

# **CURRICULUM VITAE**

**REED FERBER**  
Ph.D., CAT(C), ATC

**Assistant Professor**  
**Faculties of Kinesiology and Nursing**  
**Director: Running Injury Clinic**

Faculties of Kinesiology and Nursing  
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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
- 1997 M.S. University of Oregon, Eugene, Oregon Sports Medicine
- 1993 B.P.E. University of Calgary, Calgary, Alberta Physical Education

## PROFESSIONAL EXPERIENCE

- 2007 - present **Assistant Professor**  
Faculties of Kinesiology and Nursing, University of Calgary, Canada
- 2005 - present **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

- **2004 - NATA REF Grant \$82,563** (not funded)  
PI - Effect of a perturbation training program on ACL copers and non-copers
- **2004 - 2006 CIHR Team Planning and Development Grants - \$72,000** (funded)  
Co-PI - Developing a new research teams through the Canadian Centre for Sports Injury Prevention
- **2004 University of Calgary Undergraduate Student Research - \$1500** (funded)  
Co-PI - Determination of the concurrent validity between clinical timed static and dynamic standing balance measurements and laboratory based stabilometry measurements using a Pedar flexible insole device.
- **2003 Canadian Institute of Health Research - \$105,575** (not funded)  
Co-PI - Functional foot orthotics in the treatment of patellofemoral pain syndrome
- **2003 National Institutes of Health R01 - \$250,000** (not funded)  
Co-PI - Gender Bias & ACL Injuries: Risk Factors & Interventions
- **2003 National Institutes of Health R03 - \$100,000** (not funded)  
Co-PI - Gait Retraining of Runners through Realtime Biofeedback
- **2000 - 2001 Eugene Evonuk Award - \$2500** (funded)  
PI - Electromyographic response to unexpected gait perturbations
- **2000 - 2001 International Society of Biomechanics - \$2000** (funded)  
PI - Effect of unexpected gait perturbation on ACL deficient subjects
- **1999 - 2001 NATA Doctoral Research Grant \$2000** (funded)  
PI - Effect of unexpected gait perturbation on ACL deficient subjects

## HONORS

- 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 Fellow Teaching Award
- 1993 Dr. Lou Goodwin Award: Outstanding service to the University of Calgary Department of Athletics

## TEACHING EXPERIENCE

### University of Calgary

- KNES 261 - Human Anatomy
- KNES 509 - Anatomical Dissection
- BMEN 309 - Anatomy and Physiology for Engineers

### *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

- 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
- 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 - present: 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

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.

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

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.

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.

**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.

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.

**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.

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

**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.

**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.

**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.

**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.

**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.

**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.

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.

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.

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.** (2007). The effect of orthotics on lower extremity running mechanics. International SportMed Journal (invited review paper)

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.

**Ferber, R.** Davis, I.S., Noehren, B., Hamill, J. (2006). Retrospective biomechanical investigation of iliotibial band syndrome in competitive female runners. Medicine and Science in Sports 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, 3<sup>rd</sup> 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.

## PUBLISHED ABSTRACTS

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.

**Ferber, R**, Ronsky, J.L., von Tscherner, V., & Osternig, L.R. Neuromuscular response to unexpected perturbations in anterior cruciate ligament injured non-copers. Book of Abstracts 2004 American Society of Biomechanics, Portland, OR, USA.

**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.

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.

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.

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.

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.

**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.

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.

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.

**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.

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.

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.

**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.

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.

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.

**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.

**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.

**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.

**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.

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.

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.

**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.

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.

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.

**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.

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*

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

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

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

**Ferber, R.** Gait retraining for running relateds injuries. York University Athletic Therapy seminar. Toronto, Ontario, Canada. September, 2004.

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

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

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

**Ferber, R.** 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

**Ferber, R.** 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

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

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

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

**Ferber, R.** & Osternig, L.R. Bilateral accommodations to anterior cruciate ligament deficiency and surgery. Biomechanics Invitational Seminar. Las Vegas, NV, USA. March 2002.

**Ferber, R.** & Osternig, L.R. Accommodations to anterior cruciate ligament deficiency and surgery. Lane Athletic Trainers Association Annual Meeting. Eugene, OR, USA. March 2001.

**Ferber, R.,** & Osternig, L.R. Lower Extremity Joint Accommodations to Anterior Cruciate Ligament Dysfunction. Canadian Athletic Therapists Association Annual Meeting. Calgary, Alberta, Canada. May 2001.

Osternig, L.R. & **Ferber, R.** Effects of aging and training on PNF stretching. Proceedings, 24th Annual Meeting of the American Orthopaedic Society for Sports Medicine. Vancouver, British Columbia, Canada. May 1998.

## *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.
- **Other Equipment:** Penny and Giles biaxial electrogoniometer, custom constructed electrogoniometer