CURRICULUM VITAE

Date: June 2023

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Contact Information

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Present Position

2013- present: Associate Professor Program in Physical Therapy and Orthopaedic Surgery Washington University School of Medicine St Louis, Missouri

Education

- 1984 BS Physical Therapy, Maryville University, St Louis, Missouri
- 1992 MHS Health Science, Physical Therapy, Washington University, St Louis, Missouri
- 2006 DPT Physical Therapy, Washington University, St Louis, Missouri

Professional Experience:

1984-1985 Physical Therapist Metropolitan Physical Therapy St. Louis, Missouri
1985-1992 Physical Therapist Irene Walter Johnson Rehabilitation Washington University School of Medicine St Louis, Missouri

1986-2002	Lecturer Program in Physical Therapy Washington University School of Medicine St Louis, Missouri
1987-88, 1989-90	Clinical Instructor St Louis University Department of Physical Therapy
1992-1996	Orthopedic Clinical Specialist Barnes-Jewish Hospital St Louis, Missouri
1996-2000	Senior Physical Therapist Barnes-Jewish Hospital St Louis, Missouri
2001-2002	Lead Physical Therapist The Rehabilitation Institute of St Louis St Louis, Missouri
2002-2007	Instructor Program in Physical Therapy Washington University School of Medicine St Louis, Missouri
2007-2013	Assistant Professor Program in Physical Therapy Washington University School of Medicine St Louis, Missouri

<u>Clinical Title and Responsibilities</u>

Position: Faculty Mentor, Washington University Physical Therapy Clinic

Current Clinical Responsibilities:

Provide consultation and mentorship to clinical practitioners for patients with a variety of neuromusculoskeletal problems; specialized focus on spine, shoulder and peripheral nerve injuries.

Past Clinical Responsibilities:

Direct care of patients presenting with neuro-musculoskeletal conditions involving the spine, shoulder, hip, and knee. A special emphasis was placed on pain and movement dysfunction of the shoulder and neck.

Teaching Title and Responsibilities

Teaching Responsibilities

Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Year 1 Competency Based Curriculum:

Phase 2: Promoting Health through Movement Module 4A: Movement and Precision Health Lecturer Class size: 97 Module 4B: Movement and Precision Health Lecturer/Lab Assistant Class size: 87-97

Year 2 Competency Based Curriculum:

Coaching (Fall/Spring)

Phase 3: Optimizing Movement
Module 5: Prevention, Diagnosis and Management of Movement Problems
Module team: design, plan and implement musculoskeletal content
Lecturer/Lab Assistant
Class size: 97
Module 6: Prevention, Diagnosis and Management of Complex Movement Problems
Lecturer/Lab Assistant
Class size: 97

Legacy Curriculum:

Case Integration III (PT 654)	
Lecturer/Lab Assistant:	2007-present
Advisor:	2002-2021
Class size:	76-93 students
Credit hours:	3

Clinical Fellowship in Diagnosis and Management of Movement Impairment Syndromes

Mentorship for on-site fellow and distance fellows on examination and treatment for a wide range of orthopaedic patients. 2011-2021

Previous Teaching Responsibilities

Professional Clinical Doctorate (DPT) Curriculum (WUSM)

Anatomy (PT 611)	
Lecturer	2015-2021
Class Size:	84-93
Credit hours:	5

Kinesiology II (PT 613)	
Coursemaster:	2010-2021
Unit coordinator/Lecturer:	2008-2021
Class Size:	76-93
Credit hours:	5

Diagnosis & Management of	Musculoskeletal Conditions I (PT 614)
Lecture/Lab Assistant:	2002-2021
Class Size:	76-93
Credit hours:	3

Orthopaedic Medicine (PT 623)Coursemaster:2007-2021Class Size:76-94Credit hours:2

Diagnosis & Management of Musculoskeletal Conditions II (PT 624)Unit co-coordinator/Lecturer/Lab Assistant: 2002-2021Class Size:76-94Credit hours:3

Essential Clinical Skills II (PT 627)Lecturer:2010-2021Lab Assistant:2002-2021Class Size:76-94Credit hours:3

Case Integration Lab I (PT 628)		
Small Group Advisor	2002-2021	
Group Size:	6-10	
Lecturer:	2002-present	
Class Size:	76-88	
Credit hour:	1	

Diagnosis & Management of	Musculoskeletal Conditions III (PT 638)
Lecturer/Lab Assistant:	2002-present
Unit co-coordinator:	2019-present

Assistant Coursemaster:	2009
Class Size:	76-94
Credit hours:	3

Diagnosis and Evidence Analysis in PT Practice III (PT 650)Advisor:2002-presentStudents:1-3 studentsCredit hours:3

Case Integration III (PT 654)	
Advisor:	2002-present
Lecturer/Lab Assistant:	2007-present
Class size:	76-88 students
Credit hours:	3

Professional Issues and Skill Development II (PT 615) & III (PT 650)Examiner:2015- presentStudents:4-6 students

Post-Professional Clinical Doctorate (PP DPT) Curriculum

Diagnosis & Management for Musculoskeletal Conditions Upper Quarter (M22-740)Lecturer/Lab AssistantClass size:10-20 studentsCredit hours:3

Diagnosis & Management for Musculoskeletal Conditions Lower Quarter (M22-750)Lab AssistantClass size:10-20 studentsCredit hours:3

Women's Health Residency

Lecture/discussion: Movement System Diagnoses for the Shoulder Applied to the Patient with Breast Cancer, 2011-2015

 Instruction in professional curriculum in entry level Masters of Science in Physical Therapy and Post Professional Masters relating to examination and intervention for patients with musculoskeletal impairments, management of orthopaedic conditions, advisement of students and coordination of student elective coursework. 1986-2002

Professional Clinical Doctorate Occupational Therapy (OTD) Curriculum (WUSM)

Medical and Mental Health Conditions (OT 5223) Topic: Orthopaedic Conditions and Musculoskeletal Disorders Lecturer: 2008-2011

Trainee/Mentee/Sponsorship Record:

Advisor for PPDPT:

Fall 2010	Capstone Project (M22 820), 6 credit hours Becky Miller "Middle, Older, and Advanced Age Women's Response to High Intensity Resistance Training: A Review of the Literature and Comparison of Three Case Studies"
Spring 2011	Independent Study (M22 500), 3 credit hours Matt Driskill "Physical Therapy for Patients with Venous or Neurogenic Thoracic Outlet Syndrome"
Spring/Summer 2011	Capstone Project (M22 820), 3 credit hours Erica Herron "Axillary Web Syndrome: Treatment options and outcomes for patients with breast cancer"
Spring 2013	Capstone Project (M22 820), 6 credit hours Jennifer Long "Operative and non-operative treatment methods and related outcomes for anterior shoulder instability in young and middle- aged adults"
Fall 2013	Capstone Project (M22 820), 6 credit hours Scott Gregory "Associating scapular kinematics with impingement at the glenohumeral joint"
Spring 2014	Capstone Project (M22 820), 3 credit hours Ben Close "The Contribution of Scapular Alignment & Movement Control to Neck Pain"

Development of Teaching Materials for Professional DPT Curriculum

Videoclips

Materials used by DPT students to learn skills and clinical decision making used during examination, diagnosis, and treatment. Topics include: joint mobilization of the shoulder, special tests of the shoulder and thoracic spine, and patient cases musculoskeletal problems of the elbow and shoulder.

University, School of Medicine and Hospital Appointments and Committees

COMMITTEES:

Program in Physical Therapy, Washington University School of Medicine

1998-2009	Admissions Committee
2002-2008	Clinical Practice Advisory Committee
2003-2004	Program Innovation Council
2004-2006	Planning Committee for Orthopaedic Clinical Fellowship in Diagnosis and Management of Movement Impairment Syndromes
2007-2010	Committee on Academic Evaluation of Students (CAES)
2008-2011	International Service Committee
2010-present	Committee on Academic and Professional Evaluation of Students (CAPES)
2011-present	Professional Program Curriculum Committee
2015, 2017	Clinic Associate Search Committee
2016-2020	Fellowship Curriculum Task Force
2018-2019	Pain Task Force
2018-2020	Technology Curriculum Renewal Consideration Team
2019-2020	Clinical Faculty Search Committee: 2 faculty positions
2021	Clinic Associate interview team
2021- present	Module 5 Build Team, Consultant for Module 4 Build Team, Generation and Control of Movement Thread team member

Medical Licensure and Certification

Missouri Board of Registration for the Healing Arts Registration Number: 01496 1984-present

Credentialed Clinical Instructor 2009-present American Physical Therapy Association (APTA)

Honors and Awards

2013 Helen Mae Bradley Award, Maryville University, St Louis, MO

Editorial Responsibilities

Reviewer:	
Manual Therapy	2011-present
Journal of Shoulder and Elbow Surgery	2015-present

Professional Societies and Organizations

American Physical Therapy Association	1983-present
 Orthopaedic Section (APTA) Oncology Section 	1993-present 2009-2011
Missouri Physical Therapy Association	1983-present
American Society of Shoulder and Elbow Therapists 2010-present	

Invited Speaker:

1994	Evaluation and Treatment of Thoracic Outlet Syndrome. St. Louis Orthopaedic Special Interest Group St. Louis, Missouri
1999	Determining Prognosis and Establishing Appropriate Goals for Patients with Fibromyalgia Washington University Program in Physical Therapy Alumni Day St. Louis, Missouri
2000	Muscle and Movement Imbalance - Diagnosis and Treatment Southern Illinois Chapter IPTA, Special Interest Group Belleville, IL
2002	Diagnosis and Treatment of Movement Impairment Syndromes: Lower Quarter Alaskan Physical Therapy Association Fall Meeting Fairbanks, Alaska
2005	Carpal Tunnel Syndrome: A PT Perspective Washington University Resident Training Series St. Louis, Missouri

2005	Thoracic Outlet Syndrome Eastern District MPTA St. Louis, Missouri
2006	Rehabilitation Exercises for Scapular Muscles The 1 st Annual CASE (Center for Athlete's Shoulder and Elbow) Shoulder & Elbow Conference The Orthopaedic Center of St Louis St. Louis, Missouri
2007	Evaluation of Scapular Movement CASE (Center for Athlete's Shoulder and Elbow) Baseball Medicine Conference St. Louis, Missouri
2008	Scapular Movement Impairments Annual National Baseball Team Medicine Conference: Injury Prevention & Treatment Techniques Sponsored by Major League Baseball St Louis, Missouri
2011	Breast Cancer Rehabilitation for the Non-Women's Health Pracitioner Eastern District MPTA St. Louis, Missouri
2011	Diagnosis and Treatment of Movement Impairment Syndromes 8 th Annual Kim Hale Memorial Conference for Therapeutic Excellence San Angelo, Texas
2011	Physical Therapy for the Patient with Cervical Pain Washington University Physical Medicine and Rehabilitation Education St. Louis, Missouri
2012	Scapular and glenohumeral movement faults associated with breast cancer treatment Midwest Therapist Study Group Chesterfield, Missouri
2013	The Shoulder: Relating the Movement Impairments to the Diagnosis. MPTA Spring Conference St Louis, Missouri
2014	Treatment of Musculoskeletal Shoulder Pain - Three Evidence Based Approaches Illinois Physical Therapy Association Urbana, IL

2015	Physical Therapy for Cervical Spine Washington University Physical Medicine and Rehabilitation Education St. Louis, Missouri
2016	Upper Extremity Exercises- Does One Size Fit All? Washington University Program in Physical Therapy Clinical Instructors' Meeting St. Louis, Missouri
2020	Shoulder Examination/Dyskinesis Washington University Dept of Orthopedics CME St. Louis, Missouri
2021	An Update on the Shoulder Washington University Program in Physical Therapy Alumni MSI Update St. Louis, Missouri

Research:

Co-investigator

Protocol title: "Reliability and validity of visual assessment of shoulder biomechanic biomechanics using fluoroscopic imaging." Principle Investigator: Paula M. Ludewig, Division of Physical Therapy/Department of Rehabilitation Medicine, University of Minnesota.

Consulting Relationships and Advisory Panels

- 2001-present Physical Therapy Program, Maryville University
- 2007 Toyota Corporation Therapy Department

Provided education for Toyota (S. Indiana plant) Medical staff through inservice and direct observation of patient care

Bibliography:

PEER REVIEWED SCIENTIFIC AND PROFESSIONAL PRESENTATIONS:

- 1994 Evaluation and Management of Nerve Compression in the Upper Extremity in Cumulative Trauma Disorders Joint Congress of the APTA and CPTA Toronto, Canada
- 2005 Concentrated Education Series: Movement System Impairment Shoulder APTA Annual Conference & Exposition Boston, MA

2010	Movement System Impairment Diagnoses Applied to the Breast Cancer Patient APTA Combined Sections Meeting San Diego, CA
2014	Exercise Prescription for Shoulder Problems: Moving Away From a "One Size Fits All" APTA Combined Sections Meeting Las Vegas, NV
2015	Exercise Prescription for Shoulder Problems MPTA Spring Conference St Louis, Missouri
2015	An Introduction to the Humeral Movement System Impairment Diagnoses American Society of Shoulder and Elbow Therapists Annual Meeting Asheville, NC
2018	Do You See a Pattern? Link the Movement Faults Across Your Exam NEXT APTA Conference Orlando, Florida
2019	The Hallmark of a Movement System Expert: Pattern Recognition MPTA Fall Conference St Louis, MO
Platform Pre	sentations

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1993	Changes in the Infrasternal Angle with Abdominal Contractions APTA Annual Conference Washington, DC
2013	Treatment of Multidirectional Shoulder Instability Guided by a Movement System Diagnosis American Society of Shoulder and Elbow Therapists Annual Meeting Las Vegas, NV
2015	Beers A, Ivens R , Kahn LC, Fox I. The Use of Donor Activation as the Guiding Rehabilitation Strategy Following Multiple Nerve Transfer Surgeries: A Case Report. APTA Combined Sections Meeting Indianapolis, IN
2018	Ivens R. Humeral Superior Glide Syndrome: Case reports describing 2 patients with different contributing factors associated with humeral superior glide.

	American Society of Shoulder and Elbow Therapists Annual Meeting Chicago, IL
2022	Ivens RA , Harris-Hayes M, Lawrence RL. The impact of altering scapular kinematics on the proximity between the rotator cuff footprint and the glenoid. American Society of Shoulder and Elbow Therapists Annual Meeting Atlanta, GA
2023	Lawrence RL, Ivens RA , Harris-Hayes M. The effect of scapular kinematics on mechanisms of rotator cuff injury: internal impingement. APTA Combined Sections Meeting San Diego, CA
2023	Lawrence RL, Ivens RA , Harris-Hayes M. The effect of scapular kinematics on mechanisms of rotator cuff injury: subacromial impingement. APTA Combined Sections Meeting San Diego, CA

PUBLICATIONS: (Ivens RA = Zoeller RA) Papers

Brown JM, Yee A, **Ivens RA**, Dribben W, Mackinnon SE. Post-Cervical Decompression Parsonage-Turner Syndrome Represents a Subset of C5 Palsy: 6 Cases and Review of the Literature. *Neurosurgery*. 2010;67(6).

Invited Publications:

Book Chapters

Spitznagle TS, **Ivens RA**. Movement Impairment Syndromes of the Thoracic Spine in *Movement System Impairment Syndromes in the Extremities, Cervical and Thoracic Spines*. Sahrmann S. Mosby, Inc. St Louis, MO; 2010.

Ivens RA, Moore AM. Thoracic Outlet Syndrome in *Nerve Surgery 2nd ed*. Mackinnon SM. Theime. New York, NY. Pending publication

Abstracts

Zoeller R, Barbee J, Rose SJ, Wright-Hinzpeter C. A Goniometric Comparison of Prone and Sitting Hip Rotation. *Physical Therapy*. 1987;67(5).

Barbee J, Wright Hinzpeter C, Rose SJ, **Zoeller R.** Reliability of an inclinometer for hip rotation measurement. *Physical Therapy*. 1987;67(5).

Wright Hinzpeter C, **Zoeller R**, Rose SJ, Barbee J. Reliability of goniometry in measuring hip rotation. *Physical Therapy*. 1987;67(5).

Zoeller RA, Sahrmann SA. The Effect of Patient Position on Active and Passive Range of Medial Rotation of the Humerus. *Physical Therapy*. 1988;68(5).

Zoeller RA, Sahrmann SA. Comparison of Methods for Assessing Humeral Flexion and Associated Scapular Motion. *Physical Therapy*. 1989;69(5).

Zoeller RA. Reliability of Diagnostic Resisted Movements at the Shoulder. *Proceedings* of the 1990 APTA Conference.

Duffin L, **Zoeller R**. Reliability and Comparison of Two Goniometric Measures of the Wrist. *Proceedings of the 1991 APTA Conference*.

Caldwell C, Smith LW, Stemmons VA, **Zoeller RA**, Norton BJ. Reliability of a Method for Measurement of Scapulohumeral Rhythm in Normals. *Proceedings of the 1991 APTA Conference*.

Zoeller RA, Caldwell C, Norton BJ. Reliability of Measuring the Infrasternal Angle. *Physical Therapy*. 1992;72(6, Suppl).

Ivens R, Caldwell CA, Norton BJ. Incidence of Scapular Movement Impairments and Effect on Symptoms. APTA Combined Sections Meeting 2009.

Beers A, **Ivens R**, Kahn LC, Mackinnon SE. Functional Outcomes Following Nerve Transfer Surgery for a C5-C7 Brachial Plexus Palsy are Improved with DAFRA Rehabilitation Technique. *Proceedings of the 2015 AAHS Annual Meeting*.

Saini G, Caldwell C, **Ivens R**, Sahrmann S, Ludewig PM. Shoulder Movement Assessment Using Single Plane Flouroscopy: Reliability and the Influence of Prevalence and Bias. APTA Combined Sections Meeting 2022.

Continuing Education Programs Provided:

1990-present	Diagnosis and Treatment of Movement System Impairment Syndromes. Presentation and organization of several continuing education courses for physical therapists. Courses are offered at different levels: Introductory Level, Advanced Upper Quarter, Advanced Lower Quarter and Advanced Lab Course with focus on Upper or Lower Quarter. An average of 1-2 courses per year at national and international venues.
1994	Posture Management Exhibit Nerve Compression Syndromes Practical Anatomy and Surgical Technique Workshop

2008	Impingement & Rotator Cuff: Injury, Surgery & Rehab Saint Louis Orthopaedic Evening Series
	International Spine & Pain Institute
	St Louis, Missouri
2010	Thoracic Outlet Syndrome
	Saint Louis Orthopaedic Evening Series
	International Spine & Pain Institute
	St Louis, Missouri
	Thoracic Outlet Syndrome
	Kansas City Orthopaedic Evening Series
	International Spine & Pain Institute
	Kansas City, Missouri
2014	Annual Orthopedic Section Meeting
	Lab Assistant: Integration of Shoulder Biomechanics and Movement
	Classifications in Shoulder Rehabilitation
	St Louis, Missouri

Conferences Attended

APTA

Combined Sections Conference 2008-2020, 2022 attended virtually, 2023

National Annual Conference 1987-1994, 2005, 2018

Missouri State Conferences 1985, 2013

American Society of Shoulder and Elbow Therapists (ASSET) 2013, 2015, 2018, 2022

Community Service Contributions

Presentations

1992, 1993	Exercise through the Middle Years Women and Infant Services, Barnes-Jewish Hospital
2005	St. Louis Acoustic Neuroma Association Support Group Presentation
2005	Exercise after Head and Neck Cancer Midwest Laryngectomee Conference

2007 Superheroes and Super Bodies Lunch and Learn Series St Louis Science Center

Other Activities Associated with Washington University Program in Physical Therapy

1996	Festival of the Ages
1997	Machinist Health Fair
1997	Southwestern Bell Health Fair
1999	Washington University School of Medicine Benefits Fair
2003	Washington University School of Medicine Employee Health Fair Screening
2007, 2011	Washington University School of Medicine Health Professions Fair, Office of Diversity
2008, 2016	Maritz Health Fair – Ask the Doctor
2009	Schnucks Health Fair - Ask the Doctor
2012	Washington University School of Medicine Health Happening, Ask the Expert
2016, 2017, 2020, 2021	Annual Volunteer Day- Washington University Physical Therapy
Other Activities	
1994-1997	St Louis Zoo Friends
1999	Southwestern Illinois Special Olympics Volunteer
2003-2008	Sister Cities Organization
2003-2006, 2008, 2009, 2013	Susan G. Komen Race for the Cure Supporter, Fundraising
2006-2021	Member, Missouri Botanical Gardens
2010	St Patrick's Center Volunteer
2010, 2011,	Susan G. Komen Race for the Cure Volunteer

2014, 2015

2014 Crohn's and Colitis Foundation, Team Challenge Fundraiser & Halfmarathon participant