

Michael B. Pohl, Ph.D.

Curriculum Vitae

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EDUCATION

Doctor of Philosophy in Biomechanics, University of Leeds, 2006

Bachelor of Science in Sport & Exercise Science with First Class Honours, University of Bath, 2002

EMPLOYMENT

Postdoctoral Fellow, Running Injury Clinic, University of Calgary. 2008 – present.

Conducting research investigating the use of physical therapy and gait retraining to correct abnormal biomechanics in patients with knee osteoarthritis. Additional research is being undertaken to understand the association of biomechanical factors with running injuries.

Postdoctoral Fellow, Department of Physical Therapy, University of Delaware. 2006 – 2008.

Conducted research related to an existing Department of Defense grant investigating biomechanical factors in the etiology of tibial stress fractures. Assisted in the development and writing of two successful grants investigating the use of gait retraining to reduce biomechanical variables associated with tibial stress fractures (\$1.2 million). Maintenance and development of a new Instrumented Treadmill Lab within the department. Supervision of five graduate students due to current employer being on sabbatical leave.

Research Assistant, Centre for Sport and Exercise Science, Sheffield Hallam University. 2000.

Assistance with exercise protocols, biochemical assays and subject recruitment for a study investigating the influence of a muscle damaging bout of exercise on the immune system. Assistance with day-to-day exercise testing of clients i.e. Wingate, VO₂max, lactate threshold, isokinetic strength.

GRANTS

Pohl, M.B. (£20,000). PhD Studentship from the Centre for Sports and Exercise Sciences, University of Leeds (2002-2005). Kinematic Coupling between the Foot and Lower Limb during Gait.

Davis. I.S. (\$1.0 million). NIH/ NICHD (2007:ongoing) Realtime retraining to reduce loading in runners (**post-doctoral fellow**).

Davis, I.S. (\$200,000). DOD/BHMRR (2007: ongoing). The use of real-time feedback to reduce lower extremity loading during running in individuals at risk for stress fractures (**post-doctoral fellow**).

GRANTS SUBMITTED

Pohl, M.B. (2007). NIH (New Innovator Award). Reducing Knee Osteoarthritis Risk through Gait Retraining (not funded).

PUBLICATIONS

Pohl, M.B., Mullineaux, D.R., Milner, C.E., Hamill, J. and Davis, I.S. (2008). Biomechanical predictors of retrospective tibial stress fractures in runners. *Journal of Biomechanics*, 41, 1160-1165.

Pohl, M.B. and Buckley, J.G. (2008). Changes in foot and shank coupling due to alterations in foot strike pattern during running. *Clinical Biomechanics*, 23, 334-341.

Pohl, M.B., Messenger, N. and Buckley, J.G. (2007). Forefoot, rearfoot and shank coupling: effect of variations in speed and mode of gait. *Gait and Posture*, 25, 295-302.

Pohl, M.B., Messenger, N. and Buckley, J.G. (2006). Changes in foot and lower limb coupling due to systematic variations in step width. *Clinical Biomechanics*, 21, 175-183.

Pohl, M. and McNaughton, L. (2003). The physiological responses to running and walking in water at different depths. *Sports Medicine, Training and Rehabilitation*, 11, 63-78.

ABSTRACTS

Noehren, B., **Pohl, M.**, Barrance, P. and Davis, I.S. (2008). Tibiofemoral and patellofemoral alignment during a single leg squat: an MRI study. To be presented at the

Altman, A., **Pohl, M.**, Barrios, J. and Davis, I.S. (2008). A comparison between single-belt and split-belt treadmill walking. In *Proceedings of the North American Congress on Biomechanics*. Michigan, USA: Ann Arbor.

Willy, R., **Pohl, M.B.** and Davis, I.S. (2008). Calculation of vertical load rates in the absence of vertical impact peaks. In *Proceedings of the 32nd American Society of Biomechanics Annual Meeting*. Michigan, USA: Ann Arbor.

Pohl, M.B. and Davis, I.S. (2007). What strategies do runners utilize to reduce tibial acceleration following a gait retraining protocol? *Medicine and Science in Sports and Exercise*, 40, S19-20.

Altman, A., **Pohl, M.** and Davis, I.S. (2007). A comparison of split-belt and single belt treadmill walking over time. *Medicine and Science in Sports and Exercise*, 40, S59.

Noehren, B., **Pohl, M.**, Barrance, P. and Davis, I. (2007). Relationship between tibio-femoral and patellofemoral alignment during a single leg squat: a preliminary study. *Medicine and Science in Sports and Exercise*, 40, S119.

Pohl, M.B., Davis, I.S. and Hamill, J. (2007). Prospective study of kinetic factors associated with tibial stress fractures in runners. In Proceedings of the 31st American Society of Biomechanics Annual Meeting. Palo Alto, USA: Stanford University.

Pohl, M.B. and Davis, I.S. (2007). Predicting retrospective tibial stress fractures in female runners using kinematic and kinetic variables. *Medicine and Science in Sports and Exercise*, 39, S73.

Barrance, P., Barrios, J., Davis, I., Noehren, B. and **Pohl, M.** (2007). Bone surface tracking for standing knee MRI: a validation study. In Proceedings of the 31st American Society of Biomechanics Annual Meeting. Palo Alto, USA: Stanford University.

Pohl, M.B. and Buckley, J.G. (2006). Rearfoot, forefoot and shank coupling: effect of variations in foot strike pattern. In Proceedings of the 30th American Society of Biomechanics. Blacksburg, USA: Virginia Tech.

Pohl, M.B., Messenger, N. and Buckley, J.G. (2005). Changes in foot and lower limb coupling due to systematic variations in step width. In Proceedings of the 3rd International Conference on the Biomechanics of the Lower Limb in Health, Disease and Rehabilitation. Salford, UK: Salford University.

INVITED PRESENTATIONS

Pohl, M.B. (2008). Kinematic coupling between the foot and lower limb during running. Presented at the 11th International Conference on Foot Biomechanics and Orthotic Therapy. Vancouver: Canada.

Pohl, M.B. (2007). Kinematic coupling between the forefoot, rearfoot and shank during gait. Presented at the 10th International Conference on Foot Biomechanics and Orthotic Therapy. San Diego: USA.

CURRENT RESEARCH

The use of gait retraining and muscle strengthening in patients with knee osteoarthritis.
Collaborators: Ferber, R., Frank, C. and Lloyd, C.H.

The biomechanical aetiology of patellofemoral pain syndrome in runners. Collaborators: Ferber, R. and Ronsky, J.

Kinematic, kinetic and structural variables associated with overuse injuries in runners.
Collaborators: Ferber, R. and Hamill, J.

The relationship between foot structure, muscular strength, and foot biomechanics.

Collaborators: Ferber, R. and Rabbito, M.

Kinematic adaptations as a consequence of reducing tibial acceleration using a gait retraining intervention. Collaborators: Crowell, H.P. and Davis, I.S.

The use of a standing MRI unit to quantify patellofemoral joint kinematics during a single leg squat. Collaborators: Noehren, B., Barrance, P. and Davis, I.S.

TEACHING EXPERIENCE

Invited lecturer, Doctorate of Physical Therapy, University of Delaware. 2007

Lectures given to DPT students:

Normal gait running mechanics

Abnormal gait during running

Invited lecturer, Biomechanics and Movement Science Program, University of Delaware. 2007

Lectures given to graduate students:

An Introduction to Visual3D Analysis Software

Common Marker Systems for Photogrammetric Gait Analyses

Teaching Assistant, School of Sport and Exercise Science, University of Leeds. 2002 – 2005

Tutorials and laboratory classes were led in the following units:

Introduction to Statistics and Info Technology (SPSC 1000)

Introduction to the Mechanics of Sport (SPSC1011)

Mechanics of Sport (SPSC2111)

Motor Control: Foundations of Control/ Learning (SPSC1031)

Motor Control: The Learning Environment (SPSC2031)

Anxiety, Motivation and Sport Performance (SPSC2041)

Human Motor Development (SPSC3040)

HONOURS

CODA Motion Best Final Year Student, University of Bath, 2002.

PROFESSIONAL ACTIVITIES

Member of the American Society of Biomechanics, 2007 - Present

Member of the Board of the Faculty of Biological Sciences, University of Leeds, 2003- 2004

Postgraduate Student Representative, School of Sport and Exercise Sciences, University of Leeds, 2003- 2004