

CURRICULUM VITAE

Date: June 30, 2024

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Present Position

Professor, Physical Therapy and Orthopaedic Surgery
 Director, Rehabilitation Research for Orthopaedic Conditions (RROC) Laboratory

Education

- 1994 Bachelor of Science, Biology
 Missouri State University, Springfield, MO
- 1996 Master of Physical Therapy, Physical Therapy
 Northwestern University, Chicago, IL
- 2003 Doctor of Physical Therapy, Physical Therapy
 Washington University, St. Louis, MO
- 2010 Master of Science, Postdoctoral Training with emphasis in Clinical Investigation
 Washington University, St. Louis, MO

Academic Positions / Employment:

- 1997-2000 Physical Therapist, Barnes-Jewish Hospital, St. Louis, MO
- 2000-2005 Instructor, Washington University School of Medicine, Program in Physical Therapy, St. Louis, MO
- 2010-2011 Visiting Faculty, Indiana University, School of Health, Physical Education and Recreation, Department of Kinesiology, Bloomington, IN
- 2005-2012 Assistant Professor, Washington University School of Medicine, Physical Therapy and Orthopaedic Surgery, St. Louis, MO
- 2003-2013 Adjunct Faculty, Kaiser Permanente Orthopaedic Manual Therapy Fellowship and Movement Science Fellowship, Los Angeles, CA
- 2012-2018 Associate Professor, Washington University School of Medicine, Physical Therapy and Orthopaedic Surgery, St. Louis, MO

2018-Present Professor, Washington University School of Medicine, Physical Therapy and Orthopaedic Surgery, St. Louis, MO

Clinical Title and Responsibilities (if distinct from academic title & responsibilities)

2000-2008 Physical Therapist, Washington University Physical Therapy Clinics,
Responsibilities: Perform evaluation and provide treatment for patients with musculoskeletal impairments.

2000-2007 Physical Therapist, Barnes-Jewish Hospital
Responsibilities: Consultation for evaluation and treatment for patients with musculoskeletal impairments.

Teaching Title and Responsibilities

Current

PhD

2010-Present Advisor, Teaching Practicum in Movement Science, PhD in Movement Science (WUSM)

Enrollment: 1 student

2013-Present Lecturer, Bioenergetics, PhD in Movement Science (WUSM)

Enrollment: 5 students

2018-Present Presenter, Program Seminar, PhD in Movement Science (WUSM)

Enrollment: 5 students

DPT

2021-Present Content Expert/Lecturer/Lab assistant, Modules 1-5 Kinesiology, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Lecturer, Module 6 Exercise Adherence (Moderators), Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Discussant, Module 4B, Evidence, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Coach, Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 5-11 students

2021-Present Evaluator, Module 8, Patient client care examinations, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Discussant, Module 7/8, Journal club, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Lab Assistant, Module 7/8, Government Affairs, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Lab Assistant, Module 8, CSE, Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Enrollment: 85-90 students

2021-Present Discussant, Module 6 Clinical Epidemiology and Evidence Based Medicine (WUSM)

Enrollment: 40 students

Recent (Prior to Curriculum initiated in 2021)

2004-2023	Lab Assistant, Professional Issues and Skill Development IV, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2004-2013	Course Assistant, Diagnosis & Management of Musculoskeletal Conditions: Lower Quarter, Post-Professional Clinical Doctorate (PP DPT) Curriculum (WUSM) Enrollment: 10-20 students
2004-2013	Course Assistant, Diagnosis & Management of Musculoskeletal Conditions: Upper Quarter, Post-Professional Clinical Doctorate (PP DPT) Curriculum (WUSM) Enrollment: 10-20 students
2005-2021	Lab Assistant, Kinesiology II, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2009-2020	Lecturer and Evaluator – Student projects, Biomechanics, PhD in Movement Science (WUSM) Enrollment: 5 students
2010-2021	Course Master, Kinesiology I, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2011-2014	Lecturer, Human Anatomy, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2012-2013	Lecturer, Orthopaedic Medicine, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2014-2023	Lecturer, Moderators of Health, Wellness & Rehabilitation, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2017-2019	Evaluator, Diagnosis & Management of Musculoskeletal Conditions II, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2017-2020	Advisor, Lab Practicum in Movement Science, PhD in Movement Science (WUSM) Enrollment: 1 student
2017-2023	Lecturer, Biomechanics Focus study, Case Integration III, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students/Small group: 15 students
2017-2023	Advisor/Evaluator/Presenter Diagnosis, Evidence and Analysis III, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students
2017-2023	Advisor/Evaluator, Case Integration III, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students/Advised: 2 students
2018-2023	Evaluator, Professional Issues and Skill Development III, Professional Clinical Doctorate (DPT) Curriculum (WUSM) Enrollment: 85-90 students

- 2018-2023 Lab Assistant, Module TBD (PISD IV), Professional Clinical Doctorate (DPT) Curriculum (WUSM)
Enrollment: 85-90 students
- 2018-2020 Lecturer, Movement Science Clinical Fellowship (WUSM)
Enrollment: 8 students

Past participation in professional courses:

Course Coordinator: Orthopaedic Medicine

Course Assistant: Diagnosis & Management of Musculoskeletal Conditions I, Diagnosis & Management of Musculoskeletal Conditions II, Diagnosis & Management of Musculoskeletal Conditions III, Essential Skills II

Lecture/Key Contributor: Human Anatomy, Kinesiology II, Case Integration I, Case Integration II, Professional Issues and Skill Development III, Essential Skills I, Essential Skills III, Diagnosis and Evidence Analysis III, Case Integration III, Ambulatory Care Lecture Series for Residents, Medical and Mental Health Conditions

Past participation in selected courses for post-professional students.

Lecture/Key Contributor: Diagnosis & Management of General Medical Conditions

University, School of Medicine and Hospital Appointments and Committees

- 2000-2021 Committee on Academic Professional Evaluation of Students (PTCAPES), Program in Physical Therapy, WUSM
- 2002-2005 Sports Special Interest Group - Faculty Advisor, Program in Physical Therapy, WUSM
- 2002-2009 Admissions Committee, Program in Physical Therapy, WUSM
- 2003-2004 Clinical Advisory Committee, Program in Physical Therapy, WUSM
- 2003-2004 Physical Therapy Council, Program in Physical Therapy, WUSM
- 2004-Present Academic Women's Network, WUSM
- 2005-Present Research Advisory Council, Program in Physical Therapy, WUSM
- 2006-2007 Program Innovation Council, Program in Physical Therapy, WUSM
- 2007-2008 Executive Committee K12/K30, WUSM
- 2010-2015 Peer Group Mentoring Program for Women, WUSM
- 2010-Present Institute of Clinical and Translational Sciences, WUSM
- 2012-2014 Center for Clinical Excellence, Hip/Knee Replacement Patient Centered Outcomes Pilot Committee, WUSM
- 2012-Present Musculoskeletal Research Center, WUSM
- 2012-2023 CORRTNet Advisory Committee, Program in Physical Therapy, WUSM
- 2014 Strategic Planning Committee, Program in Physical Therapy, WUSM
- 2015 Faculty Search Committee – Education Division, Program in Physical Therapy, WUSM
- 2015-2019 Faculty Liaison, Department Orthopaedic Surgery Residency, Core Curriculum, Program in Physical Therapy, WUSM
- 2015-Present Physical Therapy Day of Service - Washington University Physical Therapy - Faculty Advisor
- 2015-2017 Review Committee, Barnes-Jewish Hospital Foundation/Washington University Institute of Clinical and Translational Sciences Clinical and Translational Research Funding Program, WUSM
- 2016-2021 CORRT Scholar liaison, Program in Physical Therapy, WUSM
- 2016-Present Coordinator, WUPT Research Seminar and Webcast, Program in Physical Therapy, WUSM

2016-2018	Distinguished Community Service Award Selection Committee, WUSM
2016-Present	Faculty Mentoring Program Development, Program in Physical Therapy, WUSM
2017-2018	Strategic Planning Committee, Program in Physical Therapy, WUSM
2017-2018	Faculty Search Committee – Education Division, Program in Physical Therapy, WUSM
2017-2019	Review Committee, Clinical Research Training Center, KL2 Career Development Awards, WUSM
2017-2019	NIH Mock Study Section, Office of Training Grant and Clinical Research Training Center, WUSM
2018-2019	Pain Task Force, Program in Physical Therapy, WUSM
2018-2020	Faculty discussant, Clinical Research Training Center, Annual Research Training Symposium and Poster Session, WUSM
2019-2020	Faculty Search Committee – Clinical and Education Division, Program in Physical Therapy, WUSM
2019-2021	Architecture Team Leader, Program in Physical Therapy, WUSM
2019-2022	Curriculum Design Committee, Program in Physical Therapy WUSM
2019-Present	Member, Research Assistantship Committee, Program in Physical Therapy WUSM
2020-2020	Ad Hoc Committee Member, Faculty Appointments and Promotions, Department of Medicine, WUSM
2021-Present	Faculty Advisor, BIPOC Student Alumni Mentoring Program, Program in Physical Therapy, WUSM
2021-Present	Member, Physical Therapy Competency Attainment Committee (PT-CAC), Program in Physical Therapy, WUSM
2022-Present	Member, Steven J. Rose Diversity Development Scholarship Review Committee, WUSM
2023-Present	AI for Health Institute (AIM), WUSM

Medical Licensure and Certification

1997-Present	Missouri Board of Registration for the Healing Arts, Active: #111958 Professional Physical Therapist for the State of Missouri
2005-2015	Certified Clinical Specialist – Orthopaedic Physical Therapy, American Board of Physical Therapy Specialties

Honors and Awards

2004	Early Career Women’s Faculty Professional Development Seminar Association of American Medical Colleges – selected to attend
2010	Enhancing Rehabilitation Research in the South (ERRIS) Grant Writing Workshop – selected to attend
2012	Young Investigator – Femoroacetabular Impingement Research Symposium, American Academy of Orthopaedic Surgeons/Orthopaedic Research Society - selected to attend
2013	Early Career Reviewer Program, Center for Scientific Review, National Institutes of Health - accepted to participate
2013	8 th Annual Pain Consortium Symposium on Advances in Pain Research, National Institutes of Health - Selected Finalist for Mitchell Max Award
2014	Academic Medical Leadership Program for Physicians and Scientist Washington University School of Medicine - Selected to attend
2014	New Investigator Workshop on Advancing Arthritis Research – Center for Enhancing Activity and Participation among person with Arthritis (ENACT) – selected to attend

- 2015 Training in Grantsmanship for Rehabilitation Research (TIGRR) Grant Writing Workshop – selected to attend
- 2016 Helen Holzum Whalen Service Award, Eastern District, Missouri Physical Therapy Association
- 2017 Outstanding Service Award, Service to the Profession, Missouri Physical Therapy Association
- 2017 Northwestern University Department of Physical Therapy and Human Movement Sciences Alumni Association's Research Achievement Award
- 2022 William H. Harris, MD Award for manuscript of scientific merit, *J Orthop Res* (Co-author)

Editorial Responsibilities

Editorial Board Member

2018-2021 Journal of Orthopaedic & Sports Physical Therapy, Associate Editor

Grant reviewer:

- 2017-2020 NIH, NICHD, Function, Integration, and Rehabilitation Sciences Subcommittee
Ad Hoc Study Section Member
- 2017-2019 NIH, NICHD, Special Emphasis Panel, NCMRR Early Career Research Award
Ad Hoc Study Section Member
- 2018 NIH, NIBIB, Study Section for review Biomedical Technology Resource Center (BTRC)
- 2020-Present NIH, NICHD, Function, Integration, and Rehabilitation Sciences Subcommittee,
Initial Review Group Member
- 2023-Present NIH, NICHD, Function, Integration, and Rehabilitation Sciences Subcommittee,
Chair

Manuscript reviewer:

- *Manuscript reviewer for 15 peer-reviewed journals in the fields of rehabilitation and orthopaedics*
- 2009-Present Archives of Physical Medicine and Rehabilitation
- 2012-Present Journal of Orthopaedic & Sports Physical Therapy
- 2013-Present Clinical Biomechanics
- 2013-Present Physical Therapy Journal
- 2013-Present Clinical Orthopaedics and Related Research
- 2015-Present Journal of Athletic Training
- 2021-Present British Journal of Sports Medicine
- 2021-Present Musculoskeletal Science and Practice
- 2022-Present Journal of Orthopaedic Research

Abstract reviewer:

- 2009-2013 Section on Research (APTA)
- 2012-2013 Gait & Clinical Motion Analysis Society Annual Conference
- 2012-Present Musculoskeletal Research Symposium (WUSM)
- 2013-Present Orthopaedic Section (APTA)
- 2017 Orthopaedic Research Society, Midwest Musculoskeletal Workshop

Book reviewer:

- 2009 American College of Occupational and Environmental Medicine Practice Guidelines for Hip Pain

National Panels, Committees, Boards***American Physical Therapy Association***

1996-Present	Member
2000-Present	<u>Academy of Orthopaedic Physical Therapy (APTA)</u>
2007-2009	Finance Committee
2014-2017	Nominating Committee, Imaging Special Interest Group
2017-2021	Research Committee
2003-Present	<u>Academy of Physical Therapy Research (APTA)</u>
2013-2017	Awards Committee, Biomechanics Special Interest Group
2017-2019	Chair, Biomechanics Special Interest Group
2003-Present	<u>American Academy of Sports Physical Therapy (APTA)</u>
2012-Present	Hip Special Interest Group
1996-Present	Missouri Physical Therapy Association
2004-2007	Treasurer
2007-2008	President-Elect
2008-2011	President
2011-2012	Past President
2011-2013	Finance Committee
	<u>Eastern District (MPTA)</u>
2002-2005	Program Chair – Eastern District
2005-2007	Student Liaison – Eastern District
2005-2007	Chair – Eastern District
2005-2007	Chair – Task Force for Consumer Access

Other

2006-2012	Diagnosis Dialog, Defining the “x” in DxPT, Planning Committee
2006-Present	Task Force Clinical Practice Guidelines (Hip), Academy of Orthopaedic Physical Therapy
2014-Present	Member, Osteoarthritis Research Society International (OARSI)
2014-2017	National Quality Forum Musculoskeletal Steering Committee, Musculoskeletal Measure Endorsement and Maintenance Project
2017-2018	Voting Panel, Appropriate Use Criteria for <i>Management of Osteoarthritis of the Hip</i> . American Academy of Orthopaedic Surgeons
2017-2022	Awards Committee, Journal of Orthopaedic and Sports Physical Therapy
2017-2020	Primary Care and Chronic Illness Standing Committee Expert Reviewer, National Quality Forum
2017-Present	Major Extremity Trauma Research Consortium (METRC) Consortium Committee
2017-Present	Major Extremity Trauma Research Consortium (METRC) Science Committee
2017-Present	LRP Ambassador Program, NIH
2018-Present	International Hip-related Pain Research Network (IHiPRN)
2020-2022	Advisory Board Member, Journal of Orthopaedic and Sports Physical Therapy/Movement Science Media Board of Directors
2022-2024	Member at Large, Journal of Orthopaedic and Sports Physical Therapy/Movement Science Media Board of Directors
2022-2023	Chair, Search Committee for President of Journal of Orthopaedic and Sports Physical Therapy/Movement Science Media Board of Directors
2024-Present	Vice President, Journal of Orthopaedic and Sports Physical Therapy/Movement Science Media Board of Directors

Community Service Contributions

Community Activities:

- 1993-1994 Boys and Girls Club of Springfield, MO – Program Director
- 2000 “Exercises and Ergonomics for Work” Health and Wellness Day – Student Support Services, WUSM
- 2001-2002 Washington University Hilltop Campus Health Awareness Day
- 2002-2011 Physical Therapy Month, Program in Physical Therapy, WUSM
- 2003-2009 Mini-Medical School, WUSM
- 2003 Relay for Life Faculty Representative, Program in Physical Therapy, WUSM
- 2003-2011 Legislative Fitness Clinic – State Capital, Missouri Physical Therapy Association, Provided postural recommendations to members of Congress and their staff
- 2003-2010 The Academy of Science of St. Louis, Volunteer – Speakers for Science Program
- 2004-2007 Mentor, Alumni Dedicated to Assisting Physical Therapy Students (ADAPTS), Northwestern University Physical Therapy
- 2006 US Figure Skating Championships, Volunteer Physical Therapist
- 2006-2008 Lunch and Learn Series, Saint Louis Science Center, Coordinator and Presenter of on-going lectures on fitness-related topics
- 2007 Bike-Fit, EDMPTA
- 2007-2008 Garden Villas, Exercise for Seniors”
- 2012-2018 “Physical Therapist: Movement System Experts”, Pre-Medical Institute Washington University School of Medicine
- 2013-present Pedal the Cause, Participated in fundraising for cancer research performed in St. Louis, raised over \$27,000 to date
- 2015-2018 Bridge Coach, Two Degrees Program, Youth Learning Center
- 2018-present Honorary Chair, Sustainable Therapy Haiti
- 2016-present Help Our Student Travel (Host) Program, Northwestern University Feinberg School of Medicine – St. Louis Host.
- 2020-2021 Advisor, AP Capstone: Research at Nixa High School (Kelly Matney, Teacher), Student: Edward Eiche
- 2020-2021 Food delivery to local senior centers, Food Search (United Way)
- 2021-present Mentor, Missouri Early Professional Special Interest Group, APTA, Missouri chapter
- 2021-present Volunteer, Institute for Conservational Medicine, St. Louis Zoo
- 2024-2024 Volunteer, STL Go Marathon, Washington University

Media activities

- 2003 Safe Running Strategies, Health and Fitness, St. Louis Post Dispatch
- 2018 Injuries and Pain, Can We Do Better? Unleashing the Power of Movement, Venture Café
- 2021 Podcast episode: Exploring the MSCI for Clinical Experts Interested In Independent Research. *Clinical Appraisal*
- 2021 Podcast episode: Treating Hip-Related Groin Pain—Which Method Is Best? *Journal of Orthopaedic and Sports Physical Therapy Insights*

Major Invited Professorships and Lectureships

- 2001 “Osteoarthritis: The Spectrum of Care from the Prevention to Rehabilitation” Arthritis Foundation’s Fall Prevention Forum, St. Louis, MO
- 2005 “Diagnosis and Treatment of Movement System Impairments of the Knee” Alumni Day - Washington University Program in Physical Therapy, St. Louis, MO
- 2006 “Movement Impairment Syndromes as a Cause of Musculoskeletal Pain” The Missouri Pain Initiative, Lake of the Ozarks, MO

- 2007 “Anatomy and Orthopaedic Management of the Shoulder and Knee: From the Lab to the Clinic”, Learn 4 Research 2007 – Student Program, Washington University Program in Physical Therapy, St. Louis, MO
- 2008 “Diagnosis and Treatment of Movement System Impairment Syndromes: Lower Quarter Advanced Application”, Arizona Physical Therapy Association’s Professional meeting, Phoenix, AZ
- 2009 “Intra-articular Hip Disorders: Understanding Structure, Function and Participation” Northwestern University Physical Therapy and Human Movement Sciences, Chicago, IL
- 2012 “Proposed Risk Factors for Hip Osteoarthritis”, Alumni Day, Washington University Program in Physical Therapy, St. Louis, MO
- 2013 “Optimizing Post-Operative Rehabilitation and Return to Activity after FAI Procedures”, St. Louis Hip Skills Course, St. Louis, MO
- 2013 “Factors Influencing Rehabilitation Outcomes in Lower Extremity Conditions 1st Annual Orthopaedic Section Meeting, Orlando, FL
- 2013 “Rehabilitation Factors in Pre-arthritis Hip Disease”, NYPTA Annual Conference, Albany, NY
- 2015 “Rehabilitation of the Hip Preservation Patient”, Innovations in the Treatment of Hip and Knee Disorders – Department of Orthopaedic Surgery, St. Louis, MO
- 2017 “Clinical Practice Guidelines (CPG) for Physical Rehabilitation and Outcome Measures for Patients with Hip Fracture Developed as a Collaboration Between the Academy of Geriatric Physical Therapy, and the Orthopedic Section of the American Physical Therapy Association (APTA).” Pre-Congress Workshop, Fragility Fracture Network Global Congress, Malmo, Sweden
- 2017 “Recommendations for Physical Rehabilitation and Outcome Measures in Daily Clinical Practice After Hip Fracture”, 6th Annual Fragility Fracture Network Global Congress, Malmo, Sweden
- 2018 “Rehabilitation Factors in Prearthritic Hip Disorders”, Research Seminar, Northwestern University Physical Therapy & Human Movement Sciences, Chicago, IL
- 2018 “Hip Instability: What Is It and How Do I Manage It?” APTA Learning Center
- 2018 “Addressing Pain Problems Through the Use of Movement Science, Annual Orthopaedic Section Meeting, Baltimore, MD
- 2018 “Rehabilitation for Hip Related Groin Pain”, Ohio State Sports Medicine Hip Symposium, Columbus OH
- 2019 “Rehabilitation for Prearthritic Hip Disorders”, Midwest Orthopaedics at Rush, Chicago, IL
- 2019 “Advances in Physical Therapist-led Intervention for Hip Joint Pain in the Young to Middle Aged Adult”, Innovations in the Treatment of Hip & Knee Disorders, St. Louis, MO
- 2019 “Physical Therapy Management of Older Adults with Hip Fracture: Clinical Practice Guidelines”, BJH Department of Rehabilitation, St. Louis, MO
- 2020 “Movement System Factors in Pre-arthritis Hip Disorders”, Movement System Clinical Fellowship Symposium, St. Louis, MO
- 2020 “Research Funding Symposium Part 2: Perspectives from Funded Junior Physical Therapy Researchers”, Combined Sections Meeting (CSM), Denver, CO
- 2021 “Spotlight on Research: Hip Studies and Clinical Implications, Combined Sections Meeting (CSM), Orlando, FL
- 2021 “Hip-Related Groin Pain: Can Movement Advance Our Knowledge Beyond the Consensus?”, Combined Sections Meeting (CSM), Orlando, FL
- 2022 “Nonarthritic Hip Disorders, Round table”, The Ohio State University Hip Outcomes Team, Columbus, OH

- 2023 “Hip Dysplasia: It’s Not Just a Shallow Socket”, Combined Sections Meeting (CSM), San Diego, CA
- 2024 “A Diversity, Equity, Inclusion, and Belonging Blueprint Spanning Education, Practice, and Scholarship in a PT Program. APTA Combined Sections Meeting, Boston, MA.

Other Professional Presentations

Lecture and Demonstration presentations

“Diagnosis and Treatment of Movement System Impairment Syndromes Lower Quarter Advanced Application” (Adjunct Faculty)
 2003-2013 Kaiser Permanente Los Angeles Orthopaedic Manual Therapy Fellowship and Kaiser Permanente Los Angeles Movement Science Fellowship
 (Lecture/Demonstration format: 25 hours)

Lower Quarter Advanced Application” (Lecture and Skill instruction)

International

- 2002 Montreal, Quebec (16 hours)
 2002 Toronto, Ontario (32 hours)
 2007 Oxford, England (16 hours)
 2007 Frome, England (16 hours)
 2007 Edmonton, Alberta (8 hours)
 2016 Honolulu, HI, Japanese attendees (16 hours)
 2018 Cabo San Lucas, Mexico (6 hours)

National

- 2004 Ames, IA (16 hours)
 2004 San Francisco, CA (16 hours)
 2011 San Diego, CA (16 hours)
 2012 Visalia, CA (16 hours)
 2016 Honolulu, HI, (16 hours)

Introduction to Concepts and Application” (Lecture/Demonstration format)

International

- 2004 London, Ontario (16 hours)

National

- 2003 Urbana, IL (16 hours)
 2004 Portland, OR (16 hours)
 2007 Lake of the Ozarks, MO (16 hours)
 2010 Brighton, MI (16 hours)

Upper Quarter Advanced Application” (Lecture and Skill instruction)

International

- 2002 Montreal, Quebec (16 hours)
 2006 Ottawa, Ontario (16 hours)
 2007 Frome, England (16 hours)
 2007 Oxford, England (16 hours)

- 2003 “Tibiofemoral Rotation: A Case Report”, Department of Physical Therapy Research Seminar, St. Louis University
- 2005 “Diagnosis and Treatment of Movement System Impairments of the Knee”, APTA National Conference, Boston, MA
- 2005 “Movement Impairment System: Case Studies”, APTA National Conference, Boston, MA

- 2006 “Foot, Ankle and Knee: Special Focus on Diagnosis and Treatment”, SSM Rehab, St. Louis, MO
- 2006 “Introduction to Tissue Impairment Diagnosis”, APTA National Conference, Orlando, FL
- 2012 “Don’t Forget to be Hip: Looking at the Role of the Hip in Lumbar Spine Disorders”, APTA Combined Sections Meeting
- 2013 “Structural and Functional Considerations in the Rehabilitation of Young Active Adults with Intra-articular Hip Disorders.”, APTA Combined Sections Meeting, San Diego, CA
- 2014 “Adherence: An Important but Often Forgotten Determinant of Treatment Effectiveness”, APTA Combined Sections Meeting, Las Vegas, NV
- 2015 “Intra-articular, prearthritic hip disease: effectiveness of movement pattern training”, APTA Combined Sections Meeting, Indianapolis, IN
- 2015 “Intra-articular, prearthritic hip disease: effectiveness of movement pattern training”, MPTA Spring Meeting, St. Louis, MO
- 2015 “*You Make the Call: FAI (Femoroacetabular Impingement) or Not?*”, Lab Assistant 3rd Annual Orthopaedic Section Meeting, Orlando, FL
- 2015 “Rehabilitation Management of Common Chronic Diseases”, Barnes-Jewish Hospital, St. Louis, MO
- 2016 “Imaging and Physical Therapist Professional Education and Clinical Practice”, APTA Combined Sections Meeting, Anaheim, CA
- 2018 “Movement Pattern Training Improves Function in People with Prearthritic Hip Disorders”, Missouri Physical Therapy Association, Eastern District, St. Louis, MO
- 2018 “Rehabilitation for Femoroacetabular Impingement and Other Prearthritic Hip Disorders”, Northwestern University Physical Therapy & Human Movement Sciences Alumni Association, Chicago, IL
- 2018 “Task-Specific Movement Training: A Novel Treatment Approach for Chronic Lower Extremity Pain”, APTA Combined Sections Meeting, New Orleans, LA
- 2018 “Reinterpreting the Role of Strength in Movement in Individuals with Hip Pain”, APTA Combined Sections Meeting, New Orleans, LA
- 2018 “Evidence-based Analysis of Movement of the Hip” WUPT Clinical Instructors Meeting, St. Louis, MO
- 2019 “Physical Therapy Management for Older Adults with Hip Fracture, APTA Combined Sections Meeting, Washington, D.C.
- 2019 “Rehabilitation for Pre-arthritis Hip Disorders” St. Louis Hip and Knee Innovations Course, Washington University School of Medicine, St. Louis, MO
- 2020 “Lessons Learned: How to Design a Multi-Center Motion Analysis Study” *Conference Proceedings, Gait and Clinical Motion Analysis Society Annual Conference.*
- 2021 “Update Hip Research” Washington University Program in Physical Alumni Event, St. Louis, MO
- 2021 “The Way You Move” Co-sponsored by Sustainable Therapy and the Eastern District, APTA Missouri. Fundraiser for Sustainable Therapy
- 2021 “Clinical Practice Guidelines for Hip Fracture, Fragility Fracture Network Webinar
- 2022 “OSU Hip Outcome Team Q3 Meeting/Panel Discussion. The Ohio State University, Columbus, OH
- 2022 “Hip-Related Groin Pain: Can Movement Advance Our Knowledge Beyond the Consensus. NexusMotion, Virtual.

Consulting Relationships and Board Memberships

2002-2006 Northwestern University Physical Therapy Alumni Association Board of Directors

2004-2006 Nominating Committee

2005-2006 Member at Large

2021-2023 Consultant – Hip arthroscopy clinical practice guidelines, The Ohio State University Wexner Medical Center Sports Medicine

Research

ORCID Identifier: 0000-0003-4274-1651

Past Funding

2006-2008 **Source: NIH-NICHD, NCMRR, R01 HD047709-01**
 Role: Co-Investigator
 Title: "Classification-Directed Treatment of Low Back Pain"
 Principal Investigator: Van Dillen, L.R.
 Amount: \$351,168

2006-2010 **Source: NIH-NCRR, 1 UL1 RR 024992-01**
 Role: Scholar
 Title: Washington University Institute of Clinical and Translational Sciences Research Education, Training and Career Development
 Principal Investigator: Polonsky, K.S.
 Amount: \$6,000

2007-2008 **Source: Mallinckrodt Institute of Radiology**
 Role: Principal Investigator
 Title: "Ultrasonography of Intra-Articular Disease of the Hip"
 Amount: \$1,500

2008-2010 **Source: Program in Physical Therapy**
 Role: Principal Investigator
 Title: "Ultrasonography of Intra-Articular Disease of the Hip"
 Amount: \$1,500

2008-2010 **Source: Mallinckrodt Institute of Radiology**
 Role: Principal Investigator
 Title: "Investigation of Proposed Risk Factors for Intra-Articular Hip Disorders"
 Amount: \$13,500

2008-2013 **Source: NIH-NICHD, NCMRR, NINDS, K12 HD055931**
 Role: Scholar
 Title: Multicenter Career Development Program for Physical and Occupational Therapists
 Principal Investigator: Mueller, M.J.
 Amount: \$4,626,510 total; Scholar amount \$95,580/year for 3 years

2010-2013 **Source: ICTS JIT Core Usage Funding**
 Role: Co-investigator
 Title: Novel tools for assessing the treatment response to antibiotic therapy in vertebral osteomyelitis: an exploratory study.
 Principal Investigator: Marschall J, MD

- 2011-2015 **Source: NIH-NICHD, NCMRR, K23HD067343**
Role: Principal Investigator
Title: Rehabilitation Factors in Pre-Arthritic Hip Disease
Amount: \$427,761
- 2014-2015 **Source: Pediatric Orthopaedic Society of North America**
Role: Co-investigator
Title: Clinical planning grant on motion analysis in femoroacetabular impingement
Principal Investigator: Podeszwa, D, MD
- 2014-2016 **Source: NIH-NIAMS, L30 AR066989**
Role: Principal Investigator
Title: Loan Repayment Program
- 2016-2017 **Source: NIH-NIAMS, L30 AR066989**
Role: Principal Investigator
Title: Loan Repayment Program Renewal
- 2016-2018 **Source: NIH-NICHD, NCMRR, R21HD086644**
Role: Co-Principal Investigator
Title: Movement Pattern Training in People with Intra-articular, Prearthritic Hip Disorders
Amount: \$423,377
- 2016-2019 **Source: Department of Defense**
Role: Collaborator
Title: METRC REPAIR: Rehabilitation Enhanced by Partial Arterial Inflow Restriction
Stinner DJ, MacKenzie EJ; McAndrew-Project PI of Subc from JHU
- 2017-2018 **Source: ICTS JIT Core Usage Funding**
Role: Principal Investigator
Title: Mechanisms Underlying Movement Pattern Training in People with Prearthritic Hip Disorders
Amount: \$10,000
- 2017-2018 **Source: Ohio Physical Therapy Association**
Role: Mentor
Title: Posture and Movement Training for Persons with Non-Arthritic Hip Disease
Principal Investigator: Lindsey Brown, PT, DPT
- 2017-2019 **Source: Foundation for Physical Therapy Research**
Role: Principal Investigator
Title: Movement Pattern Training in People with Intra-articular, Prearthritic Hip Disorders
Amount: \$40,000

- 2017-2020 **Source: Orthopaedic Research and Education Foundation**
 Role: Consultant
 Title: Mobile Weight-Support (MWeST): A Prospective, Randomized Controlled Trial for Mobility after Geriatric Lower Extremity Fracture
 Principal Investigator: Miller, A, MD
- 2018-2019 **Source: The Foundation for Barnes-Jewish Hospital/Clinical and Translational Research Funding Program**
 Role: Principal Investigator
 Title: Movement System Impairments in Patients with Lower Urinary Tract Symptoms
 Amount: \$48,000
- 2019-2020 **Source: Foundation for Physical Therapy Research**
 Role: Principal Investigator
 Title: Comparison of Movement Pattern Training and Manual Therapy for Pre-arthritis Hip disorders: A Pilot Randomized Clinical Trial
 Amount: \$240,000
- 2020-2021 **Source: Big Ideas, Institute for Informatics, WUSM**
 Role: Contributor
 Title: Integration of mobile health (mHealth) based behavioral health treatment (BHT) with clinical care and the electronic medical record (EMR)
 Amount: \$50,000
 Principle Investigator: Abby Cheng, MD
- 2019-2022 **Source: ICTS JIT Core Usage Funding**
 Role: Principal Investigator
 Title: Sustained Effects of Rehabilitation On Joint Structure In People With Prearthritic Hip Disorders
 Amount: \$9,992.50
- 2018-2023 **Source: NIAMS, NIH**
 Role: Collaborator
 Title: Muscle Geometry and its Influence on Function in Patients with Development Dysplasia of the Hip
 Principal Investigator: Michael Harris, PhD
- 2021-2023 **Source: Foundation for Physical Therapy Research**
 Competitive Renewal
 Role: Principal Investigator
 Title: Comparison of Movement Pattern Training and Manual Therapy for Pre-arthritis Hip disorders: A Pilot Randomized Clinical Trial
 Amount: \$120,000
- 2022-2023 **Source: NIH-NICHD, NCMRR, K12 HD055931-15**
 Role: Principal Investigator
 Title: Multicenter Career Development Program for Physical and Occupational Therapy
 Amount: \$3,867,387

Current funding

- 2022-2024 **Source: NIH-NINR, R21NR020379**
 Role: Co-Investigator
 Title: Assessing multifactorial etiology of IC/BPS using a novel PFM-Hip-Trunk muscle network analysis
 Principle Investigator: Yingchun Zhang, PhD
 Amount: \$442,070
- 2022-2027 **Source: NIH-NICHD, NCMRR, R25 HD109110**
 Role: Executive Committee/Program Faculty
 Title: Turning the TiDe: Training Diverse Clinical Scientists in Rehabilitation Research
 Principle Investigator: Elizabeth Skidmore, OT, PhD; Gregory Hicks, PT, PhD
 Amount: \$826,345
- 2023-2025 **Source: NIH-NINR, R21HD112985**
 Role: Co-Investigator
 Title: Assessing Multifactorial Etiology of Overactive Bladder Using a Novel PFM-HIP-TRUNK Muscle Network Analysis
 Principle Investigator: Theresa Spitznagle, DPT, WCS, Yingchun Zhang, PhD
 Amount: \$440,650

Trainee/Mentee/Sponsorship Record:**Trainee Advisement****Graduate Students (PhD and Postdoctoral)**

- 2010-2011 Priscilla Weaver, DPT, PhD, PCS
 Role: Advisory Committee Member, Indiana University
 Outcome: Program Director, Physical Therapy, St. Ambrose University
- 2015-2021 Myra Meekins, DPT, PhD, OCS, FAAOMPT
 Role: Dissertation Committee Member, Rocky Mountain University
 Title: The Effect of Chronic Low Back Pain and Trunk Stabilization on Gluteus Medius Activation During Hip Abduction and Hip Abduction - Lateral Rotation
 Outcome: Assistant Professor, The University of Tennessee Health Science Center
- 2016-2020 Stefanie Foster, PT, PhD
 Role: Primary Mentor, Washington University Movement Science Program
 Title: Movement System Impairments in Patients with Lower Urinary Tract Symptoms
 Outcome: Graduated
- 2017-2019 Lindsey Brown, DPT, PhD
 Role: Dissertation Committee Member, The Ohio State University
 Title: Informed Decisions and Patient Outcomes: An Interdisciplinary Approach to Hip Pain
 Outcome: Post-doctoral Research Fellow, U.S. Department of Veterans Affairs

- 2017-2021 Ke Song
 Role: Dissertation Committee Member, Washington University Mechanical Engineering & Materials Science
 Title: Subject-specific Musculoskeletal Modeling of Hip Dysplasia Biomechanics
 Outcome: Postdoctoral Research, University of Pennsylvania School of Medicine
- 2022- Meenakshi Sundaram, MS, PT
 Role: Dissertation Committee Member, School of Health and Rehabilitation Sciences, Dept of Physical Therapy, University of Pittsburgh
 Title: TBD
 Outcome:
- 2023-2024 Molly Shepherd, PhD Candidate
 Role: Dissertation Committee Member, Washington University Movement Science Program
 Title: Factors that Influence Loading in the Dysplastic Hip
 Outcome: Graduated

Graduate Students (Entry level DPT)

- 2012-2015 Jackie Hunt, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Bony Abnormalities of the Hip Joint: A New Comprehensive, Reliable and Radiation-Free Measurement Method Using Magnetic Resonance Imaging.
 Outcome: Poster presentation at professional meeting and published manuscript.
- 2013-2014 Davor Vasiljevic, PT, DPT, MSCI
 Role: Mentor, NIH TL1 Predoctoral Clinical Research Trainee, TL1RR024995
 Title: Three Dimensional Kinematics of Visually Classified Lower Extremity Movement Patterns During a Single Leg Squat Among People With Chronic Hip Joint Pain
 Outcome: Master of Science in Clinical Investigation, poster presentation at professional meeting and published manuscript.
- 2013-2016 Alex Uding, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Clinical Tests to Determine Femoral Version Category in People with Chronic Hip Joint Pain and Asymptomatic Controls
 Outcome: Poster presentation at professional meeting and published manuscript.
- 2014-2015 Eric Schmidt, PT, DPT, MSCI
 Role: Mentor, NIH TL1 Predoctoral Clinical Research Trainee, TL1RR024995
 Title: Dynamic Knee Valgus Kinematics and Their Relationship to Pain in Women with Patellofemoral Pain Compared to Women With Chronic Hip Joint Pain
 Outcome: Master of Science in Clinical Investigation, poster presentation at professional meeting and published manuscript.

- 2014-2017 Matt Mastenbrook, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Hip Abductor Muscle Compartment Volume and Strength Differences Between Women with Chronic Hip Joint Pain and Asymptomatic Controls
 Outcome: Poster presentation at professional meeting and published manuscript.
- 2015-2018 Trent Wiseman, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Ankle Dorsiflexion and 2D Hip, Pelvic, and Trunk Kinematics in Patients with Chronic Hip Joint Pain During Forward Step-Down.
 Outcome: Poster presentation at professional meeting
- 2017-2020 Kristen Koch, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Comparison between Movement Pattern Training and Strengthening on Muscle Volume and Strength for Hip Pain
 Outcome: Poster presentation at professional meeting and published manuscript.
- 2018-2018 Ji Xuanran
 Internship, Biostatistics
- 2018-2018 Cassie Davis, BA
 Biomedical Innovation Program (BMIP), Biomedical Engineering (WUSTL)
- 2019-2022 Taylor Burlis, PT, DPT
 Role: Mentor for Research Assistantship
 Title: Musculoskeletal impairments among Women with Lower Urinary Tract Symptoms
 Outcome: Poster presentation at professional meeting
- 2021-2023 Ramya Palaniappan
 Role: Mentor, NIH TL1 Predoctoral Clinical Research Trainee
 Title: Comparison between Movement Pattern Training and Strengthening on Kinematics and Kinetics in Patients with Chronic Hip-related Groin Pain
 Outcome: Manuscript published.
- 2021-Present Cameron Swick, SPT
 Role: Mentor for Research Assistantship
 Title: Platform presentation at 2 professional meetings, manuscript in preparation
- 2022-Present Lauren Froehlich, SPT
 Role: Mentor for Research Assistantship
 Title: Abstract for professional meeting and manuscript in preparation
- Advisor for Capstone Project (Post-Professional DPT)**
- 2004 Marcy Schulz, PT, DPT
 Title: Physical Therapy Management Following Meniscal Debridement

- 2007 Gregory Holtzman, PT, DPT
Title: Anterior Knee Pain Secondary to Patella Alta: A Critical Review and Case Study
Outcome: Poster presentation at professional meeting and published manuscript.
- 2008 Jennifer C. Hoffman, PT, DPT
Title: Taping vs. Bracing for Patellar Glide – Which is More Effective
- 2009 Cheryl Smith, PT, DPT
Title: Diagnosis and Treatment of Two Patients with Hip Pain Using the Movement System Impairment Classification System”
Outcome: Poster presentation at professional meeting
- 2009 Gary Sutton, PT, DPT
Title: Influence of Hip Muscle Control in Decreasing Symptoms, Improving Function in a Patient with Osteoarthritis of the Knee.
- 2011 Sylvia Czuppon, PT, DPT
Title: Physical and Psychological Factors Associated with Return to Sport Following Anterior Cruciate Ligament (ACL) Reconstruction
Outcomes: Poster presentation at professional meeting and published manuscript.
- 2012 Randy Raugh, PT, DPT
Title: The Effect of Physical Stress to Hyaline Cartilage in the Knee and Implications for Physical Therapy
- 2013 Steve Olsen, PT, DPT
Title: The Effect of Decrease in BMI on Knee Pain and Function Following Aggressive Fitness Programs
- 2014 Mike Horan, PT, DPT
What are the Effect of General Lower Extremity Strengthening, Quadriceps Strengthening, Hip Strengthening, and Motor Pattern Training on Pain Scores for the Treatment of Individuals with Patellofemoral Pain?: A Literature Review.”

Advisor for Independent Study and Independent Readings (Post-Professional DPT)

- 2003 Melissa Stevens, PT, DPT
Title: Treatment of a Severe Quadriceps Laceration: A Case Study Based on the Muscle Physiology to Regain Strength and Functional Mobility
- 2005 Darren Bass, PT, DPT
Title: Comparison of Rehab Outcomes for Postoperative Anterior cruciate Ligament Surgeries Via Various Surgical Techniques
- 2006 Brigitte Cutler, PT, DPT
Title: Radiological MR Imaging Studies, Low Back Biomechanics and Low Back Pain

- 2006 Brigitte Cutler, PT, DPT
Title: Spine Surgery: The Physical Therapy Perspective
- 2006 Karen Krochina, PT, DPT
Title: The Effects of Knee Rotation in the Frontal and Transverse Planes on Knee Pain and Pathology.

Mentor for Clinical Research:

- 2011-2020 Sylvia Czuppon, PT, DPT, OCS, Sports-specific injuries
2017-2020 Kate Glaws, PT, DPT, SCS, Hip-related groin pain
The Ohio State University
2018-2023 Lauren Mills, PT, DPT, SCS, Risk factors for athletic injuries
2021-Present Becky Demargel, PT, DPT, Factors associated with hip-specific function

Mentor for Clinical Track Faculty

- 2024-Present Megan Burgess, PT, DPT

Advisor for Clinical Fellowship in Diagnosis & Management of Movement Impairment Syndromes, In-Residence and Regional Fellows

- 2008-2014 Use of imaging in clinical practice
2020-Present Rehabilitation for Hip Conditions

Bibliography

Original, peer reviewed articles in referred journals

1. **Harris-Hayes M**, Wendl P, Sahrmann SA, Van Dillen LR. Does tibiofemoral joint movement affect passive hip rotation range of motion? *Physiotherapy Theory and Practice*. 2007;23(6):315-324. PubMed PMID: 18075905.
2. Clohisy JC, Knaus ER, Hunt DM, Pashos GE, **Harris-Hayes M**, Prather H, Leshner J. Clinical presentation of patients with symptomatic anterior hip impingement. *Clinical Orthopaedics & Related Research*. 2009;467:638-644. PMID: [PMC2635448](#)
3. **Harris-Hayes M**, Van Dillen LR. The inter-tester reliability of examiners classifying low back pain problems based on the movement system impairment classification system. *Physical Medicine and Rehabilitation*. 2009;1(2):117-126. PMID: [PMC2752279](#)
4. Prather H, **Harris-Hayes M**, Hunt DM, Steger-May K, Mathew V, Clohisy JC. Reliability and agreement of hip range of motion and provocative physical examination tests in asymptomatic volunteers. *PM R*. 2010 Oct;2(10):888-95. doi: 10.1016/j.pmrj.2010.05.005. Erratum in: *PM R*. 2011 Mar;3(3):286. PMID: 20970757; PMID: PMC3438506.
5. **Harris-Hayes M**, Holtzman GW, Earley JA, Van Dillen LR. Development and preliminary reliability testing of an assessment of patient independence in performing a treatment program: standardized scenarios. *J Rehabil Med*. 2010 Mar;42(3):221-7. doi: 10.2340/16501977-0505. PMID: 20411216; PMID: PMC3574865.
6. Hoffman SL, Johnson MB, Zou D, **Harris-Hayes M**, Van Dillen LR. Effect of classification-specific treatment on lumbopelvic motion during hip rotation in people with low back pain. *Man Ther*. 2011 Aug;16(4):344-50. doi: 10.1016/j.math.2010.12.007. Epub 2011 Jan 20. PMID: 21256073; PMID: PMC3095730.
7. **Harris-Hayes M**, Steger-May K, Pashos G, Clohisy JC, Prather H. Stride activity level in young and middle-aged adults with hip disorders. *Physiotherapy Theory and Practice*. 2012;5:333-343. PMID: [PMC3586766](#).

8. Hunt D, Prather H, **Harris-Hayes M**, Clohisy JC. Clinical outcomes analysis of conservative and surgical treatment of patients with clinical indications of pre-arthritis, intra-articular hip disorders. *Physical Medicine and Rehabilitation*. 2012;4:479-487. PMID: [PMC3594845](#).
9. Holtzman G, Harris-Hayes M, Hoffman SL, Zou D, Edgeworth RA, Van Dillen LR. Clinical examination procedures to determine the effect of axial decompression on low back pain symptoms in people with chronic low back pain. *J Orthop Sports Phys Ther*. 2012 Feb;42(2):105-13. doi: 10.2519/jospt.2012.3724. PMID: 22027267; PMID: PMC3628684.
10. Klein SE, Dale AM, **Harris-Hayes (Hayes) M**, Johnson JJ, McCormick JE, Racette BA. Clinical presentation and self-reported patterns of pain and function in patients with plantar heel pain. *Foot & Ankle International*. 2012;33(9):693-698. PMID: [PMC4083061](#)
11. *Kuhn M, **Harris-Hayes M**, Steger-May K, Pashos G, Clohisy JC. Total hip arthroplasty in patients 50 years or less: Do we improve activity profiles? *Journal of Arthroplasty*. 2013;28(5):872-876. PMID: [PMC3932739](#).
12. *Czuppon S, Racette BA, Klein SE, **Harris-Hayes M**. Variables Associated with Return to Sport Following Anterior Cruciate Ligament Reconstruction: A Systematic Review. *British Journal of Sports Medicine*. 2014;48(5):356-64. PMID: [PMC3975129](#).
13. **Harris-Hayes M**, Willis AW, Klein SE, Czuppon SC, Crowner B, Racette BA. Relative Mortality in United States Medicare Beneficiaries with Parkinson Disease and Hip and Pelvic Fractures. *Journal of Bone and Joint Surgery Am*. 2014;96(4):e27. PMID: [PMC3918936](#).
14. ***Harris-Hayes M**, Steger-May K, Koh C, Royer NK, Graci V, Salsich GB. Classification of Lower Extremity Movement Patterns Based on Visual Assessments: Reliability and Correlation to Two Dimensional Video Analysis. *Journal of Athletic Training*. 2014;49(3):304-310. PMID: [PMC4080603](#).
15. ***Harris-Hayes M**, Commean PK, Patterson JD, Clohisy JC, Hillen TJ. Bony abnormalities of the hip joint: a new comprehensive, reliable and radiation-free measurement method using magnetic resonance imaging. *Journal of Hip Preservation Surgery*. 2014;1:62-70. PMID: [PMC4280561](#).
16. ***Harris-Hayes M**, Mueller MJ, Sahrman Sa, Bloom NJ, Steger-May K, Clohisy JC, Salsich GB. Persons with chronic hip joint pain exhibit reduced hip muscle strength. *Journal of Orthopaedic and Sports Physical Therapy*. 2014;44:890-898. PMID: [PMC4216739](#).
17. *Neppe JJ, Thomason KM, An TW, **Harris-Hayes M**, Clohisy JCC. The utility of biomarkers for assessing the pathophysiology of hip osteoarthritis: a systematic review. *Clinical Orthopaedics and Related Research*. 2015;473:1683-1701. PMID: [PMC4385333](#).
18. ***Harris-Hayes M**, Czuppon S, Van Dillen LR, Steger-May K, Sahrman SA, Schootman M, Salsich GB, Clohisy JC, Mueller MJ. Movement pattern training to improve function in people with chronic hip joint pain: a feasibility randomized clinical trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2016;46:452-461. PMID: [PMC4889512](#)
19. Van Dillen LR, Norton BJ, Sahrman SA, Evanoff BA, **Harris-Hayes M**, Holtzman GW, Early J, Chou I, Strube MJ. Efficacy of classification-specific treatment and adherence on outcomes in people with chronic low back pain. A one-year follow-up, prospective, randomized, controlled clinical trial. *Manual Therapy*. 2016;24:52-64. PMID: [PMC4921225](#)
20. *Czuppon S, Prather H, Hunt DM, Bloom NJ, Clohisy JC, Larsen R, **Harris-Hayes M**. Gender-dependent differences in hip range of motion and impingement testing in asymptomatic college freshman athletes. *PMR*. 2017; 9(7):660-667. PubMed PMID: 27840297; PubMed Central PMCID: [PMC5425325](#).
21. *Mastenbrook MJ, Commean PK, Hillen TJ, Salsich GB, Meyer GA, Mueller MJ, Clohisy JC, **Harris-Hayes M**. Hip abductor muscle compartment volume and strength differences between women with chronic hip joint pain and asymptomatic controls. *Journal of Orthopaedic and Sports Physical Therapy*. 2017;47:923-930. PMID: [PMC5991486](#)

22. ***Harris-Hayes M**, Salsich GB, Steger-May K, Clohisy JC, Van Dillen LR, Schootman M, Czuppon S, Commean PK, Hillen TJ, Sahrmann SA, Mueller, MJ. Reduced hip adduction is associated with improved function after movement pattern training in young people with chronic hip joint pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2018;48:316-324. PMID: [PMC5993213](#)
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26. *Vasiljevic D, Salsich GB, Snozek D, Aubin BG, Foster, SN, Mueller MJ, Clohisy JC, **Harris-Hayes M**. Three dimensional kinematics of visually classified lower extremity movement patterns during a single leg squat among people with chronic hip joint pain. *Physiother Theor Pract*. 2020;36:5, 598-606, PMID: [PMC6314906](#)
27. ***Harris-Hayes M**, Hillen TJ, Commean PK, Harris, MD, Mueller MJ, Clohisy JC, Salsich GB. Hip kinematics during single leg tasks in people with and without hip-related groin pain and the association among kinematics, hip muscle strength and bony morphology. *J Orthop* doi.org/10.1093/ptj/pzaa028 *Sports Phys Ther*. 2020;50:243-251. PMID: [PMC7196020](#).
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29. ***Harris-Hayes M**, Steger-May K, Bove A, Foster SN, Mueller MJ, Clohisy JC, Fitzgerald GK. Movement pattern training compared with standard strengthening and flexibility among patients with hip-related groin pain: results of a pilot multicenter randomised clinical trial. *BMJ Open Sport & Exercise Medicine*. 2020;6:e000707/ PMID: [PMC7254120](#).
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34. ***Harris-Hayes M**, Steger-May K, M Bove A, Mueller MJ, Clohisy JC, Fitzgerald GK. One-Year Outcomes Following Physical Therapist-led Intervention for Chronic Hip-Related Groin Pain: Ancillary Analysis of a Pilot Multicenter Randomized Clinical Trial. *J Orthop Res*. 2021;1-10. doi: 10.1002/jor.24985. PMID: [PMC8285461](#).

35. *Erbes NA, Foster SN, **Harris-Hayes M**, Spitznagle TM. Movement Impairments in Women with and without Urinary Urgency/Frequency. *Journal of Women's Health Physical Therapy*. 2021;45:164-173. PMID: [PMC8741169](#).
36. Brown-Taylor L, **Harris-Hayes M**, Foraker R, Vasileff W, Glaws K, Di Stasi S. Treatment decisions after interdisciplinary evaluation for non-arthritis hip pain: a randomized controlled trial. *Physical Medicine and Rehabilitation*. 2021;1-12. DOI: 10.1002/pmrj.12661. [PMCID: PMC8712617](#).
37. Brown-Taylor L, Pendley C, Glaws K, Vasileff WK, Ryan J, **Harris-Hayes M**, Di Stasi S. Associations Between Movement Impairments and Function and the Influence of Provider Recommendations on Patients' Decisions to Pursue Physical Therapy. *Physical Therapy Journal*. 2021;1;101(9) PMID: [PMC8459885](#)
38. Harris MD, Shepherd MC, Song K, Gaffney BMM, Hillen TJ, **Harris-Hayes M**, Clohisy JC. The Biomechanical Disadvantage of Dysplastic Hips". *Journal of Orthopaedic Research*. 2021;1-10. [PMCID: PMC8858333](#).
39. *Koch K, Semciw AI, Commean PK, Hillen TJ, Fitzgerald GK, Clohisy JC, **Harris-Hayes M**. Comparison between Movement Pattern Training and Strengthening on Muscle Volume, Muscle Fat and Strength in Patients with Hip-related Groin Pain. *Journal of Orthopaedic Research*. 2021;1-12. PMID: [PMC8825882](#)
40. *Foster SN, Spitznagle TM, Tuttle LJ, Lowder JL, Sutcliffe S, Steger-May K, Ghetti C, Wang J, Burlis T, Meister N, Mueller MJ, **Harris-Hayes M**. Pelvic Floor Mobility measured by Transperineal Ultrasound Imaging in Women with and without Urgency and Frequency Predominant Lower Urinary Tract Symptoms. *Journal of Women's Health Physical Therapy*. 2022;46:100-108. PMID: [PMC9216208](#)
41. Payne ER, Harris MD, **Harris-Hayes M**, Nahal C, Kamenaga T, Clohisy JC, Pascual-Garrido, C. Greater Hip Abductor Size in Pre-Arthritic Patients with Developmental Dysplasia of the Hip vs. Femoroacetabular Impingement. *Journal of Orthopaedic Research*. 2023;41:852-861. DOI: [10.1002/jor.25426](#)
42. Houston M, Dias N, Peng Y, Spitznagle T, **Harris-Hayes M**, Lai HH, Zhang Y. Gamma-band Inter-muscular Connectivity is Associated with Increased Neural Drive to Pelvic Floor Muscles in Women with Interstitial Cystitis/Bladder Pain Syndrome. *Journal of Urology*. 2023;210:1-6 DOI: [10.1097/JU.0000000000003554](#)
43. **Harris-Hayes M**, Zorn P, Steger-May K, Burgess MM, DeMargel RD, Kuebler S, Clohisy JC, Haroutounian S. Comparison of Joint Mobilization and Movement Pattern Training for Hip-related Groin Pain: A Pilot Randomized Clinical Trial. *Physical Therapy Journal*. 2023;103:1-13. doi:10.1093/ptj/pzad111. PMID: [PMC10683042](#)
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45. *Palaniappan R, Harris MD, Steger-May K, Bove AM, Fitzgerald GK, Clohisy JC, **Harris-Hayes M**. Comparison between Movement Pattern Training and Strengthening on Kinematics and Kinetics in Patients with Chronic Hip-related Groin Pain. *Journal of Applied Biomechanics*. J Appl Biomech. 2023 Nov 8:1-7. doi: 10.1123/jab.2022-0304.
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47. Probst DT, Sookchoff MF, **Harris-Hayes M**, Prather H, Lipsey KL, Cheng AL. What is the Rate of Response to Non-operative Treatment for Hip-Related Pain: A Systematic Review and Meta-analysis. *J Orthop Sport Phys Ther*. 2023;53:286-306. PMID: [PMC10176100](#).

48. **Harris-Hayes M**, Zorn P, Steger-May K, Buss J, Burgess MM, DeMargel RD, Clohisy JC, Haroutounian S. Comparison of Joint Mobilization and Movement Pattern Training for Hip-related Groin Pain: Ancillary Analysis to Assess 12 Month Outcomes of a Pilot Randomized Clinical Trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2023 Nov 4;103(11):pzad111. PMID: [PMC10683042](#)
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Case Reports

1. **Harris-Hayes M**, Sahrman SA, Van Dillen LR. Classification, treatment, and outcomes of a patient with lumbar extension syndrome. *Physiotherapy Theory and Practice*. 2005;21(3):181-196. PubMed PMID: 16389699.
2. **Harris-Hayes M**, Sahrman SA, Norton BJ, Salsich GB. Diagnosis and management of a patient with knee pain using the movement system impairment classification system. *Journal of Orthopaedic and Sports Physical Therapy*. 2008;38(4):203-213. PubMed PMID: 18434664.
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Reviews, Chapters and Editorials

1. Desphande AJ, **Harris-Hayes M**, Schootman M. Epidemiology of diabetes and diabetes-related complications. *Physical Therapy*. 2008;88(11):1254-1264. PMID: PMC3870323.
2. **Harris-Hayes M**, Van Dillen LR. Relationship between the hip and low back pain in athletes who participate in rotation-related sports. *Journal of Sport Rehabilitation*. 2009;18:60-75. PMID: PMC2699456.
3. Cibulka MT, White DM, Woehrl J, **Harris-Hayes M**, Enseki K, Fagerson TL, Slover J, Godges JJ. Hip pain and mobility deficits--hip osteoarthritis: clinical practice guidelines linked to the international classification of functioning, disability, and health from the orthopaedic section of the American Physical Therapy Association. *J Orthop Sports Phys Ther*. 2009 Apr;39(4):A1-25. doi: 10.2519/jospt.2009.0301. PMID: 19352008; PMID: PMC3963282.
4. ***Harris-Hayes M**, Royer NK. Relationship of acetabular dysplasia and femoroacetabular impingement to hip osteoarthritis: a focused review. *Physical Medicine and Rehabilitation*. 2011 Nov;3(11):1055-1067.e1. PMID: [PMC3427648](#).
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