

## Curriculum Vitae

**DATE:** July, 2024

**NAME:** **LINDA R. VAN DILLEN, Ph.D., P.T., F.A.P.T.A.**

**CONTACT INFORMATION:**

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**PRESENT POSITION:** 2013-Present, Professor, Physical Therapy and Orthopaedic Surgery  
2018-Present, Director, Research Division  
Program in Physical Therapy  
Washington University School of Medicine  
St. Louis, Missouri

**EDUCATION:** **University of Missouri/Columbia**  
Columbia, Missouri  
B.S. in Physical Therapy  
Minor: Biology  
1979

**Washington University**  
St. Louis, Missouri  
M.H.S. in Physical Therapy  
1985

**Washington University**  
St. Louis, Missouri  
Ph.D. in Experimental Psychology  
Department: Psychological and Brain Sciences  
Laboratory: Attention, Perception and Motor Control  
Advisor: Richard A. Abrams, PhD  
1994

**ACADEMIC POSITIONS / EMPLOYMENT:**

<u>Position</u>	<u>Institution</u>	<u>Dates</u>
Staff Physical Therapist	<b>Irene Walter Johnson Institute of Rehabilitation</b> Neurology Division, Physical Therapy Washington University School of Medicine St. Louis, Missouri	1980-1981
Staff Physical Therapist (part-time)	<b>Home Rehabilitation Associates</b> Home Health St. Louis, Missouri	1981-1982
Senior Physical Therapist	<b>Irene Walter Johnson Institute of Rehabilitation</b> Neurology Division, Physical Therapy Washington University School of Medicine St. Louis, Missouri	1981-1985
Lecturer (as needed)	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	1981-1994
Supervisor	<b>Irene Walter Johnson Institute of Rehabilitation</b> Neurology Division, Physical Therapy Washington University School of Medicine St. Louis, Missouri	1985-1988
Graduate Student Research Assistant	<b>Washington University</b> Perceptual, Attention and Motor Control Laboratory St. Louis, Missouri	1988-1994
Teaching Assistant	<b>Washington University</b> Department of Psychology Quantitative Methods I & II: Doctoral-Level St. Louis, Missouri	1989-1991
Instructor	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	1994-1998
Assistant Professor	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	1998-2007
Assistant Professor	<b>Washington University School of Medicine</b> Orthopaedic Surgery St. Louis, Missouri	2006-2007

Associate Professor (with tenure)	<b>Washington University School of Medicine</b> Physical Therapy and Orthopaedic Surgery St. Louis, Missouri	2007-2013
Associate Director of Musculoskeletal Research, Research Division	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	2011-2016
Professor	<b>Washington University School of Medicine</b> Physical Therapy and Orthopaedic Surgery Faculty – Washington University Pain Center St. Louis, Missouri	2013-Present
Associate Director of Research, Research Division	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	2016-2018
Director of Research, Research Division	<b>Washington University School of Medicine</b> Physical Therapy St. Louis, Missouri	2018-Present

#### **TEACHING TITLE AND RESPONSIBILITIES:**

##### **Summary of Current Teaching Responsibilities**

###### **Professional Doctorate in Physical Therapy Curriculum: Renewal Curriculum**

- Evidence Thread Co-lead
- Lecture/discussion topics across Modules 1-8: Research methods; Musculoskeletal pain conditions – epidemiology, management and decision-making, evidence; Moderators of health; Journal Club
- DPT Trainee Coach

###### **Doctor of Philosophy in Movement Science Curriculum:**

- Pre-doctoral advisor
- Readings in Movement Science: advisor
- Independent Study in Movement Science: advisor
- Lab Practicum in Movement Science: advisor
- Program Seminar in Movement Science: lecturer for different seminars; course coordinator for biannual seminar “Funding Your Science”

##### **Summary of Previous Teaching Responsibilities**

###### **Professional Doctorate in Physical Therapy Curriculum: Legacy Curriculum**

- Diagnosis, Evidence and Analysis I: lecturer and lab assistant
- Diagnosis, Evidence and Analysis II: course coordinator, lecturer
- Diagnosis, Evidence and Analysis III: lecturer
- Professional Issues and Skills Development I, III: lab assistant

- Diagnosis and Management of Musculoskeletal Conditions II: lecturer
- Diagnosis and Management of Musculoskeletal Conditions III: lecturer
- Case Integration Lab I: lecturer and lab assistant
- Case Integration Lab III: lecturer
- Moderators of Health: lecturer

#### **Clinical Fellowship and Residency:**

- Weekend in-house educational session: lecturer
- Journal club organizer and discussant
- 2020 Fellowship symposium: lecturer
- Project: consultant

#### **Master's in Physical Therapy Curriculum:**

- Clinical Tests and Procedures in Physical Therapy: lecturer
- Diagnosis and Management of Neurological Conditions: course coordinator; lecturer
- Diagnosis and Management of Musculoskeletal Conditions: lecturer
- Topics in Pathokinesiology: lecturer
- Selected Conditions in Physical Therapy: lecturer
- Clinical Research Methods in Physical Therapy: lecturer
- Clinical Research Methods I and II: lecturer
- Clinical Diagnosis and Management II: lecturer
- Kinesiology: lab assistant
- Anatomy: lecturer
- Senior Seminar: instructor

#### **Post-Professional Doctorate in Physical Therapy Curriculum:**

- Diagnosis of Musculoskeletal Dysfunction: Spine I: lecturer
- Treatment of Musculoskeletal Dysfunction: Spine I: lecturer
- Case Studies in Musculoskeletal Dysfunction: Spine I: lecturer
- Essentials of Evidence-Based Clinical Practice I: lecturer
- Evidence Analysis and Synthesis: lecturer
- Evidence, Analysis, and Synthesis II: lecturer
- Diagnosis and Management of Clinical Conditions Lower Quarter: lecturer

#### **Doctor of Philosophy in Movement Science Curriculum:**

- Program Seminar in Movement Science: Coordinator of Grant Writing seminar; lecturer in other seminars
- Post-doctoral sponsor/mentor

#### **Workshops/Educational Courses Organized**

##### **Lecture/Demonstration Format:**

“Diagnosis and Treatment of Muscle Imbalances Associated with Musculoskeletal Pain”

Level II or Level III Workshop

Co-presenter - 16 hours; Responsible for 8 hours of content

Program in Physical Therapy, Washington University School of Medicine, St. Louis, Missouri

January 1987/1989/1990/1991; July 1990; April 1991

"Diagnosis and Treatment of Muscle Imbalances Associated with Musculoskeletal Pain"  
Level I and Level II Workshop and Level II  
Co-presenter - 8 hours; Responsible for 4 hours of content  
1988 Minnesota State Chapter Physical Therapy Meeting, Duluth, Minnesota  
April 1988

"Diagnosis and Treatment of Muscle Imbalances Associated with Musculoskeletal Pain"  
Level II Workshop  
Co-presenter - 16 hours; Responsible for 8 hours of content  
Bozeman Physical Therapy, Inc., Bozeman, MT  
July 1988

"Identification of Movement System Impairment Syndromes of the Lumbar Spine: Examination and Classification"  
Presenter - 3 hours of content  
UAW-Ford Rehabilitation Team Annual Meeting, Detroit, MI  
Physical Medicine and Rehabilitation Department, Johns Hopkins Medical School  
November 2005

"Assessment and Treatment of People with Low Back Pain"  
Presenter - 12 hours of content  
Human Posture and Movement Laboratory Research Group  
Program in Physical Therapy, University of Vermont Medical School, Burlington, Vermont  
February 2010

"Update on Studies of the Kinesiopathologic Model for Low Back Pain"  
Presenter – 1 hour of content  
Lower Quarter Movement System Impairment Syndromes Course  
Program in Physical Therapy, Washington University School of Medicine, St. Louis, Missouri  
October 2013

"Evidence for the Use of Movement in the Assessment and Treatment of People with Low Back Pain"  
Presenter – 1 hour of content  
Lower Quarter Movement System Impairment Syndromes Course  
Program in Physical Therapy, Washington University School of Medicine, St. Louis, Missouri  
October 2017

#### **UNIVERSITY, SCHOOL OF MEDICINE, AND HOSPITAL APPOINTMENTS AND COMMITTEES:**

- Coordinator, Research Seminars, Program in Physical Therapy, Washington University School of Medicine, 1994-2016
- Member, Committee on Academic Evaluation of Students, Program in Physical Therapy, Washington University School of Medicine, 1994-2010
- Member, Outpatient Rehabilitation Clinical Outcomes Committee, Barnes-Jewish Hospital, 1995-1998
- Member, Program Innovation Council, Program in Physical Therapy, Washington University School of Medicine, 1996-1997

- Member, Admissions Committee, Entry-Level Master's Program, Program in Physical Therapy, Washington University School of Medicine, 1997-2002
- Member, Master's-Level Student Research Award Committee, Program in Physical Therapy, Washington University School of Medicine, 1997-2002
- Ad Hoc Member, Human Studies Committee, Washington University School of Medicine, 1997-2011
- Member, Steven J. Rose Research Award Committee, Program in Physical Therapy, Washington University School of Medicine, 1997-Present
- Member, Research Advisory Council, Program in Physical Therapy, Washington University School of Medicine, 2003-2018
- Member, Faculty Search Committee, Program in Physical Therapy, Washington University School of Medicine, 2004-2006
- Member, Data and Safety Monitoring Committee, "Botulinum toxin effects on plantar ulcer recurrence" (NICHD R21 HD048972), Program in Physical Therapy, Washington University School of Medicine, 2004-2006
- Member, Diagnosis Dialog Planning Committee, Program in Physical Therapy, Washington University School of Medicine, 2006-2008
- Member, Planning Committee for Steven J. Rose Symposium and Alumni Day, Program in Physical Therapy, Washington University School of Medicine, 2008, 2012
- Member, Data and Safety Monitoring Committee, "Effect of weight-bearing exercise on people with diabetes and neuropathic feet" (NICHD R21 HD058938), Program in Physical Therapy, Washington University School of Medicine, 2010-2011
- Member, Physical Therapy Committee on Academic and Professional Evaluation of Students, Program in Physical Therapy, Washington University School of Medicine, 2010-Present
- Member, Steering Committee, Doctorate in Movement Science, Program in Physical Therapy, Washington University School of Medicine, 2010-Present
- Member, Center for Musculoskeletal Research, Department of Orthopaedic Surgery, Washington University School of Medicine, 2010-Present
- Member, Data and Safety Monitoring Committee, "Dose response of movement practice during stroke rehabilitation" (NICHD R01 HD068290), Program in Physical Therapy, Washington University School of Medicine, 2010-2014
- Member, Research Affairs Committee, Washington University School of Medicine, 2011-2015
- Chair, Research Division Mission Statement Committee, Program in Physical Therapy, Washington University School of Medicine, 2013
- Member, Research Division Metrics Committee, Program in Physical Therapy, Washington University School of Medicine, 2013-2014
- Chair, Movement System Graphic Committee, Program in Physical Therapy, Washington University School of Medicine, 2013-2014
- Member, Faculty Search Committee, Program in Physical Therapy, Washington University School of Medicine, 2014-2015
- Member, Strategic Planning Action Planning Subcommittee: Culture, November 2014
- Member, Strategic Planning Action Planning Subcommittee: Clinical Operations, November 2014
- Member, Strategic Planning Action Planning Subcommittee: Marketing of Research Component, January - February, 2015
- Member, Admissions Committee, Olin Fellowship for Women in Graduate Study, Washington University and the Monticello Foundation, January – April, 2015 and 2016
- Chair, Research Assistantship Committee, Program in Physical Therapy, Washington University School of Medicine, 2016-Present

- Member, Strategic Planning Committee, Program in Physical Therapy, Washington University School of Medicine, 2017
- Liaison, Institute for Clinical and Translational Sciences, Washington University School of Medicine, 2017-Present
- Chair, Research Advisory Committee, Program in Physical Therapy, Washington University School of Medicine, 2018-Present
- Chair, Steven J. Rose Research Award Committee, 2018-Present
- Member, Curriculum Renewal-Leadership Coalition, Program in Physical Therapy, Washington University School of Medicine, 2018-2019
- Chair, Faculty Search Committee (Research-Related Position), Program in Physical Therapy, Washington University School of Medicine, 2018-2019, 2020-2021, 2024-Present
- Co-Lead, Evidence Thread, Education Division Competency-Based Curriculum, Program in Physical Therapy, Washington University School of Medicine, 2021-present
- Member, Research Profiles Steering Committee, Washington University School of Medicine, 2021-present

#### **LICENSURE/REGISTRATION:**

- Missouri #01032, 1985-Present

#### **HONORS AND AWARDS:**

- Summa Cum Laude, BSPT, University of Missouri, Columbia 1979
- Magna Cum Laude, MHSPT, Washington University in St. Louis 1985
- Promotion of Doctoral Studies Award, Foundation for Physical Therapy 1993
- Early Career Women's Faculty Professional Development Seminar Association of American Medical Colleges 2000
- Research Award, Section on Women's Health, American Physical Therapy Association 2000
- Outstanding Faculty Mentor Certificate of Special Recognition, Doctorate Level Training, Washington University 2005
- Nominee, Marian Williams Award for Research in Physical Therapy, American Physical Therapy Association 2014, 2015
- Catherine Worthingham Fellow, American Physical Therapy Association 2016
- Helen Hislop Award for Outstanding Contributions to the Professional Literature, American Physical Therapy Association 2019
- John P. Maley Research Award, Academy of Physical Therapy Research, American Physical Therapy Association 2021
- Recognized Expert in Low Back Pain, Expertscape, <https://expertscape.com/ex/low+back+pain> 2021
- Rose Excellence in Research Award, Academy of Orthopaedic Physical Therapy, American Physical Therapy Association 2022
- 2022 Career Excellence in Biomechanics Research Award, Biomechanics Special Interest Group, Academy of Physical Therapy Research, American Physical Therapy Association 2022
- Dean's Impact Award, Washington University School of Medicine, Washington University in St. Louis 2024

**EDITORIAL RESPONSIBILITIES:****Manuscript Reviewer**

- Physical Therapy 1996-Present
- Journal of Orthopaedic and Sports Physical Therapy 1998-Present
- Archives of Physical Medicine and Rehabilitation 2002-Present
- Spine 2003-Present
- Clinical Biomechanics 2005-Present
- Manual Therapy 2014-Present
- Muscle and Nerve 2014-Present
- BMC Musculoskeletal 2015-Present
- The Spine Journal 2022-Present
- Annals of Medicine 2023-Present

**Editorial Review Board Member**

- Journal of Orthopaedic and Sports Physical Therapy 2003-2012

**NATIONAL AND INTERNATIONAL PANELS, COMMITTEES, AND BOARDS:****State (APTA)**

- Co-Chairman, Research Committee, Missouri Physical Therapy Association, 1986-1988

**National (APTA)**

- Content Expert Reviewer, U.S. Labor Department Occupational Information Network (O'Net) Database of Occupational Titles, Representative for American Physical Therapy Assn, March 2001
- Member, Research Committee, Orthopaedic Section, American Physical Therapy Assn, 2005-2009
- Member, Subcommittee on Differential Diagnosis, American Physical Therapy Programming Subcommittee, 2005-2013
- Member, Taskforce on Evaluation Database to Guide Effectiveness, Section on Research, American Physical Therapy Association, 2005-2006
- Member, Panel for Development of Clinical Practice Guidelines for Physical Therapy Treatment of Low Back Pain, Orthopaedic Section, American Physical Therapy Association, 2006-2012
- Moderator, Research Platform Sessions, Orthopaedic Section, American Physical Therapy Association, 2005-2008, 2010
- External Reviewer for Promotions Committee, Drexel University, Department of Physical Therapy and Rehabilitation Sciences, 2008
- External Reviewer for Promotions, University of Vermont, Department of Physical Therapy and Movement Science, 2008
- Moderator, Marilyn Gossman Graduate Student Research Symposium, Section on Research, American Physical Therapy Association, 2008-2014
- External Reviewer for Promotions, University of California San Francisco, Division of Biokinesiology and Physical Therapy, 2012
- Chair, Abstract Review and Gossman Symposium Review Committee, Section on Research, American Physical Therapy Association, 2008-2014
- External Reviewer for Promotions, Regis University, Dept. of Physical Therapy, 2014
- Expert Reviewer, Agency for Health Care Research and Quality Key Questions for Noninvasive

- Treatments for Low Back Pain, Representative of American Physical Therapy Association, 2014
- Moderator, Symposium, Research Retreat, Section on Research, American Physical Therapy Association, Providence, RI, 2015
- Member, Orthopaedic Section of American Physical Therapy Association Back Pain Working Group to Create Lumbar Module for Outcomes Registry, 2015-2017
- Member, Panel for Update of Clinical Practice Guidelines for Physical Therapy Treatment of Low Back Pain, Orthopaedic Section, American Physical Therapy Association, 2015-2020
- External Reviewer for Promotions, Michigan State University, Department of Orthopaedics, 2015
- External Reviewer for Promotions, University of Delaware, Department of Physical Therapy, 2016
- Content Expert, Planning Committee, 2018 Annual Orthopaedic Section Meeting, Orthopaedic Section of the APTA, 2017-2018
- Expert Reviewer, Pelvic Girdle Pain Postpartum Guideline Development Team Document, APTA Taskforce, 2019
- External Reviewer for Promotions, Ohio State University, Department of Physical Therapy, 2022

### **National (other)**

- Committee Member, Burden of Musculoskeletal Disease in the United States: Prevalence, Societal and Economic Cost Report, Bone and Joint Initiative, USA, 2019-2021
- Committee Member, NINDS/NICHHD Common Data Elements (CDEs) Working Group for the Rehabilitation CDE project, Emotion, Behavior, Neuropsychology Subgroup, 2020-2021
- SPINE-WORK: An inclusive research community to study and improve force-based manipulations for spine pain, University of Pennsylvania, PI: Winkelstein, NIH/NCCIH U24AT011978, 2022-2023
  - Committee Chair, External Advisory Committee
  - Committee Chair, Clinical Working Group
  - Committee Member, Scientific Review Committee

### **International**

- Member, Spinal Control Research Group, Spine Center of Clinical Research Excellence, National Health Medical Research Council Center, University of Queensland, Queensland Australia, 2008
- Member, Expert Panel for Modified Delphi Survey Study of Definition of Recurrent Low Back Pain, University of Sydney, Australia, 2009
- Moderator, Poster Session, International Society for Electrophysiology and Kinesiology, Brisbane, Australia, 2012
- Expert Reviewer, North American Spine Society's Exercise-Based Management of Lumbar Spine Pain Decision-Making Narrative and Algorithm, 2012
- Member, External Advisory Committee for Development of Clinical Practice Guidelines for the Use of Pilates Exercise in Low Back Pain, University of Western Sydney, 2014
- Content Expert, Neuromotor Control Therapies for Low Back Pain, North American Spine Society Meeting, 2015
- Scientific Steering Committee, World Congress in Low Back and Pelvic Pain, Melbourne, Australia, 2023

### **Scientific Review Committees**

#### **National (APTA):**

- Scientific Reviewer, Orthopaedic Section, American Physical Therapy Association, 2005-2007
- Member, Scientific Review Committee, Foundation for Physical Therapy, 2008-2011
- Scientific Reviewer, Clinical Practice Guideline Proposals, American Physical Therapy Association,

2017-Present

- Ad Hoc Scientific Reviewer, Academy of Orthopaedic Physical Therapy, American Physical Therapy Association, 2022

#### **National (Other):**

- Ad Hoc Scientific Reviewer, Institute for Clinical and Translational Sciences, Washington University, 2007, 2009
- Ad Hoc Scientific Reviewer, Special Emphasis Panel, Musculoskeletal, Oral and Skin Sciences Internal Review Group, National Institutes of Health, 2011, 2012, 2016
- Ad Hoc Scientific Reviewer, Loan Repayment Program, National Institute for Child Health and Human Development, National Institutes of Health, 2014, 2016, 2020
- Ad Hoc Scientific Reviewer, Pilot and Feasibility Grants, P30 Core Center for Musculoskeletal Biology and Medicine, Washington University, 2015

#### **International:**

- Ad Hoc Scientific Reviewer, Research Foundation of Belgium, 2011
- Member, Expert Reviewers' Panel, Division of Biology and Medicine of the National Research Council, Swiss National Science Foundation, 2011-2014
- Ad Hoc Scientific Reviewer, Israel Science Foundation, 2013
- Ad Hoc Scientific Reviewer, German Research Foundation - Clinical Trials Programme, 2022

#### **COMMUNITY SERVICE:**

##### **University**

- Academic Women's Network 1995-Present

##### **Scientific / Professional Societies and Organizations:**

##### **National**

- Member, American Physical Therapy Association 1977-Present
  - Section: Research, 1979-Present
  - Section: Neurology, 1985-1987; 2004-2007
  - Section: Orthopaedics, 1994-Present
- Member, American Congress of Rehabilitation Medicine 2001-2003
- Member, American Society for Biomechanics 2015-Present
- Member, NIH SPINE-WORK 2022-2024
- Member, NIH HEAL INITIATIVE/PURPOSE Network 2023-Present

##### **State**

- Member, Missouri Physical Therapy Association 1981-Present

##### **International**

- International Association for the Study of Pain 2005-Present
- International Society for Posture and Gait Research 2007-2011
- International Society for Electrophysiology and Kinesiology 2012-2023
- North American Spine Society 2012-2018

**MAJOR INVITED PROFESSORSHIPS AND PRESENTATIONS:****University****Research Presentations:**

- “Development and Testing of a Clinical Classification System for Low Back Pain”  
Annual Alumnae and Clinical Instructor’s Meeting  
Program in Physical Therapy, Washington University School of Medicine 1995
- “Progress in the Development and Testing of a Clinical Classification System for Low Back Pain”  
Research Seminar  
Program in Physical Therapy, Washington University Medical School 1995
- “Clinically-Based Impairment Measures for Low Back Pain”  
Research Seminar  
Program in Physical Therapy, Washington University Medical School 2000
- “Rotation-Related Impairments in Patients with Low Back Pain”  
Research Seminar  
Program in Physical Therapy, Washington University Medical School 2003
- “Current Status of Research in Classification of Low Back Pain”  
Annual Movement System Research Retreat  
Program in Physical Therapy, Washington University School of Medicine 2004
- “Update on Studies of the Movement System Impairment Model of Low Back Pain”  
Annual Movement System Research Retreat  
Program in Physical Therapy, Washington University School of Medicine 2006
- “Low Back Pain: When and Where Does Motion Occur?”  
Alumnae Day  
Program in Physical Therapy, Washington University School of Medicine 2008
- “Low Back Pain Studies: An Update”  
Annual Movement System Research Retreat  
Program in Physical Therapy, Washington University School of Medicine 2010
- “Observations of People with Chronic, Recurrent Low Back Pain”  
Department of Anesthesiology  
Clinical Science Division, Washington University School of Medicine 2011
- “Clinical Trials of Activity-Based Treatments for People with Chronic Low Back Pain”  
Annual Movement System Research Retreat  
Program in Physical Therapy, Washington University School of Medicine 2012
- “Impact of Lumbar Spine Disorders on Outcome in Patients with Total Hip Arthroplasty”

Annual Movement System Research Retreat Program in Physical Therapy, Washington University School of Medicine	2013
“Outcomes of Classification Directed Treatment and Adherence: A One Year, Prospective, Randomized Clinical Trial in People with Low Back Pain” Annual Movement System Research Retreat Program in Physical Therapy, Washington University School of Medicine	2014
“Prospective Examination of Hip Findings in People with Low Back Pain” “Update on Risk Factors for Initial Low Back Pain Development in Prolonged Standing” Annual Movement System Research Retreat Program in Physical Therapy, Washington University School of Medicine	2015
“Classification-Specific Treatment for Low Back Pain” Research Seminar Program in Physical Therapy, Washington University School of Medicine	2015
“Efficacy of Clinical Trials of Activity-Based Treatment of People with Low Back Pain” Department of Anesthesiology, Washington University School of Medicine	2016
“Adherence as a Moderator of Treatment Outcomes” Physical Medicine and Rehabilitation Resident Rounds Washington University School of Medicine	2016
“Skill Training in People with Low Back Pain” Annual Movement System Research Retreat Program in Physical Therapy, Washington University School of Medicine	2018
“The Role of Movement in Low Back Pain Conditions” Physical Medicine and Rehabilitation Resident Rounds Washington University School of Medicine	2018
“The Use of Movement in the Treatment of Chronic Low Back Pain” Movement System Fellows Symposium Program in Physical Therapy	2020
“Motor Skill Training in Functional Activities in People with Chronic Low Back Pain” Program Research Seminar Program in Physical Therapy, Washington University School of Medicine	2021
“Motor Skill Training in Functional Activities vs. Strength and Flexibility Exercise: A Randomized Clinical Trial in People with Chronic Low Back Pain” Alumnae Weekend Seminar Program in Physical Therapy, Washington University School of Medicine	2021

“Changes in Pain and Function in People with Chronic Low Back Pain –  
Effects of Skill Training vs. Strength and Flexibility Exercise”  
Department of Anesthesiology  
Clinical Science Division, Washington University School of Medicine 2022

#### **Other Presentations:**

“Low Back Pain: An Overview of Laboratory Studies”  
Administrative Staff Educational Presentation  
Program in Physical Therapy, Washington University School of Medicine 2004, 2015

“Low Back Pain: Risk Factors, Treatment, Prognosis”  
Administrative Staff Educational Presentation  
Program in Physical Therapy, Washington University School of Medicine 2014

“Career Choices: A Career Path in Academic Medicine”  
Pre-Doctoral Seminar, Clinical Research and Training Center  
Washington University School of Medicine 2014

#### **Hospital**

#### **Research Presentations:**

“Development of a Clinical Classification System for Low Back Pain”  
Barnes-Jewish Rehabilitation and Fitness Center, Barnes-Jewish Hospital  
St. Louis, Missouri 1999

“Testing of a Clinical Classification System for Low Back Pain”  
Barnes-Jewish Rehabilitation and Fitness Center, Barnes-Jewish Hospital  
St. Louis, Missouri 1999

“Effect of Limb Movements and Activity Type on Movement Impairments in People with  
LBP”  
Barnes-Jewish Rehabilitation and Fitness Center, Barnes-Jewish Hospital  
St. Louis, Missouri 1999

“Testing Systems for Classifying Clinical Conditions: An Example from Work in Progress”  
Preceptor Group, Barnes-Jewish Hospital  
St. Louis, Missouri 2007

“Research Methods Used to Test Scientific Properties of Clinically-Based Measures”  
Physical Therapy Council, Barnes-Jewish Hospital  
St. Louis, Missouri 2007

“Update of Conservative Management of Low Back Pain”  
Dept. of Outpatient Physical Therapy, The Rehabilitation Institute of St.  
Louis  
St. Louis, Missouri 2008

“Outcomes of Classification Directed Treatment and Adherence: A One Year, Prospective, Randomized Clinical Trial in People with Low Back Pain”  
 Barnes-Jewish Hospital 8<sup>th</sup> Multidisciplinary Research Conference  
 St. Louis, Missouri 2014

**Other Presentations:**

“Outcomes of a Randomized Clinical Trial in People with Chronic Low Back Pain”  
 Dept. of Outpatient Physical Therapy, The Rehabilitation Institute of St. Louis  
 St. Louis, Missouri 2011

**National**

**Research Presentations:**

"A Physical Therapist's Perspective on the Hemiplegic Shoulder"  
**Invited Speaker**  
 First Annual Rusk Lectureship  
 University of Missouri/Columbia  
 Columbia, Missouri 1987

“Development and Testing of Diagnostic Categories”  
**Invited Speaker**  
 Research Section  
 Combined Sections Meeting, American Physical Therapy Association  
 Dallas, Texas 1997

“Getting Your Research Started”  
**Invited Speaker**  
 Performing Arts Special Interest Group, Orthopedic Section  
 Combined Sections Meeting, American Physical Therapy Association  
 Seattle, Washington 1999

“Low Back Pain Movement System Impairments”  
**Invited Speaker**  
 American Physical Therapy Association  
 Annual Meeting, American Physical Therapy Association  
 Washington, D.C. 1999

“Dialog in Performing Arts Research”  
**Invited Speaker**  
 Performing Arts Special Interest Group, Orthopedic Section  
 Combined Sections Meeting, American Physical Therapy Association  
 New Orleans, Louisiana 2000

“Evidence-Based Practice: What is it? Where do we get it? How do we use it?”  
**Invited Plenary Session Speaker**

Combined Sections Meeting, American Physical Therapy Association New Orleans, Louisiana	2000
“Dialog in Performing Arts Research” <b>Invited Speaker</b> Performing Arts Special Interest Group, Orthopedic Section Combined Sections Meeting, American Physical Therapy Association San Antonio, Texas	2001
“Meet the Authors” <b>Invited Speaker</b> Research Section Combined Sections Meeting, American Physical Therapy Association San Antonio, Texas	2001
“Writing Performing Artist Case Reports” <b>Invited Speaker</b> Performing Arts Special Interest Group, Orthopedic Section Combined Sections Meeting, American Physical Therapy Association Boston, Massachusetts	2002
“Evidence-Based Practice” <b>Invited Speaker</b> Performing Arts Special Interest Group, Orthopedic Section Combined Sections Meeting of the American Physical Therapy Association Tampa, Florida	2003
“Movement System Impairment Syndromes of the Lumbar Spine” <b>Invited Symposium Speaker</b> Iowa Spine Symposium Department of Orthopedics and Rehabilitation, University of Iowa Iowa City, Iowa	2004
“Research Experiences with the Movement System Impairment Syndromes” <b>Invited Symposium Speaker</b> Iowa Spine Symposium Department of Orthopedics and Rehabilitation, University of Iowa Iowa City, Iowa	2004
“Clinically-Based Studies of Movement System Impairment Syndromes for For Low Back Pain - Tests of Scientific Properties and Underlying Concepts” <b>Invited Speaker</b> Annual Meeting, American Congress of Rehabilitation Medicine Ponte Vedra, Florida	2004

- “Movement System Impairments in People with Low Back Pain”  
**Invited Speaker**  
 Department of Physical Medicine and Rehabilitation  
 Johns Hopkins University Medical School  
 Baltimore, Maryland 2004  
 “Clinical and Laboratory Studies of Movement System Impairment Syndromes of the Lumbar Spine”
- Invited Speaker**  
 Pain Special Interest Group, Orthopedic Section  
 Combined Sections Meeting, American Physical Therapy Association  
 New Orleans, Louisiana 2005
- “Current Evidence in Movement-System Impairment Syndromes”  
**Invited Speaker**  
 Annual Conference, American Physical Therapy Association  
 Boston, Massachusetts 2005
- “Movement System Impairment Syndromes of the Lumbar Spine: Description and Clinical Studies”  
**Invited Speaker**  
 Human Posture and Movement Laboratory, Program in Physical Therapy  
 University of Vermont Medical School  
 Burlington, Vermont 2005
- “Movement System Impairment Syndromes of the Lumbar Region: Description and Evidence”  
**Invited Speaker**  
 UAW-Ford On Site Rehabilitation Team Annual Meeting  
 UAW-Ford Meeting Center  
 Detroit, Michigan 2005
- “The Movement System Impairment Approach to Classification and Management of Low Back Pain”  
**Invited Speaker**  
 Athleticare Conference, Athleticare Sports Medicine Program  
 St. John’s Hospital  
 Springfield, Illinois 2005
- “Low Back Pain Classification: Are We All Seeing the Same Thing?”  
**Invited Keynote Research Speaker**  
 American Association of Orthopedic and Manual Physical Therapists (AAOMPT)  
 St. Louis, Missouri 2007
- “Relative Flexibility of the Lumbar Region in People with and without Low Back Pain”  
**Invited Speaker**

Program in Physical Therapy St. Louis University College of Health Sciences Research Seminar St. Louis, Missouri	2010
“Relative Stiffness: A Control Issue in Low Back Pain?” <b>Invited Speaker</b> Department of Physical Therapy, University of Kansas Medical Center Kansas City, Kansas	2010
“Spinal Control Symposium: Subgrouping Low Back Pain” <b>Invited Keynote Speaker</b> 7 <sup>th</sup> International World Congress on Low Back and Pelvic Pain Los Angeles, California	2010
“Observations of People with Non-Specific Low Back Pain: Clinically-Based Measures” <b>Invited Speaker</b> Center for Orthopedic Research College of Osteopathic Medicine, Michigan State University Lansing, Michigan	2012
“Hip and Spine Interactions in People with Low Back Pain” <b>Invited Speaker</b> Lumbar Spine Research Society 5 <sup>th</sup> Annual Meeting Chicago, Illinois	2013
“Assessment and Treatment of Movement System Impairment Syndromes in People with Low Back Pain” <b>Invited Speaker</b> 1 <sup>st</sup> Annual Meeting of the Orthopaedic Section, American Physical Therapy Assn. Orlando, Florida	2013
“Relative Stiffness Impairments and Low Back Pain” <b>Invited Clinical Research Rounds Speaker</b> Program in Physical Therapy and Human Movement Science Feinberg School of Medicine, Northwestern University Chicago, Illinois	2013
“Adherence: An Important but Often Forgotten Determinant of Treatment Effectiveness” <b>Invited Speaker</b> Orthopaedic Section Combined Sections Meeting, American Physical Therapy Association Las Vegas, Nevada	2014
“Hip and Spine Interactions in People with Low Back Pain” <b>Invited Symposium Speaker</b> Women’s Health Symposium, Rehabilitation Institute of Chicago Chicago, Illinois	2014

- “Adherence: Implications for Treatment Outcomes”  
**Invited Speaker**  
 Eastern District Meeting, Missouri Physical Therapy Association  
 St. Louis, Missouri 2015
- “Relative Stiffness Impairments in Clinical Tests and Functional Activities”  
**Invited Annual Panther Clinical Rounds Speaker**  
 Department of Physical Medicine and Rehabilitation, University of Pittsburgh  
 Pittsburgh, Pennsylvania 2015
- “Adherence and Outcomes of Care”  
**Invited Resident Rounds Speaker**  
 Department of Physical Medicine and Rehabilitation, University of Pittsburgh  
 Pittsburgh, Pennsylvania 2015
- “The Value of Orthopaedic Manual Physical Therapy”  
**Invited Panel Member**  
 2015 Annual Meeting of the American Association of Orthopaedic and Manual Physical Therapy (AAOMPT)  
 Louisville, Kentucky 2015
- “Clinical Research: New Directions to Explore”  
**Invited Panel Member**  
 2015 Annual Meeting of the American Association of Orthopaedic and Manual Physical Therapy (AAOMPT)  
 Louisville, Kentucky 2015
- “Minimizing Pain, Normalizing Movement, and Maximizing Function: An Example in Low Back Pain”  
**Invited Keynote Speaker**  
 2015 Annual Meeting of the American Association of Orthopaedic and Manual Physical Therapy (AAOMPT)  
 Louisville, Kentucky 2015
- “Assessing Relative Flexibility Impairments: Minimizing Pain”  
**Invited Keynote Speaker**  
 2015 Annual Meeting of the American Association of Orthopaedic and Manual Physical Therapy (AAOMPT)  
 Louisville, Kentucky 2015
- “Assessing Relative Flexibility Impairments: Normalizing Movement”  
**Invited Keynote Speaker**  
 2015 Annual Meeting of the American Association of Orthopaedic and Manual Physical Therapy (AAOMPT)

Louisville, Kentucky	2015
<p>“Effect of Treating Kinesiopathologic Impairments on Pain and Disability and the Potential Moderating Effect of Adherence on Outcomes”</p> <p><b>Invited Symposium Speaker</b></p> <p>2nd International State of the Art in Spinal Control Symposium, Spine Center of Clinical Research Excellence, National Health Medical Research Council Center, University of Queensland and North American Spine Society</p>	
Chicago, Illinois	2015
<p>“Adherence: An Important but Often Forgotten Determinant of Treatment Effectiveness”</p> <p><b>Invited Speaker</b></p> <p>North American Spine Society 30<sup>th</sup> Annual Meeting</p>	
Chicago, Illinois	2015
<p>“Motor Skill Training: An Alternative to Traditional Therapeutic Exercise”</p> <p><b>Invited Speaker</b></p> <p>2016 Combined Sections Meeting of the American Physical Therapy Association</p>	
Anaheim, California	2016
<p>“Update on the Hip-Spine Connection”</p> <p><b>Invited Speaker</b></p> <p>Shirley Ryan Ability Lab</p>	
Chicago, Illinois	2017
<p>“Gender Differences in Lumbopelvic Motion”</p> <p><b>Invited Speaker</b></p> <p>Shirley Ryan Ability Lab</p>	
Chicago, Illinois	2017
<p>“Relative Flexibility: A Movement Control Impairment in Low Back Pain”</p> <p><b>Invited Lecturer, Annual Rehabilitation Science Lectureship</b></p> <p>Rehabilitation Science Division, University of Minnesota</p>	
Minneapolis, Minnesota	2017
<p>“The Role of Movement in Assessment and Management of People with Low Back Pain”</p> <p><b>Invited Lecturer, Sahrman Lectureship</b></p> <p>Program in Physical Therapy</p>	
Washington University Medical School St. Louis, Missouri	2017
<p>“Movement Control Impairments in People with Low Back Pain”</p> <p><b>Invited Biomechanics Symposium Speaker</b></p> <p>Department of Biomedical Engineering</p>	
University of Kentucky	

Lexington, Kentucky	2018
<p>“Addressing Pain Problems Through the Use of Movement Science” -  “Changing Movement and Postural Strategies in People with Low Back Pain: The Potential Role of Skill Training to Improve Long-Term Outcomes”</p>	
<p><b>Invited Speaker, General Session</b>  Annual Meeting of the Orthopaedic Section, American Physical Therapy Association  Baltimore, Maryland</p>	
	2018
<p>“Implementing Skill Training in People with Low Back Pain: The Why and the How”</p>	
<p><b>Invited Speaker, Breakout Sessions</b>  Annual Meeting of the Orthopaedic Section, American Physical Therapy Association  Baltimore, Maryland</p>	
	2018
<p>“The Role of Movement in the Assessment and Treatment of Low Back Pain”</p>	
<p><b>Invited Speaker</b>  Department of Biokinesiology and Physical Therapy  University of Southern California  Los Angeles, California</p>	
	2018
<p>“Motor Skill Training in Musculoskeletal Conditions: Current Best Evidence”</p>	
<p><b>Invited Speaker</b>  2019 Combined Sections Meeting of the American Physical Therapy Association  Washington, DC</p>	
	2019
<p>“The Role of Movement in the Management of Chronic Low Back Pain: What Does it Take to Make a Change and Does it Work?”</p>	
<p><b>Invited Speaker</b>  Virtual presentation for Nexus Motion, Monthly Movement Seminar Series</p>	
	2022
<p>“Motor Skill Training vs. Strength and Flexibility Exercise in Chronic Low Back Pain: A Randomized Controlled Trial”</p>	
<p><b>Invited Speaker, Rose Excellence in Research Award, AOPT</b>  Virtual presentation as part of the 2022 Combined Sections Meeting of the American Physical Therapy Association</p>	
	2022
<p>“Examining the Role of Movement in Assessment and Management of Low Back Pain Conditions”</p>	
<p><b>Invited Speaker, Career Excellence Award, Biomechanics SIG, APTR</b>  Virtual presentation at Spring Special Interest Group Meeting</p>	
	2022

“Low Back Pain Injury”

**Invited Speaker**

Advisory Board of National Center for Rehabilitation Research  
NIH/NICHHD/NCMRR

2023

**Other Presentations:**

“Effects of a Single Motor Skill Training Session in People With Low Back Pain: An Author Interview with Dr. Linda Van Dillen”

**Podcast:** PTJ Physical Therapy and Rehabilitation Journal

2018

“Moving Research Forward During the COVID-19 Pandemic: A Discussion”

**Invited Panel Member** (Virtual presentation)

2020

**Webinar:** *CORRT NET* Panel Discussion

“Trajectory of a Career in Physical Therapy”

**Invited Speaker** (Virtual presentation)

University of Arkansas

University of Arkansas Physical Therapy

2020

“Motor Skill Training Used in Treatment of Chronic Low Back Pain”  
(Virtual presentation)

**Invited Journal Club Speaker**

University of South Florida, Jacksonville

Orthopaedic residents and faculty

2022

“Spotlight on Research: What to Measure and Treat in the Lumbar Spine”

**Invited Session Moderator**

2023 Combined Sections Meeting of the American Physical Therapy Association

2023

“Does Biomechanics have a Role in Management of People with Low Back Pain?” (Virtual presentation)

**Invited Journal Club Speaker**

Virtual presentation to University of Florida, Gainesville and Jacksonville

Orthopaedic residents and faculty

2023

“Partnering for Excellence in Research”

**Invited Speaker**

2023 Combined Sections Meeting of the American Physical Therapy Association; Academy of Physical Therapy Research Business Meeting

2024

**International**

**Visiting Professorship:**

University of Waterloo, Department of Kinesiology  
Spine Biomechanics Laboratory

Sponsor: Dr. Stuart McGill (funded by NIH Mentored Research Scientist Award K01 HD001226)  
 Chair of Kinesiology and Director of Spine Biomechanics Laboratory  
 Waterloo, Canada 2002

**Research Presentations:**

“Influence of Limb Movements on the Lumbar Spine”  
**Invited Speaker**  
 Low Back Pain Research Group, Spine Center of Clinical Research Excellence,  
 National Health Medical Research Council Center, University of Queensland  
 Brisbane, Queensland, Australia 2009

“Relative Stiffness: A Motor Control Issue in Low Back Pain?”  
**Invited Symposium Speaker**  
 1st International State of the Art in Spinal Control Symposium, Spine Center of Clinical Research Excellence, National Health Medical Research Council Center, University of Queensland  
 Brisbane, Queensland, Australia 2009

“Classification-Specific Treatment in Chronic Low Back Pain: A Prospective, Randomized, Controlled Clinical Trial”  
**Invited Symposium Speaker**  
 8<sup>th</sup> International World Congress on Low Back and Pelvic Pain  
 Dubai, United Arab Emirates 2013

“Crossing the Bridge from Basic Science to Clinical Science: Does Subgrouping Improve Outcomes?”  
**Invited Symposium Speaker**  
 North American Spine Society 30<sup>th</sup> Annual Meeting  
 Chicago, Illinois 2015

“Potential Role of Adherence for Improving Outcomes in People with Low Back Pain”  
**Invited Keynote Speaker**  
 9<sup>th</sup> World Congress on Low Back and Pelvic Pain  
 Singapore, Singapore 2016

“The Importance of Movement in Evaluation and Directing Treatment in People with Low Back Pain”  
**Invited Symposium Speaker**  
 North American Spine Society 32<sup>nd</sup> Annual Meeting  
 Orlando, Florida 2017

“Motor Skill Training in Functional Activities in People with Chronic Low Back Pain: Impact on Pain and Function”  
**Invited Symposium Speaker: Motor Control**

9 <sup>th</sup> International World Congress on Low Back and Pelvic Pain Antwerp, Belgium	2019
“Motor Skill Training in Functional Activities in People with Chronic Low Back Pain: Impact on Movement Characteristics” <b>Invited Symposium Speaker: Exercise</b> 9 <sup>th</sup> International World Congress on Low Back and Pelvic Pain Antwerp, Belgium	2019
“Skill Training in Functional Activities: Effects in Chronic Low Back Pain” <b>Invited Speaker: Digital physiotherapy: New strategies, new skills?</b> International Scientific Congress A.I.F.I – Italian Association of Physiotherapy Virtual conference	2021
“Person-Specific Motor Skill Training in Function for People with Chronic Low Back Pain” <b>Invited Keynote Speaker</b> Annual Meeting of Japanese Society of Musculoskeletal Physical Therapy, Fukuoka, Japan Hybrid conference. Virtual presentation	2023
“Spinal Movement Impairments in Non-Chronic Low Back Pain: A Potentially Important Clinical Biomarker” <b>Invited Keynote Speaker</b> 11 <sup>th</sup> International World Congress on Low Back and Pelvic Pain Melbourne, Australia	2023
“Exercise in Low Back Pain” <b>Invited Session Moderator</b> 11 <sup>th</sup> International World Congress on Low Back and Pelvic Pain Melbourne, Australia	2023

#### **CONSULTING RELATIONSHIPS AND BOARD MEMBERSHIPS:**

Consultant, Program for the Advancement of the UAW-Ford On-Site Rehabilitation Centers, Department of Physical Medicine and Rehabilitation Johns Hopkins Medical School Baltimore, Maryland	2005-2007
Chair, Data and Safety Monitoring Board, “Systems science center for musculoskeletal CAM therapies” (NCCAM U19 AT006057) Orthopedic Research Center Michigan State University East Lansing, Michigan	2011-2019

Member, Data and Safety Monitoring Board, "Management strategies for patients with low back pain and sciatica" (AHRQ R18 HS022641) Program in Physical Therapy University of Utah Salt Lake City, Utah	2014-2018
Member, Internal Advisory Board, P30 Core Center for Musculoskeletal Biology and Medicine, Department of Orthopaedic Surgery Washington University Medical School St. Louis, Missouri	2014- 2022
Member, Board of Trustees Foundation for Physical Therapy Research Fairfax, Virginia	2019- Present

### **RESEARCH SUPPORT (GOVERNMENTAL/NON-GOVERNMENTAL):**

#### **Previous**

Role: Predoctoral Trainee Title: "Aging and Development" Source: NIA Grant #: T32 AG000030 Principal Investigator: Storandt, M. Dates: 1991-1992	
Role: Predoctoral Trainee Title: "Mechanisms of Spatial Localization for Aimed Movements" Source: NIMH Grant #: R29 MH04514 Principal Investigator: Abrams, R.A. Dates: 1992-1993	
Role: Scholar Title: "Memory for Spatial Information used for Aimed Limb Movements" Source: Foundation for Physical Therapy Grant#: NA; Doctoral Scholarship Dates: 1993-1994	
Role: Co-Principal Investigator Title: "Reliability of a Classification Scheme for Patients with Low Back Pain and Analysis of Selected Quantitated Variables" Source: Foundation for Physical Therapy Grant#: 94R 03 NOR 02 Co- Principal Investigator: Norton, B.J. Dates: July 1994-June 1996; NCE July 1996-June 1997	
Role: Principal Investigator Title: "Mechanically-Based Impairment Measures of Low Back Pain"	

Source: NICHD, K01 Mentored Research Scientist Award  
 Grant#: K01 HD001226  
 Dates: March 2000-February 2005; NCE March 2005-February 2006

Role: Principal Investigator  
 Title: "Classification-Directed Treatment of Low Back Pain"  
 Source: NICHD  
 Grant#: R01 HD047709  
 Dates: June 2006-May 2010; NCE June 2010-April 2011

Role: Co-Investigator  
 Title: "Measuring Outcomes in Young Hip Patients"  
 Source: The Hip Society  
 Grant#: NA  
 Principal Investigator: Clohisy, J.C.  
 Dates: June 2007-May 2008

Role: Co-Investigator  
 Title: "Development of a Collaborative Research Team for Prevention of Hip Osteoarthritis"  
 Source: NCCR - Washington University Institute of Clinical and Translational Sciences  
 Grant#: UL1 RR024992  
 Principal Investigator: Clohisy, J.C.  
 Dates: January 2008-December 2009

Role: Principal Investigator  
 Title: "The Role of Daily Activities to Low Back Pain: A Feasibility Study"  
 Source: Pilot Fund, Research Division, Program in Physical Therapy, Washington University School of Medicine  
 Grant#: NA  
 Dates: July 2008-June 2010

Role: Co-Investigator  
 Title: "Effect of Unloading Techniques as a Component of Treatment for People with Long Standing Neck Pain"  
 Source: Pilot Fund, Research Division, Program in Physical Therapy, Washington University School of Medicine  
 Grant#: NA  
 Principal Investigator: McDonnell, M.K.  
 Dates: September 2008-June 2010

Role: Secondary Mentor  
 Title: "Rehabilitation Factors in Pre-Arthritic Hip Disease"  
 Source: NICHD, NINDS  
 Grant#: K12 HD055931  
 Principal Investigator: Harris-Hayes, M.  
 Dates: September 2008-March 2011

Role: Primary Mentor  
 Title: "Prediction of Ambulation and Disability in Adults with Multiple Sclerosis Using Instrumented Measures of Lower Extremity Impairment"  
 Source: NICHD, NINDS  
 Grant#: K12 HD055931  
 Principal Investigator: Wagner, J.  
 Dates: September 2008-August 2013

Role: Principal Investigator  
 Title: "Trunk and Pelvic Region Characteristics in Subgroups of People with Low Back Pain"  
 Source: NCRR - Washington University Institute for Clinical and Translational Sciences and Mallinckrodt Institute of Radiology  
 Grant#: UL1 RR024992  
 Dates: May 2009-July 2010

Role: Principal Investigator  
 Title: "Anterior Shear Findings in People with Flexion-Related Low Back Pain"  
 Source: Missouri Physical Therapy Association  
 Grant#: NA  
 Dates: July 2009-June 2011

Role: Co-Investigator  
 Title: "Musculoskeletal Pain Problems in Professional Musicians"  
 Source: Pilot Fund, Research Division, Program in Physical Therapy, Washington University School of Medicine  
 Grant#: NA  
 Principal Investigator: Khoo-Summers, L.  
 Dates: October 2009-September 2011; NCE June 2012

Role: Co-Investigator  
 Title: "The Hip Spine Syndrome: A Prospective Descriptive Study of Clinical Presentation and Diagnostic Tests for Patients with Coexisting Hip and Lumbar Spine Disorders"  
 Source: NCRR - Washington University Institute of Clinical and Translational Sciences; JIT Core Usage Funding  
 Grant#: JIT137, UL1 RR024992  
 Principal Investigator: Prather, H.  
 Dates: July 2010-July 2011

Role: Co-Investigator  
 Title: "Mechanisms of Specific Trunk Exercises in Low Back Pain"  
 Source: NICHD  
 Grant#: R01 HD040909  
 Principal Investigator: Henry, S.M.  
 Dates: September 2010-March 2012

Role: Co-Investigator

Title: "The Hip-Spine Syndrome: A Prospective Descriptive Study of Clinical Presentation and Physical Examination"  
 Source: Scott F. Nadler PASSOR Musculoskeletal Education and Research Grant  
 Grant#: NA  
 Principal Investigator: Prather, H.  
 Dates: August 2010-August 2011

Role: Secondary Mentor  
 Title: "Rehabilitation Factors in Pre-Arthritic Hip Disease"  
 Source: NICHD  
 Grant#: K23 HD067343  
 Principal Investigator: Harris-Hayes, M.  
 Dates: April 2011-March 2015

Role: Co-Investigator  
 Title: "Physical Therapy in the Emergency Department: Intervention Effects for Patients with Acute Back Pain"  
 Source: Pilot Fund, Research Division, Program in Physical Therapy, Washington University School of Medicine  
 Grant#: NA  
 Principal Investigator: McDonnell, D.F.  
 Dates: May 2011-April 2012; NCE April 2013

Role: Co-Investigator  
 Title: "Back Pain in the Emergency Department: A New Service Delivery Model"  
 Source: Missouri Physical Therapy Association  
 Grant#: NA  
 Principal Investigators: McDonnell, D.F., Deusinger S.  
 Dates: July 2011-June 2013

Role: Secondary Mentor  
 Title: "Brain Spectroscopy Following Exercise Training in Chronic Low Back Pain"  
 Source: NCCR, Kansas University Hartland Institute for Clinical & Translational Research  
 Grant#: KL2 RR033177 & UL1 RR033179  
 Principal Investigator: Sharma, NK.  
 Dates: July 2011-February 2014

Role: Secondary Mentor  
 Title: "Development of an Optimal Data Acquisition Protocol for Spine Kinematics and Trunk Muscle Activation in Patients with Non-Specific Low Back Pain"  
 Source: Canadian Institutes for Health Research, REPAR Program  
 Grant#: 2012-2013-#2  
 Principal Investigator: Preuss, R.  
 Dates: May 2012-April 2013

Role: Principal Investigator

Title: "Relationship of Movement and Alignment Patterns During Clinical Tests and Functional Activities in People with Low Back Pain"  
 Source: Missouri Physical Therapy Association  
 Grant#: NA  
 Dates: May 2012-April 2014; NCE April 2014-March 2015

Role: Consultant  
 Title: "Task-Specific Movement Pattern Training for Treatment of Patellofemoral Pain"  
 Source: NCCR - Washington University Institute of Clinical and Translational Sciences  
 Grant#: UL1 TR000448; CTSA#705  
 Principal Investigator: Salsich, G  
 Dates: June 2014-May 2015; NCE June 2015-May 2016

Role: Principal Investigator  
 Title: "Kinematic and Intervertebral Disc Changes in People with Non-specific Low Back Pain and People at Risk for Low Back Pain"  
 Source: Multi-Institutional Pilot Grant, Research Division, Program in Physical Therapy, Washington University School of Medicine  
 Grant#: NA  
 Dates: July 2014- June 2015; NCE July 2015-June 2016

Role: Consultant  
 Title: "Supplement to Task-Specific Movement Pattern Training for Treatment of Patellofemoral Pain"  
 Source: Orthopaedic Section, American Physical Therapy Association  
 Grant#: Supplement to UL1 RR024992; CTSA#705  
 Principal Investigator: Salsich, G  
 Dates: June 2014-May 2016; NCE June 2016-May 2017

Role: Primary Mentor  
 Title: "Lumbar Alignment and Development of Low Back Pain in Prolonged Standing"  
 Source: American Society for Biomechanics, Grant in Aid Award  
 Grant#: NA  
 Principal Investigator: Hwang, CT  
 Dates: May 2016-April 2017

Role: Consultant  
 Title: "Spinal Loads during Activities of Daily Living: Influences of Unilateral Lower-Limb Amputation"  
 Source: NICHD, NINDS  
 Grant#: R03 HD086512  
 Principal Investigator: Bazgari, B  
 Dates: September 2016-August 2018

Role: Principal Investigator

Title: "Spinal Control During Functional Activities to Improve Low Back Pain Outcomes"  
 Source: NICHD, NCMRR  
 Grant#: R01 HD047709  
 Dates: April 2013-March 2020

Role: Secondary Mentor  
 Title: "Physical Therapy and Deep Brain Stimulation in Parkinson's Disease"  
 Source: NICHD, NINDS  
 Grant#: K12 HD055931  
 Principal Investigator: Duncan, R  
 Dates: September 2016-April 2020

Role: Primary Mentor  
 Title: "Tissue Level Deformations of the Loaded Spine In Humans with Low Back Pain"  
 Source: NIAMS  
 Grant#: K01 AR069116  
 Principal Investigator: Tang, S.  
 Dates: August 2016- July 2021

Role: Primary Mentor  
 Title: "Muscle Geometry and its Influence on Function in Patients with Developmental Dysplasia of the Hip"  
 Source: NIAMS  
 Grant#: K01 AR072072  
 Principal Investigator: Harris, M  
 Dates: April 2018-March 2023

Role: Secondary Mentor  
 Title: "The Influence of Postural Behavior and Brain Organization on Progression of Back Pain Symptoms in Young Adults"  
 Source: NICHD  
 Grant#: K01 HD092613  
 Principal Investigator: Armour-Smith, J  
 Dates: July 2018-June 2024

Role: Significant Contributor  
 Title: "SPINE-WORK: An Inclusive Research Community to Study and Improve Force-Based Manipulations for Spine Pain"  
 Source: NIH/NCCIH  
 Grant#: U24AT011978  
 Co-Principal Investigators: Winkelstein, B; Barocas, V  
 Dates: June 2022-December 2023

Role: Secondary Mentor  
 Title: Low back pain in Parkinson Disease  
 Source: NICHD, NCMRR

Grant #: K23 HD100569  
 Principal Investigator: Duncan, R  
 Dates: March 2021-February 2024

Role: Principal Investigator  
 Title: "Impact of Hip Structure and Function on the Clinical Presentation of Low Back Pain"  
 Source: Academy of Orthopaedic Physical Therapy, APTA  
 Grant#: P19-03313  
 Dates: June 2019-April 2024

**Current:**

Role: Principal Investigator  
 Title: "Significance of Spinal Movement Impairments in Acute Low Back Pain"  
 Source: NIH/NICHD  
 Grant#: R01 HD108240  
 Dates: March 2023-February 2028

Role: Secondary Mentor  
 Title: "Using Mobile Health Technology and Real-Time Assessments to Address Multilevel Influences on Lumbar Spine Surgery Outcomes"  
 Source: NIH/NIAMS  
 Grant#: 1K23AR082986-01A1  
 Dates: June 2024-May-2029

**TRAINEE, MENTEE, SPONSORSHIP RECORD (current):**

**Faculty Career Development Trainees:**

Washington University School of Medicine

*Jacob Greenberg, MD*

Assistant Professor, Department of Neurosurgery  
 December 2023-Present

K23 Mentored Patient-Oriented Research Career Development Award, NIAMS

Secondary Mentor, Project Title: "Using mobile health technology and real-time assessments to address multilevel influences on lumbar spine surgery outcomes"

*Currently:* Assistant Professor, Department of Neurosurgery, Washington University, St. Louis, Missouri

**Ph.D. in Movement Science:**

*Kayla Krueger, DPT*

Program in Physical Therapy

August 2020-Present

NICHD T32 HD007434

Primary Mentor, Project Title: Spinal movement impairments in people with low back pain

*Allison Haussler, BA*

Program in Physical Therapy

January 2024-Present

MSCI Scholar, Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences  
 NCRR TL1 TR002344  
Primary Dissertation Committee Member, Project Title: Advancing interventions to improve symptoms of Parkinson Disease

**WUPT Faculty:**

*Vanessa Lanier, DPT, OCS*  
 Associate Professor  
 Program in Physical Therapy

*Alyssa Skala, DPT, OCS*  
 Instructor  
 Program in Physical Therapy

**Trainee Advisement (previous)**

**Faculty Career Development Trainees:**

Washington University School of Medicine

*Marcie Harris-Hayes*

Program in Physical Therapy, Washington University School of Medicine  
 Scholar, K12 Comprehensive Opportunities in Rehabilitation Research Training, NICHD/NINDS  
 K12 HD055931  
 2008-2011  
Member, Mentoring Committee, Project Title: Intra-articular hip disease

Fellow, K23 Mentored Clinical Scientist Trainee, NICHD K23 HD067343  
 September 2011-April 2015

Member, Mentoring Committee, Project Title: Rehabilitation factors in pre-arthritis hip disease  
*Currently:* Professor, Program in Physical Therapy, Washington University, St. Louis, Missouri

*Simon Tang, PhD*

Assistant Professor, Orthopaedic Surgery, Biomedical Engineering

May 2016-June 2020 (NCE: July 2020-May 2021)

NIAMS K01 AR069116-01A1/UL1 RR024992 (MTPCI)

Member, Career Advisory Committee

Primary Mentor, Project Title: Deformations of the loaded spine in people with low back pain

*Currently:* Associate Professor, Department of Orthopaedic Surgery and Department of Biomedical Engineering, Washington University, St. Louis, Missouri

*Mike Harris, PhD*

Assistant Professor, Program in Physical Therapy, Orthopaedic Surgery, Mechanical Engineering  
 June 2016-March 2023

K01 Mentored Research Scientist Award, NIAMS

Primary Mentor, Project Title: Muscle geometry and its influence on function in patients with developmental dysplasia of the hip

*Currently:* Associate Professor, Program in Physical Therapy and Department of Orthopaedic Surgery, Washington University, St. Louis, Missouri

*Ryan Duncan, PT, DPT*

Associate Professor, Program in Physical Therapy, Neurology

March 2020-Present

K23 mentored Patient-Oriented Research Career Development Award, NICHD/NCMRR NICHD Secondary Mentor, Project Title: Low Back Pain in Parkinson Disease

*Currently:* Associate Professor, Program in Physical Therapy and Department of Neurology, Washington University, St. Louis, Missouri

### Outside University

*Joanne Wagner*

Program in Physical Therapy, Saint Louis University

Scholar, K12 Comprehensive Opportunities in Rehabilitation Research Training Trainee, NICHD K12 HD055931

September 2008-August 2013

Primary Mentor, Project Title: Prediction of ambulation and disability in adults with multiple sclerosis using instrumented measures of lower extremity impairment

Grant: National Multiple Sclerosis Society Pilot Research Grant, 2013-2014

Project Title: Neuropathogenesis of impairments in bilateral coordination of gait in persons with Multiple Sclerosis

*Currently:* Director Medical Affairs, Xenon Pharmaceuticals Inc.

*Neena Sharma*

Program in Physical Therapy, Kansas University

Scholar, KL2 NCRK Kansas University Hartland Institute for Clinical & Translational Research Therapy, Kansas University

KL2 RR033177 & UL1 RR033179

July 2011-February 2014

Secondary Mentor, Project Title: Brain spectroscopy following exercise training in chronic low back pain

*Currently:* Associate Professor, Program in Physical Therapy. Kansas University, Kansas, Missouri

*Joanne Armour-Smith, PT, PhD*

Assistant Professor, Physical Therapy

June 2017-May 2023

K01 Mentored Research Scientist Award, NICHD/NCMRR

Secondary Mentor, Project Title: The influence of postural behavior and brain organization on progression of back pain symptoms in young adults

*Currently:* Associate Professor, Program in Physical Therapy, Chapman University, Orange, California

### **Post-Doctoral Fellow:**

#### Washington University

*Molly Johnson, PhD, MAmSAT*

Movement Science, Program in Physical Therapy

NICHD T32 HD007434

January 2010-July 2011

Primary Mentor, Project Title: Relationships among movement patterns during functional activities and clinical tests in people with and without low back pain

*Currently*: Instructor, Integrated Motion Studio, Austin, Texas; Adjunct Assistant Professor, Department of Kinesiology, Southwestern University, Georgetown, Texas

*Adam Abraham, PhD*

Department of Orthopaedic Surgery, Musculoskeletal Research Center

NIH T32AR060719

April 2014-January 2016

Member, Post-Doctoral Advisory Committee

*Currently*: Research Investigator, Department of Orthopedic Surgery, University of Michigan, Ann Arbor, Michigan

*Bethany Taylor Gardner, OTD, OTR/L*

Department of Internal Medicine, Division of General Medical Sciences

May 2014-June 2015

Member, Mentoring Committee, Project Title: Assessment of work productivity and functional impairment due to musculoskeletal disorders

*Currently*: Occupational Therapist, Vice President - Service Development at Fit-For-Work, Lexington, Kentucky

*Brecca Gaffney, PhD*

Postdoctoral Fellow, Movement Science

October 2017-April 2021

Postdoctoral Fellowship Award, NIH/NIAMS F32AR075349

Co-Sponsor, Project Title: Effects of simulated interventions on hip articular cartilage loading in patients with femoroacetabular impingement and developmental dysplasia of the hip

*Currently*: Assistant Professor, Department of Mechanical Engineering, University of Colorado Denver, Denver, Colorado

#### Outside University

*Valentina Graci, PhD*

Program in Physical Therapy, St. Louis University

September 2010-March 2012

Member, Mentoring Committee, Project Title: Gender differences in trunk, pelvis and lower limb kinematics during a single leg squat

*Currently*: Research Scientist, Children's Hospital of Philadelphia, Research Institute, Philadelphia, Pennsylvania

#### **Ph.D. in Physical Therapy:**

##### Outside University

*Daniel Azevedo, PT, MSc.*

Universidade Cidade de São Paulo, São Paulo, Brazil

CNPQ grant number 470273/2013-5

April 2014-March 2018

Primary Dissertation Committee Member, Project Title: Movement system impairment based classification vs. general exercise for chronic non-specific low back pain: A randomized, clinical trial

*Currently:* Assistant Professor, Pontificia Universidade Catolica de Minas Gerais, Minas Gerais, Brazil

### **Ph.D. in Kinesiology:**

#### Outside University

*Janice Moreside, PT*

Department of Kinesiology, University of Waterloo, Waterloo, Canada

July 2010

External Examiner Ph.D. Thesis, Dissertation Title: Hip mobility and lumbar spine function

*Currently:* Assistant Professor, Health and Human Sciences, Dalhousie University, Halifax, Nova Scotia

### **Ph.D. in Psychology:**

#### Washington University

*Emily Bloesch, BS*

Department of Psychology

May 2013

External Examiner Ph.D. Thesis, Dissertation Title: An investigation into peripersonal space representations in older adults

*Currently:* Associate Professor, Psychology Department, Central Michigan University, Mount Pleasant, Michigan

### **Ph.D. in Movement Science:**

#### Washington University School of Medicine

*Katrina Maluf, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

August 1998-May 1999

Primary Mentor, August 1998-May 1999; Project Titles: Modifying lumbar spinal alignment or movement during symptom testing in patients with low back pain: A follow-up study; The use of a classification system to guide nonsurgical management of a patient with LBP

June 2001-December 2002

Primary Dissertation Committee Member, June 2002-December 2002; Dissertation Title: Effect of physical activity on plantar tissue stress: Experimental application of a theoretical model for tissue adaptation & injury

*Currently:* Professor, San Diego State University, San Diego, California

*John Hollman, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

August 1998-December 2000

Primary Dissertation Committee Member, Dissertation Title: Analysis of intrinsic knee joint surface kinematics: The path of instant centers of rotation

*Currently:* Professor, Physical Therapy, Mayo Clinic, College of Medicine and Science, Rochester, Minnesota

*Sara Gombatto, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

August 2002-August 2007

Primary Mentor, Dissertation Title: Mechanisms contributing to chronic, recurrent low back pain  
Scholarships:

- Foundation for Physical Therapy Doctoral Scholarships 2003-2007

*Currently:* Professor, San Diego State University, San Diego, California

*Sara Scholtes, DPT*

Program in Physical Therapy

NICHD T32 HD007434

August 2004-July 2009

Primary Mentor, Dissertation Title: The role of limb movements in chronic, recurrent low back pain

Scholarships:

- Foundation for Physical Therapy McMillan Scholarship 2004-2005
- Foundation for Physical Therapy Doctoral Scholarships 2006-2009

*Currently:* Professor and Chair, Department of Physical Therapy, North Central College, Naperville, Illinois

*Cara Lewis, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

June 2004-December 2005

Primary Dissertation Committee Member, Dissertation Title: Effect of movement and muscle activation patterns on anterior hip joint forces and hip pain

*Currently:* Associate Professor, Program in Physical Therapy, Boston University, Boston, Massachusetts

*Joanne Wagner, MSPT, ATC*

Program in Physical Therapy

NICHD T32 HD007434

October 2005-April 2006

Dissertation Committee Member, Dissertation Title: Upper extremity movement control in people with acute hemiparesis

*Currently:* Director Medical Affairs, Xenon Pharmaceuticals Inc.

*Donovan Lott, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

February 2006-May 2007

Dissertation Committee Member, Dissertation Title: Mechanisms and contributing factors to skin trauma and breakdown in the neuropathic foot

*Currently:* Research Associate Professor, Department of Physical Therapy, College of Public Health and Health Professions, University of Florida, Gainesville, Florida

*Justin Beebe, MSPT*

Program in Physical Therapy

NICHD T32 HD007434

April 2007-December 2008

Dissertation Committee Member, Dissertation Title: Mechanisms underlying hand function after stroke

*Currently:* Associate Professor, Physical Therapy, Simmons School of Nursing and Health Sciences, Simmons College, Boston, Massachusetts

*Minna Hong, DPT*

Program in Physical Therapy

NICHD T32 HD007434

August 2007-December 2007

Dissertation Committee Member, Dissertation Title: Locomotor deficits in patients with Parkinson's Disease

*Currently:* SCI Peer Support Supervisor at Shepherd Center Spinal Cord Injury Group, Atlanta, Georgia

*Madeleine Hackney, BS*

Program in Physical Therapy

NICHD T32 HD007434

April 2008-April 2009

Dissertation Committee Member, Dissertation Title: Alternative movement therapies for Parkinson's Disease

*Currently:* Assistant Professor of Medicine, Division of General and Geriatric Medicine, Emory University School of Medicine, Atlanta, Georgia

*Dustin Hardwick, DPT*

Program in Physical Therapy

NICHD T32 HD007434

July 2008-March 2010

Primary Dissertation Committee Member, Dissertation Title: Hemiparetic shoulder pain

*Currently:* Assistant Professor, Physical Therapy and Rehabilitation Sciences, University of Southern Florida, Tampa, Florida

*Ericka Merriweather, DPT*

Program in Physical Therapy

NICHD T32 HD007434

August 2009-May 2014

Primary Dissertation Committee Member, Dissertation Title: Foot progression angle in people with diabetes and peripheral neuropathy

*Currently:* Assistant Professor, Department of Physical Therapy, New York University, New York, New York

*Christopher Sorensen, MS*

Program in Physical Therapy

NCRR TL1 RR024995 & UL1 RR024992

August 2010-May 2015

Primary Mentor, Project Title: Symptom behavior and risk factors for low back pain in prolonged standing

Awards and Scholarships:

- TL1 Pre-Doctoral Scholarship (Standard Program) 2011-2015
- 2nd place award, Poster presentation, 17th Annual Washington University Graduate Student Research Symposium

*Currently:* Senior Staff Scientist, Program in Physical Therapy, Washington University Medical School

*Andrej Marich, PT, DPT*

Program in Physical Therapy

NICHD T32 HD007434

August 2012-April 2017

Primary Mentor, Project Title: Relationship between movement and alignment patterns during standardized clinical tests and functional activities

Awards and Scholarships:

- Florence P. Kendall Doctoral Scholarship 2012-2013
- PODS I Scholarship 2014-2015
- 3rd place award, Poster presentation, 19th Annual Washington University Graduate Student Research Symposium
- Dr. Hans and Clara Davis Zimmerman Foundation Health Scholarship 2015-2017

*Currently:* Medical Science Liason, Scholar Rock Biotechnology

*Kshamata Shah, BS, PT*

Program in Physical Therapy

December 2013-May 2014

Dissertation Committee Member, Dissertation Title: Diabetes mellitus and impairments of the UE

*Currently:* Assistant Professor of Physical Therapy, Arcadia University, Glenside, Pennsylvania

*Victor Cheuy, BS*

Program in Physical Therapy

September 2013-2015

Primary Dissertation Committee Member, Project Title: Contributing factors to forefoot deformity in the diabetic, neuropathic foot

*Currently:* Assistant Professor, University of California San Francisco, San Francisco, California

*Ching Ting Hwang, BS*

Program in Physical Therapy

August 2013-February 2018

Primary Mentor, Project Title: Biomechanical, psychological and sensory processing findings in back-healthy people susceptible to low back pain

Awards:

- Olin Fellowship for Women in Graduate Study co-sponsored by Washington University and the Monticello Foundation 2013-2017
- American Society for Biomechanics, Grant in Aid Award, 2016-2017

*Currently:* Senior Project Manager, Scale Management, WCG MedAvante-ProPhase

*Kimberly Waddell, MS, OTR/L*

Program in Physical Therapy

November 2016-April 2019

NICHD T32 HD007434

NCRR TL1 TR000449

Member, Mentoring Committee, Project Title: Evaluating self-reported change and actual change in upper limb use after stroke

Primary Dissertation Committee Member, Project Title: Exploring the complexities of real world upper limb performance after stroke

*Currently:* Assistant Professor of Physical Medicine and Rehabilitation in the Perelman School of Medicine, University of Pennsylvania, Research Health Scientist, VA Center for Health Equity Research and Promotion

*Quenten Hooker, MS*

Program in Physical Therapy

August 2017-August 2021

NICHD T32 HD007434

NCRR TL1 TR000449

Primary Mentor, Project Title: Movement patterns during functional activities in people with chronic low back pain

*Currently:* Concept Engineer, Callaway Golf

*Jessica Barth, OTD*

Program in Physical Therapy

February 2021-May 2022

NICHD T32 HD007434

Dissertation Committee Member, Project Title: "Prediction of upper limb outcomes after stroke"

*Currently:* Advanced Health Fellow, U.S. Department of Veteran's Affairs

*David May, DPT*

Program in Physical Therapy

February 2021-Present

NICHD T32 HD007434

Dissertation Committee Member, Project Title: "Advancing the assessment and treatment of signs and symptoms of Parkinson Disease"

*Currently:* Field Clinical Neuromodulation Engineer, Boston Scientific

*Molly Shepherd, BS*

Program in Physical Therapy

August 2022-June 2024

NICHD T32 HD007434

Primary Dissertation Committee Member, Project Title: Femoral Geometry and Activity Type: Factors that Influence Loading in the Dysplastic Hip  
*Currently*: Staff Scientist,

**Ph.D. in Biokinesiology and Physical Therapy:**

Outside University

*Hai-Jung (Steffi) Shih, PT, PhD*

Biokinesiology and Physical Therapy, University of Southern California  
 February 2017-2020

Primary Dissertation Committee Member, Project Title: Effects of cognitive loading on gait characteristics in people with and people without LBP

*Currently*: Engineering Program Manager - Human Factors, Apple, Inc.

**Master's in Clinical Investigation Trainees:**

Washington University School of Medicine

*Michelle Kinney, MSPT*

Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences  
 NCRR TL1 RR024995

July 2006-September 2006

Primary Mentor, Project Title: Effect of modifications of hip lateral rotation on symptoms, movement patterns and muscle activity in people with low back pain

Scholarships:

- TL1 Pre-Doctoral Scholarship (Summer Program) 2006

*Currently*: Director, Physical Therapy, Saline Physical Therapy, Saline, Michigan

*Marcie Harris-Hayes, PT, DPT, MSCI, OCS*

MSCI student, Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences

August 2006-September 2008

Primary Mentor, Project Titles: Reliability of examiners to classify patients with LBP based on the MSI classification system; Development and preliminary testing of examiners to assess adherence to a physical therapy treatment program

*Currently*: Professor, Program in Physical Therapy, Washington University School of Medicine, St. Louis, Missouri

*Ruth Porter-Chimenti, DPT, PhD*

Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences

NCRR TL1 RR024995

June 2007-August 2007

Primary Mentor, June 2007-August 2007; Project Title: Movement patterns and activity levels in people with and without low back pain who participated in rotation-related sport

Scholarships:

- TL1 Pre-Doctoral Scholarship (Summer Program) 2007

June 2009-August 2009

Primary Research Advisor, June 2009-August 2009, Research Intensive Clinical Rotation, Project Title: Musculoskeletal conditions in professional musicians

*Currently*: Assistant Professor, Department of Physical Therapy, University of Iowa, Iowa City, Iowa

*Margaret Ravenna, DPT*

MSCI Scholar, Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences

NCRR TL1 RR024995

June 2009-May 2010

Primary Mentor, Project Title: Anterior shear findings in people with flexion-related low back pain

Scholarships:

TL1 Pre-Doctoral Scholarship (Intensive Program) 2009-2010

*Currently*: Manager Physical Therapist, Fusion Rehabilitation, Phoenix, Arizona

*Stephanie Sandvick, DPT*

MSCI Scholar, Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences

NCRR TL1 RR024995

June 2012-May 2013

Primary Mentor, Project Title: Mechanical impairments and outcomes in people with LBP

Awards and Scholarships:

TL1 Pre-Doctoral Scholarship (Intensive Program), 2012-2013

Missouri Physical Therapy Association Noteworthy Poster Award, 2015

*Currently*: Physical Therapist, Physical Therapy & Sports Medicine Centers, Orange, Connecticut

*Stacey Chen, BS, ATC*

MSCI Scholar, Clinical Research and Training Center, Washington University Institute for Clinical and Translational Sciences

NCRR TL1 TR002344

June 2020-May 2021

Primary Mentor, Project Title: Spinal movement impairments in people with chronic, recurrent LBP vs. people with chronic LBP

Awards and Scholarships:

TL1 Pre-Doctoral Scholarship (Intensive Program), 2020-2021

*Currently*: PhD student, Movement Science Program, Program in Physical Therapy, Washington University

**MS in Biomedical Engineering**

*Donald Aboytes, BS*

Department of Biomedical Engineering

January 2021-August 2021

Master's Thesis Committee Member, Project Title: "Intervertebral disc strains induced during prolonged standing"

*Currently*: Research and Development Engineer at BioSense Weber (Johnson and Johnson)

**Research Scholars:**International*Roberto Meroni, PT, MSc, PhD*

Visiting Researcher, Motion Analysis Laboratory, Department of Clinical Medicine and Prevention, University of Milan Bicocca, Milan, Italy

March 2008-May 2008

Primary Mentor, Project Title: Lumbopelvic movements and symptom behavior with a test performed in quadruped: People with and without LBP

*Currently*: Associate Professor, Chair, Physical Therapy, Lunex University, Luxembourg

*Marco Boschi, BSPT, OMPT*

Visiting Researcher, Physical Therapist, Department of Physical Therapy, University of Bologna, Bologna, Italy

January 2009-May 2009

Primary Mentor, Project Title: Pattern of movement with hip medial rotation in 2 LBP subgroups

*Currently*: Physical Therapist, University of Bologna, Bologna, Italy

*Hiroshige Tateuchi, MSPT, PhD*

Visiting Researcher, Physical Therapist

February 2009-April 2009

Primary Mentor, Project Title: Pattern of movement with return from forward bend in 2 LBP subgroups

*Currently*: Associate Professor, Department of Physical Therapy, School of Health Sciences, Faculty of Medicine, Kyoto University, Kyoto, Japan

**Post-Professional Clinical Doctorate in Physical Therapy:**Washington University School of Medicine*Cheryl Caldwell, PT, DPT, CHT*

Capstone Project, Program in Physical Therapy

September 2002-December 2002

Primary Mentor, Project Title: Medical and physical therapy diagnosis of shoulder impingement syndrome

*Currently*: Retired 2021 as Associate Professor of Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine, St. Louis, Missouri

*Marcie Harris-Hayes, PT, DPT, MSCI*

Independent Study, Program in Physical Therapy

September 2002-May 2003

Primary Mentor, Project Title: Classification, treatment and outcomes of a patient with lumbar extension syndrome

*Currently*: Professor of Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine, St. Louis, Missouri

*Mary Kate McDonnell, PT, DPT, OCS*

Capstone Project, Program in Physical Therapy

September 2002-May 2003

Primary Mentor, Project Title: Use of a specific exercise program and modification of postural alignment in the treatment of a patient with cervicogenic headache

*Currently*: Retired 2022 as Associate Professor of Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine, St. Louis, Missouri

*Teresa Spitznagle, PT, DPT, WCS*

Independent Study, Program in Physical Therapy

January 2004-August 2004; January 2006-May 2006

Primary Mentor, Project Title: Diastasis recti abdominis in a urogynecological patient population

*Currently*: Professor of Physical Therapy and Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Missouri

*Tom Susco, DPT*

Independent Study, Program in Physical Therapy

July 2004-December 2004

Primary Mentor, Project Titles: Passive hip rotation measures in people with and without low back pain who participate in rotation-related sports activities

*Currently*: Lawyer, United States Court of Appeals for Veterans Claims, Washington, D.C.

*Renee Ivens, PT, DPT*

Independent Study, Program in Physical Therapy

January 2005-December 2005

Primary Mentor, Project Title: Characteristics of people with low back pain who do not fully respond to modifications of alignment and movement during a clinical examination

*Currently*: Associate Professor of Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine, St. Louis, Missouri

*Bethany Taylor Gardner, OTD, OTR/L*

Capstone Project, Program in Occupational Therapy

November 2005-May 2007

Capstone Project Committee Member, Project Title: The relationship between job satisfaction, control, social support at work and hand symptoms in carpal tunnel syndrome

*Currently*: Occupational Therapist, Toyota Family Health Center, San Antonio, Texas

*Pamela Wendl, PT, DPT*

Independent Study, Program in Physical Therapy

June 2006-August 2006

Primary Mentor, Project Title: Outcomes Used in LBP

*Currently*: Assistant Professor of Emergency Medicine and Physical Therapy, Washington University School of Medicine, St. Louis, Missouri

*Brigitte Cutler*

Capstone Project, Program in Physical Therapy

January 2007-December 2007

Primary Mentor, Project Title: The use of unweighting techniques in a patient with lumbar rotation with extension syndrome

*Currently*: Owner and Physical Therapist at PhysioTherapy Professionals, Springfield, Illinois

*Lynnette Khoo-Summers, PT, DPT*

Independent Study, Program in Physical Therapy

January 2008-December 2008

Primary Mentor, Project Title: Musculoskeletal contributions to turn out in first position in college-level ballet dancers

*Currently*: Associate Professor of Physical Therapy and Orthopaedic Surgery, Washington University School of Medicine, St. Louis, Missouri

#### **Doctorate in Physical Therapy:**

*Yi Kang, BS, DPT*

Research Assistant

January 2021-May 2024

*Currently*: Pre-doctoral trainee, Movement Science Doctoral Program, Washington University School of Medicine, St. Louis, Missouri

#### **Master's in Science:**

Washington University School of Medicine

*Sanford Olevitch*

Program in Occupational Therapy, Washington University School of Medicine

July 1998-December 1998

Primary Master's Thesis Committee Member, Thesis Title: Effects of the perceived work environment on return to work outcomes of LBP patients

*Currently*: Physical therapist, Luna Physical Therapy, Robbinsdale, Minnesota

#### **Professional Master's in Physical Therapy:**

Washington University School of Medicine

*Stephanie Griffith*

January 1998-May 1998

*Katherine Ballmann*

January 1999-May 1999; September 1999-December 1999

*Matt Luzinski*

August 1999-December 1999

*Jill Taylor*

January 2000-May 2000

*Elena Zelkowitz*

January 2000-May 2000; August 2000-December 2000

*Rani Linarelli*

February 2001-May 2001

*Marc Haro*

February 2002-December 2002

#### **Undergraduate:**

Washington University

*Elizabeth Jokerst*, Psychology

August 1994-May 1995

Laura Jones, Psychology

January 1995-May 1995

Alissa Hartmann, Biology

August 1995-May 1996

Ayala Weiner, Psychology and Biology

August 1995-December 1995

Anna Bailes, Biomedical Engineering

August 2014-May 2015, August 2016- May 2017

Patrick Wong, Biomedical Engineering

January 2016-May 2016

Kearsten Miller, Biomedical Engineering

March 2023-April 2024

Sophie Ma, Mechanical Engineering and Biomedical Engineering

August 2023-December 2023

## BIBLIOGRAPHY:

### Peer Reviewed Manuscripts - Published/In Press/Accepted

1. **Van Dillen LR**, Roach KE. Reliability and validity of the Acute Care Index of Function for patients with neurologic impairment. *Physical Therapy*. 1988; 68(7):1098-101. PubMed PMID: 3387465.
2. Roach KE, **Van Dillen LR**. Development of an Acute Care Index of Functional status for patients with neurologic impairment. *Physical Therapy*. 1988; 68(7):1102-8. PubMed PMID: 3387466.
3. **Van Dillen LR**, Roach KE. Interrater reliability of a clinical scale of rigidity. *Physical Therapy*. 1988; 68(11):1679-81. PubMed PMID: 3186794.
4. **Van Dillen LR**, Sahrman SA, Norton BJ, Caldwell CA, Fleming DA, McDonnell MK, Woolsey NB. Reliability of physical examination items used for classification of patients with low back pain. *Physical Therapy*. 1998; 78(9):979-88. PubMed PMID: 9736895.
5. **Van Dillen LR**, McDonnell MK, Fleming DA, Sahrman SA. Effect of knee and hip position on hip extension range of motion in individuals with and without low back pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2000; 30(6):307-16. PubMed PMID: 10871142.
6. Maluf KS, Sahrman SA, **Van Dillen LR**. Use of a classification system to guide nonsurgical management of a patient with chronic low back pain. *Physical Therapy*. 2000; 80(11):1097-111. PubMed PMID: 11046197.
7. **Van Dillen LR**, Sahrman SA, Norton BJ, Caldwell CA, Fleming D, McDonnell MK, Bloom NJ. Effect of active limb movements on symptoms in patients with low back pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2001; 31(8):402-13; discussion 414-8. PubMed PMID: 11508611.
8. Hollman JH, Deusinger RH, **Van Dillen LR**, Matava MJ. Knee joint movements in subjects without knee pathology and subjects with injured anterior cruciate ligaments. *Physical Therapy*. 2002; 82(10):960-72. PubMed PMID: 12350211.
9. **Van Dillen LR**, Sahrman SA, Norton BJ, Caldwell CA, McDonnell MK, Bloom NJ. Movement system impairment-based categories for low back pain: stage 1 validation. *Journal of Orthopaedic and Sports Physical Therapy*. 2003; 33(3):126-42. PubMed PMID: 12683688.
10. **Van Dillen LR**, Sahrman SA, Norton BJ, Caldwell CA, McDonnell MK, Bloom N. The effect of modifying patient-preferred spinal movement and alignment during symptom testing in patients with low back pain: a preliminary report. *Archives of Physical Medicine and Rehabilitation*. 2003; 84(3):313-22. PubMed PMID: 12638097.

11. Hollman JH, Deusinger RH, **Van Dillen LR**, Zou D, Minor SD, Matava MJ, Engsberg JR. Tibiofemoral joint-surface motions in weight-bearing and non-weight-bearing movement. *Journal of Sport Rehabilitation*. 2003; 12(2):143-161.
12. Hollman JH, Deusinger RH, **Van Dillen LR**, Matava MJ. Gender differences in surface rolling and gliding kinematics of the knee. *Clinical Orthopedics & Related Research*. 2003; (413):208-21. PubMed PMID: 12897612.
13. Norton BJ, Sahrman SA, **Van Dillen LR**. Differences in measurements of lumbar curvature related to gender and low back pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2004; 34(9):524-34. PubMed PMID: 15493520.
14. McDonnell MK, Sahrman SA, **Van Dillen LR**. A specific exercise program and modification of postural alignment for treatment of cervicogenic headache: a case report. *Journal of Orthopaedic and Sports Physical Therapy*. 2005; 35(1):3-15. PubMed PMID: 15754599.
15. **Van Dillen LR**, Sahrman SA, Wagner JM. Classification, intervention, and outcomes for a person with lumbar rotation with flexion syndrome. *Physical Therapy*. 2005; 85(4):336-51. PubMed PMID: 15794704.
16. Harris-Hayes M, **Van Dillen LR**, Sahrman SA. Classification, treatment and outcomes of a patient with lumbar extension syndrome. *Physiotherapy Theory and Practice*. 2005; 21(3):181-96. PubMed PMID: 16389699.
17. **Van Dillen LR**, Sahrman SA, Caldwell CA, McDonnell MK, Bloom N, Norton BJ. Trunk rotation-related impairments in people with low back pain who participated in 2 different types of leisure activities: a secondary analysis. *Journal of Orthopaedic and Sports Physical Therapy*. 2006; 36(2):58-71. PubMed PMID: 16494073.
18. Prather H, **Van Dillen LR**, Metzler JP, Riew KD, Gilula LA. Prospective measurement of function and pain in patients with non-neoplastic compression fractures treated with vertebroplasty. *Journal of Bone and Joint Surgery*. 2006; 88(2):334-41. PubMed PMID: 16452745.
19. Gombatto SP, Collins DR, Sahrman SA, Engsberg JR, **Van Dillen LR**. Gender differences in pattern of hip and lumbopelvic rotation in people with low back pain. *Clinical Biomechanics*. (Bristol, Avon). 2006; 21(3):263-71. PubMed PMID: 16376467.
20. **Van Dillen LR**, Gombatto SP, Collins DR, Engsberg JR, Sahrman SA. Symmetry of timing of hip and lumbopelvic rotation motion in 2 different subgroups of people with low back pain. *Archives of Physical Medicine and Rehabilitation*. 2007; 88(3):351-60. PubMed PMID: 17321829.
21. Spitznagle TM, Leong FC, **Van Dillen LR**. Prevalence of diastasis recti abdominis in a urogynecological patient population. *International Urogynecology Journal and Pelvic Floor Dysfunction*. 2007; 18(3):321-8. PubMed PMID: 16868659.
22. Gombatto SP, Collins DR, Sahrman SA, Engsberg JR, **Van Dillen LR**. Patterns of lumbar region movement during trunk lateral bending in 2 subgroups of people with low back pain. *Physical Therapy*. 2007; 87(4):441-54. PubMed PMID: 17374634.
23. Caldwell C, Sahrman S, **Van Dillen L**. Use of a movement system impairment diagnosis for physical therapy in the management of a patient with shoulder pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2007; 37(9):551-63. PubMed PMID: 17939614.
24. **Van Dillen LR**, McDonnell MK, Susco TM, Sahrman SA. The immediate effect of passive scapular elevation on symptoms with active neck rotation in patients with neck pain. *Clinical Journal of Pain*. 2007; 23(8):641-7. PubMed PMID: 17885341.
25. Harris-Hayes M, Wendl PM, Sahrman SA, **Van Dillen LR**. Does stabilization of the tibiofemoral joint affect passive prone hip rotation range of motion measures in unimpaired individuals? A preliminary report. *Physiotherapy Theory and Practice*. 2007; 23(6):315-23. PubMed PMID: 18075905.

26. Scholtes SA, **Van Dillen LR**. Gender-related differences in prevalence of lumbopelvic region movement impairments in people with low back pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2007; 37(12):744-53. PubMed PMID: 18560183.
27. Gombatto SP, Klaesner JW, Norton BJ, Minor SD, **Van Dillen LR**. Validity and reliability of a system to measure passive tissue characteristics of the lumbar region during trunk lateral bending in people with and people without low back pain. *Journal of Rehabilitation Research & Development*. 2008; 45(9):1415-29. PubMed PMID: 19319764.
28. **Van Dillen LR**, Bloom NJ, Gombatto SP, Susco TM. Hip rotation range of motion in people with and without low back pain who participate in rotation-related sports. *Physical Therapy in Sport*. 2008; 9(2):72-81. PubMed Central PMCID: PMC2597839.
29. Gombatto SP, Norton BJ, Scholtes SA, **Van Dillen LR**. Differences in symmetry of lumbar region passive tissue characteristics between people with and people without low back pain. *Clinical Biomechanics*. (Bristol, Avon). 2008; 23(8):986-95. PubMed Central PMCID: PMC2577573.
30. Andrade GT, Azevedo DC, De Assis Lorentz I, Galo Neto RS, Sadala Do Pinho V, Ferraz Goncalves RT, McDonnell MK, **Van Dillen LR**. Influence of scapular position on cervical rotation range of motion. *Journal of Orthopaedic and Sports Physical Therapy*. 2008; 38(11):668-73. PubMed PMID: 19024884.
31. Gardner BT, Dale AM, **Van Dillen LR**, Franzblau A, Evanoff BA. Predictors of upper extremity symptoms and functional impairment among workers employed for 6 months in a new job. *American Journal of Industrial Medicine*. 2008; 51(12):932-40. PubMed PMID: 18651568.
32. Scholtes SA, Gombatto SP, **Van Dillen LR**. Differences in lumbopelvic motion between people with and people without low back pain during two lower limb movement tests. *Clinical Biomechanics*. (Bristol, Avon). 2009; 24(1):7-12. PubMed Central PMCID: PMC2643272.
33. **Van Dillen LR**, Maluf KS, Sahrman SA. Further examination of modifying patient-preferred movement and alignment strategies in patients with low back pain during symptomatic tests. *Manual Therapy*. 2009; 14(1):52-60. PubMed Central PMCID: PMC2659590.
34. Harris-Hayes M, Sahrman SA, **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(1):60-75. PubMed Central PMCID: PMC2699456.
35. Harris-Hayes M, **Van Dillen LR**. The inter-tester reliability of physical therapists classifying low back pain problems based on the movement system impairment classification system. *Physical Medicine and Rehabilitation*. 2009; 1(2):117-26. PubMed Central PMCID: PMC2752279.
36. 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. *Journal of Rehabilitation Medicine*. 2010; 42(3):221-7. PubMed Central PMCID: PMC3574865.
37. Scholtes SA, Norton BJ, Lang CE, **Van Dillen LR**. The effect of within-session instruction on lumbopelvic motion during a lower limb movement in people with and people without low back pain. *Manual Therapy*. 2010; 15(5):496-501. PubMed Central PMCID: PMC2922485.
38. Hoffman SL, Harris-Hayes M, **Van Dillen LR**. Differences in activity limitation between 2 low back pain subgroups based on the movement system impairment model. *Physical Medicine and Rehabilitation*. 2010; 2(12):1113-8. PubMed Central PMCID: PMC3628674.
39. Sharma NK, McCarson K, **Van Dillen L**, Lentz A, Khan T, Cirstea CM. Primary somatosensory cortex in chronic low back pain - a H-MRS study. *Journal of Pain Research*. 2011; 4:143-50. PubMed Central PMCID: PMC3100229.
40. Ravenna MM, Hoffman SL, **Van Dillen LR**. Low interrater reliability of examiners performing the prone instability test: a clinical test for lumbar shear instability. *Archives of Physical Medicine and Rehabilitation*. 2011; 92(6):913-9. PubMed Central PMCID: PMC3104326.

41. Hoffman SL, Johnson MB, Zou D, **Van Dillen LR**. Sex differences in lumbopelvic movement patterns during hip medial rotation in people with chronic low back pain. *Archives of Physical Medicine and Rehabilitation*. 2011; 92(7):1053-9. PubMed Central PMCID: PMC3124680.
42. 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. *Manual Therapy*. 2011; 16(4):344-50. PubMed Central PMCID: PMC3095730.
43. Hoffman SL, Johnson MB, Zou D, **Van Dillen LR**. Gender differences in modifying lumbopelvic motion during hip medial rotation in people with low back pain. *Rehabilitation Research and Practice*. 2012; 2012:635312. PubMed Central PMCID: PMC3270471.
44. 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. *Journal of Orthopaedic and Sports Physical Therapy* 2012; 42(2):105-13. PubMed Central PMCID: PMC3628684.
45. Hoffman SL, Johnson MB, Zou D, **Van Dillen LR**. Differences in end-range lumbar flexion during slumped sitting and forward bending between low back pain subgroups and genders. *Manual Therapy*. 2012; 17(2):157-63. PubMed Central PMCID: PMC3288514.
46. Delitto A, George SZ, **Van Dillen LR**, Whitman JM, Sowa G, Shekelle P, Denninger TR, Godges JJ. Low back pain: clinical practice guidelines linked to the international classification of functioning, disability, and health from the orthopaedic section of the American Physical Therapy Association. *Journal of Orthopaedic and Sports Physical Therapy*. 2012; 42(4):A1-57. PubMed Central PMCID: PMC4893951.
47. Prather H, **Van Dillen LR**, Kymes SM, Armbrecht MA, Stwalley D, Clohisy JC. Impact of coexistent lumbar spine disorders on clinical outcomes and physician charges associated with total hip arthroplasty. *Spine Journal*. 2012; 12(5):363-9. PubMed Central PMCID: PMC3340523.
48. Graci V, **Van Dillen LR**, Salsich GB. Gender differences in trunk, pelvis and lower limb kinematics during a single leg squat. *Gait Posture*. 2012; 36(3):461-6. PubMed Central PMCID: PMC3407338.
49. Sharma NK, Brooks WM, Popescu AE, **Van Dillen LR**, George SZ, McCarson KE, Gajewski BJ, Gorman P, Cirstea CM. Neurochemical analysis of primary motor cortex in chronic low back pain. *Brain Sciences*. 2012; 2(3):319-31. PubMed Central PMCID: PMC3678773.
50. Scholtes SA, Norton BJ, Gombatto SP, **Van Dillen LR**. Variables associated with performance of an active limb movement following within-session instruction in people with and people without low back pain. *BioMed Research International*. 2013; 2013:867983. PubMed Central PMCID: PMC3747432.
51. Azevedo DC, Lauria AC, Pereira AR, Andrade GT, Ferreira ML, Ferreira PH, **Van Dillen LR**. Intraexaminer and interexaminer reliability of pressure biofeedback unit for assessing lumbopelvic stability during 6 lower limb movement tests. *Journal of Manipulative and Physiological Therapeutics*. 2013; 36(1):33-43. PubMed PMID: 23380212.
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#### **Non Peer Review Publications**

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#### **Invited Publications – Book Chapters**

1. **Van Dillen LR**, Roach KE. Analysis of Movement Dysfunction and Physical Disability - Activities of Daily Living. Scully RM, Barnes MR, editors. Philadelphia, PA: Lippincott Co.; 1987. *Physical Therapy*. 629-643p.
2. Abrams RA, **Van Dillen LR**, Stemmons V. Multiple Sources of Spatial Information for Aimed Limb Movements. Umilta C, Moscovitch M, editors. Cambridge, MA: MIT Press; 1993. *Attention and Performance XV*. 267-290p.
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#### **Preprints**

1. Shih H-JS, **Van Dillen LR**, Kutch J, Kulig, K. (2020) Individuals with recurrent low back pain exhibit further altered trunk control in remission than when in pain. *medRxiv*, <https://doi.org/10.1101/2020.10.15.20213488>.
2. Hooker QL, **van Dillen LR**. (2022) Person-specific characteristics of People with Low Back Pain Moderate the Preferred Movement Pattern within Motor Skill Training and Strength and Flexibility Exercise. *medRxiv* doi: <https://doi.org/10.1101/2022.02.28.22271619>.
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#### **Abstracts – Published (Peer Reviewed)**

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  38. Hooker QL, Lanier VM, **Van Dillen LR**. Consistent differences in lumbar spine alignment between low back pain subgroups and sexes during clinical and functional sitting tests. 2020, *Association for Clinical and Translational Science*, April 14-17, Washington, DC, USA.
  39. Ellingston AM, Foltz MH, Weber C, **Van Dillen LR**, Tang SY. Intervertebral disc structure, function and mechanics. *Orthopaedic Research Society 2021*; Paper No. 1186.
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  42. Smith JA, Tain R, Sharp KG, Glynn LM, **Van Dillen LR**, Henslee K, Jacobs JV, Cramer SC. Identifying the neural correlates of postural control: a novel fMRI paradigm. *Organization for Human Brain Mapping Annual Meeting*, Glasgow, Scotland, June 7-8, 2022, Poster No. WTh681.
  43. **Van Dillen LR**, Lanier VM. Spinal movement impairments in non-chronic low back pain: A potentially important clinical biomarker. In *Proceedings of 11<sup>th</sup> Interdisciplinary World Congress for Low Back and Pelvic Pain*, November 1-5, Melbourne, Australia 2023, pp. 69-74, ISBN/EAN 978-90-816016-8-9.
  44. Lanier VM, Lohse KR, Hooker QL, Civello JM, **Van Dillen LR**. Booster prescription and outcomes in adults with low back pain. In *Proceedings of 11th Interdisciplinary World Congress for Low Back and Pelvic Pain*, November 1-5, Melbourne, Australia 2023, p. 303, ISBN/EAN 978-90-816016-8-9.
  45. Lanier VM, Hooker QL, **Van Dillen LR**. Person-specific characteristics moderate the effect of motor skill training in adults with low back pain. In *Proceedings of 11th Interdisciplinary World Congress for*

*Low Back and Pelvic Pain*, November 1-5, Melbourne, Australia 2023, p. 149, ISBN/EAN 978-90-816016-8-9.

46. **Van Dillen LR**, Lanier V, McDonnell DF. Within-session effects of treating spinal movement impairments in people with acute low back pain presenting to the Emergency Department. In *Proceedings of 11<sup>th</sup> Interdisciplinary World Congress for Low Back and Pelvic Pain*, November 1-5, Melbourne, Australia 2023, p. 264, ISBN/EAN 978-90-816016-8-9.

#### **Poster Presentations (Peer Reviewed; No associated published abstract)**

1. Spitznagle TM, Leong FC, **Van Dillen LR**. Diastasis recti abdominis in a urogynecological patient population. *American Physical Therapy Association Combined Sections Meeting 1999*, February 3-7, Seattle, WA.
2. Porter R, Scholtes SA, **Van Dillen LR**. Differences between people with low back pain and people without low back pain who participate in rotation-related sports. *Second Annual Research Training Symposium and Poster Session 2007*, September, Washington University School of Medicine, St. Louis, MO.
3. Ravenna MM, Hoffman SL, **Van Dillen LR**. Low inter-rater reliability of examiners performing the Prone Instability Test, a clinical identification of lumbar anterior shear. *Missouri Physical Therapy Association Spring Meeting 2010*, April 2-3, St. Louis, MO.
4. Bowers S, Spitznagle TM, **Van Dillen LR**. The combined use of a musculoskeletal and a neuromuscular physical therapy diagnosis in the treatment of a patient with knee pain: A case report. *American Physical Therapy Association Combined Sections Meeting 2011*, February 10-13, New Orleans, LA.
5. Norton BJ, Sahrman SA, Baldwin SJ, Kotyk JJ, **Van Dillen LR**. Effect of opposing rotation conditions on transverse rotation of lumbar vertebra and sacrum. *American Physical Therapy Association Combined Sections Meeting 2011*, February 10-13, New Orleans, LA.
6. Gombatto SP, Norton BJ, Scholtes SA, **Van Dillen LR**. Differences in symmetry of lumbar region passive tissue characteristics between people with and people without low back pain. *Washington University Musculoskeletal Research Symposium 2011*, February, St. Louis, MO.
7. Norton BJ, Baldwin SJ, Sahrman SA, Kotyk JJ, **Van Dillen LR**. Effect of in vivo twisting on lumbar region intersegmental angles in frontal and transverse planes. *American Physical Therapy Association Combined Sections Meeting 2012*, February 8-12, Chicago, IL.
8. Sorensen CJ, Johnson MB, Callaghan JP, George SZ, **Van Dillen LR**. The relationship between psychological measures and low back pain symptom intensity during prolonged standing in back healthy people: A preliminary study. *National Clinical and Translational Sciences Predoctoral Programs Meeting, Mayo Clinic 2012*, May 6-8, Rochester, MN.
9. Sandvick SA, Bohall S, **Van Dillen LR**. Association between rotation-related impairments and asymmetric activity in people with and without low back pain. *National Clinical and Translational Sciences Predoctoral Programs Meeting 2013*, May 5-7, Rochester, MN.
10. Sorensen CJ, Callaghan JP, George SZ, **Van Dillen LR**. Differences in movement patterns during the active hip abduction test in low back pain developers and non-pain developers. *National Clinical and Translational Sciences Predoctoral Programs Meeting Mayo Clinic 2013*, May 5-7, Rochester, MN.
11. Fleming-McDonnell D, Wendl P, Deusinger S, **Van Dillen LR**, Bohall S, Poirer R. Physical therapy in the emergency department: A new delivery option. *4<sup>th</sup> Annual Great Plains Regional Society for Academic Emergency Medicine Research Meeting*, 2013, September 28<sup>th</sup>, Springfield, IL.
12. Hwang CT, Tang S, Liu J, **Van Dillen LR**. Intervertebral disc deformation in people with and people without low back pain: A preliminary report. *Washington University Musculoskeletal Research Winter Symposium*, 2015, February 16<sup>th</sup>, St. Louis, MO.

13. Hwang CT, Tang S, Liu J, **Van Dillen LR**. Intervertebral disc deformation in people with and people without low back pain: A preliminary report. *Washington University Graduate Student Association Symposium*, 2015, February 21<sup>st</sup>, St. Louis, MO.
14. Marich AV, Bohall SC, **Van Dillen LR**. Assessing patient preferences towards two physical therapy treatments in people with low back pain. *5<sup>th</sup> Annual Comparative Effectiveness Research Symposium*, 2015, April 14, St. Louis, MO.
15. Weyrauch S, Bohall S, Sorensen CJ, **Van Dillen LR**. Association between rotation-related impairments and activity type in people with and without low back pain. *Missouri Physical Therapy Association Spring Conference, MPTA Noteworthy Poster Award*, 2015, April 16-18, St. Louis, MO.
16. Salsich GB, Yemm B, Reitenbach A, DiStaulo A, Lang CE, **Van Dillen LR**. Task specific movement pattern training for treatment of patellofemoral pain. *Section on Research Retreat*, 2015, July 26-30, Providence, RI.
17. Francois SJ, Marich AV, Putnam SC, **Van Dillen LR**. Attributes contributing to treatment preference in people with chronic low back pain. *Missouri Physical Therapy Association Spring Conference*, 2017, April 8, St. Louis, MO.
18. Salsich GB, Yemm B, Steger-May K, Lang CE, **Van Dillen LR**. Preliminary effects of task-specific movement training on lower extremity kinematics, pain, and activity limitations in women with patellofemoral pain. *Midwest Musculoskeletal Workshop*, Washington University School of Medicine, 2017, July 20, Saint Louis, MO.
19. Lanier VM, Lang CE, **Van Dillen LR**. Application of a motor skill training program in an individual with chronic low back pain. *Missouri Physical Therapy Association Spring Meeting*, 2018, April 14, Kansas City, MO.
20. Salsich GB, Yemm B, Steger-May K, Lang CE, **Van Dillen LR**. Preliminary effects of task-specific movement training on lower extremity kinematics, pain, and activity limitations in women with patellofemoral pain. *6<sup>th</sup> International Patellofemoral Research Network Retreat*, 2019, October 1-3, Milwaukee, WI.
21. Krueger KO, Ducan RP, **Van Dillen LR**. Prevalence of spinal movement impairments in people with acute low back pain. *16<sup>th</sup> Annual Neuromuscular Plasticity Symposium*, 2021, March 13, Gainesville, FL.
22. Hooker QL, **Van Dillen LR**. Person-specific characteristics of people with LBP moderate the baseline and change over time in the altered movement pattern. *16<sup>th</sup> Annual Neuromuscular Plasticity Symposium*, 2021, March 13, Gainesville, FL.
23. Harris MD, Wu T, **Van Dillen LR**, Clohisy JC. Associations between abnormal muscle-induced biomechanics and patient-reported outcomes among patients with developmental dysplasia of the hip. *North American Congress on Biomechanics*, 2022, August 21-22, Ottawa, Ontario, CA.
24. Chen S, **Van Dillen LR**, Krueger KO. Relationship between hip range of motion to pain and function in people with low back pain. *28<sup>th</sup> Annual Graduate Research Symposium*, 2023, April 4, Olin Business School, St. Louis, MO.

#### **Platform Presentations (Peer Reviewed; No associated published abstract)**

1. Gombatto SP, Collins DR, Sahrman SA, Engsborg JR, Lenke LG, **Van Dillen LR**. Lumbar spine contribution to trunk side bending in people with different low back pain classifications. Presented *Gossman Research Symposium for Graduate Students, American Physical Therapy Association Combined Sections Meeting 2005*, February 23 -27, New Orleans, LA.
2. Scholtes SA, Gombatto SP, **Van Dillen LR**. Differences in lumbopelvic movement during hip lateral rotation between people with and people without low back pain. Presented *Gossman Research Symposium for Graduate Students, American Physical Therapy Association Combined Sections Meeting 2008*, February 6-9, Nashville, TN.

3. Ravenna MM, Hoffman SL, **Van Dillen LR**. Low inter-rater reliability of examiners performing the Prone Instability Test, a clinical identification of lumbar anterior shear. Presented *2010 Fifth Annual Pre-Doctoral Research Training Symposium and Poster Session* 2010, October 27, Washington University School of Medicine, St. Louis, MO.
4. **Van Dillen, LR**, Norton BJ, Sahrman SA, Evanoff BE, Harris-Hayes, M, Holtzman GE, Earley J, Chou I, Strube M. Effects of classification-specific treatments and adherence on function in people with chronic low back pain: A one-year prospective, randomized, controlled clinical trial. Presented *8<sup>th</sup> Annual Multidisciplinary Research Symposium*, 2014, October 23, Barnes-Jewish Hospital, St. Louis, MO.
5. McDonnell DF, Wendl PA, Deusinger SS, **Van Dillen LR**, Bohall S, Poierer RF. Partnership with physical therapy in inter-disciplinary emergency care: An innovative delivery paradigm. Presented *8<sup>th</sup> Annual Multidisciplinary Research Symposium*, 2014, October 23, Barnes-Jewish Hospital, St. Louis, MO.
6. Harris-Hayes M, Czuppon S, **Van Dillen LR**, Steger-May K, Sahrman SA, Schootman M, Salsich GB, Clohisy JC, Mueller MJ. Movement pattern training improves function in people with pre-arthritis hip disease: a preliminary study. Presented *American Association of Hip and Knee Surgeons 25<sup>th</sup> Annual Meeting*, 2014, November 7, Dallas, TX.
7. Weber C, Hwang CT, **Van Dillen LR**, Tang S. Load-sharing of the intervertebral discs during standing determined by open-upright magnetic resonance imaging. Presented *Philadelphia Spine Research Symposium*. 2016, November, Philadelphia, PA.
9. Marich AV, Hwang CT, **Van Dillen LR**. Consistency of a lumbar movement pattern in back-healthy people and people with low back pain when demands of a functional activity are varied. Presented *Gossman Graduate Symposium at Combined Sections Meeting of the APTA*, 2017, February 15-18, 2017, San Antonio, TX.
10. Hooker QL, Roles K, Lanier VM, **Van Dillen LR**. Motor skill training vs. strength and flexibility exercise: Effects on functional limitations, pain, and movement. *10<sup>th</sup> Musculoskeletal Research Center: Musculoskeletal Symposium*, 2019, February 20, St. Louis, MO.
11. Hooker QL, Roles K, Lanier VM, **Van Dillen LR**. Effects of motor skill training vs. strength and flexibility exercise on functional limitations, pain, and movement characteristics in people with chronic low back pain. *Association for Clinical and Translational Sciences Meeting*, 2019, March 5-8, Washington, DC.
12. Hooker QL, Roles K, Lanier VM, **Van Dillen LR**. Person-specific characteristics of people with LBP moderate the baseline and change over time in an altered movement pattern. *2019 Fifth Annual Pre-Doctoral Research Training Symposium and Poster Session*, 2019, October 8, Washington University School of Medicine, St. Louis, MO.

#### **Manuscripts in Review**

1. Hooker QL, Lanier V, **van Dillen LR**. Person-specific characteristics of people with LBP moderate the baseline and change over time in an altered movement pattern. 1<sup>st</sup> submission to *Journal of Electromyography and Kinesiology*.
2. Krueger KO, Duncan R, **Van Dillen LR**. Do people with acute low back pain display relevant spinal movement impairments similar to people with chronic low back pain? 1<sup>st</sup> submission to *Physical Medicine and Rehabilitation*.
3. Lanier V, Lohse K, Hooker QL, Civello JM, **Van Dillen LR**. Booster session attendance, prescription, and outcomes: A secondary analysis in adults with chronic low back pain. 1<sup>st</sup> submission to *Journal of Orthopaedic and Sports Physical Therapy*.
4. Smith JA, Tain R, Chrisman I, Sharp KG, Glynn LM, **van Dillen LR**, Jacobs JV, Cramer SC. Gray matter morphology and pain-related disability in young adults with low back pain. 1<sup>st</sup> submission to *Pain*.

#### **Manuscripts in Revision**

1. Aboytes D, Ellingson A, **Van Dillen LR**, Tang S. Time-dependent adaptations of the intervertebral disc correspond with low back pain symptoms induced by prolonged standing.
2. Hooker QL, Chen S, Lanier VM, **Van Dillen LR**. Validity of an operational definition for recurrence of an episode of low back pain.

#### **Manuscripts In Preparation**

1. Hooker QL, **Van Dillen LR**. The relationship of movement patterns across multiple functional activity tests in people with chronic low back pain.