

Curriculum Vitae

MICHAEL WORTLEY

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CURRENT POSITON

Georgian Court University, Lakewood, NJ

Assistant Professor, Department of Exercise Science

2014-present

Courses Taught: Exploration of Exercise Science, Foundations of Exercise Science and Wellness, Theory of Coaching, Introduction to Nutrition, Kinesiology and Applied Anatomy, Biomechanics, Care and Prevention of Athletic Injuries, ECG Interpretation, Research Methods in Exercise Science, Research Project in Exercise Science, and General Ed 199 – Finding Yourself in the Big Universe.

EDUCATION

The University of Tennessee, Knoxville, TN

Ph.D. in Exercise Science, Sports, and Leisure Studies

2010

Concentration: Biomechanics

Dissertation: "Effects of Taiji and Strength Training Interventions on Knee Osteoarthritis of Older Adults."

Minor: Statistics

The University of Tennessee, Knoxville, TN

M.S. in Human Performance and Sports Studies

2003

Concentration: Biomechanics

Thesis: "The effect of shoe inserts on the kinematics of the lower extremity and center of pressure during treadmill running."

The Johns Hopkins University, Baltimore, MD

B.S. in Biomedical Engineering

2001

Area of Concentration: Computer Science

Minor: Computer Science

PROFESSIONAL AFFILIATIONS

American College of Sports Medicine

2017-present

Council for Undergraduate Research

2016-2019

PREVIOUS PROFESSIONAL EXPERIENCE

The University of Tennessee, Knoxville, TN

Adjunct Professor, Department of Kinesiology

2013-2014

Courses Taught: Applied Anatomy, Biomechanics of Musculoskeletal Injury, Qualitative Biomechanical Analysis of Human Movement, Biomechanics Lab

Webb School of Knoxville, Knoxville, TN

Head Coach, Boys and Girls Cross Country

2008-2014

Duties: Plan and execute training and competitions for high school student-athletes, in cooperation with assistant coaches.

The Knoxville Track and Field Club, Knoxville, TN

Events Manager

2011-2014

Duties: Organize logistics of running and walking events ranging in size from 100 to 1,500 participants.

Pellissippi State Community College, Knoxville, TN

Adjunct Professor, Department of Natural and Behavioral Sciences

2011

Courses Taught: Anatomy and Physiology I Lab, Anatomy and Physiology II Lab

- The University of Tennessee, Knoxville, TN
Graduate Research Assistant, UT Biomechanics/Sports Medicine Lab **2007-2010**
 Equipment and Software Used: Vicon 3-D Motion Capture System, AMTI Force Platforms, Visual 3-D, Matlab, EMG, F-Scan Plantar Pressure Measurement System, Electrogoniometer
- The University of Tennessee, Knoxville, TN
Graduate Teaching Assistant, Department of Exercise Science, Health, and Leisure Studies **2007-2009**
 Courses Taught: Applied Anatomy Lab, Biomechanics Lab
- The University of Tennessee, Knoxville, TN
Graduate Teaching Associate, Physical Education Activity Program **2007, 2001-03**
 Courses Taught: Fitness Walking, Running, Swimming, Conditioning, Bowling, and Ice Skating.
- The Knoxville Track and Field Club, Knoxville, TN
Youth Competitive Team Director **2006-2007**
Distance Running Specialty Coach **2002-2006**
 Events Coached: 800m, 1500m, 2000m Steeple Chase, 3000m, 5000m, 4x800m Relay, Cross Country

AWARDS AND HONORS

- Knoxville News Sentinel, Knoxville, TN
PrepXtra Girls Cross Country Coach of the Year **2012**
- The University of Tennessee, Knoxville, TN
Andy Kozar Graduate Research Scholarship **2010**
 For excellence and potential in research and writing.
- Patsy Crockett Boroviak Award** **2008**
 For outstanding work as a graduate teaching associate.
- Tennessee Citation Award** **2003**
 For extraordinary professional promise.
- The Johns Hopkins University, Baltimore, MD
Thomas Wood Memorial Trophy **2001**
 For demonstrating outstanding leadership as a Johns Hopkins student-athlete.

PUBLICATIONS IN REFEREED JOURNALS

- Bhaskaran, D., Wortley, M., Chen, Q., Fitzhugh, E.C. Milner, C.E., and Zhang S. (2015) Effect of a combined inversion and plantarflexion surface on ankle kinematics and EMG activities in landing. *Journal of Sport and Health Science*, 4(4), 377-383.
- Wortley, M., Zhang, S., Paquette, M., Byrd, E., Baumgartner, L., Klipple, G., Krusenklau, J., and Brown, L. (2013) Effects of resistance and Tai Ji training on mobility and symptoms in knee osteoarthritis patients. *Journal of Sports and Health Science*, 2(6): 209-214.
 DOI:10.1016/j.jshs.2013.01.001
- Keenum, A.J., Rawlings, L.M., Odoi, A., Wortley, M.G., Lamsen, L., Jones, L., and Wallace, L.S. (2013) Tennessee emergency medicine workforce, 2009. *Tennessee Medicine*, 106(3): 41-43.
- Zhang, S., Wortley, M., Silvernail, J.F., Carson, D., and Paquette, M.R. (2012) Do ankle braces provide similar effects on ankle biomechanical variables in subjects with and without chronic ankle instability during landing? *Journal of Sports and Health Science*, 1(2): 114-120.
- Chen Q., Wortley, M., Bhaskaran, D., Milner, C.E., and Zhang, S. (2012) Is the inverted surface landing more suitable in evaluating ankle braces and ankle inversion perturbation? *Clinical Journal of Sports Medicine*, 22(3): 214-220.
- Zhang, S., Wortley, M., Chen, Q., and Freedman, J. (2009) Efficacy of an ankle brace with a subtalar locking system in inversion control in dynamic movements. *Journal of Orthopaedic & Sports Physical Therapy*, 39(12): 875-883.

Zhang, S., Clowers, K.G., Wortley, M., and Krusenklau, J.H. (2006) Efficacy of lumbar and lumbosacral orthoses in restricting spinal ROMs. *Journal of Back and Musculoskeletal Rehabilitation*, 19(2/3): 49-56.

Zhang, S., Wortley, M., Clowers, K.G., and Krusenklau, J.H. (2005) Evaluation of efficacy and kinematic characteristics of two new cervical orthoses. *Clinical Biomechanics*, 20(3):264-269.

TECHNICAL REPORTS

Zhang, S., Wortley, Freedman, J., and Carson, D. (2009) Biomechanical Evaluation of a Different Version of Element™ Ankle Orthosis. Technical Report to DeRoyal Industries, Inc.

Zhang, S., Wortley, M., Chen, Q., and Freedman, J. (2007) Biomechanical Evaluation of a New Ankle Brace. Technical Report to DeRoyal Industries, Inc.

Zhang, S., Wortley, M. and Clowers, K. (April, 2003) Evaluation of efficacy and kinematic characteristics of four cervical orthoses. Technical Report to DeRoyal Industries, Inc.

Zhang, S., Clowers, K. and Wortley, M. (January, 2003) Product evaluation of two back braces for DeRoyal. Technical Report to DeRoyal Industries, Inc.

Zhang, S., Wortley, M., Clowers, K. and Kohstall, C. (January, 2003) Long-term evaluation of perceptual and biomechanical measurements of running footwear. Technical Report to adidas International.

PUBLICATIONS IN REFEREED PROCEEDINGS

McBride, J., Zhang, S., Wortley, M., Paquette, M., Klipple, G., Byrd, E., Baumgartner, L., and Zhao, X. (2011) Neural network analysis of gait biomechanical data for classification of knee osteoarthritis. In: Biomedical Sciences and Engineering Conferences (BSEC), Oak Ridge, Tennessee.

Zhang, S., Chen, Q., and Wortley, M. (2009) Biomechanical characteristics of drop landing on an inverted surface with ankle brace. In: Proceedings of the 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Chen, Q., Zhang, S., Wortley, M., Milner, C.E., and Bhaskaran, D. (2009) Comparison of testing protocols of ankle sprain mechanism: inversion drop test and landing on an inverted surface. In: Proceedings of the 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Wortley, M., Zhang, S. and Carson, D. (2009) Asymmetry in joint work of healthy participants during landing. In: Proceedings of the 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Zhang, S., Wortley, M., Chen, Q., Freedman, J. and Riley, C. (2008) An Ankle Orthosis With A Subtalar Locking System is More Effective In Restricting Passive And Active Ankle Kinematics. In: Proceedings of the 2008 North American Congress on Biomechanics (NACOB), Ann Arbor, MI, USA.

Zhang, S., Wortley, W., Chen, C., Freedman, F. and Riley, C. (2008) Efficacy of an ankle orthosis with a subtalar locking system in restricting ankle kinetics and kinematics in lateral cutting. In: The Proceedings of the 1st Congress of the International Foot & Ankle Biomechanics (i-FAB) community, Bologna, Italy.

Zhang, S., Clowers, K., Wortley, M., and Krusenklau, J. H. (2004) Evaluation of efficacy and 3D kinematic characteristics of cervical orthoses. In: M. Bottlang and S. M. Madey (Eds), Proceedings of 28th Annual Conference of American Society of Biomechanics, Portland, OR.

Zhang, S., Clowers, K., and Wortley, M. (2003) Efficacy and kinematic characteristics of two spinal orthoses. In: R. Kram, G. Heise, V. K. Goel and D. M. Pincivero (Eds), Proceedings 27th Annual Meeting of American Society of Biomechanics, University of Toledo, Ohio.

Zhang, S., Clowers, K., Wortley, M., and Kohstall, C. (2003) Longitudinal characteristics of plantar pressure measurements of a running shoe. In: R. Kram, G. Heise, V. K. Goel and D. M. Pincivero (Eds), *Proceedings 27th Annual Meeting of American Society of Biomechanics*, University of Toledo, Ohio.

REFEREED ABSTRACTS

Enright, C., Addison, N., Wortley, M., and Bonczek, E. (2019) Fatigue induced changes in dynamic balance in trained ballet dancers. *International Journal of Exercise Science: Conference Proceedings*, 9(7), Article 24.

O'Toole, T. and Wortley M. (2018) Improvement in high school 1600-meter run times within and between seasons. *International Journal of Exercise Science: Conference Proceedings*, 9(6), Article 101.

Vitale, T., O'Toole, T., and Wortley, M. (2018) Ground contact times and flight times at different running speeds in novice and competitive runners. *International Journal of Exercise Science: Conference Proceedings*, 9(6), Article 131.

Wortley, M., Vitale, T., and O'Toole, T. (2018) Asymmetry of ground contact times and flight times during running at different speeds. *International Journal of Exercise Science: Conference Proceedings*, 9(6), Article 140.

Bhaskaran, D., Zhang, S., Wortley, M., Milner, C.E., Chen, Q., and Fitzhugh, E. (2010) Electromyographic responses of ankle muscles during landing on a combined inversion and plantarflexion surface. *Medicine and Science in Sports and Exercise*, 42(5):679.

Steeves, J.S., Zhang, S., Dean, J., Wortley, M., Freedman, J. and Milner, C.E. (2009) Relationship between eccentric knee strength and impact force attenuation in drop landing. *Medicine and Science in Sports and Exercise*, 40(5):S488.

Wortley, M., Zhang, S. and Carson, D. (2009) Evaluating Symmetry of Healthy Participants during Landing. *Medicine and Science in Sports and Exercise*, 40(5):S262.

Songning Zhang, Michael Wortley, Qingjian Chen, Julia Freedman and Casey Riley (2008) Efficacy of an ankle orthosis with a subtalar locking system in restricting ankle kinetics and kinematics in lateral cutting, *Journal of Foot and Ankle Research*, 1 (Suppl 1):O19.

Zhang, S., Clowers, K., and Wortley, M. (2007) Match and motion analyses of high loading movements in NCAA Men's basketball competitions. *Medicine and Science in Sports and Exercise*, 39(5):S934.

Wortley, M., Zhang, S., and Krusenklau, J.H.. (2004) Effects of orthotic inserts on lower extremity kinematics during treadmill running. *Medicine and Science in Sports and Exercise*, 36(5):S236.

Clowers, K., Zhang, S., Wortley, M. and Kohstall, C. (2004) Longitudinal Perception about Cushioning, Fit, and Comfort of a Running Shoe over 400 Miles. *Medicine and Science in Sports and Exercise*, 36(5):S267.

PRESENTATIONS

Zhang, S., Wortley, M., Freedman, J., and Carson, D. (2010) Ankle brace with a heel strap is effective in stabilizing ankle in frontal plane in walking and running. The 34th Annual Meeting of the American Society of Biomechanics, Brown University and Rhode Island Hospital, Providence, Rhode Island.

Wortley, M., Zhang, S, Freedman, J., Carson, D., & Krusenklau, J. (2010) Ankle Brace with a Calcaneal Strapping System Alters COP Displacement during Gait. Annual Conference of American College of Sports Medicine, Baltimore, MD.

Zhang, S., Chen, Q., and Wortley, M. (2009) Biomechanical characteristics of drop landing on an inverted surface with ankle brace. The 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Chen, Q., Zhang, S., Wortley, M., Milner, C.E., and Bhaskaran, D. (2009) Comparison of testing protocols of ankle sprain mechanism: inversion drop test and landing on an inverted surface. In:

Proceedings of the 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Wortley, M., Zhang, S. and Carson, D. (2009) Asymmetry in joint work of healthy participants during landing. The 2009 annual meeting of the American Society of Biomechanics, State College, Pennsylvania.

Steeves, J.S., Zhang, S., Dean, J., Wortley, M., Freedman, J. and Clare, C.E. (2009) Relationship between eccentric knee strength and impact force attenuation in drop landing. Annual Conference of American College of Sports Medicine, Seattle, Washington.

Wortley, M., Zhang, S. and Carson, D. (2009) Evaluating Symmetry of Healthy Participants during Landing. Annual Conference of American College of Sports Medicine, Seattle, Washington.

Zhang, S., Wortley, W., Chen, C., Freedman, F. and Riley, C. (2008) Efficacy of an ankle orthosis with a subtalar locking system in restricting ankle kinetics and kinematics in lateral cutting. The 1st Congress of the International Foot & Ankle Biomechanics (i-FAB) community, Bologna, Italy.

Zhang, S., Wortley, M., Chen, Q., Freedman, J. and Riley, C. An Ankle Orthosis With A Subtalar Locking System is More Effective In Restricting Passive And Active Ankle Kinematics. 2008 North American Congress on Biomechanics (NACOB), Ann Arbor, MI, USA.

Zhang, S., Clowers, K., and Wortley, M. (2007) Match and motion analyses of high loading movements in NCAA Men's basketball competitions. 2007 Annual Conference of American College of Sports Medicine, New Orleans, Louisiana.

Zhang, S., Wortley, M., Clowers, K. and Krusenklau, J. H. (2004) Evaluation of efficacy and 3D kinematic characteristics of cervical orthoses. Twenty Eighth Annual Conference of American Society of Biomechanics, Portland, OR.

Clowers, K., Zhang, S., Wortley, M. and Kohstall, C. (2004) Longitudinal perception about cushioning, fit, and comfort of a running shoe over 400 miles. 2004 Annual Conference of American College of Sports Medicine, Indianapolis, IN.

Zhang, S., Clowers, K. and Wortley, M. (2003) Efficacy and kinematic characteristics of two spinal orthoses. Twenty Seventh Annual Meeting of American Society of Biomechanics, University of Toledo, Ohio.

Zhang, S., Clowers, K., Wortley, M. and Kohstall, C. (2003) Longitudinal characteristics of plantar pressure measurements of a running shoe. Twenty Seventh Annual Meeting of American Society of Biomechanics, University of Toledo, Ohio.