

Robert J. Butler

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EDUCATION

Ph.D. in Biomechanics and Movement Science, *expected August 2005*
University of Delaware, Newark, DE
M.S. in Movement Science (Biomechanics), December 2001
Springfield College, Springfield, MA
B.S. in Biology, May 1999
Marietta College, Marietta, OH

PROFESSIONAL EXPERIENCE

Research Assistant, University of Delaware, Newark, DE
Fall 2001 - present

- Everyday tasks include assisting in research designs, collection of data, and analysis of data in a biomechanics lab focused on running mechanics and running injury prevention. Current experimentation includes the evaluation of gender differences in running mechanics, the effect of running mechanics on running injuries, and changes in running mechanics due to orthotic intervention.
- Current primary responsibility is the management and data collection of a study evaluating the effect of wedged orthoses on pain, function, and gait mechanics in subjects with knee osteoarthritis.
- Dissertation will evaluate how the interaction of arch height and footwear affect running mechanics acutely and during a prolonged run.

Volunteer, Z-Coil Ltd. footwear, Albuquerque, NM
Winter 2002

- Responsible for the collection and analysis of a set of pilot data that evaluated the effect of the Z-Coil running shoe on kinetic variables during the loading portion of stance during walking.

Volunteer, Footwear Industries of America, Stoughton, MA
Fall 2000

- Partially responsible for the organization, recruitment, and proctoring of a testing protocol used to establish the Foot Measurement Standard established by the Footwear Industries of America.

Teaching Fellow, Springfield College, Springfield, MA

Fall 2000 - Spring 2001

- In charge of lecturing, set-up and evaluation of undergraduate Human Anatomy and Physiology laboratory that was designed to prepare students for a future in Health related fields.

RESEARCH INTERESTS

- Investigation of changes in rearfoot motion due to orthotic or footwear intervention during a fatigued state.
- Training programs focused on altering lower extremity stiffness in order to reduce incidence of injury.
- Changes in pain, function, and gait mechanics due to the implementation of a wedged orthotic in patients with knee osteoarthritis.
- The effect of midsole hardness on propulsion during running. MS thesis. Springfield College
- The relationship between arch height and 2-D rearfoot angle. BS thesis. Marietta College

PUBLISHED MANUSCRIPTS

- **Butler, R.J.**, Davis, I.M., Laughton, C.M., Hughes, M. (2003). Can a dual function orthosis reduce shock and control rearfoot motion? *Foot Ank* 24(5), 410-414.
- **Butler, R.J.**, Crowell, P.C., Davis, I.M. (2003). Lower extremity stiffness: Implications for performance and injury. *Clin Biomech* 18(6), 511-517.

PUBLISHED ABSTRACTS

- **R.J. Butler**, I.M. Davis, T. Royer, S.J. Crenshaw & E.S. Mika. Differences in frontal plane mechanics during walking between patients with medial and lateral knee osteoarthritis. *Book of Abstracts 2004 American Society of Biomechanics, Portland, Oregon, USA.*
- **R.J. Butler**, I.M. Davis, T. Royer, S.J. Crenshaw & E.S. Mika (2004). The effect of wedged orthotics on hip and ankle mechanics. *Med Sci Sports Exer* 36(5).
- R. Zifchock, **R.J. Butler** & I. Davis (2004). Measured Differences in Foot Arch Height as a Function of Gender. *Med Sci Sports Exer* 36(5).
- S. J. Crewnshaw, T. Royer, **R.J. Butler**, & I. M. Davis. Laterally wedged insoles reduce knee pain during functional activities in subjects with medial knee osteoarthritis. *Book of Abstracts 2004 Gait and Clinical Movement Analysis Society, Lexington, Kentucky, USA.*
- **Butler, R.J.**, I.M. Davis, T. Royer, S. Crenshaw and E. Mika. Toe out effects frontal plane knee moments and angles in patients with knee osteoarthritis. *Book of Abstracts 2003 American Society of Biomechanics, Toledo, Ohio, USA.*
- Richards, CJ, K Card, J Song, H Hillstrom, **R. Butler**, IM Davis

A novel arch height index measurement system (AHIMS): Intra- and inter-rater reliability. Book of Abstracts 2003 American Society of Biomechanics, Toledo, Ohio, USA.

- Crenshaw, S., T. Royer, I. Davis, E. Mika, **R. Butler**. The effect of laterally wedged insoles on standing alignment. Book of Abstracts 2003 American Society of Biomechanics, Toledo, Ohio, USA.
- **Butler, R.J.**, Ferber, R., & McClay Davis, I. (2003). Gender differences in lower extremity stiffness during running. *Med Sci Sports Exer* 35(5), S89.
- **Butler, R.J.**, I.M. Davis, T. Royer, S. Crenshaw, & E.S. Mika (2003). Acute effects of laterally wedged orthotics on frontal plane knee moments and angles. Book of Abstracts 2003 International Society of Biomechanics, Dunedin, New Zealand.
- 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.
- **Butler, R.J.**, & Scheuchenzuber, H.J. (2002). The effect of midsole hardness on propulsion. *Med Sci Sports Exer* 34(5), S280.

TECHNICAL EXPERIENCE

- **Motion Analysis:** VICON Motion Capture, Peak Performance Technologies v. 5.0.
- **Kinetics:** Bertec and AMTI force plates, PCB uniaxial accelerometer, and Tekscan.
- **EMG:** Motion Lab non pre-amplified surface electrodes.
- **Isokinetics:** Kin-Com and Cybex dynamometers.
- **Programming:** LabVIEW, MATLAB, and Visual BASIC.

PROFESSIONAL MEMBERSHIPS

- American College of Sports Medicine
- American Society of Biomechanics
- International Society of Biomechanics

GRANTS AND EXTERNAL FUNDING

- Springfield College Alumni Gift for Research (\$1,400)
- American College of Sports Medicine Doctoral Student Research Grant (\$5,000)
- International Society of Biomechanics Congress Travel Grant (\$1,000)
- University of Delaware Graduate Travel Fund (\$200)
- University of Delaware Competitive Graduate Fellowship Award (\$11,500)
- University of Delaware Alumni Enrichment Award (\$1,348)