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

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Jan, 2010

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: 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: Oct 2009 – Oct 2013
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 2004 – 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

HONORS

- 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
- 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

SERVICE

- 2008 – present: Chair of Communications: AHFMR Team Grant
- 2007 – present: Co-Chair: UC101 New Student Orientation Committee
- 2005 – present: Manuscript Reviewer for American Journal of Sports Medicine
- 2005 – present: Manuscript Reviewer for Sports Medicine
- 2004 – present: Member of the NATA Research and Education Foundation:
  Vice Chair for Student Awards (04-07)
  Vice Chair for General Grants (08-09)
- 2004 – present: Member of the Editorial Board – Journal of Athletic Training
- 2004 – present: Manuscript Reviewer for Journal of Orthopaedic Research
- 2004 – present: Manuscript Reviewer for Journal of Sport Rehabilitation
- 2004 – present: Manuscript Reviewer for Sport Sciences and Medicine
- 2004 – present: Manuscript Reviewer for Medicine & Science in Sports and Exercise
- 2003 – present: Manuscript Reviewer for Journal of Applied Biomechanics
- 2003 – present: Manuscript Reviewer for British Journal of Sports Medicine
- 2002 – present: Manuscript Reviewer for Clinical Biomechanics
- 2002 – present: Manuscript Reviewer for Clinical Journal of Sports Medicine
- 2002 – 2008: Member of the CATA Exam Review Committee

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 MacNeil, L. (2009). Normative values and critical criterion for iliotibial band and iliopsoas muscle flexibility. Journal of Athletic Training. (in press).

2. **Ferber, R**. Davis, I.S., Noehren, B., Hamill, J. (2009). Competitive female runners with a history of iliotibial band syndrome demonstrate atypical hip and knee kinematics. Journal of Orthopaedic & Sports Physical Therapy. (in press).

3. **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.

4. 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.

5. **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.

6. **Ferber, R.** (2007) The influence of custom foot orthoses on lower extremity running mechanics: Invited Review Paper. International SportMed Journal, 8(3), 97-106.

7. 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.

8. 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.

9. Hreljac, A., **Ferber, R**. (2006). A Biomechanical Perspective of Predicting Injury Risk in Running. International SportMed Journal, 7(2): 98-108.

10. 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.

11. 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.

12. **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.

13. 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.

14. **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.

15. **Ferber, R.**, McClay Davis, I., & Williams III, D.S. (2003). Gender differences in lower extremity mechanics during running. Clinical Biomechanics 18(4), 350-357.

16. **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.

17. **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.

18. **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.

19. **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.

20. **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.

21. **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.

22. 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.

23. 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.

24. 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

Ferber, R., Kendall, K.D., and Farr, L. (2009 – in review). Changes in knee biomechanics following a hip abductor strengthening protocol for runners with patellofemoral pain syndrome. Journal of Athletic Training.

Kendall, K.D., **Ferber, R.** (2009 – in review). The effectiveness of exercise therapy for acute, subacute, and chronic non-specific low back pain. Journal of Athletic Training.

Pohl, M.B., Kendall, K.D., **Ferber, R.** (2009 – in review). Database of Common Anatomical Measures for Injured Runners. Clinical Journal of Sports Medicine.

Pohl, M.B., Rabbito, M., **Ferber, R.** (2009 – in review). The role of tibialis posterior on foot kinematics during walking. Gait and Posture.

Kendall, K.D., Schmidt, C.S., **Ferber, R.** (2009 – in review). The relationship between hip abductor muscle strength and the magnitude of pelvic drop in patients with low back pain. Journal of Sport Rehabilitation

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.

TECHNICAL RESEARCH REPORTS

Nigg, B.M., **Ferber, R.**, & Gormley, T. (2004). Effect of an unstable shoe construction on lower extremity gait characteristics. Research report for Masai Switzerland.

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.

Stefanyshyn, D.J., **Ferber, R.**, Weber, C., & Anderson, B. (2004). Performance requirements for golf footwear. Research report for TaylorMade-adidas Golf.

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.

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, 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

2. Best, C.S., **Ferber. R**. (2009). Comparison of three different hand-held dynamometry measurement techniques. Journal of Athletic Training. 44(3), S113.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. **Ferber R.**, Kendall K.D. (2007). Biomechanical approach to rehabilitation of lower extremity musculoskeletal injuries in runners. Journal of Athletic Training, 42(2), S114.

10. 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.

11. **Ferber, R.,** Ronsky, J.L., von Tscharner, 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.

12. **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.

13. 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.

14. 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.

15. 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.

16. 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.

17. **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.

18. 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.

19. 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.

20. **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.

21. 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.

22. 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.

23. **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.

24. 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.

25. 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.

26. **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.

27. **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.

28. **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.

29. **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.

30. 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.

31. 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.

32. **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.

33. 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.

34. 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.

35. **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.

36. 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 Presentation*: Biomechanical and Clinical Factors Associated With Patellofemoral Pain Syndrome. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Saskatoon, Saskatchewan. Oct, 2009

2. Exercise Prescription for Patellofemoral Pain Syndrome. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Saskatoon, Saskatchewan. Oct, 2009

3. The role of tibialis posterior in the control of midfoot and rearfoot mechanics. 12th

Annual International PFOLA Conference, Atlanta, USA. October, 2009

4. Examination of the Hip as a Contributing Factor of Lower Extremity Overuse Injuries. 12th Annual International PFOLA Conference, Atlanta, USA. October, 2009

5. Advanced Track Seminar: Evaluation and Interpretation of Running Gait. 60th NATA Annual Meeting & Clinical Symposia, San Antonio, TX. June 2009

6. Clinical Lecture: Clinical Gait Analysis and Proper Footwear Selection. 60th NATA Annual Meeting & Clinical Symposia, San Antonio, TX. June 2009

1. *Keynote Presentation*: The Inter-Relationship Between Hip Muscle Strength and Running Biomechanics. Pedorthic Association of Canada Annual Symposium. Kelowna British Columbia, April, 2009.

2. Examination of the Hip as a Contributing Factor of Lower Extremity Overuse Injuries. Pedorthic Association of Canada Annual Symposium. Kelowna, British Columbia, April, 2009.

3. *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

4. Exercise Prescription for Shin Splints and Stress Fractures. Saskatchewan Sports Medicine Council: Sports Med Saturday Symposium, Regina, Saskatchewan. March, 2009

5. 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

6. Stress Fracture Management & Treatment. 59th NATA Annual Meeting & Clinical Symposia, St. Louis, MO. June 2008

7. Pathomechanics of patellofemoral pain syndrome: the hip-down perspective. 11th Annual International PFOLA Conference, Vancouver, BC. October, 2008

8. Proprioceptive neuromuscular response to unexpected gait perturbation in ACL deficient individuals. 8th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2004

9. Bilateral accommodations to anterior cruciate ligament during normal and perturbed gait. 8th International Conference in Orthopaedics, Biomechanics, Sports Rehabilitation. Assisi (Perugia), Italy. November 2004

10. *Keynote Presentation*: Foot structure and biomechanics of lower extremity injuries. Sutter Heath Group Santa Cruz Seminar, Santa Cruz, CA. October 2004.

11. Gait retraining for running relateds injuries. York University Athletic Therapy

seminar. Toronto, Ontario, Canada. September, 2004.

12. *Keynote Presentation*: Foot Orthotics: Current Research in Rehabilitation. Canadian Athletic Therapists Association Annual Meeting. Antigonish, Nova Scotia, Canada. May 2004.

13. Factors influencing the etiology and treatment of lower extremity musculoskeletal injuries. Canadian Athletic Therapists Association Annual Meeting. Antigonish, Nova Scotia, Canada. May 2004.

14. Neuromuscular adaptations in anterior cruciate ligament deficient individuals. Distinguished Lecture Series, UNLV Department of Kinesiology, Las Vegas, NV. March 2004.

15. 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

16. 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

17. Patellofemoral pain syndrome: Current trends and research in rehabilitation. Dynamic Rehabilitation Specialists Symposium. Calgary, Alberta, Canada. October 2003

18. Prehabilitation for the endurance athlete. Clinical Workshop: National Athletic Trainers Association National Meeting. St Louis, MO. June 2003

19. Gait accommodations to anterior cruciate ligament deficiency and surgery. School of Kinesiology and Health Science Graduate Seminar. York University, Toronto, Ontario, Canada. September 2002

20. Bilateral accommodations to anterior cruciate ligament deficiency and surgery. Biomechanics Invitational Seminar. Las Vegas, NV, USA. March 2002.

21. Accommodations to anterior cruciate ligament deficiency and surgery. Lane Athletic Trainers Association Annual Meeting. Eugene, OR, USA. March 2001.

22. Lower Extremity Joint Accommodations to Anterior Cruciate Ligament Dysfunction. Canadian Athletic Therapists Association Annual Meeting. Calgary, Alberta, Canada. May 2001.

TECHNICAL EXPERIENCE

- **Motion analysis**: VICON Motion Capture, Peak Performance Technologies real-time system, Motion Analysis real-time system.
- **EMG**: Delsys and Motion Lab non pre-amplified surface electrodes, Beckman pre-amplified surface electrodes, indwelling fine-wire electrodes

- **Kinetics**: Kistler force plates, Bertec force plates, AMTI force plates, custom-built hydraulic moveable dual force platform system, PCB uniaxial accelerometer.
- **Data acquisition**: Associative Measurement Laboratory system (AMLAB), Ariel Performance Analysis System (APAS).
- **Isokinetics**: Omnikinetic custom-built isokinetic dynamometer, Kin-Com, Cybex, and Biodex dynamometers.
- **Programming**: MATLAB, LabView.

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-present: 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-present: 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-present: Blaine 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**: MSc): Interaction between turf surface and athletic shoes in the prediction of lower extremity injury.
- 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.