HENRY WANG (Ph.D.)
Associate Professor

Office location: Biomechanics Lab
School of Kinesiology
Ball State University
Muncie, IN 47303
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Educational Background

2002 Ph.D. in Exercise Science
Department of Exercise Science
University of Georgia, Athens, GA

1997 MS in Biomechanics
Department of Biomechanics
National Institute of Sports Science, Beijing, China

1994 BMED, MD in Orthopedics
Department of Sports Medicine
Chengdu Institute of Physical Culture, Chengdu, China

Professional Experience

08/2014 – Present, Associate Professor in School of Kinesiology at Ball State University.
08/2007 – 07/2014, Assistant Professor in School of Physical Education, Sport, and Exercise Science at Ball State University.
09/2002 – 08/2007, Assistant Professor in Department of Family, Nutrition, and Exercise Sciences at Queens College of the City University of New York.

Courses Taught

EXSC 294: Anatomical Kinesiology
EXSC 633: Seminar in Biomechanics
EXSC 651: Laboratory Techniques in Biomechanics
EXSC 652: Clinical Biomechanics
EXSC 655: Advanced Biomechanics

Publications

Wang H, Foster J, Franksen N, Estes J, Rolston L (in press) Gait analysis after total knee replacement vs customized partial knee replacement. Int Orthop.

Wang H, Brown S (2017) The effects of total ankle replacement on ankle joint mechanics during walking. J Sport Health Sci 6: 340-345.

Dickin DC, Surowiec R, Wang H (in press) Energy expenditure and muscular activation patterns through active sitting on compliant surfaces. J Sport Health Sci.

Wang H, Kia M, Dickin DC (in press) Influences of load carriage and physical activity history on tibia bone strain. J Sport Health Sci.

Wang H, Dueball S (2017) The effect of drop-landing height on tibia bone strain. J Biomed Sci Eng 10-1:10-20.

Dahl K, Wang H, Popp JK, Dickin DC (2016) Load distribution and postural changes in young adults when wearing a traditional backpack versus the BackTPack. Gait Posture 45: 90-96.

Dickin DC, Johann E, Wang H, Popp JK (2015) Combined effects of drop height and fatigue on landing mechanics in females. J Appl Biomech 31-4: 237-243.

Wang H, Haggerty M, Dickin C, Popp J (2014) Incline walking: An offloading option for patients with knee OA. Lower Extremity Rev, August 2014.

Haggerty M, Dickin D, Popp J, Wang H (2014) The influence of incline walking on joint mechanics. Gait Posture 39: 1017-1021.

Surowiec R, Wang H, Nagelkirk P, Frame J, Dickin C (2014) The effects of whole body vibration on the Wingate test for anaerobic power when applying individualized frequencies. J Strength Cond Res 28-7: 2035-2041.

Brown S, Wang H, Dickin D, Weiss K (2014) The relationship between leg dominance and knee mechanics during sidestepping in collegiate female footballers. Sports Biomech 13-4: 351-361.

Wang H, Weiss K, Haggerty M, Heath J (2014) The effect of active sitting on trunk motion. J Sport Health Sci 3: 333-337.

Dickin D, Faust K, Wang H, Frame J (2013) The effects of whole-body vibration on gait parameters in adults with cerebral palsy. J Musculoskelet Neuronal Interact 13-1: 19-26.

Wang H, Rolston L (2012) The influence of partial knee replacement designs on tensile strain at implant-bone interface. Int J Rheumatol 2012: 1-7.

Wang H, Frame J, Ozimek E, Leib D, Dugan E (2012) Influence of fatigue and load carriage on mechanical loading during walking. Mil Med 177-2: 152-156.

Wang H, Frame J, Rolston L (2012) Influence of bi-compartmental knee replacement on stand-to-sit. Res Q Exerc Sport 83-2: 136-142.

Wang H, Toner M, Lemonda T, Zohar M (2010) Changes in landing mechanics after cold-water immersion. Res Q Exerc Sport 81-2: 127-132.

Lanier A, Simpson K, Gregory C, Stevenson S, Wang H, Dudley G (2009) Exercise-induced muscle injury and influence of NSAID therapy on kinematics of downhill walking in older adults. J Exerc Physiol Online 12-5: 11-21.

Wang H, Dugan E, Frame J, Rolston L (2009) Gait analysis after bi-compartmental knee replacement. Clin Biomech 24-9: 751-754.

Wang H, Simpson K, Chamnongkich S, Kinsey T, Mahoney OM (2008) Biomechanical influence of TKA designs with varying radii on bilateral TKA patients during sit-to-stand. Dyn Med 7-12.

Wang H, Simpson K, Ferrara M, Chamnongkich M, Kinsey T, Mahoney OM (2006) Biomechanical differences exhibited during sit-to-stand between total knee arthroplasty designs of varying radii. J Arthroplasty 21-8: 1193-1199.

Wang H, Simpson K, Chamnongkich S, Kinsey T, Mahoney OM (2005) A biomechanical comparison between the single-axis and multi-axis total knee arthroplasty systems for the stand-to-sit movement. Clin Biomech 20: 428-433.

Wang H (2000) Strength characteristics of young adults' shoulder flexor and extensor muscle groups, Part II: Isokinetic eccentric strength. J Chengdu Phys Ed Inst 26-3: 57-62.

Wang H (2000) Strength characteristics of young adults' shoulder flexor and extensor muscle groups, Part I: Isometric and isokinetic concentric strength. J Chengdu Phys Ed Inst 26-2:46-52.

Simpson KJ, Ciapponi T, Wang H (1999) Biomechanics of landing. In: W. Garrett (ed.). Exercise and Sports Science. Lippincott, Williams & Wilkins, New York. pp. 539-550.

Research Grants

Wang H. (PI). Prolonged cycling's effect on transition run mechanics in triathletes. Force and Motion Foundation. (2016) ($500)

Wang H. (PI). Effects of soccer training history on tibia mechanical strength during load carriage in females. Department of the Army. (W81XWH-15-1-0006). (2014-2017) ($719,022)

Wang H. (PI). Functional improvement after iDuo bi-compartmental knee replacement: a cross-sectional study with biomechanical analysis of daily activities. ConforMIS, Inc. (2014-2016) ($63,908)

Wang H. (PI). Knee joint loading during Golf Swing – a computer simulation approach. KonKuk University. (2011-2014) ($81,000)

Wang H. (PI). The effects of physical activity history on biomechanical variables related to tibia stress fractures. Department of the Army. (W81XWH-08-1-0587) (2010-2013) ($827,770)

Wang H. (PI). The effects of total ankle replacement on ankle joint mechanics during walking. Force and Motion Foundation. (2011-2012) ($500)

Wang H. (PI). Biomechanical adjustments with time of an exhaustive run: comparison of compression tights and running shorts. Wacoal Sports Science Corp. (2010-2011) ($1,164)

Wang H. (PI). Energy expenditure and muscular activation patterns associated with active sitting on an automatic Abs Seat Cushion and on an exercise ball. License Services International Inc. (2010) ($1,000).

Wang H. (PI). Visual attentiveness during prolonged sitting in a Comfort Motion Technology equipped automobile seat. Comfort Motion Technology Inc. (2009) ($26,997).

Wang H. (PI). The effects of fatigue and load carriage on musculoskeletal injury mechanisms. Department of the Army (W81XWH-08-1-0587). (2008-2010) ($1,244,000)

Wang H. (PI). Biomechanical analysis of a bi-compartmental knee replacement system during daily activities. Ball State University, SEET Fund. (2007-2008) ($3,000).

Wang H. (PI). Influence of joint cooling on landing movement. PSC-CUNY 38 Research Award (#69735-00-38) (2007-2008) ($4,376).

Wang H. (PI). Does cold exposure increase risk of ACL injuries in females – a biomechanical study. PSC-CUNY 37 Research Award (#68492-00-37). (2006-2007) ($1,700)

Wang H. (PI). Biomechanical characteristics of drop landing after cold exposure. PSC-CUNY 35 Research Award (#66319-00-35). (2004-2005) ($4,517)

Wang H. (PI). The effect of the single-radius and multi-radius total knee arthroplasty designs on the knee strength and functional performance during the sit-to-stand and stand-to-sit. PSC-CUNY 34 Research Award (#60069-33-34). (2003-2004) ($4,350)

Memberships and Associations

- American College of Sports Medicine (ACSM).
- International Society of Biomechanics (ISB).
- American Society of Biomechanics (ASB).
- Sigma Xi – The Scientific Research Society of North America.
- International Council for Health, Physical Education, Recreation, Sport, and Dance (ICHPER·SD).