CURRICULUM VITAE

Joaquin Alberto Barrios, PT, DPT, PhD

300 College Park
Dayton, OH 45469-2925
jbarrios1@udayton.edu
937.229.5609 (office) / 937.229.5601 (fax)

EDUCATION

University of Delaware, Newark, DE
1/2005-12/2008
Doctor of Philosophy, Biomechanics & Movement Science

Duke University, Durham, NC
8/2000-5/2003
Doctor of Physical Therapy

Creighton University, Omaha, NE
8/1996-5/2000
Bachelor of Science, Exercise Science

WORK EXPERIENCE

University of Dayton, Dayton, OH
Department of Physical Therapy
Professor (7/2022-present)
Associate Professor (7/2015-6/2022)
Assistant Professor (8/2009-6/2015)

- Founder & Director of the Motion Analysis Laboratory (2009-present), emphasis on lower extremity biomechanics, the relationships between structure, movement patterns and function, as well as study of the etiology and conservative management of lower limb pathologies
- Teach biomechanics and movement science content for 1st year physical therapy students (2010-present) in traditional lecture and modified team-based learning formats
- Teach evidence-based practice and research content for 2nd year (2011-present) and 3rd year physical therapy students (2019, 2022) in traditional lecture and modified team-based learning formats
- Coordinate/teach orthopedic curricular content for 2nd (2010-present) and 3rd year (2009-2017) physical therapy students, including the use of traditional lecture, clinical laboratories, and problem-based learning formats
- Earned tenure and promotion from Assistant Professor to Associate Professor 6/2015.

University of Delaware, Newark, DE
Program in Biomechanics and Movement Science
1/2009-7/2009
Post-Doctoral Fellow – Mentor: Irene Davis, PT, PhD, FAPTA, FACSM, FASB

- Oversee existing National Institutes of Health ($1 million) and Department of Defense ($200,000) grants investigating biomechanical factors in the etiology and prevention of tibial stress fractures
- Direct supervision of four doctoral-level graduate students

University of Delaware, Newark, DE
Program in Biomechanics and Movement Science
1/2005-12/2008
Doctoral Student/Research Assistant – Mentor: Irene Davis, PT, PhD, FAPTA, FACSM, FASB

- Full-time project coordination of National Institutes of Health grant ($932, 815) studying clinical & biomechanical effects of wedged foot orthoses as treatment for tibiofemoral osteoarthritis
- Dissertation title: A biomechanical assessment of young, asymptomatic individuals with genu varus alignment: can gait retraining be beneficial?
- Assistance with development of Instrumented Treadmill Laboratory and real-time biofeedback protocols.

Mercy Health Partners, Mercy Hospital Fairfield, Fairfield, OH
7/2003-12/2004
Staff Physical Therapist

- Full-time staff physical therapist in hospital-based outpatient orthopedic setting

PEER-REVIEWED PUBLICATIONS

Werner DM, Casey L, Myers E, **Barrios JA** (2024). Lower limb squat biomechanics and select clinical measures in chronic ankle instability. *Clin Biomech* (accepted).

Beerse M, Callahan C, **Barrios J** (2023). Self-directed kinematic adjustments when learning the kettlebell swing in young adults. *Sports Biomechanics* doi: 10.1080/14763141.2022.2161409. Epub ahead of print. PMID: 36597768.

Werner DM, Mostaed MF, Price SK, **Barrios JA** (2022). Modified Biering-Sorenson Protocol Changes Joint Contributions to Total Support in Individuals with a History of Anterior Cruciate Ligament Reconstruction During Drop Vertical Jump Landings. *Int J Sports Phys Ther* 17:201-209.

Werner DM, Davis RW, Hinton A, Price SK, Rowland JL, **Barrios JA** (2021). Three-dimensional joint kinematic and two-dimensional quality of movement comparison between lateral and forward step-downs. *Phys Ther Sport* 52:162-167.

Kuska EC, **Barrios JA**, Kinney AL (2020). Multi-segment foot model reveals distal joint kinematic differences between habitual heel-toe walking and non-habitual toe walking. *J Biomech* 18;110:109960. doi: 10.1016/j.jbiomech.2020.109960.

Beerse M, Bigelow KE, **Barrios JA** (2020). The patterning of local variability during the acquisition of a novel whole-body continuous motor skill in young adults. *Exp Brain Res* 238(9):1797-1812.

Kinney AL, Giel M, Harre B, Heffner K, McCullough, Savino M, Scott A, **Barrios JA** (2020). Surface electromyography of the internal and external oblique muscles during isometric tasks targeting the lateral trunk. *J Sport Rehabil* doi.org/10.1123/jsr.2018-0442.

Werner DM, Di Stasi S, Lewis CL, **Barrios JA** (2019). Test-retest reliability and minimum detectable change for various frontal plane projection angles during dynamic tasks. *Phys Ther Sport* 40:169-176.

Werner DM, **Barrios J** (2019). In-Line Half-Kneeling as a Motor Control Test of Core Stability: Known-Groups Validity and Reliability. *J Sport Rehabil* 28:395-398.

Werner DM, **Barrios JA** (2018). Trunk muscle endurance in individuals with and without a history of anterior cruciate ligament reconstruction. *J Strength Cond Res* doi: 10.1519/JSC.0000000000002395.

Bruening DA, Pohl MB, Takahashi KZ, **Barrios JA** (2018). Midtarsal locking, the windlass mechanism, and running strike pattern: a kinematic and kinetic assessment. *J Biomech* 73:185-191.

Mostaed MF, Werner DM, **Barrios JA** (2018). 2D and 3D kinematics during lateral step-down testing in individuals with anterior cruciate ligament reconstruction. *Int J Sports Phys Ther* 13:77-85.

Werner D, Willson J, Willy R, **Barrios J** (2017). Validity, reliability and normative values for clinically-assessed frontal tibial orientation as a measure of varus-valgus knee alignment. *Int J Athl Ther Train* 22:29-33.

Pozzi F, Di Stasi S, Zeni JA, **Barrios JA** (2017). Single-limb drop landing biomechanics in active individuals with and without a history of anterior cruciate ligament reconstruction: A total support analysis. *Clin Biomech* 43:28-33.

Barrios JA, Willson JD (2017). Minimum detectable change in medial tibiofemoral contact force parameters: derivation and application to a load-altering intervention. *J Appl Biomech* 33:171-175.

Bjelopetrovich A, **Barrios JA** (2016). Effects of incremental ambulatory-range loading on arch height index parameters. *J Biomech* 49:3555-3558.

Rodrigues C, Jackson K, **Barrios J**, Laubach L, Edginton-Bigelow K (2016). Task-oriented ankle and foot training for improving gait, balance, and strength in individuals with Multiple Sclerosis. *JEMonline* 1:1-13.

Barrios JA, Heitkamp CA, Smith BP, Sturgeon MM, Suckow DW, Sutton SC (2016). Three-dimensional hip and knee kinematics during walking, running and single-limb drop landing in females with and without genu valgum. *Clin Biomech* 31:7-11.

Tipnis RA, Anloague PA, Laubach LL, **Barrios JA** (2014). The dose-response relationship between lateral foot wedging and the reduction of knee adduction moment. *Clin Biomech* 29:984-989.

Barrios JA, Strotman DE (2014). A sex comparison of ambulatory mechanics relevant to osteoarthritis in individuals with and without asymptomatic varus knee alignment. *J Appl Biomech* 30:632-636.

Petit DJ, Willson JD, **Barrios JA** (2014). Comparison of stance phase knee joint angles and moments using two different surface marker representations of the proximal shank in walkers and runners. *J Appl Biomech* 30:173-178.

Caldwell LK, Laubach LL, **Barrios JA** (2013). Effect of specific gait modifications on medial knee loading, metabolic cost and perception of task difficulty. *Clin Biomech* 28:649-654.

Barrios JA, Butler RJ, Crenshaw JR, Royer TD, Davis IS (2013). Mechanical effectiveness of lateral foot wedging in medial knee osteoarthritis after one year of wear. *J Orthop Res* 31:659-664.

Boldt AR, Willson JD, **Barrios JA,** Kernozek RW (2013). Effects of medially wedged foot orthoses on knee and hip running mechanics in females with and without patellofemoral pain syndrome. *J Appl Biomech* 29:68-77.

Barrios JA, Royer TD, Davis IS (2012). Dynamic versus radiographic alignment in relation to medial knee loading in symptomatic osteoarthritis. *J Appl Biomech* 28:551-559.

Butler RJ, **Barrios JA**, Royer TD, Davis IS (2011). Frontal plane gait mechanics differ between medial and lateral knee osteoarthritis. *Phys Ther* 91:1235-1243.

Barrios JA, Crossley KM, Davis IS (2010). Gait retraining to reduce the knee adduction moment through real-time visual feedback of dynamic knee alignment. *J Biomech* 43:2208-2213.

Barrios JA, Higginson JS, Royer TD, Davis IS, (2009). Static and dynamic correlates of the knee adduction moment in healthy knees ranging from normal to varus-aligned. *Clin Biomech* 24:850-854.

Barrios JA, Davis IS, Higginson JS, Royer TD (2009). Lower extremity walking mechanics of young individuals with asymptomatic varus knee alignment. *J Orthop Res* 27:1414-1419.

Butler RJ, **Barrios JA**, Royer TD, Davis IS (2009). Effect of laterally wedged foot orthoses on rearfoot and hip mechanics in patients with medial knee osteoarthritis. *Prosthet Orthot Int* 33:107-116.

Barrios JA, Crenshaw JR, Royer TD, Davis IS (2009). Walking shoes and laterally wedged orthoses in the clinical management of medial tibiofemoral osteoarthritis: a one-year prospective controlled trial. *Knee* 16:136-142.

PEER-REVIEWED ABSTRACTS

Barrios J, Kacmarcik, C, Archambeau C, Yacks C (2024). Effectiveness of a Talocrural Joint Mobilization on Restricted Dorsiflexion: A Time Series Intervention Analysis. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Boston, MA.

- Foot and Ankle Special Interest Group Best Poster Content – First Place Award

Barrios J, Cloud R, Gorski M, Grieshop A, Kinney A, Zeni J (2024). Altering the Lower Limb Kinetic Chain: Reliability and Minimum Detectable Change of Total Support Moment. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Boston, MA.

Curtis A, Jackson T, **Barrios J**, Meardon S, Willson J (2024). Sex Specific Relationship of Standing Tibial Orientation with Medial Tibiofemoral Joint Contact Force during Walking. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Boston, MA.

Barrios J, Kinney A (2023). Clinician-Identified Pelvic Drop and Dynamic Knee Valgus during Lateral Step-Downs Reveal Altered Hip Joint Coordination. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Merriman H, Jackson K, **Barrios J** (2023). Validity and Reliability of Handheld 3D Scanning for Measuring Lower Limb Volumes. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Merriman H, Jackson K, **Barrios J** (2022). Test-retest reliability of 3D scanning devices for measuring lower limb volume. Presented at the American College of Rehabilitation Medicine Annual Meeting, Chicago, IL.

Beerse M, Perry B, Kinney A, **Barrios J** (2022). Estimation of patellar tendon load during bilateral and unilateral movements in young adults. Presented at the North American Congress of Biomechanics, Ottawa, CA.

Barrios JA, Kinney AL (2022). Hip adduction coordination during lateral step-downs. Presented at the North American Congress of Biomechanics, Ottawa, CA.

Macri EM, Callaghan MJ, van Middelkoop M, Bennell KL, Hinman RS, Paterson KL, Hunter DJ, de Noronha M, van Ginckel A, Thoumie P, Brouwer RW, Duivenvoorden T, **Barrios JA**, Uchôa de Rezende M, Trombini-Souza F, Hunt MA, Ferreira V, Tan JM, Hotwani R, Bierma-Zeinstra SMA (2022). Mechanical interventions in the management of knee OA: an OA trial bank individual participant data meta-analysis initiative status update. Presented at the Osteoarthritis Research Society International (OARSI) Hybrid World Congress, Berlin, Germany

Barrios J, Price S, Werner D (2022). Lower extremity joint kinematics during lateral and forward step-downs differ by sex. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Antonio, TX.

Beerse M, Callahan C, Gallo G, **Barrios J** (2021). Joint kinematics and work adjustments in adults when learning the kettlebell swing without coaching. Presented at the American Society of Biomechanics Annual Meeting (virtual).

Beerse M, Bigelow K, **Barrios J** (2021). Individual differences of variance restructuring when acquiring a kettlebell swing motor task in young adults. Presented at the Annual Meeting of the North American Society for the Psychology of Sport and Physical Activity.

Werner D, Price S, Davis R, Hinton A, Rowland J, **Barrios J** (2021). Joint kinematic comparison between lateral and forward step-downs. Presented at the Combined Sections Meeting of the American Physical Therapy Association (virtual).

Werner D, Brubakken K, Grace C, Lawless W, Lewis A, McCuen M, Mirosh D, **Barrios J** (2021). Single-limb squat mechanics in individuals with and without chronic ankle instability. Presented at the Combined Sections Meeting of the American Physical Therapy Association (virtual).

Barrios J, Willson J (2021). The association of a clinical inclinometer measure with tibiofemoral peak contact forces. Presented at the Combined Sections Meeting of the American Physical Therapy Association (virtual).

Beerse M, Bigelow KE, **Barrios JA** (2020). The patterning of local variability during the acquisition of a whole-body continuous motor skill in young adults. Presented at the American Society of Biomechanics Annual Meeting, Atlanta, GA.

Werner D, Brubakken K, Grace C, Lawless W, Lewis A, McCuen M, Mirosh D, **Barrios J** (2020). Frontal and sagittal plane lower extremity mechanics during single-limb squatting in chronic ankle instability. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Denver, CO.

Price S, Werner D, Mostaed M, **Barrios J** (2020). Effects of a hip extensor fatigue protocol on landing mechanics after anterior cruciate ligament reconstruction. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Denver, CO.

Werner D, Di Stasi S, Lewis C, **Barrios J** (2020). Minimum detectable change for various frontal plane projection angles during common laboratory movement assessments. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Denver, CO.

Kuska EC, **Barrios JA**, Kinney AL (2019). Ankle and midtarsal joint kinematics during rearfoot and non-rearfoot strike walking. Presented at the International Society of Biomechanics Meeting, Calgary, CA.

Weisman LR, Werner DM, **Barrios JA**, Kinney AL (2019). Kinematic coordination patterns change with task speed during a lateral step-down. Presented at the Midwest American Society of Biomechanics Regional Meeting, Dayton, OH.

Werner D, **Barrios JA** (2018). Do runners demonstrate less risky hip and knee mechanics than non-runners during drop vertical jumps? Presented at the Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA.

Kinney AL, Giel M, Harre B, Heffner K, McCollough T, Savino M, Scott A, **Barrios JA** (2018). Surface electromyography of the internal and external oblique muscles during isometric tasks targeting the lateral trunk: is the lateral plank the best option? Presented at the Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA.

Werner D, Mostaed M, **Barrios JA** (2018). Lateral step-movement quality correlates with hip frontal plane mechanics during drop vertical jump testing in subjects with history of anterior cruciate ligament reconstruction. Presented at the Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA.

Mostaed M, Werner D, **Barrios JA** (2018). 2D and 3D kinematics during lateral step-down testing in individuals with anterior cruciate ligament reconstruction. Presented at the Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA.

Bruening DA, Pohl MB, Takahashi KZ, **Barrios JA** (2017). Running strike pattern, midtarsal locking, and the windlass mechanism. Presented at the American Society of Biomechanics Annual Meeting, Boulder, CO.

Henderson AD, **Barrios JA**, Bruening DA (2017). Arch structure and loading pattern may predict running foot mechanics. Presented at the American Society of Biomechanics Annual Meeting, Boulder, CO.

Barrios J, Colatruglio C, Cox M, Farwick D, Fullenkamp L, O'Brien K, Seekins J, Willson JD (2017). Combined effects of weight gain and reduced walking speed on tibiofemoral contact forces: experimental simulation of changes typical of osteoarthritis. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Antonio, TX.

Werner DM, **Barrios JA** (2017). The relationships of trunk muscle performance and foot type to Y-Balance performance. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Antonio, TX.

Werner DM, **Barrios JA** (2017). The association between static foot and tibial postures with 3D hip and knee kinematics. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Antonio, TX.

Geddes A, **Barrios JA**, Willson JD (2016). Medial tibiofemoral joint contact parameters vary with walking speed and simulated weight gain. Presented at the North Carolina Physical Therapy Association Annual Meeting, Greensboro, NC.

Barrios J, Willson J (2016). Effects of altered walking speed and simulated weight gain on medial tibiofemoral joint contact force parameters. Presented at the American Society of Biomechanics Annual Meeting, Raleigh, NC.

Barrios J, Willson J (2016). Minimum detectable change in medial tibiofemoral contact force: derivation and application to laterally wedged foot orthoses. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Anaheim, CA.

Barrios J, Werner D (2016). Core muscle performance after anterior cruciate ligament reconstruction. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Anaheim, CA.

Barrios J, Bucci J, Clauda A, Hyland J, Lamping K, McCann M, Moeller S, Rubenstein L (2016). The cognitive task load of matching foot strikes to a metronome to increase step rates in runners with and without knee pain: a pilot analysis. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Anaheim, CA.

Rodrigues CM, Jackson KJ, **Barrios JA**, Laubach LL, Edginton-Bigelow K (2016). Task-oriented ankle and foot training for improving gait, balance and strength in individuals with Multiple Sclerosis: a pilot study. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Anaheim, CA.

Barrios JA, Feskanin HF (2015). The effects of varus and valgus midfoot orthotic posting on ankle and midtarsal joint angles during walking: a multi-segment foot analysis. Presented at the American Society of Biomechanics Annual Meeting, Columbus, OH.

Willson JD, Willy RW, Meardon SA, **Barrios JA** (2015). Kinematic predictors of tibiofemoral and patellofemoral joint impulse during running. Presented at the American Society of Biomechanics Annual Meeting, Columbus, OH.

Pozzi F, Rombach A, Zeni J, Di Stasi S, **Barrios J** (2015). Single-limb drop landing biomechanics following anterior cruciate ligament reconstruction. Presented at the American Society of Biomechanics Annual Meeting, Columbus, OH.

Barrios JA, Heitkamp C, Smith B, Sturgeon M, Suckow D, Sutton C (2015). Do your knees touch in standing? Implications of excessive genu valgus on running knee kinematics relevant to patellofemoral pain. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN.

Barrios JA, Heitkamp C, Smith B, Sturgeon M, Suckow D, Sutton C (2015). The influence of clinically-determined excessive genu valgus on 3D hip and knee kinematics during single-leg drop landing. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Indianapolis, IN.

Barrios JA, Caldwell LK (2014). The metabolic and cognitive demands of altering natural gait. Presented at the World Congress of Biomechanics, Boston, MA.

Barrios JA, Calkins N, Corrigan P, Evans A, Wolf K, Wright A (2014). A comparison of arch height indices and stiffness between natural forefoot and rearfoot strikers during running. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Las Vegas, NV.

Barrios JA, Caldwell LK (2013). Mechanical effectiveness of a combined gait modification strategy to reduce knee adduction moment: increasing trunk lean and foot progression angle. Presented at American Society of Biomechanics Annual Meeting, Omaha, NE.

Petit DJ, **Barrios JA,** Bigelow KE (2013). Comparison of traditional and nonlinear gait analysis measures in individuals with multiple sclerosis. Presented at the Gait and Clinical Movement Analysis Society Annual Meeting, Cincinnati, OH.

Barrios JA, Caldwell LK (2013). Metabolic cost and self-reported task workload for gait modifications aimed at reducing medial knee joint loading. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Barrios JA, Brahler CJ, Cornell A, Wimberly C, Steinmetz E (2013). The influence of an artificial turf overlay on ground reaction forces during overground running and cutting. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Barrios JA, Bare DE (2012). A gender comparison of lower extremity ambulatory mechanics in healthy subjects with excessive varus alignment. Presented at the American Society of Biomechanics Annual Meeting, Gainesville, FL.

Caldwell LK, **Barrios JA** (2012). The influence of specific gait modifications on medial knee loading and metabolic cost. Presented at the Gait and Clinical Movement Analysis Society Annual Meeting, Grand Rapids, MI.

Willson JD, Boldt A, **Barrios JA**, Kernozek T (2012). Effects of medially wedged orthoses on knee and hip joint running mechanics in females with and without patellofemoral pain. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Chicago, IL.

Petit DJ, Willson JD, **Barrios JA** (2011). Quantitative comparison of knee joint angles and moments between two different marker representations of the proximal shank. Presented at the American Society of Biomechanics Annual Meeting, Long Beach, CA.

Barrios JA, Davis IS (2011). Clinical measurement of tibial mechanical axis: reliability and normative data. Presented at the American College of Sports Medicine Annual Meeting, Denver, CO.

Elpers MA, **Barrios JA**, Butler RJ (2010). Can motion control shoes inhibit the purported mechanism of lateral tibiofemoral knee osteoarthritis progression? Presented at the American College of Sports Medicine Annual Meeting, Baltimore, MD.

Barrios JA, Davis IS (2010). The influence of lateral wedging over time in patients with medial knee osteoarthritis: an analysis of frontal plane knee mechanics and clinical outcomes. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Barrios JA, Davis IS (2009). Gait retraining to reduce the knee adduction moment through real-time feedback of dynamic knee alignment. Presented at the American Society of Biomechanics Annual Meeting, State College, PA.

Barrios JA, Davis IS (2009). The influence of tibial mechanical axis on knee varus mechanics and rearfoot eversion in young individuals with healthy, varus knees. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Las Vegas, NV.

Barrios JA, Davis IS (2008). The relationship between hip and knee kinematics to the knee adduction moment in asymptomatic individuals with genu varum. Presented at the North American Congress of Biomechanics, Ann Arbor, MI.

Altman A, Pohl M, **Barrios J**, Davis I (2008). A 3-D kinematic comparison between single-belt and split-belt treadmill walking. Presented at the North American Congress of Biomechanics, Ann Arbor, MI.

Royer TD, Crenshaw JR, **Barrios JA**, Davis IS (2008). Knee joint loading variability during gait does not differ between individuals with and without knee osteoarthritis. Presented at the North American Congress of Biomechanics Meeting, Ann Arbor, MI.

Barrios JA, Davis IS (2008). The effect of gait retraining on medial knee loading. Presented at the American College of Sports Medicine Annual Meeting, Indianapolis, IN.

Barrios JA, Davis IS, Royer TD, Lloyd CH (2008). Progression of dynamic knee loading at one year in medial knee osteoarthritis: the influence of baseline load. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Nashville, TN.

Barrios JA, Davis IS (2007). A gait modification to reduce the external adduction moment at the knee: a case study. Presented at the American Society of Biomechanics Annual Meeting, Palo Alto, CA.

Barrance P, Pohl M, Noehren B, **Barrios J**, Davis I (2007). Bone surface tracking for standing knee MRI: a validation study. Presented at the American Society of Biomechanics Annual Meeting, Palo Alto, CA.

Barrios JA, Davis IS, Lloyd CH, Royer TD (2007). Differences in frontal plane mechanics between asymptomatic controls and patients with medial or lateral compartment tibiofemoral osteoarthritis. Presented at the American College of Sports Medicine Annual Meeting, New Orleans, LA.

Fellin R, **Barrios J**, Davis I (2007). 3D kinematic hip, knee and rearfoot comparison of overground and treadmill running. Presented at the American College of Sports Medicine Annual Meeting, New Orleans, LA.

Lloyd CH, Royer TD, **Barrios JA**, Davis IS (2007). Medially wedged insoles reduce knee pain during functional activities in subjects with lateral knee osteoarthritis. Presented at the American College of Sports Medicine Annual Meeting, New Orleans, LA.

Barrios JA, Davis IS, Crenshaw JR, Royer TD (2007). Acute effects of laterally wedged orthoses on walking and stair negotiation in subjects with medial compartment tibiofemoral osteoarthritis. Presented at the Combined Sections Meeting of the American Physical Therapy Association, Boston, MA.

Barrios JA, Royer TD, Crenshaw JR, Davis IS (2006). Frontal plane mechanics during walking in patients with lateral compartment tibiofemoral osteoarthritis with and without a medially wedged orthoses. Presented at the American Society of Biomechanics Annual Meeting, Blacksburg, VA.

Barrios JA, Davis IS, Crenshaw JR, Royer TD (2006). Effect of laterally wedged orthoses on frontal plane mechanics in subjects with medial compartment tibiofemoral osteoarthritis. Presented at the American College of Sports Medicine Annual Meeting, Denver, CO.

Crenshaw J, Royer T, **Barrios J**, Davis I (2006). Long-term effects of wedged orthoses on function and WOMAC scores in subjects with knee osteoarthritis. Presented at the American College of Sports Medicine Annual Meeting, Denver, CO.

Royer TD, Crenshaw JR, **Barrios JA**, Davis IS (2006). Wedged shoe orthoses reduce peak medial ground reaction force. Presented at the American College of Sports Medicine Annual Meeting, Denver, CO.

INVITED PRESENTATIONS

Barrios JA (2016). Gait modification as a strategy for joint health: keeping it simple. Presented at the Scientific Symposium of the Ohio Physical Therapy Association. Columbus, OH.

Barrios JA (2013). Gait retraining: taking the next step across populations from osteoarthritis, neurological impairments to running related injuries. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

Barrios JA (2011). Gait strategies that reduce medial knee loading: framing the discussion from a physical therapy perspective. Presented at the Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA.

Barrios JA (2010). Gait strategies that reduce medial knee loading: framing the discussion from a physical therapy perspective. Presented at the Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.

MANUSCRIPT REVIEWER

Journal of Orthopaedic and Sports Physical Therapy (International Review Board Member 2018-present)
Journal of Applied Biomechanics
International Journal of Sports Physical Therapy
Arthritis Care and Research
BioMed Central Musculoskeletal Disorders
Journal of Biomechanics
Osteoarthritis and Cartilage
Sports Health
Clinical Biomechanics
Journal of Foot and Ankle Surgery
Physical Therapy
Journal of Visualized Experiments
Journal of Sports Sciences
Scandinavian Journal of Medicine and Science in Sports

Journal of Orthopaedic Research
Medicine and Science in Sport and Exercise
Gait and Posture
Physical Therapy in Sport
Journal of Sport Rehabilitation
Journal of Knee Surgery
Journal of Acute Care Physical Therapy
Journal of Strength and Conditioning Research
Archives of Physical Medicine and Rehabilitation

SPONSORED RESEARCH ACTIVITY

Prosthetic Design, Inc, 2012-2015, $5670
"The effects of a knee flexion-bias prosthesis on the walking mechanics of above-knee amputees"

University of Dayton Research Council Seed Grant, 2013
Grant-in-Aid Award Recipient, $1500
"Validation of inclinometer-based tibial mechanical axis as a measure of lower limb alignment"

American Society of Biomechanics, 2008
Student Grant-in-Aid Award Recipient - $2000
"A biomechanical assessment of young, asymptomatic individuals with genu varus alignment: can gait retraining be beneficial?"

Foundation for Physical Therapy, 2007-2008
Promotion of Doctoral Studies (PODS I) Award Recipient - $7500

Foundation for Physical Therapy, 2006-2007
Promotion of Doctoral Studies (PODS I) Award Recipient - $7500

PROFESSIONAL MEMBERSHIPS AND DUTIES

American Physical Therapy Association, Member, 2000-present
Abstract Reviewer for the Orthopaedic Section and Sports Section programming for the Combined Sections Meeting (2009-present)

American Society of Biomechanics, Member, 2005-present
Jean Landa Pytel Award for Diversity Mentorship in Biomechanics Sub-Committee, 2020-2022

American College of Rheumatology, Member, 2007-2008

American College of Sports Medicine, Member, 2005-2010

CERTIFICATIONS

American Physical Therapy Association, Certified Clinical Instructor, 2003-present

American Heart Association, BLS for Healthcare Providers (CPR and AED) Program, 2002-present

CLINICAL LICENSURE

Delaware Physical Therapist Licensure J1-0002031 (inactive)

Ohio Physical Therapist License #10505 (active)

GRADUATE STUDENT MENTORSHIP

MS (Mechanical Engineering) Thesis Committee Member for Elijah Kuska
University of Dayton, 2017-2020

MS (Exercise Science) Thesis Advisor for Harmeet Bhatti
University of Dayton, 2015-present (Graduate Student Summer Fellowship Award recipient)

MS (Exercise Science) Thesis Advisor for Maria Mostaed
University of Dayton, 2015-present (Graduate Student Summer Fellowship Award recipient)

MS (Exercise Science) Thesis Advisor for Rima Tipnis
University of Dayton, 2012-2014

MS (Exercise Science) Thesis Advisor for Kendel Ross
University of Dayton, 2012-2014

MS (Exercise Science) Thesis Advisor for Laura Schemenauer
University of Dayton, 2012-2014 (Graduate Student Summer Fellowship Award recipient)

MS (Exercise Science) Thesis Advisor for Eddie Jones
University of Dayton, 2013-2014

MS (Exercise Science) Thesis Advisor for Lydia Caldwell
University of Dayton, 2011-2013 (Graduate Student Summer Fellowship Award recipient x 2)

UNDERGRADUATE STUDENT THESIS MENTORSHIP

BS (Health and Sports Science) Honors Thesis Advisor for Anastasia Bjelopetrovich
University of Dayton, 2014-present

BS (Mechanical Engineering) Honors Thesis Advisor for Hilary Feskanin
University of Dayton, 2014-2015

BS (Mechanical Engineering) Honors Thesis Advisor for Danielle Bare
University of Dayton, 2011-2012