total: \$219,205 Direct funding

Title: The relationship between patellofemoral pain syndrome, gait biomechanics, and muscular strength

Funding Agency: Alberta Heritage Foundation for Medical Research: Population Health New Investigator Award

Role: Principal Investigator

Date: July 2008 - July 2015

Amount: \$325,000 Direct funding + salary support

Title: Creating Bone and Joint Health from the Bedside to the Bench and Back Again - 'Designer Therapies' to Reduce the Burden of Osteoarthritis (OA) - from Mechanisms to Prevention: Real-time feedback to restore gait mechanics for mild-to-moderate knee OA patients: a randomized clinical trial.

Funding Agency: Alberta Heritage Foundation for Medical Research Team Grant

Role: Co-Investigator

Date: July 2008 - July 2012

Amount: \$5,067,103.43 total: \$395,120 Direct funding

Title: The role of orthotic devices in the treatment of tibialis posterior tendinopathy.
Funding Agency: SOLE (Industry Partnership)
Role: Principal Investigator
Date: Dec 2008 - Dec 2009
Amount: \$39,996 Direct funding

Title: The relationship between foot structure, muscular strength, and foot biomechanics
Funding Agency: Olympic Oval High Performance Fund
Role: Principal Investigator
Date: Jan 2008 - Jan 2010
Amount: \$23,410 Direct funding

Title: The effectiveness of hip strengthening exercises in patients with knee osteoarthritis
Funding Agency: Canadian Academy of Sports Medicine
Role: Co-Investigator
Date: Sept 2007 - June 2009
Amount: \$7500 total: \$0 Direct funding

Title: Building a multidisciplinary team in adolescent Sports Injury Prevention
Funding Agency: Canadian Institutes of Health Research: Team Planning and Development Grants
Role: Co-Investigator
Date: June 2002 - June 2006
Amount: \$98,805 total: \$0 Direct funding

Title: Electromyographic response to unexpected gait perturbations
Funding Agency: Eugene Evonuk Award
Role: Principal Investigator
Date: June 2000 - June 2001
Amount: \$2500 Direct funding

Title: Effect of unexpected gait perturbation on ACL deficient subjects
Funding Agency: International Society of Biomechanics - Doctoral Award
Role: Principal Investigator
Date: June 2000 - June 2001
Amount: \$2000 Direct funding

Title: Effect of unexpected gait perturbation on ACL deficient
Funding Agency: National Athletic Trainers Association Research Education Foundation Doctoral Research Grant
Role: Principal Investigator
Date: June 1999 - June 2001
Amount: \$2000 Direct funding

STUDENT FINANCIAL SUPPORT

- 2011 - Reginaldo Fukuchi - Faculty of Graduate Studies Scholarship (\$6,175)
- 2010 - Whitney Kilback - Canadian Institutes of Health Research: Frederick Banting and Charles Best Canada Graduate Scholarships - Master's Award (\$17,500)
- 2010 - Karen Kendall - Queen Elizabeth II Doctoral Scholarship (\$10,000)
- 2010 - Lindsay Burnett - USRP Award: Pathomechanics and Optimal Treatment of Iliotibial Band Syndrome (\$4000)
- 2010 - Brittany Benson - PURE Award: Biomechanical Effect of Semi-Custom Foot Orthoses (\$5000)
- 2009 - 2013 - Reginaldo Fukuchi - Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES Ministério da Educação, Brazil (\$116,000)
- 2009 - Carolyn Graham - PURE Award: Differences in hip, knee, and ankle muscle stabilizer strength in subjects diagnosed with PFPS (\$5000)
- 2008 - Karen Kendall - Meredith Doctoral Award, Workers Compensation Board - Alberta (\$25,000)
- 2008 - Karen Kendall - Graduate Student Research Scholarship, Faculty of Kinesiology, University of Calgary (\$4100)
- 2008 - Lindsay Farr - USRP Award: Changes in lower extremity biomechanics following a hip muscle strengthening protocol and resultant reductions in patellofemoral pain (\$5000)
- 2008 - Christie Schmidt - USRP Award: The role of gluteus medius muscle strengthening on reducing low back pain and its effect on a positive Trendelenburg test (\$5000)

HONORS

- 2011: Winner: Top 40 Under 40 - Calgary Avenue Magazine
- 2010: Teaching Excellence Award: Honorable Mention, University of Calgary
- 2009: Faculty Award of Excellence for Teaching/Research, University of Calgary
- 2009: Teaching Excellence Award: Honorable Mention, University of Calgary
- 2008: Teaching Excellence Award: Winner, University of Calgary
- 2007: Teaching Excellence Award: Nomination, University of Calgary
- 2006: Teaching Excellence Award: Winner, University of Calgary
- 2005: Teaching Excellence Award: Honorable Mention, University of Calgary
- 2004: Canadian Athletic Therapists' Association and Human Kinetics Writing Award
- 2003 Third place - Promising Young Scientist Award - International Society of Biomechanics
- 2001 Outstanding Student Research Award: Northwest Chapter of ACSM
- 2001 Finalist for the ISB Congress Scherb Award: Outstanding biomechanical research in the area of human locomotion with emphasis on clinical application
- 1999 Nominated for University of Oregon Graduate Teaching Award
- 1993 Dr. Lou Goodwin Award: Outstanding service to the University of Calgary Department of Athletics

TEACHING EXPERIENCE

University of Calgary

- KNES 259/260 - Human Anatomy & Physiology I/II
- KNES 503 - Clinical Biomechanics
- ZOOL 269 - Anatomy and Physiology for Nurses
- BMEN 309 - Anatomy and Physiology for Engineers
- KNES 261 - Human Anatomy
- KNES 593.61 - Anatomical Dissection
- KNES 503.63 - Clinical Biomechanics
- KNES 591 - Special Studies in Clinical Biomechanics Research

University of Oregon

- EMS 101 - Exercise as Medicine
- ANAT 311/312 - Human Anatomy
- ANAT 507 - Anatomical Dissection
- EMS 361 - Sports Medicine
- EMS 406 - Care and Prevention of Athletic Injuries
- EMS 609 - Graduate Advanced Clinical Anatomy
- EMS 607 - Graduate Advanced Seminar in Sports Medicine

Oregon State University

- EXSS 257 - Athletic Training Practicum - injury evaluation
- EXSS 356 - Care and Prevention of Athletic Injuries
- EXSS 357 - Athletic Training Practicum - advanced rehabilitation
- EXSS 365 - Emergency Management
- EXSS 380 - Therapeutic Modalities
- EXSS 390 - Athletic Training Practicum - advanced therapeutic exercise
- EXSS 445 - Therapeutic Exercise

INTERNAL / EXTERNAL ADMINISTRATIVE COMMITTEES

- 2011: Member of Killam Memorial Chair Selection Committee - University of Calgary
- 2010 - present: Member of Campus Recreation and Athletics Committee - University of Calgary
- 2010 - present: Member of Strategic Directions Committee - Faculty of Kinesiology
- 2010 - present: Member of the Editorial Board - Prosthetics and Orthotics International
- 2010 - present: Member of the Pedorthic Research Foundation of Canada Vice-Chair for Grants
- 2010 - present: Member of the Editorial Board - Journal of Sport Rehabilitation
- 2008 - present: Chair of Communications: AHFMR Team Grant
- 2007 - present: Co-Chair: UC101 New Student Orientation Committee
- 2004 - 2010: Member of the NATA Research and Education Foundation: Vice Chair for Student Awards (04-07)
Vice Chair for General Grants (08-10)
- 2004 - present: Member of the Editorial Board - Journal of Athletic Training
- 2002 - 2008: Member of the CATA Exam Review Committee

MANUSCRIPT REVIEWER

- American Journal of Sports Medicine
- Journal of Orthopaedic Research
- Sport Sciences and Medicine
- Journal of Applied Biomechanics
- Clinical Biomechanics
- Sports Medicine
- Journal of Sport Rehabilitation
- Medicine & Science in Sports and Exercise
- British Journal of Sports Medicine
- Clinical Journal of Sports Medicine

RESEARCH INTERESTS

- Identification, development, and optimization of treatment and rehabilitation protocols for walkers and runners
- Biomechanical factors related to the treatment and prevention of anterior knee pain in runners
- Biomechanical risk factors in the etiology of tibial stress fractures
- Effect of orthotics on lower extremity running mechanics
- The effect of unexpected gait perturbations in ACL deficit patients prior to and following reconstructive surgery. Ph.D. dissertation. University of Oregon
- Effect of PNF stretch techniques on trained and untrained older adults. MS thesis. University of Oregon

PUBLISHED MANUSCRIPTS

1. **Ferber, R., Kendall, K.D., and Farr, L.** (2011). Changes in knee biomechanics following a hip abductor strengthening protocol for runners with patellofemoral pain syndrome. Journal of Athletic Training. (in press)
2. **Fukuchi, R.K., Eskofier, B.M., Duarte, M., Ferber, R.** (2011). Support Vector Machines for Detecting Age-Related Changes in Running Kinematics. Journal of Biomechanics. 44(3), 540-542.
3. **Kendall, K.D., Schmidt, C.S., Ferber, R.** (2010). The relationship between hip abductor muscle strength and the magnitude of pelvic drop in patients with low back pain. Journal of Sport Rehabilitation. 19, 422-435.
4. **Pohl, M.B., Lloyd, C., Ferber, R.** (2010). Can the reliability of three-dimensional running kinematics be improved using functional joint methodology? Gait & Posture. 32(4), 559-563.
5. **Ferber, R., Kendall, K.D., and McElory, L.** (2010). Normative values and critical criterion for iliotibial band and iliopsoas muscle flexibility. Journal of Athletic Training. 45(4), 344-348.
6. **Pohl, M.B., Rabbito, M., Ferber, R.** (2010). The role of tibialis posterior fatigue on foot kinematics during walking. Journal of Foot and Ankle Research, 3(6), 1-8.

7. **Ferber, R.** Davis, I.S., Noehren, B., Hamill, J. (2010). Competitive female runners with a history of iliotibial band syndrome demonstrate atypical hip and knee kinematics. Journal of Orthopaedic & Sports Physical Therapy, 40(2), 52-58.
8. **Ferber, R.**, Sheerin, K., Kendall, K.D. (2009). Measurement error of rearfoot kinematics during running between a 100Hz and 30Hz camera. International SportMed Journal, 10(3), 152-162.
9. Butler, R.J., Minick, K., **Ferber, R.**, Underwood, F.B. (2009). Gait mechanics following ACL rupture: Implications for the early onset of knee osteoarthritis. British Journal of Sports Medicine, 43(5), 366-370.
10. **Ferber, R.**, Hreljac, A., Kendall, K.D. (2009). Suspected mechanisms in the aetiology of overuse running injuries: a clinical review. Sports Health: A Multidisciplinary Approach, 1(3), 242-246.
11. **Ferber, R.** (2007) The influence of custom foot orthoses on lower extremity running mechanics: Invited Review Paper. International SportMed Journal, 8(3), 97-106.
12. Vickers, J.N., Ronsky, J.L., Loitz-Ramage, B., Panchuck, D., Morton, B., Gotch, M., **Ferber, R.**, & Robu, I. (2006). Gaze and postural stability of elite ballet dancers, ACL-deficient and normal controls during the quiet stance and lunge. Cognitive Processing, 7(1), 176.
13. Milner, C.E., **Ferber, R.**, Pollard, C.D., Hamill, J., & Davis, I.S. (2006). Biomechanical Factors Associated with Tibial Stress Fracture in Female Runners. Medicine and Science in Sports and Exercise, 38(2):323-328.
14. Hreljac, A., **Ferber, R.** (2006). A Biomechanical Perspective of Predicting Injury Risk in Running. International SportMed Journal, 7(2): 98-108.
15. Hamstra-Wright, K.L., Swanik, C.B., Sitler, M.R., Swanik, K.A., **Ferber, R.**, & Ridenour, M. (2006). Gender comparisons of dynamic restraint and motor skill in children. Clinical Journal of Sports Medicine 16(1), 56-62.
16. Nigg, B.M., Hintzen, S., **Ferber, R.** (2005). Effect of an unstable shoe construction on lower extremity gait characteristics. Clinical Biomechanics 21(1):82-88.
17. **Ferber, R.**, McClay Davis, I., & Williams III, D.S. (2005). Effect of foot orthotics on rearfoot and tibia joint coupling patterns and variability. Journal of Biomechanics 38(3), 477-483.
18. DeLeo A.T., Dierks, T.A., **Ferber, R.**, & Davis, I.S. (2004). Lower extremity joint coupling during running: a current update. Clinical Biomechanics 19(10), 983-1074.
19. **Ferber, R.**, Osternig, L.R., Woollacott, M.H., Wasielewski, N.J., & Lee, J-H. (2004). Bilateral accommodations to anterior cruciate ligament deficiency and surgery. Clinical Biomechanics 19(2), 136-144.

20. **Ferber, R.,** McClay Davis, I., & Williams III, D.S. (2003). Gender differences in lower extremity mechanics during running. Clinical Biomechanics 18(4), 350-357.
21. **Ferber, R.,** Osternig, L.R., Woollacott, M.H., Wasielewski, N.J., & Lee, J-H. (2003). Gait perturbation response in anterior cruciate ligament deficiency and surgery. Clinical Biomechanics 18(2), 132-141.
22. **Ferber, R.,** Osternig, L.R., Woollacott, M.H., Wasielewski, N.J., & Lee, J-H. (2002). Reactive balance adjustments to unexpected perturbations during human walking. Gait and Posture 16(3), 238-248.
23. **Ferber, R.,** Osternig, L.R., Woollacott, M.H., Wasielewski, N.J., & Lee, J-H. (2002). Gait mechanics in chronic ACL deficiency and subsequent repair. Clinical Biomechanics 17(4), 274-285.
24. **Ferber, R.,** Osternig, L.R., & Gravelle, D. (2002). Effect of PNF stretch techniques on knee flexor muscle EMG activity in older adults. Journal of Electromyography and Kinesiology 12(5), 391-397.
25. **Ferber, R.,** Osternig, L.R., & Gravelle, D. (2002). Effect of PNF stretch techniques on trained and untrained older adults. Journal of Aging and Physical Activity 10(2), 132-142.
26. **Ferber, R.,** McClay Davis, I, Williams III, D.S., & Laughton, C. (2002). A Comparison of between-day reliability of discrete 3-D lower extremity variables in runners. Journal of Orthopaedic Research 20, 1139-1145.
27. Hreljac, A., Arata, A., **Ferber, R.,** Mercer, J., & Row, B.S. (2001). An electromyographical analysis of the role of dorsiflexors on the gait transition during human locomotion. Journal of Applied Biomechanics 17(4), 287-296.
28. Osternig, L.R., **Ferber, R.,** Mercer, J., & Davis, H. (2001). Effects of position and speed on joint torques and knee shear after ACL injury. Medicine and Science in Sports and Exercise 33(7): 1073-1080.
29. Osternig, L.R., **Ferber, R.,** Mercer, J., & Davis, H. (2000). Human hip and knee torque accommodations to anterior cruciate ligament dysfunction. European Journal of Applied Physiology 83(1): 71-76.

MANUSCRIPTS UNDER REVIEW

Rabbito, M., Pohl, M.B., Ferber, R. (in review). Biomechanical and Clinical Factors Related to Stage I Posterior Tibial Tendon Dysfunction. Journal of Orthopaedic & Sports Physical Therapy.

Eslami, M., **Ferber, R.** (in review). Association of navicular drop and selected lower-limb biomechanical measures during the stance phase of running. Journal of Science and Medicine in Sport.

Eslami, M., **Ferber, R.** (in review). Effect of foot orthoses on forefoot-rearfoot coupling motion patterns in different navicular drop measures during stance phase of running. Clinical Biomechanics.

Ferber, R., Pohl, M.B., (in review). Changes in joint coupling and variability during walking following tibialis posterior muscle fatigue. Journal of Foot and Ankle Research.

Schnackenburg, K.E., Macdonald, H.M., **Ferber, R.**, Wiley J.P., Boyd, S.K. (in review). Bone quality and muscle strength in female athletes with lower limb stress fractures. Medicine and Science in Sport and Exercise.

BOOK CHAPTERS

Chmielewski, T., & **Ferber, R.** (2004). Rehabilitation considerations for the female athlete. *In*: Andrews, J.R., Harrelson, G.L., & Wilk, K.E. (ed.), *Physical Rehabilitation of the Injured Athlete*, 3rd ed. Saunders, Philadelphia, PA. p. 315-329.

NON-REFEREED PUBLICATIONS

1. **Ferber, R.** Hip to the Core. Canadian Running Magazine. Jan/Feb Issue 2009.

TECHNICAL RESEARCH REPORTS

1. Nigg, B.M., **Ferber, R.**, & Gormley, T. (2004). Effect of an unstable shoe construction on lower extremity gait characteristics. Research report for Masai Switzerland.
2. **Ferber, R.**, Stefanyshyn, D.J., Weber, C., Gromley, T., & Nigg, B.M. (2004). Lister field infilled artificial turf testing. Research report for Cannon-Johnston Sport Architecture.
3. Stefanyshyn, D.J., **Ferber, R.**, Weber, C., & Anderson, B. (2004). Performance requirements for golf footwear. Research report for TaylorMade-adidas Golf.
4. **Ferber, R.**, Stefanyshyn, D.J., Uehli, K., Weber, C. & Nigg, B.M. (2003). Knee joint moments during cutting maneuvers and while running on uneven terrain in XYZ shoes. Research report for adidas International.
5. McClay Davis, I and **Ferber, R.** Gait Retraining in Runners: An Application of the VICON Real-Time System. The Standard, 1, 2002.

PUBLISHED ABSTRACTS

1. Schnackenburg KE, Macdonald HM, Ferber R, Wiley JP, Boyd SK (2011) Bone quality and muscle strength in lower limb stress fractures in female athletes. *Canadian Orthopaedic Association and Canadian Orthopaedic Research Society Annual Meeting*, St. John's, Canada.
2. Kendall, K.D., Schmidt, C.S., Ferber, R. (2010). The relationship between hip abductor muscle strength and the magnitude of pelvic drop in patients with low back pain. In *Proceedings of the 2010 World Congress of Low Back Pain*, Las Angeles, CA, USA.
3. Park, S.K., Pohl, M.B., Lloyd, C.H., Baxter, J., Wiley, P., Ferber, R. (2010). Effect of hip muscle strengthening on frontal plane gait mechanics in patients with knee osteoarthritis. In *Proceedings of the American Society of Biomechanics Annual Meeting*. Providence, RI, USA.
4. Fukuchi, R.K., Eskofier, B.M., Ferber, R., Duarte, M. (2010). Assessment of the Support Vector Machine for detecting age-related changes in running mechanics. In *Proceedings of the American Society of Biomechanics Annual Meeting*. Providence, RI, USA.
5. Ferber, R., Kendall, K.D., and Farr, L. (2010). Changes in knee biomechanics following a hip abductor strengthening protocol for runners with patellofemoral pain syndrome. *Journal of Athletic Training*. 45(3), S63.
6. Bachand, A., Farr, L., McElroy, L.K., Rabbito, M., Pohl, M.B., Ferber, R. Reliability and Accuracy of a Digital Photograph Method for Measuring Arch Height Index and Foot Structure. *Journal of Athletic Training*. 45(3), S69.
7. Pohl, M.B., Rabbito, M. and Ferber, R. (2010). The relationship between static arch rigidity and foot kinematics during gait. *International Foot & Ankle Biomechanics Annual Meeting*. Seattle, WA, USA.
8. Lloyd, C.H., Pohl, M.B., Ferber, R. Reliability of gait kinematic variables from functionally determined hip, knee, and ankle joint centers. *Book of Abstracts 2010 Gait and Clinical Movement Analysis Society Annual Meeting*, Miami, FL, USA.
9. Pohl, M.B., Lun, V., Wiley, P., Ferber, R. Kinematic compensation strategies in patient with medial compartment knee osteoarthritis. *Book of Abstracts 2010 Gait and Clinical Movement Analysis Society Annual Meeting*, Miami, FL, USA.
10. Ferber, R., Farr, L., Kendall, K.D. (2010). The relationship between hip abductor strength and knee genu valgum for patients with PFPS following a strengthening protocol. *Journal of Orthopaedic & Sports Physical Therapy*. 40(3), A39.
11. Pohl, M.B., Rabbito, M. and Ferber, R. (2009). The role of tibialis posterior on foot kinematics during walking. In *Proceedings of the American Society of Biomechanics Annual Meeting*. Penn State College, PA, USA.
12. Schnackenburg, K.E., Macdonald, H.M., Ferber, R., Boyd, S.K. (2009). Bone Micro-

architectural Parameters and Muscle Strength in Recreational Runners with and without Tibial Stress Fractures. 10th Alberta BME Conference, Banff, Canada

13. Best, C.S., Ferber, R. (2009). Comparison of three different hand-held dynamometry measurement techniques. Journal of Athletic Training, 44(3), S113.
14. Pohl, M.B., Lloyd, C.H., Lun, V., Wiley, P., Ferber, R. (2009). Frontal plane lower extremity gait and muscle strength asymmetry in patients with medial compartment knee osteoarthritis and healthy controls. European League Against Rheumatism (EULAR) Book of Abstracts 2009 World Congress, June, Copenhagen, DE.
15. Kendall, K.D., Schmidt, C., & Ferber, R. The relationship between hip abductor muscle strength and magnitude of pelvic drop following a 3 week strengthening protocol in non-specific low back pain patients. Book of Abstracts, 2009 Canadian Athletic Therapists Association National Conference, May, Vancouver, BC.
16. Butler R.J., Minick K., Ferber R., & Underwood F.B. (2008). Gait mechanics following ACL rupture: Implications for the Early Onset of Knee Osteoarthritis. Medicine and Science in Sports and Exercise, 40(5S), 766.
17. Minick K., Ferber R., Underwood F.B., & Butler R.J. (2008). Gender Differences In Gait Mechanics Following an ACL Rupture: Implications For Early Onset Knee Osteoarthritis In Females. Medicine and Science in Sports and Exercise, 40(5S), 1940.
18. Kendall K.D., Sheerin K., Keshmiri E., Ferber R. (2008) Normative database of common anatomical measures related to running injuries. Journal of Athletic Training, 43(3), S123.
19. Kendall K.D., Ferber R., Louro, M. (2007). Proximal and distal clinical measures related to patellofemoral pain syndrome in runners. Journal of Athletic Training, 42(2), S114.
20. Ferber R., Kendall K.D. (2007). Biomechanical approach to rehabilitation of lower extremity musculoskeletal injuries in runners. Journal of Athletic Training, 42(2), S114.
21. Vickers, J.N., Ronsky, J.L., Loitz-Ramage, B., Panchuck, D., Morton, B., Gotch, M., Ferber, R., & Robu, I. (2006). Gaze and postural stability of elite ballet dancers, ACL-deficient and normal controls during the quiet stance and lunge. Cognitive Processing, 7 (S5):176.
22. Ferber, R., Ronsky, J.L., von Tscherner, V., & Osternig, L.R. (2004). Neuromuscular response to unexpected perturbations in anterior cruciate ligament injured non-copers. Book of Abstracts 2004 American Society of Biomechanics, Portland, OR, USA.
23. Ferber, R., McClay Davis, I., & Hamill, J. (2003). Prospective biomechanical investigation of iliotibial band syndrome in competitive female runners. Medicine

and Science in Sports and Exercise 35(5), s91.

24. DeLeo, A.T., **Ferber, R.**, McClay Davis, I., & Mika, E.S. (2003). Comparison of rearfoot motion and comfort between custom and semi-custom orthotics based on arch height. Medicine and Science in Sports and Exercise 35(5), s237.
25. Dierks, T.A., McClay Davis, I., & **Ferber, R.** (2003). Gender differences in continuous joint coupling variables during running. Medicine and Science in Sports and Exercise 35(5), s89.
26. McClay Davis, I., Dierks, T.A., & **Ferber, R.** (2003). Gender differences in discrete joint coupling variables during running. Medicine and Science in Sports and Exercise 35(5), s89.
27. Butler, R.J., **Ferber, R.**, & McClay Davis, I. (2003). Gender differences in lower extremity stiffness during running. Medicine and Science in Sports and Exercise 35(5), s89.
28. **Ferber, R.**, Osternig, L.R., Woollacott, M.H., Wasielewski, N.J., & Lee, J-H. (2003). Bilateral accommodations to anterior cruciate ligament deficiency and reconstruction. Book of Abstracts 2003 International Society of Biomechanics, Dunedin, New Zealand.
29. McClay Davis, I., **Ferber, R.**, Hamill, J., & Pollard, C. (2003). Rearfoot mechanics in competitive runners who had experienced plantar fasciitis. Book of Abstracts 2003 International Society of Biomechanics, Dunedin, New Zealand.
30. McClay Davis, I., Dierks, T.A., **Ferber, R.**, & Hamill, J. (2003). Lower extremity mechanics in patients with patellofemoral joint pain: a prospective study. Book of abstracts 2003 American Society of Biomechanics, Toledo, Ohio, USA.
31. **Ferber, R.**, McClay Davis, I, & Williams III, D.S. (2002). Orthotics alter lower extremity joint coupling: a dynamical systems approach. Book of Abstracts 2002 World Congress of Biomechanics, Calgary, Alberta, Canada.
32. McClay Davis, I., **Ferber, R.**, Dierks, T.A., Butler, R.J., & Hamill, J. (2002). Variables associated with the incidence of lower extremity stress fractures. Book of Abstracts 2002 World Congress of Biomechanics, Calgary, Alberta, Canada.
33. DeLeo, A.T., McClay Davis, I., & **Ferber, R.** (2002). Custom and semi-custom orthotic devices: A comparison of rearfoot motion control and comfort. Book of Abstracts 2002 World Congress of Biomechanics, Calgary, Alberta, Canada.
34. **Ferber, R.**, McClay Davis, I., Hamill, J., Pollard, C.D., & McKeown, K.A. (2002). Kinetic variables in subjects with previous lower extremity stress fractures. Medicine and Science in Sports and Exercise, 34(1), s25.
35. Osternig, L.R., **Ferber, R.**, Mercer, J., & Davis, H. (2002). Effect of anterior cruciate ligament surgery on lower extremity joint torques and knee shear. Medicine and Science in Sports and Exercise, 34(1), s579.

36. Pollard, C.D., & McKeown, K.A. Hamill, J., **Ferber, R.**, McClay Davis, I. (2002). Selected structural characteristics of female runners with and without lower extremity stress fractures. Medicine and Science in Sports and Exercise, 34(1), s991.
37. **Ferber, R.**, Wasielewski, N.J., Lee, J-H., Woollacott, M.H., & Osternig, L.R. (2001). Gait perturbation response in pre and post-surgical anterior cruciate ligament subjects and healthy controls. Book of Abstracts 2001 ISB World Congress, Zurich, Switzerland.
38. **Ferber, R.**, Wasielewski, N.J., Lee, J-H., Woollacott, M.H., & Osternig, L.R. (2001). Electromyographic response to unexpected gait perturbations in pre and post-surgical anterior cruciate ligament subjects and healthy individuals. Journal of Athletic Training, 36(2), s62.
39. **Ferber, R.**, Wasielewski, N.J., Lee, J-H., Woollacott, M.H., & Osternig, L.R. (2001). Reactive balance adjustments to unexpected perturbations while walking. Medicine and Science in Sports and Exercise, 33(5), s1321.
40. **Ferber, R.**, Osternig, L.R. (2000). Lower extremity joint adaptations in an ACL deficient male: Pre-injury to post-surgical evaluation. Medicine and Science in Sports and Exercise, 32(5), s252.
41. Osternig, L.R., **Ferber, R.**, Mercer, J., & Davis, H. (2000). Effect of velocity and joint position on hip and knee torque and anterior tibial shear in pre-surgical ACL deficient and post-surgical subjects. Medicine and Science in Sports and Exercise, 32(5), s222.
42. Hreljac, A., & **Ferber, R.** (2000). The relationship between gait transition speed and dorsiflexor force production. 2000 Canadian Society for Biomechanics Conference Proceedings, Waterloo, Ontario, Canada.
43. **Ferber, R.**, Osternig, L.R., & Neros, C. (1999). Effect of biological aging on lower extremity torque and power production in Masters class athletes. Medicine and Science in Sports and Exercise, 31(5), s385.
44. Osternig, L.R., **Ferber, R.**, Mercer, J., & Davis, H. (1999). Muscle accommodation to Anterior Cruciate Ligament dysfunction. Journal of Athletic Training, 34(2), S-11.
45. Hreljac, A., Arata, A., Chen, S-J, **Ferber, R.**, Keller, T.L., Mercer, J., & Row, B.S. (1999). Neurological considerations of the gait transition in humans. 1999 International Society of Biomechanics Conference Proceedings, Calgary, Alberta, Canada.
46. **Ferber, R.**, Osternig, L.R., & Gravelle, D. (1998). Range of motion and EMG response to Proprioceptive Neuromuscular Facilitation stretch techniques in trained and untrained older adults. Medicine and Science in Sports and Exercise, 30(5), s213.
47. Osternig, L. R. and **Ferber, R.** (1998). Effects of aging and training on PNF

stretching. Proceedings, 24th Annual Meeting of the AOSSM, Vancouver, BC, Canada; pp. 314-315.

INVITED PRESENTATIONS

1. *Keynote Address:* Biomechanical Factors Associated with Running Related Injuries. 26th Annual University of Iowa Hawkeye Sports Medicine Symposium. Iowa City IO. Dec 2010.
2. Clinical and Biomechanical Considerations for the Assessment and Treatment of Patellofemoral Pain Syndrome. 26th Annual University of Iowa Hawkeye Sports Medicine Symposium. Iowa City IO. Dec 2010.
3. Examination of the Hip as a Contributing Factor to Overuse Injuries. 26th Annual University of Iowa Hawkeye Sports Medicine Symposium. Iowa City IO. Dec 2010.
4. Aetiology of Running Injuries. University of Calgary Sports Medicine Centre Clinic Rounds. December 2010.
5. Healthy aging and pain-free walking: what research has done for us. Rotary Club of Calgary. November 2010.
6. Running Injury Free. Royal Victoria Marathon Running Expo, Victoria, BC. October 2010.
7. *NATA Exchange Lecture:* Biomechanical Factors Associated with Running-Related Injuries. American Orthopaedic Society for Sports Medicine (AOSSM) Annual Meeting, Providence RI. July 2010.
8. Clinical Assessment of Walking Gait Mechanics: Learning Lab. 61st NATA Annual Meeting & Clinical Symposia, Philadelphia, PA. June 2010.
9. *Feature Presentation:* Importance of the hip abductors for the resolution of lower extremity injuries. 61st NATA Annual Meeting & Clinical Symposia, Philadelphia, PA. June 2010.
10. *Keynote Presentation:* Biomechanical and Clinical Factors Associated With Patellofemoral Pain Syndrome. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Saskatoon, Saskatchewan. Oct, 2009
11. Exercise Prescription for Patellofemoral Pain Syndrome. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Saskatoon, Saskatchewan. Oct, 2009
12. The role of tibialis posterior in the control of midfoot and rearfoot mechanics. 12th Annual International PFOA Conference, Atlanta, USA. October, 2009
13. Examination of the Hip as a Contributing Factor of Lower Extremity Overuse Injuries. 12th Annual International PFOA Conference, Atlanta, USA. October, 2009

14. The pain in my knee is a pain in my butt. Big Rock Lecture Series, Calgary, Canada. September, 2009.
15. Advanced Track Seminar: Evaluation and Interpretation of Running Gait. 60th NATA Annual Meeting & Clinical Symposia, San Antonio, TX. June 2009
16. Clinical Lecture: Clinical Gait Analysis and Proper Footwear Selection. 60th NATA Annual Meeting & Clinical Symposia, San Antonio, TX. June 2009
17. *Keynote Presentation*: The Inter-Relationship Between Hip Muscle Strength and Running Biomechanics. Pedorthic Association of Canada Annual Symposium. Kelowna British Columbia, April, 2009.
18. Examination of the Hip as a Contributing Factor of Lower Extremity Overuse Injuries. Pedorthic Association of Canada Annual Symposium. Kelowna, British Columbia, April, 2009.
19. *Keynote Presentation*: Biomechanical and Clinical Factors Associated With Shin Splints and Stress Fractures. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Regina, Saskatchewan. March, 2009
20. Exercise Prescription for Shin Splints and Stress Fractures. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Regina, Saskatchewan. March, 2009
21. Understanding the pathomechanics of musculoskeletal injury: the inter-relationship of clinical and biomechanical factors. University of Oregon, Department of Human Physiology Graduate Lecture Series, Eugene, Oregon. January, 2009
22. Stress Fracture Management & Treatment. 59th NATA Annual Meeting & Clinical Symposia, St. Louis, MO. June 2008
23. Pathomechanics of patellofemoral pain syndrome: the hip-down perspective. 11th Annual International PFOLA Conference, Vancouver, BC. October, 2008
24. Proprioceptive neuromuscular response to unexpected gait perturbation in ACL deficient individuals. 8th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2004
25. Bilateral accommodations to anterior cruciate ligament during normal and perturbed gait. 8th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2004
26. *Keynote Presentation*: Foot structure and biomechanics of lower extremity injuries. Sutter Heath Group Santa Cruz Seminar, Santa Cruz, CA. October 2004.
27. Gait retraining for running relateds injuries. York University Athletic Therapy seminar. Toronto, Ontario, Canada. September, 2004.

28. *Keynote Presentation: Foot Orthotics: Current Research in Rehabilitation.* Canadian Athletic Therapists Association Annual Meeting. Antigonish, Nova Scotia, Canada. May 2004.
29. Factors influencing the etiology and treatment of lower extremity musculoskeletal injuries. Canadian Athletic Therapists Association Annual Meeting. Antigonish, Nova Scotia, Canada. May 2004.
30. Neuromuscular adaptations in anterior cruciate ligament deficient individuals. Distinguished Lecture Series, UNLV Department of Kinesiology, Las Vegas, NV. March 2004.
31. How puberty influences the biomechanics of running and landing in male and female adolescents. 7th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2003
32. Influence of puberty and consequent structural alterations on anterior knee pain in young runners. 7th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2003
33. Patellofemoral pain syndrome: Current trends and research in rehabilitation. Dynamic Rehabilitation Specialists Symposium. Calgary, Alberta, Canada. October 2003
34. Prehabilitation for the endurance athlete. Clinical Workshop: National Athletic Trainers Association National Meeting. St Louis, MO. June 2003
35. Gait accommodations to anterior cruciate ligament deficiency and surgery. School of Kinesiology and Health Science Graduate Seminar. York University, Toronto, Ontario, Canada. September 2002
36. Bilateral accommodations to anterior cruciate ligament deficiency and surgery. Biomechanics Invitational Seminar. Las Vegas, NV, USA. March 2002.
37. Accommodations to anterior cruciate ligament deficiency and surgery. Lane Athletic Trainers Association Annual Meeting. Eugene, OR, USA. March 2001.
38. Lower Extremity Joint Accommodations to Anterior Cruciate Ligament Dysfunction. Canadian Athletic Therapists Association Annual Meeting. Calgary, Alberta, Canada. May 2001.

TRAINEE/STUDENT SUPERVISION

- 2007-present: Karen Kendall (Faculty Supervisor: PhD): Validation of the Trendelenburg Test for the purpose of optimal assessment and treatment of low back pain.
- 2007: Mike Green (Committee Member: MKin): The relationship between core strength and patellofemoral pain syndrome.
- 2008-2010: Melissa Rabitto (Faculty Supervisor: MSc): Posterior Tibial Tendon Dysfunction

- 2008-present: Mike Pohl (**Faculty Supervisor: PDF**): The underlying mechanics between patellofemoral pain syndrome and patellofemoral osteoarthritis.
- 2009-2010: San Kyoon Park (**Faculty Supervisor: PDF**): Biomarkers associated with inflammation and the progression of knee osteoarthritis.
- 2009-present: Lindsay McElory (**Faculty Supervisor: MSc**): The relationship between anatomical structure, flexibility, and strength in the development of torsional forces while running.
- 2009-present: Katharina Schnackenburg (**Committee Member: Msc**): Bone Micro-architectural Parameters and Muscle Strength in Recreational Runners with and without Tibial Stress Fractures.
- 2009: Blayne Hettinga (**Faculty Supervisor: PDF**): Development of biomechanical methodologies for automated analysis.
- 2009-present: Shawn Allen (**Committee Member: MSc**): Do Components of a Physiotherapist Delivered Pre-participation Examination in Male and Female Adolescent Soccer Players Predict Acute Lower Extremity Injuries in Soccer?
- 2009-present: Bill Wannop (**Committee Member: PhD**): Biomechanical Model of Lower Extremity Injuries in High School Football.
- 2009-present: Reginaldo Fukuchi (**Faculty Supervisor: PhD**): Changes in running mechanics across the lifespan: the relationship of chronic running to the development of osteoarthritis.
- 2010-present: Whitney Kilback (**Faculty Supervisor: MSc**): Biomechanical variables associated with iliotibial band syndrome.
- 2010-present: Ryan Leigh (**Faculty Supervisor: PhD**): Biomechanical factors related to minimizing torsional foot-shoe forces for diabetics with peripheral neuropathy.

SUMMER STUDENTS AND SPECIAL PROJECTS

- 2010 - Angela McClintock - Commercialization and marketing strategies related to the Running Injury Clinic
- 2010 - Lindsay Burnett - Functional vs. manual calculation of anatomical joint coordinate systems
- 2010 - Lissandre Dufresne - Biomechanical factors related to lower extremity running injuries
- 2009 - Andrea Bachand - Development of a 3-dimensional motion capture system for use in a clinical setting
- 2009 - Lauren Tompkins - Biomechanical and clinical factors related to PFPS
- 2009 - Holliston Logan - HYRS Alberta Heritage Foundation for Health Research
- 2008 - Lindsay MacNeil - Normative values and critical criterion for iliotibial band and iliopsoas muscle flexibility

POPULAR PRESS INTERVIEWS / CONTRIBUTIONS

Dec 2010: Globe and Mail: Running man nears the end of line.

<http://www.theglobeandmail.com/sports/more-sports/running-man-nears-the-end-of-line/article1852611/>

November 2010 issue of Runner's World: Is Less More?

<http://www.runnersworld.com/article/0,7120,s6-240-400--13691-6-1X2X3X4X5X6X7X8-9,00.html>

Nov 29, 2010: ABC News Online: Should Runners Surrender Their Soles? Despite Barefoot Running Rage, Conventional Footwear Loyalists Remain

<http://abcnews.go.com/Health/Wellness/runners-save-soles-barefoot-minimalist-shoes/story?id=12228478&page=1>

November 11, 2010: Macleans.ca Don't drink and drive. Run, instead.
<http://www2.macleans.ca/2010/11/11/drink-and-run-instead/>

November 1, 2010: Sweat Science: Biomechanics for Performance and Injuries
<http://sweatscience.com/tag/sports-technology/>

November 2010: Avenue Magazine - Top 40 under 40
<http://www.avenuecalgary.com/top-40-under-40/item/reed-ferber>

Oct 31, 2010: Globe and Mail: Can biomechanics boost my athletic performance?
<http://www.theglobeandmail.com/life/health/alex-hutchinson/can-biomechanics-boost-my-athletic-performance/article1778660/>

October 15, 2010: The Daily (Shaw TV): 3D Gait Analysis_Victoria
<http://www.youtube.com/watch?v=NtyJRRJXxE4>

October 15, 2010: The Daily (Shaw): Goodlife Fitness Victoria Marathon, Running Without Injury by Dr. Reed Ferber

Pt. 1: <http://www.youtube.com/watch?v=GP6XwIR2MtE&feature=related>

Pt. 2: <http://www.youtube.com/watch?v=tqabqYZSUSk>

September 21, 2010: Canadian Running: LAB RAT: Fresh Out of the Gait
<http://runningmagazine.ca/2010/09/sections/health-nutrition/body-work/lab-rat-fresh-out-of-the-gait/>

September 2, 2010 Innovation Anthology #336 Preventing Running Injuries
<http://www.innovationanthology.com/programs.php?id=352>

September 1, 2010: Canada.com: Push yourself, slowly training for a marathon stresses your body, so don't ignore the pain

<http://www.canada.com/Push+yourself+slowly/3473075/story.html>

also August 24, 2010: Montreal Gazette

<http://www.montrealgazette.com/Fitness+Push+yourself+slowly/3434930/story.html>

August 24, 2010: National Post: Training for a marathon? Be sure to listen to what your body is telling you (also on Calgary Herald)

<http://www.nationalpost.com/life/Training+marthon+sure+listen+what+your+body+tel ling/3437281/story.html#ixzz1750hLvQg>

June 25, 2010? Running Times: 3D Revolutionizes Gait Analysis

<http://www.runningtimes.com/Article.aspx?ArticleID=19945>

June 24, 2010. CBC News: Clinic gives runners 3D insight into injuries
<http://www.cbc.ca/canada/calgary/story/2010/06/24/calgary-running-clinic-injury-technique-gait-analysis.html>

June 10, 2010: Globe Sports: Jogging into the Unknown
<http://sudburyrocks.ca/archives/2010/06-10index.htm>

May 28, 2010: Breakfast TV: Live Host at the Running Injury Clinic (7am-10am)

May 20, 2010: Calgary Herald: The gaits of heaven and hell
<http://communities.canada.com/calgaryherald/blogs/calgaryrunner/archive/2010/05/20/draft.aspx>

Summer 2010. Research News: Keep on Moving.
<http://www.ahfmr.ab.ca/researchnews/2010/summer/keeponmoving/>

February 27, 2010: Science News: Running Barefoot Blunts Foot's force:
http://www.sciencenews.org/view/generic/id/55708/title/Running_barefoot_blunts_foot

April 6, 2010: CTV: Shin splints can lead to stress fractures
http://toronto.ctv.ca/servlet/an/local/CTVNews/20100406/CGY_Fracture_Stress_100406/Flashpoint

March 2010: Runners World: The 10 Laws of Injury Prevention
http://www.runnersworld.com/article/0,7120,s6-241-285--13413-0,00.html?cm_mmc=Mag_URL--2010_March--Injuries--The_Laws_of_Perpetual_Motion

(reposted Ottawa Running Club: 10 Tips to Extend your Running Life:
http://www.soleresponsibility.org/runclub/tips/injuries_burfoot.htm)

February 17, 2010: Natural News: New Harvard Study shows advantages of barefoot running:
http://www.naturalnews.com/028178_barefoot_running.html

February 1, 2010 Calgary Herald: Running Your way fit
http://www.calgaryherald.com/story_print.html?id=2493444&sponsor=

December 2009. Running Times: Do Weak Hips Cause Pronation?
<http://runningtimes.com/Article.aspx?ArticleID=18359>

November 23, 2009: Womens Health: Hip Exercises to Prevent Running Injuries:
<http://www.womenshealthmag.com/fitness/hip-exercise>

September 9, 2009: Calgary Herald: Is Running Barefoot better for you?
<http://www.calgaryherald.com/Video+running+barefoot+better/1977408/story.html>

September 2009: Runners World: All in the Hips
<http://www.runnersworld.com/article/0,7120,s6-241-286--13410-0,00.html>

May 20, 2009: Sports Injury Clinic: Weakened Hip Muscles May cause overuse Running Injuries: <http://www.sportsinjuryclinic.net/blog/?p=80>

January 28, 2009: Metro News: High-tech injury clinic takes a three-dimensional approach: <http://www.metronews.ca/calgary/local/article/173116>

January 27, 2009 CTV: Running injury clinic opens to the public
http://calgary.ctv.ca/servlet/an/local/CTVNews/20090127/CGY_Runner_Clinic_090127/20090127/Ghost%20Whisperer%20

January 2009: McCaig Institute: No Referral Knee Clinic:
<http://mccaiginstitute.com/education/patient-resources/>

December 28, 2008: That's fit: [The Truth About Running and Knees](http://www.thatsfit.ca/2008/12/28/the-truth-about-running-and-knees/)
<http://www.thatsfit.ca/2008/12/28/the-truth-about-running-and-knees/>

October 2010: Running Runners Run: Does Running Increase Harm to your knees?
<http://www.runningrunnersrun.com/2008/10/does-running-increase-harm-to-your.html>

July 11, 2008: Dearborn Health: Will building my "core strength" prevent injuries?
<http://www.dearbornhealth.com/main.cfm?id=DB703739-C29A-0912-E2316E3C77B95782>

June 7, 2007, Calgary Herald - Straight from the hip
<http://www.runninginjuryclinic.com/news/straight-from-the-hip.html>