

**CURRICULUM VITAE**

**Brad W. Willis, MPT, GCS**

Assistant Teaching Professor  
Department of Physical Therapy  
University of Missouri  
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**Education:**

**PhD in Educational Leadership and Policy Analysis:** Currently Enrolled  
Dept. of Educational Leadership and Policy Analysis, Program Area: Higher Education  
University of Missouri-Columbia

**Master of Physical Therapy:** May 2008  
Dept. of Physical Therapy, University of Missouri-Columbia

**Bachelors in Health Science:** May 2008  
School of Health Professions, University of Missouri-Columbia

**Licensure Information/Registration Number:**

State Board of Registration for the Healing Arts of Missouri, Physical Therapy License.  
NO. 2008025594.

**Certifications:**

Board Certified Specialist in Geriatric Physical Therapy, American Board of Physical  
Therapy Specialties-2017  
Certified Clinical Instructor, American Physical Therapy Association-2012  
DARI Motion Capture Certified User-2012  
Lumbar and Cervical MedX Certification-2010

**Academic Employment and Positions Held:**

2015-Present Assistant Teaching Professor, Department of Physical Therapy, School of Health  
Professions, University of Missouri.

2010-2015 Adjunct Faculty Member: Role included Teaching Assistant and Lab Assistant  
positions, Department of Physical Therapy, School of Health Professions,  
University of Missouri.

2007 Graduate Teaching Assistant, Department of Physical Therapy, School of Health  
Professions, University of Missouri.

2007 Research Assistant, Department of Family Medicine, School of Medicine,  
University of Missouri.

**Peer Reviewed Publications:** (\* = DPT student author)

Gray AD, **Willis BW**, Skubic M, Huo Z, Razu S, Sherman S, Jahandar A, Miller S, Siesner N, Guess T. “Development and Validation of a Portable and Inexpensive Tool to Measure the Drop Vertical Jump using the Microsoft Kinect™ V2.” *Sports Health*. Available online ahead of print. August, 2017. doi. 10.1177/1941738117726323.

**Willis BW**, Razu S, Baggett K\*, Jahandar A, Gray A, Skubic M, Sherman S, Blecha K, Guess T. “Sex Differences in Frontal and Transverse Plane Hip and Knee Kinematics during the Modified Start Excursion Balance Test.” *Human Movement*. 2017; 18(3): 28-35. doi: 10.1515/humo-2017-0028

A. Mishra, M. Skubic, **BW. Willis**, T. Guess, S. Razu, C. Abbott, A. Gray. “Examining Methods to Estimate Static Body Sway from the Kinect V2.0 Skeletal Data: Implications for Clinical Rehabilitation.” *11<sup>th</sup> EA International Conference on Pervasive Computing Technologies for Healthcare*, Barcelona, Spain. May, 2017.

P. Savvidou, **BW. Willis**, M. Li, M. Skubic, “Assessing Injury Risk in Pianists: Using Objective Measures to Promote Self-Awareness,” *Music Teachers National Association e-Journal*, November, 2015. Awarded 2016 MTNA e-Journal Article of the Year.

Z. Huo, J. Griffin, R. Babiuch, A. Gray, **BW. Willis**, M. Skubic, and S. Sun, “Examining the Feasibility of a Microsoft Kinect-Based Game Intervention for Individuals with ACL Injury Risk,” *Proc., IEEE International Conference of the Engineering in Medicine and Biology Society*, Milan, August, 2015.

M. Li, P. Savvidou, **BW. Willis**, and M. Skubic, “Using the Kinect to Detect Potentially Harmful Hand Postures in Pianists,” in *Proc., IEEE International Conference of the Engineering in Medicine and Biology Society*, Chicago, August, 2014, pp. 762-765.

**Peer Reviewed Scientific and Professional Presentations:**

**Willis BW**, Campbell AS, Sayers S, Beal E, Gibson K. “Changes in Self-Assessed Clinical Reflection and Reasoning Following the First Year of a Doctorate of Physical Therapy Program” *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

Campbell AS, **Willis BW**, Sayers S, Beal E, Gibson K. “Same Issues, Different Class: Shared Challenges in Critical Thinking Between Cohorts of a Doctorate of Physical Therapy Program” *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

**Willis BW**, Campbell AS, Sayers S, Beal E, Gibson K. “Identification of Shared Challenges in Clinical Reflection and Reasoning between First, Second, and Third Year DPT Students” *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

Campbell AS, **Willis BW**, Sayers S, Beal E, Gibson K. “Changing the Way They Think: Integration of an Explicit Mixed Methods Critical Thinking Approach for 1<sup>st</sup> Year Doctor of Physical Therapy Students”. *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

Guess T, Hocker K, Gray AD, Razu S, Kurkowski S, Sherman SL, Skubic M, **Willis BW**. “The Medial Knee Position at Initial Contact of the Drop Vertical Jump is Strongly Correlated to the Knee Abduction Angle” *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

Echelmeyer D, **Willis BW**, Guess M, Sherman SL, Gray AG, Blecha K, Guess T. “Comparing Peak Hip and Knee Flexion during the Lateral Step Down Test between the Kinect<sup>TM</sup> and Vicon<sup>TM</sup>: Examining Subjects with and without ACL-Reconstruction”. *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation. New Orleans, February, 2018. Accepted.

Mann B, **Willis BW**, Guess T, Jahandar A. “A Case Study: Examination of Jump Propulsive Forces on a NCAA Division Wrestler 6 Months Post ACLR”. *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation (Non-presenting author). New Orleans, February, 2018. Accepted.

Mullen J\*, **Willis BW**, Prost E. “Communicating with Persons with Cognitive Impairment: Improving Physical Therapy Students’ Effectiveness through a Blinded Role-Play Simulation.” *American Physical Therapy Association, Combined Section Meeting*. Poster Presentation (Non-presenting author). New Orleans, February, 2018. Accepted. *27<sup>th</sup> Annual Caring for the Frail Elderly Conference*. Poster Presentation (Non-presenting author). Columbia, MO. August. 2017.

**Willis BW**, Sims MA\*, Prost E, Sayers SP. “Examining the Exercise Habits of Community-Dwelling Older Adults: A 15-Year Retrospective Study”. *Innovation in Aging*. June 2017(1)1:388. Presented at *IAGG World Congress of Gerontology and Geriatrics*. Poster Presentation. San Francisco, CA. July, 2017.

Campbell AS, **Willis BW**, Sayers SP, Beal E, Gibson K. “Ready to Launch: Predicting Success on the NPTE with Traditional and Non-Traditional Metrics.” *Clinical Reasoning Symposium. Education Section of the American Physical Therapy Association*. Poster Presentation. (Non-presenting author) Omaha, NE. July, 2017.

Sherman SL, Gray A, **Willis BW**, Huo Z, Siesner N, Gulbrandsen T, Miller S, Razu S, Jahandar A, Skubic M, Guess TM. “Development and Validation of a Portable and Inexpensive ACL Injury Risk Identification Tool: Measuring the Drop Vertical Jump Using the Microsoft Kinect V2”. *11<sup>th</sup> Biennial International Society, of Arthroscopy, Knee Surgery, and Orthopaedic Medicine Congress*. e-Poster. (Non-presenting author). Shanghai, China, June 2017.

**Willis BW.** “The Development of an ACL Screening Tool: From the Lab to the High School Gym.” Invited Lecturer. 1 Contact Hr. *Missouri Physical Therapy Association (MPTA) Spring Conference.* St. Louis, MO. April, 2017.

Gray AD, **Willis BW**, Skubic M, Huo Z, Razu S, Gulbrandesen, Miller S, Siesener B, Jahandar Sherman SL. “Validation and Pilot Testing of a Portable and Inexpensive ACL Injury Risk Identification Tool: Measuring the Drop Vertical Jump Using the Microsoft Kinect V2.” *Clin J Sport Med.* Mar 2017 (27)2:183-192. Presented at *American Medical Society for Sports Medicine Annual Meeting.* Podium Presentation (Non-presenting author) San Diego, CA. March, 2017.

**Willis BW**, Sayers S, Prost E. “Flipping a Physical Therapy Classroom.” *American Physical Therapy Association Combined Sections Meeting.* Poster Presentation. San Antonio, TX. February, 2017.

Williams H\*, Abbott C, **Willis BW**, Prost E. “Balance Confidence and Fall Risk are Related to the Perceived Benefit of Using Walking Poles for Community Dwelling Older Adults.” *American Physical Therapy Association Combined Sections Meeting.* Poster Presentation. (Non-presenting author) San Antonio, TX. February, 2017.

Davis L\*, **Willis BW**, Gray A, Sherman S, Razu S, Jahandar A, Skubic M, Blecha K, Guess T. “Simplifying Anterior Cruciate Ligament Injury Screening: A Jump in the Right Direction”. *JOSPT.* Jan 2017(47)1:A176-A177. Presented at *American Physical Therapy Association Combined Sections Meeting.* Poster Presentation. San Antonio, TX, February 2017.

**Willis BW**, Prost E, William H\*. “Functional Assessment and Approach to Fall Reduction: Physical Therapy Assessment and Evaluation Section”. 3 Contact Hrs. *26<sup>th</sup> Annual Caring for the Frail Elderly Conference.* Columbia, Mo. Aug, 2016.

Abbott C, **Willis BW**, Williams H\*, Prost E. “Walking Poles Reduce Low Back Pain and Increase Physical Activity in a 65 Year Old Woman.” *26<sup>th</sup> Annual Caring for the Frail Elderly Conference.* Poster Presentation (Non-presenting author). Columbia, MO. August. 2016.

Prost E, Abbott C, **Willis BW**, Williams H\*, Flowers P, Swithin R, Martinez Campuzano R, Jahandar A, Guess T. “Using Walking Poles Results in Slower Gait Parameters for Community Dwelling Older Adults.” *26<sup>th</sup> Annual Caring for the Frail Elderly Conference.* Poster Presentation (Non-presenting author). Columbia, MO. August. 2016.

Sherman S, Gulbrandsen T, Miller S, Guess T, **Willis BW**, Blecha K, Huo Z, Skubic M, Gray A. “Mass Screening of Youth Athletes for High Risk Landing Patterns using a Portable and Inexpensive Motion Sensor Device.” *OJSM.* July, 2016.4(7). Presented at *American College of Sports Medicine Annual Conference.* Poster. (Non-presenting author). Denver, CO. June, 2016.

**Willis BW**, LeAnn Faidley, Jorge Aguilar-Sanchez, Stephen Klien, Adrienne Brundage. "Innovations in the Classroom (Flipped Classrooms)." Invited Panel Discussion. 1 hour. *Wakonse Teaching Conference*. Shelby, MI. May 26-31, 2016.

**Willis BW**, Razu S, Jahandar A, Gray A, Skubic M, Sherman S, Blecha K, Guess T. "Gender Differences During the Modified Star Excursion Balance Test." *Gait and Clinical Movement Analysis Society*, Poster Presentation. Memphis, TN May 2016.

Sherman S, **Willis BW**, Guess T, Gray A, Skubic M, Blecha K. "Mass Screening of Youth Athletes for High Risk Landing Patterns Using a Portable and Inexpensive Motion Sensor Device: Efficiency, Gender Disparities and Continued Validity of the Xbox Kinect for Assessing ACL Injury Risk". *ACL Study Group* (Non-presenting author). Are, Sweden. March 13-17. 2016.

### **Funded Grant Activity:**

Title: Do walking poles improve the gait parameters of community dwelling older adults?

PI: Evan Prost

Funding Source: SHP Catalyst Award

Date of Award: (11)2015-(11)2016

Total Award: \$3,450. Funded.

Role: Co-Investigator

Title: Screening High School Athletes Risk for Anterior Cruciate Ligament Injury Using Portable Motion Sensor Device.

PI: Aaron Gray

Funding Source: Mizzou Advantage

Date of Award: 2014-2015

Total Award: \$50,000. Funded.

Role: Co-Investigator

Title: Using the Kinect to Detect Potentially Harmful Hand Postures in Advanced-Level Classical Pianists

PI: Paola Savvidou

Funding Source: Mizzou Advantage

Date of Award: 2013-2014

Total Award: \$25,000. Funded.

Role: Co-Investigator

### **In Review Grant Activity:**

#### **Current/Active Research Activity (not cited above):**

Title: A Retrospective Analysis of Movement Screening Tasks from the Human Performance Institute

PI: Brad Willis

Date: (8)2017- Present

Title: Correlation of Findings Between a Visual Assessment Rating Scale and the Microsoft Kinect During a Lateral Step Down Test.

PI: David Echelmeyer

Date: (3)2017- Present

Role: Co-Investigator

Title: Data Analysis: Examination of Biomechanics in College Athletes using the DARI Motion Capture System

PI: Jill Lucas

Date: (10)2016-Present

Role: Co-Investigator

Title: Measuring Critical Thinking and Self-Assessed Clinical Reasoning in Physical Therapy Students: Utilization of the CCTST and SACRR.

PI: Brad Willis

Date: (7)2016-Present

Title: Examining the Habits of Older Adults Involved in a Community Wellness Center.

PI: Brad Willis

Date: (5)2016- (5)2017

Title: Student Perception of the Educational Environment Using the DREEM

PI: Brad Willis

Date: (11)2015-(12)2016

### **Non-Peer Reviewed Publications:**

Mullen J\*, **Willis BW**, Prost E. "Communicating with Persons with Cognitive Impairment: Improving Physical Therapy Students' Effectiveness through a Blinded Role-Play Simulation." *GeriNotes: Academy of Geriatric Physical Therapy*. Accepted for publication.

### **Non-Peer Reviewed Presentations:**

Sherman SL, **Willis BW**, Echelmeyer D. "Return to Sport Testing" Sports Medicine Grand Rounds. Missouri Orthopaedic Institute. (Non-presenting author). Columbia, Mo. May 2017.

**Willis BW**. "Physical Therapy Evaluation and Assessment: Lumbar Spine and SI Joint" Invited Lecturer. Physical Therapy 2500: Anatomy and Injury. Course Instructor Bryan Mann. April, 2016.

**Willis BW**. "Physical Therapy Evaluation and Assessment: The Cervical Spine" Invited Lecturer. Physical Therapy 2500: Anatomy and Injury. Course Instructor Bryan Mann. April, 2016.

**Willis BW.** “Games for Health: Using the Microsoft Kinect to Identify and Prevent ACL Injury Risk in Female Athletes.” Invited Lecture. Hickman High School. Columbia, Mo. November 2015.

**Willis BW.** “Evidence Based Practice for the SI Joint, Evaluation and Manual Intervention.” *Strength and Conditioning, Athletic Training Meeting, Mizzou Athletics.* October 2012.

**Willis BW.** “Current Evidence to Assess Readiness to Return to Play following ACL Reconstruction.” *Missouri Orthopaedic Sports Medicine Meeting.* Nov, 2010.

**Willis BW.** “Evaluation and Treatment for the Pelvis and Lumbar Spine with Myofascial Release Techniques.” *Boone Hospital Therapy Meeting, April, 2009.*

**Willis BW.** “Evidenced Based Approach for Classification of Cervical and Lumbar Pain.” *Select Physical Therapy In-service.* May, 2008.

### **Continuing Education Workshops Presented (non-peer reviewed):**

**Willis BW.** “Evidence Based Return to Sport Criteria: Unstable Ankle Population”. *Missouri Orthopaedic Sports Medicine Meeting.* 1 Contact hour. March, 2014.

**Willis BW.** “Proper Training Principles for a Run/Walk Event”. *Central Leukemia and Lymphoma Society.* 1 Contact hour. Columbia, Mo. May, 2011.

**Willis BW.** “Best Practice for Evaluation and Treatment of Achilles Tendonopathy.” *Missouri Orthopaedic Sports Medicine Meeting.* 1 Contact hour. Feb, 2011.

**Willis BW.** “Physical Therapy Abroad: Lessons in Rehab following the Haitian Earthquake.”, *Missouri Health Professions Student Association.* 1 Contact hour. Columbia, Mo. March, 2010.

### **Membership in Scientific/Professional Organizations:**

#### **Membership**

American Physical Therapy Association (APTA). 2008-Present;

- Clinical Electrophysiology & Wound Management Section. 2015-Present
- Education Section. 2016-Present.
- Geriatric Section. 2016-Present

Missouri Physical Therapy Association (MPTA). 2008-Present

Central Group on Educational Affairs (CGEA) of the Association of American Medical Colleges (AAMC), 2016-Present

Gait and Clinical Motion Analysis Society. 2016-Present

Phi Kappa Phi, Honor Society. 2005-2009

### **Consultative and Advisory Positions Held:**

- 2015-Present Physical Therapist, MU Family Medicine Senior Assessment/Geriatric Evaluation (SAGE) Team Member. South Providence Family Medical Center, Columbia, Mo
- 2015-Present Physical Therapist, Mizzou Therapy Services/SHP Faculty Clinic. Columbia, Mo
- 2015-Present Physical Therapist, PhysZou Therapy Clinic. Columbia, Mo.
- 2010-2015 Physical Therapist, Missouri Orthopaedic Institute, Mizzou Physical Therapy and Sports Medicine, Columbia, Mo.
- 2008-2010 Physical Therapist, Boone Hospital Center, Columbia, Mo.

### **Community Service:**

- For-Columbia. City-wide clean up. Volunteer. 2016.
- Coyote Hill - Christians Children's Home. Volunteer. 2016 to present
- Mizzou Physical Therapy and Sports Medicine. Youth Physical Day. 2012 to 2014.
- Physical Therapist Volunteer following Haitian Earthquake. *CRUDEM (Center for the Rural Development of Milot) organization. Milot, Haiti.* 2010.

### **Service to the Profession:**

#### **Reviewer of Scholarly Works**

- Reviewer for professional journal, *Journal of Sport Rehabilitation*: 2017 to present.
- Reviewer for professional journal, *PM&R*: 2016 to present
- Reviewer for professional journal, *Sports Health*: 2016 to present.

### **Service to the University:**

#### **Department**

- Interview Committee, Member: 2015-Present
- Doctorate of Physical Therapy Research Interest Group, Faculty Sponsor: 2015

#### **School of Health Professions**

- Summer Welcome Faculty Panel-Summer: 2016 to Present
- School of Health Professions Research Committee: 2016 to Present

### **Honors and Awards:**

- Wakonse Fellowship for Teaching Excellence. 2016
- Undergraduate MU Honors Graduation Mentor, Student: Aimee Murray. 2016
- 2016 MTNA e-Journal Article of the Year Award Recipient: Injury-Prevention in Pianist: Feasibility of the Microsoft Kinect™ to Detect Potentially Harmful Hand Positions. MTNA eJournal. Nov 2015.
- Shooting Star Award. Boone Hospital Center: Awarded through patient nomination. 2009
- Gerald Browning Scholarship. University of Missouri, Physical Therapy Department. 2008
- School of Health Professions Scholar, 2008
- Graduated Summa Cum Laude, University of Missouri, Master of Physical Therapy, 2008.



**Continuing Education Attended:**

- 21<sup>st</sup> IAGG World Congress of Geriatrics and Gerontology. San Francisco, CA. July, 2017.
- Maitland-M3-Advanced Spinal. Nashville, TN. April, 2017.
- MedBridge-GCS Prep Course. Online Modules. Completed. Feb, 2017.
- Combined Sections Meeting, American Physical Therapy Association. San Antonio, Texas. Feb. 2017.
- The Ultimate Hands-On Wound Care Clinical Lab. Columbia, Mo. Sept. 2016.
- Geriatric Focus for the Physical Therapist-Topics 1-6.APTA Learning Center. July.2016
- Gait and Clinical Motion Analysis Society National Meeting. Memphis, TN, May. 2016.
- Wakonse National Teaching Conference. Shelby, MI. May, 2016.
- Maitland-M-ST-Stabilization. Columbia, Mo. Mar. 2016.
- Combined Sections Meeting, American Physical Therapy Association. Anaheim, CA. February, 2016.
- Evidence-Based Practice of Electrotherapy: From Parameter Settings to Treatment Uses and Device Selection. Anaheim, CA. Feb. 2016.
- Maitland-M1Peripheral Joints. Columbia, Mo. Oct. 2015.
- Maitland-M2-Axial Skeleton. Washington University. Oct. 2014.
- Mulligan-Mobilization with Movement for the Peripheral Joints, MOI Nov. 2013.
- Clinical Instructor Credentialing Course. APTA. Briedwell, Martin. June, 2013.
- DARI Training. Patrick Moodie, MS. Dec, 2012.
- Muscle Energy Techniques. M1. Thomas Ockler, PT. Nov 2012.
- Manual Therapy. University of Missouri. Williams, Briedwell, and Martin. June, 2012.
- Sport Related Injuries in the Young Athlete. Feb, 2011.
- Sports Injuries. Mike Begg, PA-C. Oct 2010.
- Cervical and Lumbar MedX certification. DeEtte Fertuado. July 2010.
- Myofascial Release I John Barnes, PT April 2010.
- Current Advances in Foot and Ankle Surgery, including Total Ankle Joint Replacement. Dr. Trevino, Columbia, Mo. 2009.
- Active Treatment Modalities: Chronic Ulcers. Boone Hospital. 2009.
- Treatment Strategies in the Acute Care of Stroke Survivors. International Clinical Educators, Inc.-Home Study, Oct 2009.
- Cervical Dystonia: Diagnosis and Treatment. Dr. Asher. Boone Hospital, Columbia, Mo. 2009.
- Pusher Syndrome: Diagnosis and Treatment. Laura Deshon, PT, Columbia, Mo. 2009

**Current Teaching Responsibilities:**

Course #/Name: 4330/7330 Physical Agents (3 Cr Hr)

Role in Course: **Course Coordinator**

Location in Curriculum: Fall, 1<sup>st</sup> Semester

Course Description: Biophysics, theory and technique concerning usage of physical agents as adjuncts to exercise programs. Includes thermal, electrical, light, hydrotherapy, and mechanical agents.

Dates: 2015 to present

Course #/Name: 7(4)520 Applied Therapeutic Exercise (3 Cr Hr)

Course Instructor: Jeff Bridges, DPT, OCS, ATC

Role in Course: **Lab Assistant**

Location in Curriculum: Fall, 2nd Semester

Course Description: Application of therapeutic exercise with an emphasis on evidenced-based exercise prescription, modes and techniques of exercise typically seen in rehabilitation.

Dates: 2014 to present

Course #/Name: 7890 Case Management I (Acute and Chronic Medical and Surgical Conditions) (5 Cr Hr)

Course Instructor: Evan Prost, DPT, CEEAA.

Current Role in Course: **Co-Teach**

Previous Role in Course: Teaching Assistant, Lab Assistant and PBL tutor (2014-2017)

Location in Curriculum: Spring, 6th Semester

Course Description: Evaluation and team approach to physical therapy management in adult medical and surgical conditions: cardiovascular, pulmonary, rheumatic, oncologic, integumentary or wound care, including major burn injury. Psychosocial and ethical issues incorporated.

Dates: 2017-Present

Course #/Name: 8390 Case Management II (Geriatrics and Orthopedics)(5 Cr Hr)

Course Instructor: Evan Prost, DPT, CEEAA

Current Role in Course: **Co-Teach**

Role in Course: Teaching Assistant, Lab Assistant and PBL tutor (2014-2017)

Location in Curriculum: Fall, 8th Semester

Course Description: Complex orthopedic problems in persons of all ages; supervision, reimbursement, ethical/legal situations; community programs for injury prevention; work capacity evaluation/work hardening; consultation.

Dates: 2017-Present