

Curriculum Vitae

BIOGRAPHICAL

Name: G. Kelley Fitzgerald, PhD, PT, FAPTA

Title:

Associate Dean of Graduate Studies, School of Health and Rehabilitation Sciences
Professor, Department of Physical Therapy, School of Health and Rehabilitation Sciences
Professor, University of Pittsburgh Clinical and Translational Science Institute
Director, PhD in Rehabilitation Science Program, University of Pittsburgh

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EDUCATION AND TRAINING

Undergraduate

1975 to 1980	University of Illinois, Champaign-Urbana, IL.	B.S., 1980	Physical Education
1980 to 1982	University of Health Sciences/Chicago Medical School, North Chicago, IL.	B.S., 1982	Physical Therapy

Graduate

1987 to 1990	Virginia Commonwealth University, Medical College of Virginia, Richmond, VA.	M.S., 1990	Biomechanics
1992 to 1998	MCP/Hahnemann University, Philadelphia, PA.	PhD, 1998	Orthopaedic Physical Therapy

APPOINTMENTS AND POSITIONS

Academic

1990 to 1997	Hahnemann University, Department of Physical Therapy, Philadelphia, PA	Assistant Professor
1998 to 1998	University of Delaware, Department of Physical Therapy, Newark, DE	Visiting Assistant Professor
1998 to 2004	University of Pittsburgh, Department of Physical Therapy, Pittsburgh, PA	Assistant Professor
2004 to 2012	University of Pittsburgh, Department of Physical Therapy, Pittsburgh, PA	Associate Professor
2012 to Present	University of Pittsburgh, Department of Physical Therapy, Pittsburgh, PA	Professor
2009 to Present	University of Pittsburgh, Clinical and Translational Science Institute	Associate Professor
2009 to Present	University of Pittsburgh, Physical Therapy Clinical and Translational Research Center	Director
2012 to Present	University of Pittsburgh, Physical Therapy Clinical and Translational Research Center	Professor
2015 to Present	University of Pittsburgh, School of Health and Rehabilitation Sciences	Associated Dean of Graduate Studies

Non-Academic Positions

1982 to 1983	Good Samaritan Medical Center - South Campus, Milwaukee, Wi.	Staff Physical Therapist
1983 to 1985	Sacred Heart Rehabilitation Hospital, Milwaukee, Wi.	Staff Physical Therapist
1985 to 1986	Sacred Heart Rehabilitation Hospital, Milwaukee, Wi.	Clinical Supervisor, Head Injury Unit
1986 to 1987	Milwaukee Medical Clinic, Milwaukee, Wi	Sports Physical Therapist
1988 to 1990	Medical College of Virginia Hospitals, Richmond, Va.	Staff Physical Therapist

CERTIFICATION AND LICENSURE

Board Certified Specialist in Orthopaedic Physical Therapy American Board of Physical Therapy Specialties

1992 to 2002, Recertification in 2002 to 2012.

License to Practice Physical Therapy Department of State Bureau of Professional and Occupational Affairs Commonwealth of Pennsylvania

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

1980 to Present American Physical Therapy Association.
1990 to Present Orthopaedic Section/American Physical Therapy Association.
1990 to Present Research Section/American Physical Therapy Association.
2001 to Present Association of Rheumatology Health Professionals of the American College of Rheumatology.
2008 to Present Osteoarthritis Research Society International.

HONORS

1987 A.D. Williams Scholarship, Virginia Commonwealth University
1995 Alpha Eta Honor Society for Allied Health Professions
2001 Dorothy Briggs Memorial Scientific Inquiry Award, American Physical Therapy Association
2002 Manuscript Reviewer of the Year Award, *Physical Therapy*, The Journal of the American Physical Therapy Association.
2009 Catherine Worthingham Fellow of the American Physical Therapy Association
2011 Jules M. Rothstein Golden Pen Award for Scientific Writing, American Physical Therapy Association
2014 Exemplary Abstract Presentation. Association of Rheumatological Health Professions Annual Conference. **Fitzgerald GK**, Fritz JM, Childs JD, Brennan GB, Landsittel D, Abbott JH, Gil AB, Nielsen B. Exercise,

Manual Therapy, and Use of Booster Sessions in Physical Therapy for Knee OA: A Multi-Center Randomized Clinical Trial.

- 2015 Exemplary Abstract Presentation: Association of Rheumatological Health Professions. Bove AM, Smith KJ, Bise C, Fritz JM, Childs JD, Brennan G, Abbott JH, **Fitzgerald GK**. What is the most cost-effective physical therapy strategy to treat knee osteoarthritis?
- 2019 Steven Rose Excellence in Orthopaedic Physical Therapy Research Award, Academy of Orthopaedic Physical Therapy, American Physical Therapy Association.

PUBLICATIONS

Refereed Articles

Fitzgerald GK, Wynveen KJ, Rheault W, Rothschild B. Objective assessment with establishment of normal values for lumbar spinal mobility. *Physical Therapy*, 63, 1776-1781. 1983

Fitzgerald GK, Rothstein JM, Mayhew TM, Lamb RL. Exercise induced muscle soreness after concentric and eccentric isokinetic muscle contractions. *Physical Therapy*, 71, 505-513. 1991

Fitzgerald GK, Newsome DM. Treatment of a large infected thoracic spine wound using high voltage pulsed monophasic current. *Physical Therapy*, 73, 355-360. 1993.

Fitzgerald GK, McClure PW, Beattie P, Riddle DL. Issues in determining treatment effectiveness of manual therapy. *Physical Therapy*, 74, 227-233, 1994.

Fitzgerald GK, McClure PW. Reliability of measurements obtained with four tests for patellofemoral alignment. *Physical Therapy*, 75, 84-92, 1995.

Esola MA, McClure PW, **Fitzgerald GK**, Siegler S. Analysis of lumbar and hip motion during forward and backward bending in subjects with and without a history of low back pain. *Spine*, 21, 71-77, 1996.

Snyder-Mackler L, **Fitzgerald GK**, Bartolozzi A, Ciccotti M. Passive knee joint laxity and functional outcome. *American Journal of Sportsmedicine*, 25(2), 191-195, 1997.

Fitzgerald GK. Open vs closed kinematic chain exercise: Issues in knee rehabilitation after ACL reconstruction. *Physical Therapy*, 77, 1747-1754, 1997.

Kietrys D, McClure PW, **Fitzgerald GK**. The relationship between head and neck posture and VDT screen height in keyboard operators. *Physical Therapy*. 78(4) 395-403, 1998.

Fitzgerald GK, Axe MJ, Snyder-Mackler L. A decision-making scheme for returning patients to high level activity with non-operative treatment after anterior cruciate ligament rupture, *Knee Traumatology, Arthroscopy and Sports*. 8, 76-82, 2000

Fitzgerald GK, Axe MJ, Snyder-Mackler L. The efficacy of perturbation training in non-operative anterior cruciate ligament rehabilitation programs for physically active individuals. *Physical Therapy*. 80(2) 128-140, 2000

Fitzgerald GK, Axe MJ, Snyder-Mackler L Proposed practice guidelines for non-operative anterior cruciate ligament rehabilitation. *Journal of Orthopaedic and Sports Physical Therapy*. 30, 194-203, 2000.

Fitzgerald GK. Considerations for evaluation and treatment of overuse tendon injuries. *Athletic Therapy Today*. 5, 14-19, 2000.

Irrgang JJ, **Fitzgerald GK**. Rehabilitation of multiple ligament injuries. *Clinics in Sports Medicine*. 19, 545-571, 2000.

Chmielewski TL, Rudolph KS, **Fitzgerald GK**, Axe MJ, Snyder-Mackler L. Biomechanical evidence supporting a differential response to acute ACL injury. *Clinical Biomechanics*. 2001;16:586-591.

Fitzgerald GK, Delitto A. Considerations for planning and conducting clinic-based research in physical therapy. *Physical Therapy*. 2001;81:1446-1454

Fitzgerald GK, Lephart SM, Hwang JH, Wainner RS. Hop tests as predictors of dynamic knee stability. *Journal of Orthopaedic and Sports Physical Therapy*. 2001;31:588-597

Fitzgerald GK, Childs JD, Ridge TM, Irrgang JJ. Agility and perturbation training for a physically active individual with knee osteoarthritis. *Physical Therapy*. 2002; 82: 373-382

Fitzgerald GK, Piva SR, Irrgang JJ. A Modified High Intensity Neuromuscular Electrical Stimulation Protocol for Quadriceps Strength Training Following Anterior Cruciate Ligament Reconstruction. *J Orthop Sports Phys Ther* 2003; 33: 492-501.

Fitzgerald GK, Piva SR, Irrgang JJ, Bouzubar F, Starz TW. Quadriceps Activation Failure as a Moderator of the Relationship Between Quadriceps Strength and Physical Function in Individuals with Knee Osteoarthritis. *Arthritis Care and Research*. 2004; 51:40-48.

Fitzgerald GK, Piva SR, Irrgang JJ. Reports of Joint Instability in Knee Osteoarthritis: Its Prevalence and Relationship to Physical Function. *Arthritis Care and Research*. 2004;51:941-948.

Piva SR, **Fitzgerald GK**, Irrgang JJ, Bouzubar F, Starz TW. Get Up and Go Test in Patients with Knee Osteoarthritis. *Archives of Physical Medicine and Rehabilitation*. 2004; 85: 284-289.

Childs JD, Sparto PJ, **Fitzgerald GK**, Bizzini M, Irrgang JJ. Alterations in lower extremity

movement and muscle activation patterns in individuals with knee osteoarthritis. *Clin Biomech (Bristol, Avon)*. 2004; 19(1): 44-49.

Lyons CL, Robb JB, Irrgang JJ, **Fitzgerald GK**. Differences in quadriceps femoris muscle torque when using a clinical electrical stimulator versus a portable electrical stimulator. *Physical Therapy*. 2005;85:44-51.

Fitzgerald GK. Therapeutic exercise for knee osteoarthritis: considering factors that may influence outcome. *Europa Medicophysica*. 2005;41:163-171

Piva SR, **Fitzgerald GK**, Irrgang JJ, Jones S, Hando BR, Browder DA, Childs JD. Reliability of measures of impairments associated with patellofemoral pain syndrome *BMC Musculoskeletal Disorders* 2006, 7:33

Rabin A, Irrgang JJ, **Fitzgerald GK**. The Intertester Reliability of the Modified Scapular Assistance Test. *J Orthop Sports Phys Ther*. 2006;36:653-660.

Fitzgerald GK. Invited Editorial: Examining the consequences of rehabilitation interventions on disease progression and functional decline: Is function really the only thing that matters? *Arth Rheum (Arthritis Care and Research)* 2006;55:687-689.

Fitzgerald GK. Invited Editorial: Focus and value added: The new case report. *Phys Ther*. May 2007

Piva SR, Goodnite A, Azuma K, Woollard JD, Goodpaster GH, Wasko M-C, **Fitzgerald GK**. Neuromuscular Electrical Stimulation for Individuals with Rheumatoid Arthritis – Multiple-Patient Case Report. *Phys Ther* 2007;87:1064-77.

Schmidt LC, **Fitzgerald GK**, Reisman AS, Rudolph KS. Instability, laxity and physical function in patients with medial knee osteoarthritis. *Phys Ther*. 2008;88:1506-1516.

Piva SR, **Fitzgerald GK**, Irrgang JJ, Fritz JM, Wisniewski S, McGinty GT, Childs JD, Domenech MA, Jones S, Delitto A. Associates of physical function and pain in patients with patellofemoral pain syndrome *Arch Phys Med Rehabil*. 2009;90:285-295.

Ambrosio F; Lexell J, Kadi F, **Fitzgerald GK**, Boninger ML, Huard J. The effect of muscle loading on skeletal muscle regenerative potential: an update of current research findings relating to aging and neuromuscular pathology. *Am J Phys Med Rehabil*. 2009;88:145-155.

Piva SR, Gil AB, Moore C, **Fitzgerald GK**. Responsiveness of the Activities of Daily Living Scale of the Knee Outcome Survey and Numeric Pain Rating Scale in Patients with Patellofemoral Pain. *J Rehab Med*. 2009;41:129-135.

Ambrosio F, Ferrari RJ, **Fitzgerald GK**, Carvell G, Boninger ML, Huard J. Functional overloading of the extensor digitorum longus muscle enhances muscle-derived stem cell contribution to the contractile properties of mouse dystrophic skeletal muscle. *Arch Phys Med*

Rehabil. 2009;90:66-73.

Piva SR, Childs JD, Klucinec BM, Irrgang JJ, Almeida GJ, **Fitzgerald GK**. Patella fracture during rehabilitation after bone-patellar-tendon bone anterior cruciate ligament reconstruction: Two case reports. *J Orthop Sports Phys Ther.* 2009;39:278-286.

Scopaz KA, Piva SR, Gil AB, Woollard JD, Oddis CV, **Fitzgerald GK**. The Effect of Baseline Quadriceps Activation on Changes in Quadriceps Strength After Exercise Therapy in Patients with Knee Osteoarthritis. *Arthritis Care and Research.* 2009;61: 951-957. PMC 2732991

Scopaz KA, Piva SR, Wisniewski S, **Fitzgerald GK**. The Relationships of Fear, Anxiety, and Depression with Physical Function in Patients with Knee Osteoarthritis. *Archives of Phys Med.* 2009;90:1866-1873.

Piva SR, Gil AB, Almeida GJM, DiGioia AM, Levison TJ, **Fitzgerald GK**. A Balance Exercise Program Appears to Improve Function for Patients with Total Knee Arthroplasty: a Randomized Clinical Trial. *Phys Ther.* 2010;90:880-894. PMC 2879033

Ambrosio F, Ferrari RJ, Distefano G, *Plasmeyer* JM, Carvell GE, Deasy BM, Boninger ML, **Fitzgerald GK**, Huard J. The Synergistic Effect of Treadmill Running on Stem-cell Transplantation to Heal Injured Skeletal Muscle. *Tissue Eng Part A.* 2010;16:839-849. PMC 2862616

Almeida GJD, Schroeder CA, Gil AB, **Fitzgerald GK**, Piva SR. Inter-rater reliability and validity of the stair ascend/descend test in individuals with total knee arthroplasty *Archives of Physical Medicine and Rehabilitation.* Arch Phys Med Rehabil. 2010; 91:932-938. PMC 2892160

Hile ES, **Fitzgerald GK**, Studenski SA. Incident Persistent Mobility Disability after Neurotoxic Chemotherapy: A Case Report. *Phys Ther.* 2010;90:1649-1657.

Piva SR, Almeida GJD, Gil AB, **Fitzgerald GK**. Contribution of Hip Abductor Strength to Physical Function in Patients with Total Knee Arthroplasty. *Phys Ther.* 2010;91:225-233.

Ambrosio F, Wolf SL, Delitto A, **Fitzgerald GK**, Badylak SF, Boninger ML, Russell AJ. The Emerging Relationship Between Regenerative Medicine and Physical Therapeutics. *Phys Ther.* 2010;90:1807-1814.

Fitzgerald GK, Piva SR, Gil AB, Wisniewski SR, Oddis CV, Irrgang JJ. Agility and perturbation training techniques in exercise therapy for improving pain and function in subjects with knee osteoarthritis: A randomized clinical trial. *Phys Ther.* 2011;91:452-469. PMCID: PMC3070919

Woollard JD, Gil AB, Sparto P, Kwok CK, Piva SR, Farrokhi S, Powers CM, **Fitzgerald GK**. Change in Knee Cartilage Volume in Individuals Completing a Therapeutic Exercise Program for Knee Osteoarthritis. *J Orthop Sports Phys Ther.* 2011;41(10):708-22. PMC3383656

Riddle DL, Kong X, **Fitzgerald GK**. Psychological Health Impact on Two-Year Changes in Pain and Function in Persons with Knee Pain: Data from the Osteoarthritis Initiative. *Osteoarthritis Cartilage*. 2011 Sep;19(9):1095-101 PMC3159740

Teixeira PEP, Piva SR, **Fitzgerald GK**. The effects of impairment-based exercise on specific self-reported functional task performance in individuals with knee osteoarthritis. *Phys Ther* 2011;91: 1752-65. PMID: PMC3229042

Farrokhi S, **Fitzgerald GK**. The Role of Physical Activity and Therapeutic Exercise in Development and Management of Knee Osteoarthritis. *J Clin Outcome Manag* 2012;19:1-10.

Farrokhi S, Tashman S, Gil AB, Klatt BA, **Fitzgerald GK**. Are the kinematics of the knee joint altered during the loading response phase of gait in individuals with concurrent knee osteoarthritis and complaints of joint instability? A Dynamic Stereo X-ray Study. *Clin Biomech*. 2012; 27:384-389. PMC3289733

Williams VJ, Piva SR, Irrgang JJ, Crossley C, **Fitzgerald GK**. Comparison of reliability and responsiveness-reported clinical outcome measures in knee osteoarthritis rehabilitation. *J Orthop Sports Phys Ther* 2012;42:716-723. PMC3435439

Ambrosio F, **Fitzgerald GK**, Ferrari R, Distefano G, Carvell G. A murine model of muscle training by neuromuscular electrical stimulation. *J Vis Exp*. 2012 May 9;(63) PMC3468190

Fitzgerald GK, White D, Piva SR. Associations for change in physical and psychological factors and treatment response following exercise in knee osteoarthritis: An exploratory study. *Arthritis Care Res*. 2012;64:1673-1680. PMC3448876

Farrokhi S, Piva SR, Gil AB, Oddis CV, Brooks MM, **Fitzgerald GK**. Severity of coexisting patellofemoral disease is associated with increased impairments and functional limitations in patients with knee osteoarthritis. *Arthritis Care and Res*. 2013; 65:544-51. PMC3562754

Farrokhi S, Rainis C, Tashman S, **Fitzgerald GK**. A biomechanical perspective on physical therapy management of knee osteoarthritis. *J Orthop Sports Phys Ther*. 2013; 43:600-619.

Piva SR, Lasinski S, Almeida GJM, **Fitzgerald GK**, Delitto A. Disability and catastrophising predict high doses of neuromuscular electrical stimulation in subjects with rheumatoid arthritis. *Physiotherapy Practice and Research*. 2013; 34:57-66.

Susko AM, **Fitzgerald GK**. The pain-relieving qualities of exercise in knee osteoarthritis. *Open Access Rheumatology: Research and Reviews*. 2013; 5: 81-91

Pinto D, Robertson MC, Abbott JH, Hansen P, Campbell AJ, MOA Trial Team (**Fitzgerald GK** was member of the MOA Trial Team). Manual therapy, exercise therapy, or both, in addition to usual care, for osteoarthritis of the hip or knee. 2: economic evaluation alongside a randomized clinical trial. *Osteoarthritis Cartilage*. 2013;21:1504-1513.

Khoja SS, Susko AM, Josbeno DA, Piva SR, **Fitzgerald GK**. Comparing physical activity programs for managing osteoarthritis in overweight or obese patients. *J Comparative Effectiveness*. 2014; 3:283-299.

Marcum Z, Zhan H, Perera S, Moore C, **Fitzgerald GK**, Weiner D. Correlates of gait speed in advanced knee osteoarthritis. *Pain Medicine*. 2014;15:1334-1342. PMC4693145

Farrokhi S, Voycheck CA, Klatt BA, Gustafson JA, Tashman S, **Fitzgerald GK**. Altered tibiofemoral joint contact mechanics and kinematics in patients with knee osteoarthritis and episodic complaints of joint instability. *Clin Biomech*. 2014;29:629-635. PMC4111962

Piva SR, Susko AM, Khoja SS, Josbeno DA, **Fitzgerald GK**, Toledo FGS. Links between Osteoarthritis and Diabetes and Implications for Management from a Physical Activity Perspective. *Clin Geriatr Med*. 2014;31:67-87.

Farrokhi S, O'Connell M, **Fitzgerald GK**. Altered gait biomechanics and increased knee-specific impairments in patients with coexisting tibiofemoral and patellofemoral osteoarthritis. *Gait and Posture* 2015;41:81-85. PMC4267982

Bouzubar FF, **Fitzgerald GK**, Sparto P, Irrgang JJ. Quadriceps fatigue test: Test-retest reliability study and relationship to quadriceps activation failure. *Physiotherapy Research and Practice*. 2015;36:65-72.

Farrokhi S, O'Connell M, Gil AB, Sparto PJ, **Fitzgerald GK**. Altered gait characteristics in patients with knee osteoarthritis and self-reported complaints of instability. *J Orth Sport Phys Ther*. 2015;23: 803-814 PMC6196716

Gustafson JA, Robinson ME, **Fitzgerald GK**, Tashman S, Farrokhi S. Knee motion variability in patients with knee osteoarthritis: the effect of self-reported instability. *Clin Biomech*. 2015;30:475-480. PMC4428966

Fitzgerald GK, Hinman RS, Zeni J, Risberg MA, Snyder-Mackler L, Bennell KL. Design and conduct of clinical trials for rehabilitation in people with osteoarthritis: recommendations from a task force of the osteoarthritis research society international. *Osteoarthritis Cartilage*. 2015;23:803-814.

Farrokhi S, Gustafson JA, Chuang W-N, **Fitzgerald GK**, Tashman S. Altered Frontal and Transverse Plane Tibiofemoral Kinematics and Patellofemoral Malalignments During Downhill Gait in Patients with Mixed Knee Osteoarthritis. *J Biomech*, 2015;48:1707-1712. PMC4521908

Farrokhi S, Chen Y-F, Piva SR, **Fitzgerald GK**, Jeong J-H, Kwok CK. The influence of knee pain location on symptoms, functional status and knee-related quality of life in older adults with chronic knee pain: data from the Osteoarthritis Initiative. *Clin J Pain*. 2015, Aug 24 [Epub ahead of print]. PMC4766069

Abbott JH, Chapple CM, **Fitzgerald GK**, Fritz JM, Childs J, Harcombe H, Stout K. The incremental effects of manual therapy or booster sessions in addition to exercise therapy for knee osteoarthritis: A randomized clinical trial. *JOSPT*. 2015;45:975-983

Farrokhi S, Voycheck CA, Gustafson JA, **Fitzgerald GK**, Tashman S. Knee joint mechanics during downhill gait and its relationship with varus/valgus motion and muscle strength in patients with knee osteoarthritis. *The Knee*. 2016;23:49-56.

O'Connell M, Farrokhi S, **Fitzgerald GK**. The role of knee joint moments and knee impairments on self-reported knee pain during gait in patients with knee osteoarthritis. *Clin Biomech*. 2016;31:40-46.

Almeida GJ, Irrgang JJ, **Fitzgerald GK**, Jakicic JM, Piva SR. Reliability of physical activity measures during free-living in individuals after total knee arthroplasty. *Phys Ther*. 2016;96: 898-907.

Gustafson JA, Gorman S, **Fitzgerald GK**, Farrokhi S. Alterations in walking knee joint stiffness in individuals with knee osteoarthritis and self-reported knee instability. *Gait and Posture*. 2016; 43:210-215.

Karp JK, Dew MA, Wahed AS, **Fitzgerald K**, Bolon CA, Weiner DK, Morse JQ, Albert SM, Butters MA, Gildengers AG, Reynolds CF III: Challenges and solutions for depression prevention research: methodology for a depression prevention trial for older adults with knee arthritis and emotional distress. *American Journal of Geriatric Psychiatry*, 2016;24:433-443. NIHMS 738976 PMID 26809601 PMCID PMC4870147

Piva SR, Farrokhi S, Almeida G, **Fitzgerald GK**, Levison TJ, DiGioia AM. Dose-associated changes in gait parameters in response to exercise programs after total knee arthroplasty: Secondary analysis of two randomized studies. *Int. J Phys Med Rehabil*. 2016;3:3-7. PMC4807621, PMID: 27019858

Fitzgerald GK, Fritz JM, Childs JD, Brennan G, Talisa V, Gil AB, Neilson BD, Abbott JH. Exercise, manual therapy, and use of booster sessions in physical therapy for knee osteoarthritis: a multi-center factorial randomized clinical trial. *Osteoarthritis Cartilage*. 2016;24:1340-1349

Bove AM, Lynch AD, DePaul SM, Terhorst L, Irrgang JJ, **Fitzgerald GK**. Test-Retest Reliability of Ratings of Perceived Exertion and Agreement with 1-Repetition Maximum in Adults. *J Orthop Sports Phys Ther* 2016;46:768-774.

Woollard JD, Bost JE, Piva SR, **Fitzgerald GK**, Rodosky MW, Irrgang JJ. The ability of preoperative factors to predict patient-reported disability following surgery for rotator cuff pathology. *Disability and Rehabilitation*. 2017;39:2087-2096 (published online, August 22, 2016)

Woollard JD, Bost JE, Piva SR, **Fitzgerald GK**, Rodosky MW, Irrgang JJ. The relationship of preoperative factors to patient-reported outcome in rotator cuff repair: A Systematic Review.

Physical Therapy Reviews. 2016. DOI: 10.1080/10833196.2016.1262099.

Stevans JM, **Fitzgerald GK**, Piva SR, Schneider M. The association of early outpatient rehabilitation with health service utilization in managing medicare beneficiaries with non-traumatic knee pain: a retrospective cohort study. *Phys Ther* 2017;97:615-624.

Bove AM, Baker N, Livengood H, King V, Mancino J, Popchak A, **Fitzgerald GK**. Task-specific training for adults with chronic knee pain: a case series. *J Orthop Sports Phys Ther*. 2017;47:548-556.

Almeida GJ, Terhorst L, Irrgang JJ, **Fitzgerald GK**, Jakicic JM, Piva SR. Responsiveness of Physical Activity Measures Following Exercise Programs after Total Knee Arthroplasty. *J Exerc Sports Orthop*, 2017. 4(3): 1-8.

Bove AM, Smith KJ, Bise CG, Fritz JM, Childs JD, Brennan GP, Abbott JH, **Fitzgerald GK**. Exercise, manual therapy, and booster sessions in knee osteoarthritis: Cost-effectiveness analysis from a multi-center randomized clinical trial. *Phys Ther*. 2018;98:16-27 Note: Winner of the 2019 Steven Rose Excellence in Research Award, Academy of Orthopaedic Physical Therapy, American Physical Therapy Association.

Goode AP, Ni P, Jette A, **Fitzgerald GK**. Development and evaluation of the Boston University Osteoarthritis Functional Pain Short Form (BU-OA-FPS). *Phys Ther*. 2018;98:715-724.

Piva SR, Khoja SS, Toledo FGS, Chester-Wasko, M, **Fitzgerald GK**, Goodpaster BH, Smith CN, Delitto A. Neuromuscular Electrical Stimulation Compared to Volitional Exercise in Improving Muscle Function in Rheumatoid Arthritis: A Randomized Pilot Study. *Arthritis Care and Res*. 2019;71:352-361

Karp JF, Zhang J, Wahed AS, Anderson S, Dew MA, **Fitzgerald GK**, Weiner DK, Albert S, Gildengers A, Butters M, Reynolds CF. Improving patient-reported outcomes and preventing depression and anxiety in older adults with knee osteoarthritis: Results of a sequenced multiple assignment randomized trial (SMART) study. *Am J Ger Psych*. 2019 October 27; (10): 1035-1045. PMID: 31047790.

Harris-Hayes M, Steger-May K, Bove A, Foster SN, Mueller MJ. Clohisy JC, **Fitzgerald GK**. Movement pattern training compared with standard strengthening and flexibility among patients with hip-related groin pain: results of a pilot multicenter randomised clinical trial. *BMJ Open Sport & Exercise Medicine*. 2020;6:e000707.

Moehl K, Wright RM, Shega J, Malec M, **Fitzgerald GK**, Robbins-Welty G, Zoberi K, Tait R, n Perara,, Deverts D, Horvath Z, WeinerDK. How to Teach Medical Students About Pain and Dementia: E-Learning, Experiential Learning, or Both. *Pain Medicine*. 2020: pnaa187;doi:10.1093, Aug 8 2020.

Middleton A, **Fitzgerald GK**, Delitto A, Saper RB, Barnett KG, Stevans J. Implementing Stratified Care for Acute Low Back Pain in Primary Care using the STarT Back Instrument: A

Process Evaluation within the Context of a Large Pragmatic Cluster Randomized Trial. *BMC Musculoskeletal Disorders*. 2020;21(1):776

Gustafson JA, Elias JJ, **Fitzgerald GK**, Tashman S, Debski RE, Farrokhi S. Combining advanced computational and imaging techniques as a quantitative tool to estimate patellofemoral joint stress during downhill gait: A feasibility study. *Gait and Posture*. February 2021;84:31-37

Fitzgerald GK. JOSPT Cases: A great opportunity to increase the number and improve the impact of case reports. Guest Editorial. *JOSPT Cases*. 2021;1:3-4.
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Harris-Hayes M, Steger-May K, Bove A, Foster SN, Mueller MJ, Clohisy JC, **Fitzgerald GK**. One-year outcomes following physical therapist-led intervention for chronic hip-related groin pain: ancillary analysis of a pilot multicenter randomized clinical trial. *J Orthop Res*. 2021;39:2409-2418. doi: 10.1002/jor.24985. PMID: 33458839; NIHMSID:NIHMS1666445.

Schlenk EA, **Fitzgerald GK**, Rogers J, Kwoh, CK, Sereika SM. Promoting Physical Activity in Older Adults with Knee Osteoarthritis and Hypertension: A Randomized Controlled Trial. *Journal of Aging and Physical Activity*. 2021; 29; 207-218. doi: 10.1123/japa.2019-0498. PMID: 32887850

Bove AM, Dong ER, Hausmann LRM, Piva SR, Brach JS, Lewis A, **Fitzgerald GK**. Exploring race differences in patient satisfaction with rehabilitation following total knee arthroplasty. *The Journals of Gerontology:Series A*, glab132, <https://doi.org/10.1093/gerona/glab132>. May 11, 2021.

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Bove AM, Hausmann LRM, Piva SR, Brach JS, Lewis A, **Fitzgerald GK**. Race differences in post-acute physical therapy utilization and patient-reported function after total knee arthroplasty. *Arthritis Care Res*. 2022;74:79-88

Reviews, Invited Published Papers, Proceedings of Conferences and Symposia, Monographs, Books, and Book Chapters

Fitzgerald GK. Delayed onset muscle soreness: Implications for rehabilitation and clinical research. *Critical Reviews in Physical Medicine and Rehabilitation*. 5, 291-299. 1993

Fitzgerald GK, Michlovitz SL. Modality Therapy. In: Kelley and Clark, ed., *Orthopedic Therapy of the Shoulder*. Philadelphia, PA, Lippincott, 1994.

McEwen I. (Ed) *Writing Case Reports. A How-to Manual For Clinicians*. American Physical Therapy Association Publications, Alexandria, VA, 1996. Contributing Author.

Rudolph K, **Fitzgerald GK**, Snyder-Mackler L. *Restoration Of Dynamic Stability In The ACL*

Deficient Knee. In Lephart SM, Fu FH (Ed), Proprioception and Neuromuscular Control in Joint Stability. Human Kinetics, Champaign, Il. 2000: 393-404.

Chmielewski TL, Rudolph KS, Axe MJ, **Fitzgerald GK**, Snyder-Mackler L. Movement Patterns of Individuals with Good Potential to Dynamically Stabilize Their Knees After ACL Rupture. In Hascall VC and Kuettner KE (Ed) The Many Faces of Osteoarthritis. Birkhauser Verlag Basel/Switzerland, 2002: 461-463.

Fitzgerald GK, Irrgang JJ. Post-operative rehabilitation following articular cartilage procedures of the knee. In Brotzman B. (Ed) Clinical Orthopaedic Rehabilitation. Mosby Publishing. 2003

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Fitzgerald GK, Delitto A. Neuromuscular electrical stimulation for muscle strength training. In Rainoldi A, Minetto MA, Merletti R (Ed) Biomedical Engineering in Exercise and Sports. Edizioni Minerva Medica, Torino, Italy, 2006. 199-207

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Fitzgerald GK. The Knee – Common Ligamentous Knee Pathology; e-Learning Module, Universal Musculoskeletal Curriculum, Evidence in Motion, Louisville, KY, 2012

Fitzgerald GK. The Knee – Disease Related Issues in Osteoarthritis; e-Learning Module, Universal Musculoskeletal Curriculum, Evidence in Motion, Louisville, KY, 2012

Fitzgerald GK. The Knee – Factors That May Affect the Outcome of Rehabilitation for Knee Osteoarthritis; e-Learning Module, Universal Musculoskeletal Curriculum, Evidence in Motion, Louisville, KY, 2012

Farrokhi S, Baker NA, **Fitzgerald GK**. Principles of Rehabilitation: Physical and Occupational Therapy. In Hochberg MJ (Ed) Rheumatology, 6th Edition. Elsevier, Philadelphia, PA 2015.

Bove A, **Fitzgerald GK**. Updated in knee OA management. The Rheumatologist. 2016;10: 34-36.

American Academy of Orthopaedic Surgeons. Management of Osteoarthritis of the Knee (Non-Arthroplasty). Evidence-Based Clinical Practice Guidelines. Expert Panel Member representing

the American Physical Therapy Association. August 30, 2021.

Published Abstracts

Fitzgerald GK, Rothstein JM, Mayhew TM, Lamb RL. Exercise induced muscle soreness after concentric and eccentric isokinetic muscle contractions. Presentation: *Proceedings of International Society of Electrophysiologic Kinesiologists, 8th International Congress*. Baltimore 8/14/90

Fitzgerald GK, McClure PW. Reliability of four tests for patellofemoral alignment. *JOSPT* 19, 61, 1994.

McKenna M, McClure PW, **Fitzgerald GK**. A comparison of the effects of cervical mobilization and active exercise on cervical range of motion and pain. *JOSPT*, 19, 63, 1994.

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Fitzgerald GK, Axe MJ, Lear L, Snyder-Mackler L. Development and testing of a screening examination to distinguish rehabilitation candidates from non-operators early after ACL rupture. American Academy of Orthopaedic Surgeons 1998 Annual meeting, New Orleans, LA

Fitzgerald GK, Snyder-Mackler L, Axe MJ. A comparison of two non-operative ACL rehabilitation programs for highly active individuals. *JOSPT*, January, 1999.

Piva S, **Fitzgerald GK**, Irrgang JJ, McGinty G. Decreasing the amplitude of the electrical stimulus during the burst-superimposition maximum voluntary quadriceps isometric force test. Presented at the 2001 Combined Sections Meeting of the APTA. San Antonio, TX, 2/2001.

Fitzgerald GK, Childs JD, Ridge TM, Irrgang JJ. Coordination and agility training in individuals with knee osteoarthritis: a case report. Presented at the 2002 Combined Sections Meeting of the APTA, Boston, MA, 2/2002.

Fitzgerald GK, Piva SR, Irrgang JJ, Bouzubar F, Starz TW. Quadriceps Activation Failure as a Moderator of the Relationship Between Quadriceps Strength and Physical Function in Individuals with Knee Osteoarthritis. *Arthritis and Rheumatism*. 2002;46: Supplement S198, #447.

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Fitzgerald GK, Piva SR, Irrgang JJ. The prevalence of self-reported joint instability in knee osteoarthritis and its relationship to physical function. *J Orthop Sports Phys Ther*. 2004; 34:A2

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Piva SR, **Fitzgerald GK**, Irrgang JJ, Fritz JM, Childs JD, Delitto A. Association between impairments and function in individuals with patellofemoral pain syndrome. *J Orthop Sports Phys Ther*. 2006; 36:A3.

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Teixeira PEP, **Fitzgerald GK**, Gil AB, Almeida GJM, Piva SR. Association Between Hip Muscles Strength and Physical Function in Individuals with Total Knee Arthroplasty. *Arthritis and Rheumatism* 2008; 58 (9): S892 - 1977.

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Distefano, G., Plassmeyer, J., Carvell, G.E., **Fitzgerald, GK**, Huard, J., Ambrosio, F. The effect of electrical stimulation on the myogenic capacity of stem cells transplanted into dystrophic muscle. **Federation of Brazilian Societies for Experimental Biology, Fortaleza, Brazil May 2008**

Ferrari R., Distefano G., Nozaki M., **Fitzgerald GK**, Boninger M., Huard J., Ambrosio F. The relationship between vascularity and fibrosis formation after skeletal muscle injury. **International Society for Stem Cell Research, Philadelphia, Pennsylvania, USA, June, 2008,**

Ambrosio F., Plassmeyer J., Brown E., Deasy BM., Boninger ML., Goodpaster B., **Fitzgerald GK.**, Huard J. Neuromuscular electrical stimulation: The skeletal muscle fountain of youth? **Association of Academic Physiatrists, Colorado Springs, Colorado, USA, February 2009,**

Plassmeyer J., Groscost D., Brown E., Goodpaster B., **Fitzgerald GK**, Boninger ML., Huard J., Ambrosio F. Neuromuscular electrical stimulation rejuvenates muscle stem cell regenerative potential. **Molecular mechanisms of aging and age-related diseases, Puerto Vallarta, Mexico, March 2009,**

Piva SR, Almeida GJM, Gil AB, Teixeira PEP, **Fitzgerald GK**. Effectiveness and Feasibility of a Balance Training Program Post Total Knee Arthroplasty -Pilot Randomized Trial. *J Orthop Sports Phys Ther* 2009; 39 (1): A29-30.

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Teixeira PEP, Piva SR., **Fitzgerald GK**. Exercise Effects On Self-Reported Functional Tasks in Knee Osteoarthritis [abstract]. *Arthritis Rheum* 2009;60 Suppl 10 :1881 DOI: 10.1002/art.26955

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Gil, AB, Sparto, PJ, Chambers, AJ, Cham, R, **Fitzgerald, GK**; Relationship between physical function and stiffened pattern of movement during gait in patients with knee osteoarthritis. *Proceedings of the XIX Conference of International Society for Posture & Gait Research 2009*; O.96; page 112.

Gil AB, Sparto PJ, Piva SR, **Fitzgerald GK**. Stiffened pattern of movement is associated with worse physical function in people with knee osteoarthritis. *Osteoarthritis and Cartilage* - September 2009 (Vol. 17Supplement 1, Pages S81-S82, DOI: 10.1016/S1063-4584(09)60158-8)

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Maia Neto FJ, Almeida GJ, **Fitzgerald GK**, Piva SR. The Effect of an Exercise Program on Gait Asymmetry in Patients After Total Knee Arthroplasty. [abstract] *Arthritis Rheum*. 2010.

Fitzgerald GK, White DK, Piva SR. Associations between changes in impairments and treatment response following exercise therapy in subjects with knee osteoarthritis. *Osteoarthritis Cartilage*. 2012;17:S263

Farrokhi S, Rainis C, **Fitzgerald GK**, Tashman S. Dynamic Stereo X-Ray Evaluation of Knee Joint Mechanics During Downhill Walking in Subject with Knee Osteoarthritis [abstract] *Arthritis Rheum*. 2012

Rainis C, Farrokhi S, Tashman S, **Fitzgerald GK**. Altered Tibiofemoral Joint Contact Mechanics in Patients with Knee Osteoarthritis and Episodic Complaints of Joint Instability. *Orthopaedic Research Society*. 2013

Farrokhi S, O'Connell M, Gil A, **Fitzgerald GK**. Alterations in sagittal-plane knee joint kinematics and kinetics during gait in knee osteoarthritis patients with complaints of instability. *Osteoarthritis Research Society International*. April 2013.

O'Connell M, Farrokhi S, Gil A, **Fitzgerald GK**. Severity of coexisting patellofemoral osteoarthritis is associated with altered sagittal-plane gait biomechanics in patients with tibiofemoral osteoarthritis. *Osteoarthritis Research Society International*. April 2013.

Schlenk, E. A., Crowley-Lisowski, D., Twerski, S., Fallon, A., Sartore, A., Sereika, S., Rogers, J., **Fitzgerald, G. K.**, & Kwoh, C. K. (2013). Relationships between self-efficacy, outcome

expectancy, and outcomes in older adults with osteoarthritis of the knee and hypertension: Baseline results [Abstract]. *Arthritis Care and Research*, 65(10), S895

Gustafson JA, Farrokhi S, Tashman S, **Fitzgerald GK**. Increased Variability of Knee Motion in Patients with Knee Osteoarthritis and Complaints of Instability. Orthopaedic Research Society. March 2014.

Susko AM, DePaul SM, **Fitzgerald GK**. Correlation of 1-repetition maximum and ratings of perceived exertion in adults: Implications for strength training. Osteoarthritis Research Society International. April 2014.

Fitzgerald GK, Fritz JM, Childs JD, Brennan GB, Landsittel D, Abbott JH, Gil AB, Nielsen B. Exercise, Manual Therapy, and Use of Booster Sessions in Physical Therapy for Knee OA: A Multi-Center Randomized Clinical Trial. ACR 2014.

Farrokhi S, **Fitzgerald GK**, Tashman S. Knee Joint Contact Mechanics during Downhill Gait and its Relationship with Varus/Valgus Motion and Muscle Strength in Patients with Knee Osteoarthritis. CSM 2015.

Farrokhi S, Piva SR, **Fitzgerald GK**, Kwok CK. Association of pain location with symptoms, functional limitations, and knee related quality of life in patients with knee pain: data from the Osteoarthritis Initiative. CSM 2015.

O'Connell M, Farrokhi S, **Fitzgerald GK**. Biomechanical and Clinical Correlates of Self-reported Knee Pain during Gait in Patients with Knee Osteoarthritis. CSM 2015.

Gustafson JA, **Fitzgerald, GK**, Farrokhi S. Decreased dynamic knee joint stiffness in patients with knee osteoarthritis and complaints of instability. Orthopaedic Research Society. March 2015.

Bove AM, Smith KJ, Bise C, Fritz JM, Childs JD, Brennan G, Abbott JH, **Fitzgerald GK**. What is the most cost-effective physical therapy strategy to treat knee osteoarthritis? *Arthritis Care and Research* 2015.

Bove AM, Bise CG, Smith KJ, Fritz JM, Childs JD, Brennan GP, Abbott JH, **Fitzgerald GK**. Does receiving physical therapy for knee osteoarthritis impact downstream healthcare utilization? *Arthritis Rheumatol*. 2016;68(suppl 10).

Stevens JM, Schneider MJ, Hack LM, Terhorst L, **Fitzgerald GK**, Brach JS, Delitto A. Identifying determinants of suboptimal adherence to low back pain guidelines in a 10 year old physical therapy implementation initiative: a mixed methods study. 9th Annual Conference of Dissemination and Implementation Science. Washington, DC. Dec 2016.

Gustafson JA, Elias JJ, **Fitzgerald GK**, Tashman S, Debski RE, Farrokhi S. A modeling framework to estimate in-vivo subject-specific patellofemoral joint cartilage stress during gait. Orthopaedic Research Society, 2017.

Schlenk EA, Sereika SM, Rogers J, **Fitzgerald GK**, Kwoh, CK (2017, July). Improving clinical outcomes and physical activity in older adults with comorbidity: A randomized controlled trial. Abstract accepted at Sigma Theta Tau International Honor Society of Nursing 28th International Nursing Research Congress, Dublin Ireland.

Harris-Hayes M, Bove AM, Brown K, King V, Mancino J, Wortman D, **Fitzgerald GK**. Treatment fidelity among treatment providers in a multicenter, randomized clinical trial comparing two rehabilitation strategies for people with pre-arthritis hip disease. Combined Sections Meeting of the American Physical Therapy Association. 2018

Gustafson JA, Elias JJ, **Fitzgerald GK**, Tashman S, Debski RE, Farrokhi S. Effects of patellofemoral osteoarthritis on joint contact stress during downhill walking: A modeling study. Orthopaedic Research Society, 2018.

Harris-Hayes M, Steger-May K, Bove A, Foster SN, Mueller MJ, Clohisy JC, **Fitzgerald GK**. Movement pattern training compared to standard strengthening and flexibility among patients with prearthritic hip disorders: a pilot multicenter randomized clinical trial. World Congress on Osteoarthritis (OARSI), Toronto, ON, May 2019

Middleton A, **Fitzgerald GK**, Stevans J. Implementation of technology-mediated screening and referral of high-risk back pain patients to non-pharmacological treatment in primary care. Academy of Health, Dissemination and Implementation Conference. December, 2019.

Cook R, **Fitzgerald GK**, Foster SN, Mueller MJ, Clohisy JC, Harris-Hayes, M. Gender Differences in Movement During Single Leg Tasks in People with Hip-Related Groin Pain. Accepted for APTA Combined Sections Meeting, February 2020.

Harris-Hayes M, Steger-May K, Bove A, Foster S, Mueller MJ, Clohisy JC, **Fitzgerald GK**. Sustained outcomes following movement pattern training or strengthening/flexibility among patients with prearthritic hip disorders: results of a pilot multicenter randomized clinical trial. *Osteo Cart*. 2020;28;S171-S172. DOI: <https://doi.org/10.1016/j.joca.2020.02.279>

Harris-Hayes M, Steger-May K, Bove AM, Mueller MJ, Clohisy JC, **Fitzgerald GK**. Sustained effects of rehabilitation among patients with hip-related groin pain: secondary analysis from a pilot randomized clinical trial. Accepted Conference Proceedings, International Society for Hip Arthroscopy 2020.

Bove AM, Hausmann LRM, Piva SR, Brach JS, Lewis A, **Fitzgerald GK**. Race differences in physical function and post-acute physical therapy utilization following total knee arthroplasty. Platform presentation at American Physical Therapy Association Combined Sections Meeting. February 2021. (Conference held virtually due to COVID-19 pandemic.)

Bove AM, Dong ER, Hausmann LRM, Piva SR, Brach JS, Lewis A, **Fitzgerald GK**. Exploring race differences in patient satisfaction with rehabilitation following total knee arthroplasty. Poster presentation at American Physical Therapy Association Combined Sections Meeting.

February 2021. (Conference held virtually due to COVID-19 pandemic.)

Paterno MV, Quatman-Yates CC, Thomas S, **Fitzgerald GK**. Patient and Provider Perspectives on Booster Visits after ACL Reconstruction: A Novel Delivery Model. Platform Presentation at the American Physical Therapy Association Combined Sections Meeting, February, 2022.

Bise CB, Schneider MJ, Freburger JK, **Fitzgerald GK**, Switzer G, Smyda G, Peele P, Delitto A. Emergency Department Use for Acute Low Back Pain: a Trajectory and Utilization Analysis. Platform Presentation at the American Physical Therapy Association Combined Sections Meeting, February, 2022.

Bise CB, Schneider MJ, Freburger JK, **Fitzgerald GK**, Switzer G, Smyda G, Peele P, Delitto A. First Provider Seem for Acute Episode Low Back Pain: Influences on Subsequent Healthcare Utilization. Platform Presentation at the American Physical Therapy Association Combined Sections Meeting, February, 2022.

Other

Master of Science Thesis: Exercise Induced Muscle Soreness After Concentric and Eccentric Isokinetic Muscle Contractions. Virginia Commonwealth University/Medical College of Virginia, 1990

Doctoral Dissertation: Non-operative Anterior Cruciate Ligament Rehabilitation For Individuals Participating in High Level Physical Activity, MCP/Hahnemann University, 1998

PROFESSIONAL ACTIVITIES

TEACHING

Current Teaching Responsibilities in Department of Physical Therapy

Lecturer: PT 2029: Kinesiology. University of Pittsburgh, Department of Physical Therapy.

PT Boot Camp Lecturer/Instructor.

Paper Reviewer: PT 2072 Evidence-Based Practice I
Guest Discussant: PT 2073 Evidence-Based Practice II
Paper Reviewer: PT 2077 Evidence-Based Practice VI
Paper Reviewer: PT 2078 Evidence-Based Practice VII

Lab Instructor-Knee Module: PT 2085 Advanced Therapeutic Exercise for PT Practice

Teaching in Other Departments/Institutions

HRS 3000: Doctoral Seminar: Course Coordinator, PhD in Rehabilitation Science Program, University of Pittsburgh

HRS 3003: Introduction to Core Concepts in Rehabilitation Science Disability- Lecturer, PhD in Rehabilitation Science Program, University of Pittsburgh

HRS 3004: Introduction to Methods of Inquiry-Outcomes Module Coordinator-PhD in Rehabilitation Science Program, University of Pittsburgh

Course Director: Kinesiology, Orthopaedic Physical Therapy, Entry Level Master's Program, Department of Physical Therapy, Allegheny University of the Health Sciences, Philadelphia, PA, Fall 1990 to Fall 1997.

Visiting Professor, Clinical Kinesiology. University of Illinois-Chicago. Jan 6-10, 1992; Jan 4-8, 1993, Jan 3-7, 1994. January 2-6, 1995. January 2-5, 1996. Course coordinator; Jules Rothstein PhD, PT

Introduction to Physical Therapy: 3rd Year Medical Students on Orthopedic Rotation Hahnemann University, School of Medicine Fall 1990 - Spring 1992.

Thesis Committees

University of Pittsburgh

Chair of Committee: Allyn Bove, DPT. Doctoral Degree. Racial differences in functional outcomes and delivery of physical therapy services after total knee arthroplasty. Proposal Defended, December 2014, (in progress).

Member of Committee: Joel Stevans, DC. Doctoral Degree. Identifying factors associated with physical therapists' adherence to low back pain guidelines across the domains of the consolidated framework for implementation research: a mixed methods study. Defended, August, 2016

Member of Committee: Gustavo Almeida, MS, PT. Doctoral Degree. Reliability and responsiveness of physical activity measures in individuals after total knee arthroplasty. Defended, November, 2015.

Member of Committee: Jason Woollard, MPT. Doctoral Degree. Derivation of a clinical prediction rule for maximizing the probability of successful arthroscopic subacromial decompression in patients with chronic subacromial impingement syndrome. Defended, April 2012.

Chair of Committee: Ibrahim Altubasi, MS, PT. Doctoral Degree. "The effects of neuromuscular electrical stimulation on type II muscle fiber hypertrophy in aging muscle." Defended July 2011.

Member of Committee: Stephanie Di Stasi, MSPT. Doctoral Degree. University of Delaware.

“The Fickle ACL deficient athlete: Investigation of the noncopper response to injury, surgery, and neuromuscular training. Defended, June 2011.

Chair of Committee: Alexandra Gil, MS, PT. Doctoral Degree. “The relationship between gait variables and physical function in individuals with knee osteoarthritis.” Defended September 2010.

Member of Committee: John McGee MPT. Doctoral Degree. The cost-effectiveness of using a treatment-based classification (TBC) approach vs. a usual care approach in the management of low-back pain in the outpatient physical therapy setting. Defended, September 2009.

Member of Committee: Joseph Zenni, DPT. Doctoral Degree. University of Delaware. “Decreased Functional Ability and Altered Joint Loading with the Progression of Medial Compartment Knee Osteoarthritis.” Defended, June 2008.

Chair of Committee: Jennifer Lias, MS, PT. Doctoral Degree. “Predictive factors of short and long term outcome following total knee arthroplasty.” (Student dropped out of program April 2008)

Member of Committee: Laura Schmitt, MPT. Doctoral Degree, University of Delaware. “The influence of laxity, instability, and alignment of the knee on physical function and motor patterns in individuals with knee osteoarthritis.” Defended, June 2006.

Chair of Committee: Sara R. Piva, MS, PT. Doctoral Degree. “Association between impairments and function in response to physical therapy in individuals with patellofemoral pain syndrome.” Defended, April 2005.

Member of Committee: Kevin Conley MS, ATC. Doctoral Degree. “Effects of Selected Modes of Prophylactic Support on Reflex Muscle Firing Following Dynamic Perturbation of the Ankle.” Defended, April 2005.

Member of Committee: Fawzi Bouzubar, MS, PT. Doctoral Degree. “Self Reported Fatigue in Individuals with Knee Osteoarthritis.” Defended, October 22, 2003

Member of Committee: Cheryl Ferris, MS. ATC. Doctoral Degree. “The effect of trunk and hip neuromuscular and biomechanical characteristics upon the knee during a stop-jump task in males and females.” Defended, May 23, 2003

Post-Doctoral/Faculty Fellows

Co-Primary Mentor: Sara Piva, PT, PhD. Neuromuscular electrical stimulation in people with rheumatoid arthritis. NIH K12 Fellow. University of Pittsburgh. 2006-2010.

Primary Mentor: Fabrisia Ambrosio, PT, PhD. Exercise, electrical stimulation, and stem cell implantation for muscular dystrophy. NCMRR-CORRT K12 Fellow. 2006-2010.

Primary Mentor: Shawn Farrokhi, PT, PhD. The biomechanical risk factors underlying the link between patellofemoral joint pain and osteoarthritis. NCMRR-CORRT K12 Fellow 2010-2013.

Primary Mentor: Adam Goode, PT, PhD, Duke University. Faculty Fellow, Pragmatic Trials. CoHSTAR. 2015-2017.

Co-Primary Mentor: Addie Middleton, Medical University of South Carolina. Faculty Fellow, Implementation Science. CoHSTAR, 2017 –present.

MCP/Hahnemann University, Philadelphia, PA

Chair of Committee: Melody Chamberlain, PT; "The effect of fatigue on muscle performance after ACL reconstructive surgery." Thesis defended on 11/10/94

Chair of Committee: David Ebaugh, PT; "Changes in quadriceps femoris strength between partial range and full range knee extension exercise." Thesis defended 4/96

Member of Committee: Maureen McKenna, PT; "The effects of cervical mobilization on range of motion and pain." Thesis defended on 4/20/93.

Member of Committee: Kathy Sawyer, PT; "The effects of therapeutic exercise on scapular position." Thesis defended 5/95

Member of Committee: Irene Mizobe, PT; "The relationship between isometric quadriceps muscle force output and functional ability in patients with knee instability." Thesis defended on 11/10/94.

Member of Committee: Marcia Esola, PT; "The relationship between lumbar spine and pelvic motion during forward bending in individuals with and without back pain." Thesis defended 6/94.

Member of Committee: Dave Kietrys, PT; "The relationship between head and neck posture, VDT screen height, and pain in keyboard operators". Thesis defended 11/95.

Clinical Mentor for Sports Physical Therapy Residency Program

Tara Ridge, MPT and Erica Baum, MPT; Fall 1999, Spring 2000

Brian Klucinek, MS, PT, ATC; Fall 2000

Christian Lyons, MPT; Fall 2001

Joel Robb, MPT; Spring 2002

Alon Rabin, MPT; Fall 2002

Adam Eubanks, PT; Fall 2003, Spring 2004

Jennifer Swanson, DPT; Spring 2005

Advisor, Entry-Level Clinical Research Internships

Derek Metsger: Fall 1999

Keelan Enseki: Fall 2000, Spring 2001

Lisa Curtis: Fall 2002, Spring 2003, Fall 2003

Matthew Guarino: Fall 2003

Colleen O'Hara: Fall 2004

Drew Breaky: Summer 2007

Timothy Zelch, Summer 2009

Matthew Janczak, Summer 2010

RESEARCH

Grants Received

Years	Grant Title	Source
1995 to 1996 Principal Investigator	Compensatory patterns in patients with knee instability. Doctoral Dissertation Award. \$5,000.00	Foundation for Physical Therapy Research, Inc.
1997 to 1998 Principal Investigator	Compensatory patterns in patients with knee instability. Doctoral Dissertation Award. \$4,600.00	Foundation for Physical Therapy Research, Inc.
1999 to 2001 Principal Investigator	High intensity electrical stimulation for quadriceps femoris strength training in post-operative anterior cruciate ligament rehabilitation. \$11,120.00	University of Pittsburgh, Central Research Development Fund.

1999 to 2000 Principal Investigator	High intensity electrical stimulation for quadriceps femoris strength training in post-operative anterior cruciate ligament rehabilitation. \$2,500.00	Section on Research, American Physical Therapy Association, Clinical Research Demonstration Project.
2000 Principal Investigator	High intensity electrical stimulation for quadriceps femoris strength training in post-operative anterior cruciate ligament rehabilitation. \$40,000.00	Foundation for Physical Therapy Research, Inc.
2000 to 2001 Principal Investigator	Quadriceps femoris muscle inhibition in patients with knee osteoarthritis. \$50,000.00	Arthritis Foundation, Western PA Chapter.
2001 to 2002 Principal Investigator	Gait adaptations in individuals with knee osteoarthritis. \$9,900.00	Orthopaedic Section, APTA, Clinical Research Grant Program.
2003 to 2004 Principal Investigator	Neuromuscular electrical stimulation in rheumatoid arthritis. \$6,500.00	EMPI, Inc.
2004 to 2008 Principal Investigator	Knee stability training in individuals with knee OA. \$1,425,000.00	National Institute of Arthritis and Musculoskeletal and Skin Diseases.
2007 to 2008 Co-Investigator	Validation of the knee function composite test: A Pilot Study. 65,000.00	Omerus Corporation
2008 to 2009 Co-Principal Investigator	Dynamic Arthrokinematic Profiles of Knee Instability in People with Knee Osteoarthritis. 25,000.00	National Center for Research Resources; University of Pittsburgh Clinical and Translational Science Institute, Basic to Clinical Collaborative Research Pilot Program.
2008 to 2009 Co-Investigator	Mechanotransduction for improved skeletal muscle functioning in aged individuals. 37,000.00	University of Pittsburgh Claude Pepper Center Pilot Study Program.

2010 to 2014 Co- Investigator	Promoting Physical Activity in Older Adults with Comorbidity 290,909.00	National Institute of Nursing Research.
2010 to 2015 Principal Investigator	Enhancing the Effectiveness of Physical Therapy for People with Knee Osteoarthritis 1,410,000.00	Agency for Health Research and Quality.
2011 – 2016 Co- Investigator	Reducing Pain; Preventing Depression	National Institute of Mental Health
2015-2020 Co-Director of Pilot Study Core	Center of Excellence in Physical Therapy Health Services/Health Policy Research and Training (CoHSTAR)	Foundation for Physical Therapy Research, Inc
2016-2019 Site Principal Investigator	Movement Pattern Training in People with Intra-articular Hip Disorders	National Institute of Health

Seminars and Invited Lectureships Related to Research Activity

February, 1999.	Invited Speaker: Non-operative management of ACL injuries in physically active individuals.	Marquette Challenge Conference. University of Pittsburgh, Department of Physical Therapy.
June, 1999	Screening Patients With Acute ACL Rupture For Return To High Level Activity With Non-Operative Rehabilitation.	American Physical Therapy Association Annual Conference, Washington, DC.
February, 2000	Clinical Research Demonstration Project: High Intensity Electrical Stimulation for Quadriceps Strength Training in Post-Operative ACL Rehabilitation.	Combined Sections Meeting of the APTA. New Orleans, LA
May, 2000	Invited Speaker: “Innovations in Non-operative Rehabilitation of ACL Injuries”: “ Theoretical Considerations for Functional Re-training Programs”.	Ninth Panther International Sports Medicine Symposium, Pittsburgh, PA

October, 2000	Invited Speaker: Quadriceps Femoris Muscle Inhibition in Patients with Knee Osteoarthritis.	Western PA Chapter of the Arthritis Foundation Annual Meeting, Pittsburgh, PA
February, 2002	Invited Speaker: Clinical Research: Practical Solutions to Common Problems.	Combined Sections Meeting of the American Physical Therapy Association, Boston MA
April, 2002	Invited Speaker: The Institutional Review Board Process: A Reviewers Perspective.	University of Pittsburgh, School of Health and Rehabilitation Sciences, Doctoral Seminar
June, 2002	Invited Speaker: Foundation for Physical Therapy Research Grant Forum: Where does the money go?	Annual Conference of the American Physical Therapy Association. Cincinnati OH
October, 2002	Invited Speaker: Knee Instability in Individuals with Knee Osteoarthritis: Special Considerations for Rehabilitation.	37 th Annual Scientific Meeting of the Association of Rheumatology Health Professionals. New Orleans, LA
March, 2003.	Invited Speaker: Knee Instability in Individuals with Knee Osteoarthritis: Special Considerations for Rehabilitation.	Marquette Challenge Conference. University of Pittsburgh.
October 2004	Invited Speaker: Agility Training for the Arthritic Knee.	39 th Annual Scientific Meeting of the Association of Rheumatology Health Professionals. San Antonio, TX
November 2005	Invited Speaker: Measuring the Impact of Therapeutic Exercise Interventions: Physical Function in Knee OA.	American College of Rheumatology: Evidence Based Rheumatology: Reducing the Prevalence and Impact of Arthritis Conference. San Diego, CA.
March 2006	Invited Speaker: Neuromuscular Electrical Stimulation for Muscle	Biomedical Engineering in Exercise and Sports

	Strength Training.	Conference, Torino, Italy
December 2007	Keynote Speaker: Non-operative Management of Anterior Cruciate Ligament Injury: Maximizing A Successful Return to High Level Physical Activity	Southern Physiotherapist Symposium, Queenstown, New Zealand.
October 2008	Invited Speaker: Risk Factors for Functional Decline: Considerations for Planning Exercise Programs in Knee Osteoarthritis.	American College of Rheumatology Clinical Research Conference: Rehabilitation and Exercise Therapy
March 2010	Visiting Professor, “Knee Instability in Knee OA: In Pursuit of a Solution.”	Boston University Medical Center, Arthritis and Epidemiological Research Center, Boston MA
August 2010	“Knee Instability in Knee OA: In Pursuit of a Solution.”	University of Oslo, Sports Medicine, Oslo Norway.
September 2011	Keynote Speaker: “; 1)“Agility and perturbation training in patients with knee osteoarthritis: Experience from a randomized clinical trial”: 2)“The effects of impairment-based exercise on specific functional tasks in people with knee osteoarthritis”	Washington University in St. Louis, Department of Physical Therapy. Steven J Rose Clinical Research Symposium

Other Scientific Presentations Related to Research

August, 1990.	Platform presentation: Exercise Induced Muscle Soreness after Concentric and Eccentric Isokinetic Muscle Contractions.	ISEK 90, 8th International Congress, International Society of Electrophysiologic Kinesiologists.
February, 1994.	Platform Presentation: Reliability of four tests for patellofemoral alignment.	Combined Sections Meeting of the APTA, New Orleans, LA.
March, 1998.	Platform Presentation: Development and testing of a screening examination to distinguish rehabilitation candidates from non-copers early after ACL	Annual Conference of American Academy of Orthopaedic Surgeons, New Orleans, LA

rupture.

February, 1999.	Platform Presentation: A comparison of two non-operative ACL rehabilitation programs for highly active individuals.	Combined Sections Meeting of the APTA, Seattle, WA.
February, 2001.	Platform Presentation: Decreasing the amplitude of the electrical stimulus during the burst-superimposition maximum voluntary quadriceps isometric force test.	Combined Sections Meeting of the APTA. San Antonio, TX.
February, 2002	Platform Presentation: Coordination and agility training in individuals with knee osteoarthritis: a case report.	Combined Sections Meeting of the APTA, Boston, MA
October, 2002	Platform Presentation: Quadriceps Activation Failure as a Moderator of the Relationship Between Quadriceps Strength and Physical Function in Individuals with Knee Osteoarthritis.	37 th Annual Scientific Meeting of the Association of Rheumatology Health Professionals. New Orleans, LA
October, 2002	Poster Presentation: Alterations in lower extremity movement and muscle activation patterns in individuals with knee osteoarthritis.	37 th Annual Scientific Meeting of the Association of Rheumatology Health Professionals. New Orleans, LA
October, 2002	Platform Presentation: Reliability and validity of the get up and go test in patients with knee osteoarthritis.	37 th Annual Scientific Meeting of the Association of Rheumatology Health Professionals. New Orleans, LA
February, 2003	The effectiveness of neuromuscular electrical stimulation (NMES) for quadriceps strengthening in post-operative ACL rehabilitation: standard vs criterion-based application.	Combined Sections Meeting of the APTA, Tampa, FL
February, 2004	The prevalence of self-reported joint instability in knee osteoarthritis and its relationship to physical function.	Combined Sections Meeting of the APTA, Nashville, TN

Manuscript Reviewer

1993 – present	<i>Physical Therapy.</i>
1998	<i>Journal of Motor Behavior.</i>
1999 to present	<i>Journal of Orthopaedic and Sports Physical Therapy.</i>
2002 to present	<i>Physiotherapy International.</i>
2003 to present	<i>Arthritis Care and Research.</i>
2004 to present	<i>Medicine and Science in Sports and Exercise</i>
2005 to present	<i>Arthritis and Rheumatism</i>
2006 to present	<i>Osteoarthritis and Cartilage</i>
2008 to present	<i>Archives of Internal Medicine</i>

Grant Reviewer

1994 to 1995	Pennsylvania Physical Therapy Association Research Award.
2000 to Present	The Aircast Foundation
2003	Orthopedic Special Section of the American Physical Therapy Association, Research Grant Award.
2004 to 2006	American College of Rheumatology Research and Education Foundation
2004 to Present	National Institutes of Health, Medical Rehabilitation Science Study Section
2005 to 2009	Foundation for Physical Therapy Research, Inc, Scientific Review Committee
2007, 2012	Arthritis Research Campaign-United Kingdom
2007 to 2009	Dutch Arthritis Association
2008	National Institute on Aging, Special Emphasis Panel
2009	National Institutes of Health: Musculoskeletal Tissue Engineering Study Group

2010	US Army Medical Research and Material Command: Peer-Reviewed Medical Research Program (PRMRP): Post-traumatic OA study section.
2011	Australian Physiotherapy Research Foundation.
2011	NIH MOSS Special Emphasis Panel
2011 to 2013	Arthritis Health Professions Association, Canada
2014	US Army Medical Research and Material Command: Peer-Reviewed Medical Research Program (PRMRP)
2014	NIH Director's Early Independence Awards
2015, 2017	NIH Special Emphasis Panel
2015-2019	Center on Health Services Training and Research (CoHSTAR), Pilot Study Program Director
2019-2020	University of Pittsburgh Competitive Medical Research Fund (CMRF)

Editorial Board Membership

2000	Editorial Review Group, <i>Guide to Physical Therapy Practice</i> , Publication of the American Physical Therapy Association.
2003 to 2004	Editorial Review Board: <i>Journal of Orthopaedic and Sports Medicine</i> .
2004 to 2006 2016 to 2020	Editorial Board Member: <i>Physical Therapy</i>
2006 to 2010	Senior Editorial Board Member: <i>Physical Therapy</i>
2004 to 2005	Associate Editor: <i>Arthritis Care and Research</i>
2010 to 2015	Editorial Board Member: <i>Arthritis Care and Research</i>
2012 to 2019	Editorial Board Member: <i>Physiotherapy Practice and Research</i> , The official journal of the Irish Society of Chartered Physiotherapists

SERVICE

University and School Committees

August 2000 to	Member of University of Pittsburgh Institutional Review Board.
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2003.

July 2000 to June 2001.	Member of University of Pittsburgh, School of Health and Rehabilitation Sciences, Nomination Committee.
January 2002 to 2005.	Member of University of Pittsburgh, School of Health and Rehabilitation Sciences, Academic Integrity Board.
October 1998 to Present 2003	Member of Department of Physical Therapy Admissions Committee. Member of the Department of Physical Therapy Entry-Level Competency Examination Committee.
2004	University of Pittsburgh Internal Data Safety and Monitoring Board Member. Functional Impact of PENS for 65+ Chronic Low Back Pain. PI: Deborah Weiner, MD
2004	University of Pittsburgh Internal Data Safety and Monitoring Board Member. Osteopuncture for OA-Associated Knee Pain and Disability. PI: Deborah Weiner, MD
2005 to 2007	Chair, Scientific Review Committee, University of Pittsburgh, School of Health and Rehabilitation Sciences.
2005	Member: Academic Promotion and Tenure Committee, University of Pittsburgh, School of Health and Rehabilitation Sciences.
2010	Member: School of Health Sciences Post-Doctoral Progress Assessment Committee
2011 to 2014	Multidisciplinary Advisory Committee, Multidisciplinary Clinical Research Scholars Program, Institute for Clinical Research Education, University of Pittsburgh.
2012	Doctoral Comprehensive Examination Committee University of Pittsburgh, School of Health and Rehabilitation Sciences.
2013	Chair: Task Force for Dissertation Credit Grading University of Pittsburgh, School of Health and Rehabilitation Sciences.
2015 to present	PCOR K12 Advisory Committee, Institute for Clinical Research Education, University of Pittsburgh
2015 to present	Member, University Council on Graduate Studies, University of Pittsburgh

2015 to present	Chair, University of Pittsburgh, School of Health and Rehabilitation Sciences, Academic Integrity Board.
2017 to present	SHRS Task Force on Hybrid Education and Distance Learning
2017 to 2019	University of Pittsburgh Task Force on Personalized Education.
2017	Chair, Search Committee; Vice Chair and Director of Post-Professional Education, Department of Physical Therapy
2017-2018	Chair, Search Committee; Chairperson, Department of Communication Science and Disorders.
2018	Member, Search Committee; Chairperson, Department of Rehabilitation Science and Technology
2020	Re-imagining the University of Pittsburgh Task Force: Graduate Education and Research Work Group.

Professional/Community Service

March, 1995	Invited Member of American Physical Therapy Association Task Force to develop a "How to" manual for clinicians on writing case reports.
June 1995	Member of Task force to develop a research grant program sponsored by the Orthopedic Special Section of the American Physical Therapy Association.
1995 to 1999.	Member of the Research Committee, Orthopedic Special Section of the American Physical Therapy Association.
1999 to 2002.	Chair, Research Committee, Pennsylvania Physical Therapy Association.
2003 to 2006	Chair, Research Committee, Orthopedic Special Section of the American Physical Therapy Association.
1999 to 2002	Member of Annual Conference Educational Programming Subcommittee, American Physical Therapy Association.
1999	Examiner: Sports Physical Therapy Competency Certification Program. Centers for Rehabilitation Services, McKeesport, PA.
2002, 2003	Abstract Reviewer for American College of Rheumatology/Association of Rheumatological Health Professionals, Annual Conference.

2003 to 2004	Expert Panel Member, <i>FYSIO</i> , An International Newsletter for Physiotherapists.
2003 to 2004	Member of Association of Rheumatological Health Professions Research Committee.
2004	Discussion Group Leader, Ethics in Research: University of Pittsburgh Survival Skills and Ethics Workshop Program.
2004-2008	Team Coordinator and Captain: Arthritis Foundation, Western PA Chapter, Annual Fund Raising Walk.
2006 to 2008	Chairperson: National Institute of Arthritis and Musculoskeletal and Skin Diseases, Data Safety and Monitoring Board. Flavocoxib: A medical food therapy for osteoarthritis. PI: Sarah Luise Morgan, MD, RD, University of Alabama at Birmingham.
2008-2009	Invited Faculty, United States Bone and Joint Decade Young Investigator's Grant Writing Workshop.
2008	Invited Member, Expert Panel: Revision of American College of Rheumatology Treatment Guidelines for Hip, Knee, and Hand Osteoarthritis.
2008	Chairperson: Orthopaedic Section Special Task Force for APTA Research Agenda.
2008	Invited Member: American Physical Therapy Association: Research Advisory Committee.
2010 to 2012	Catherine Worthingham Fellows Awards Subcommittee American Physical Therapy Association
2011	Invited Member, Technical Expert Panel, Minnesota Evidence-based Practice Center's Project on Physical Therapy for Knee Pain Secondary to Osteoarthritis. Sponsored by Agency for Health Research and Quality.
2011 to 2015	Advisory Board Member: "Translation of Quantitative Imaging in Osteoarthritis" CORT, NIAMS
2011 to 2017	Advisory Panel Member: United States Bone and Joint Decade "Experts in Arthritis," A Public Education Seminar for People with Arthritis.
2013 to 2015	Chair, Subcommittee on Rehabilitation. Osteoarthritis Research Society International (OARSI) Revision of Clinical Trial Guidelines Task Force.

2013	Invited Stakeholder: Patient Centered Outcomes Research Institute (PCORI). Effectiveness of Alternative Strategies for Stabilizing Symptoms in People with Osteoarthritis
2016 to present	Member, Journal of Orthopaedic and Sports Physical Therapy Board of Directors
2017	Invited Chairperson of Expert Scientific Review Panel: Ludwig Boltzmann Institute, Arthritis and Rehabilitation Research Cluster. Vienna Austria. October 2018.
2018	Invited Stakeholder Panel, Degenerative Joint Disease Care and Payment Reform, Duke University-Margolis Center for Health Policy. Washington DC, January 2018
2018 to present	Invited Expert Panel Member Representing the American Physical Therapy Association: Revision of the American Academy of Orthopaedic Surgeons Clinical Practice Guidelines for the Treatment of Osteoarthritis.
2019	Invited Reviewer: Exercise and Arthritis Brochure, Arthritis Foundation, Consumer Health Publishing.

Consultative and Advisory Positions

1987	Physical Therapy Advisor to Sportsmedicine Program: Milwaukee Medical Clinic
1989	Physical Therapy Consultant to Spine Clinic: Medical College of Virginia, Richmond VA
1989 to 1990	Prosthetic/Orthotic Clinic Coordinator: Medical College of Virginia, Richmond VA
1990	Physical Therapy Consultant to Work Hardening Program: Medical College of Virginia, Richmond VA
1992	Physical Therapy Consultant: Northwest Physical Therapy, Wynnmore, PA
1996 to 1998	Physical Therapy Consultant: University of Delaware, Sports Medicine Clinic
1999 to 2008	Physical Therapy Consultant: University of Pittsburgh, Center for Sports

	Medicine, Pittsburgh PA.
1999 to 2008.	Sports Physical Therapy Resident Program Advisory Committee and Clinical Mentor, University of Pittsburgh, Center for Sports Medicine.
2004 to 2006	Center for Disease Control, Pittsburgh Laboratory. Knee injury prevention in Coal Miners.
2007	Mid-term tenure and promotion reviewer for Virginia Commonwealth University. (Lori Michener, PT, PhD)
2007	Mid-term tenure and promotion reviewer for University of Florida. (Steven George, PT, PhD)
2008 to 2011	Orthopedic Physical Therapy Resident Program Research Advisor and Clinical Mentor, Centers for Rehabilitation Services, an affiliate of University of Pittsburgh Medical Center.
2010 to 2015	Volunteer Physical Therapy Faculty Consultant to the Pro-Bono Physical Therapy Clinic at the University of Pittsburgh Student Health Services
2016 to 2019	Volunteer Physical Therapy Faculty Consultant to the Birmingham Physical Therapy Clinic. Pittsburgh PA.
2016 to present	Technical Expert; Knee pain quality improvement initiative, Centers for Rehabilitation Services, Pittsburgh PA

Professional Presentations

May, 1991.	Cadaver Laboratory Presentation on "Knee Ligament Anatomy." Pennsylvania Physical Therapy Association, Spring Conference.
May, 1991.	"Conservative Management of Patellofemoral Dysfunction." Pennsylvania Physical Therapy Association, Spring Conference.
February, 1992.	Invited speaker, Manual Therapy Round Table, Combined Sections Meeting of the APTA, San Francisco, CA. "Efficacy of Manual Therapy",
March, 1992.	Invited speaker, South East District PPTA Chapter Meeting, "Patellofemoral Dysfunction: Considerations for Conservative Management."
January, 1993.	Invited Speaker: Faculty Development Day, Hahnemann University, Current Transformations in U.S. Healthcare. Co-coordinator of a

workshop titled "Generalists and Specialists in Healthcare." Sponsored by the School of Health Sciences and Humanities.

- June, 1996. Invited Speaker, Clinical Decision Making Forum, American Physical Therapy Association Annual Conference, Minneapolis, MN, "Open and Closed Kinetic Chain Exercises: Issues in Knee Rehabilitation."
- June 1997. Invited Speaker, Clinical Decision Making Forum, American Physical Therapy Association Annual Conference, San Diego, CA, "Open and Closed Kinetic Chain Exercises: Issues in Knee Rehabilitation."
- June, 1999. Invited Speaker, Symposim: Challenging the Myths in Physical Therapy, American Physical Therapy Association Annual Conference, Washington, DC. "Open and Closed Kinetic Chain Exercises: Issues in Knee Rehabilitation."
- July, 1999. Invited Speaker: University of Delaware, Department of Physical Therapy, Graduation Ceremony. Newark, DE.
- November, 1999. Invited Speaker: Pennsylvania Physical Therapy Association/Southwest District Meeting, "Current Concepts in Post-Operative ACL Rehabilitation".
- June, 2000. Invited Panelist: Clinical Case Conference. American Physical Therapy Association Annual Conference. Indianapolis, IN.
- April, 2001. Invited Speaker: Functional Retraining Workshop for Athletic Trainers. Sponsored by the UPMC Center for Sports Medicine Department of Athletic Training.
- October, 2001. Invited Speaker: Pennsylvania Physical Therapy Association Annual Conference: Continuing Education Course: "Current Issues in Knee Rehabilitation". Two Day Course. Seven Springs Resort, Champion PA.
- April, 2002. Neuromuscular Electrical Stimulation for Quadriceps Strengthening. Presented to the Physical Therapy Department at the UPMCCenter for Sports Medicine.
- January, 2003 Knee Instability in Knee OA: Considerations for Rehabilitation. Presented to the Physical Therapy Department at UPMC Rehabilitation Hospital.
- May, 2003 Physical Activity and Exercise for Knee Osteoarthritis. Community Education Program Sponsored by the UPMC Arthritis Institute.

- September 2003 Invited Speaker, One Day Course: “Evidence-Based Knee Rehabilitation.” US Army Medical Corps. Fort Sam Houston, San Antonio, TX.
- October 2003 Invited Speaker, First International Congress on Rehabilitation of the Knee: The Future of Knee Rehabilitation. Campinas, Brazil
- April, 2004 Visiting Professor, University of Missouri, Department of Physical Therapy. “Measurement Issues in Knee Osteoarthritis,” and “Writing Case Reports: Getting Started and General Considerations.”
- April, 2004 Invited Speaker, Missouri Physical Therapy Association, Spring Conference. Physical Therapy Management of Knee Disorders. 8 hour continuing education course.
- May, 2004 Physical Activity and Exercise for Knee Osteoarthritis. Community Education Program Sponsored by the UPMC Arthritis Institute.
- October 2004 Invited Speaker, “Agility Training for the Arthritic Knee.” American College of Rheumatology 2005 Annual Scientific Meeting, San Antonio, TX.
- February 2005 Invited Speaker, “Open vs Closed Chain Exercise in ACL Rehabilitation.” Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA
- February 2005 Moderator and Instructor, “Orthopaedic Physical Therapy Research Information Exchange Center.” Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA
- February 2006 Moderator and Instructor, “Orthopaedic Physical Therapy Research Information Exchange Center.” Combined Sections Meeting of the American Physical Therapy Association, San Diego, CA.
- March 2006 Invited Speaker, Biomedical Engineering in Exercise and Sports Conference. “Neuromuscular electrical stimulation for muscle strength training.” Torino, Italy.
- June 2006 Invited Speaker, American Physical Therapy Association Scientific Exposition. “Foundation for Physical Therapy Grant Roundtable Session.” Orlando, FL.
- February 2007 Invited Speaker: ‘Managing the Patient with Lower Extremity Osteoarthritis From Lab to Clinic to Community.’ Combined Sections

- Meeting of the American Physical Therapy Association, Boston, MA
- February 2007 Invited Speaker: Knee Education Group: The contribution of abnormal hip mechanics to knee injury: A top-down perspective: “Associations Between Hip Mechanics and Knee Osteoarthritis.” Combined Sections Meeting of the American Physical Therapy Association, Boston, MA
- February 2007 Moderator and Instructor, “ Physical Therapy Research Information Exchange Center.” Combined Sections Meeting of the American Physical Therapy Association, Boston, MA
- February 2007 Invited Panelist: “Mock NIH Review: a glimpse into the NIH grant review process.” Combined Sections Meeting of the American Physical Therapy Association, Boston, MA
- December 2007 Invited Speaker: Therapeutic Exercise and Knee Osteoarthritis: Can We Improve Our Effects? Southern Physiotherapist Symposium, Queenstown, New Zealand.
- February 2008 Moderator and Instructor, “ Physical Therapy Research Information Exchange Center.” Combined Sections Meeting of the American Physical Therapy Association, Nashville, TN
- April 2008 Invited Speaker: “Current Issues in Knee Rehabilitation.” Pennsylvania Physical Therapy Association sponsored course, Harrisburg PA.
- May 2008, April 2009 Invited Faculty Member, United States Bone and Joint Decade, Young Investigator Workshop. Chicago, Il. “Writing the Background and Significance Section of a Grant.”
- June 2008 Invited Speaker, “Reflections on Arthritis in *Physical Therapy*.” Annual Conference of the American Physical Therapy Association, San Antonio, TX.
- October 2009 Invited Speaker, American College of Rheumatology Research Conference. “Addressing Subsets that Affect the Outcomes of Physical Therapy for Knee Osteoarthritis: An Evidence-Based Approach.” Philadelphia, PA
- November 2009 Invited Speaker. Intermountain Healthcare, “Current Issues in Knee Rehabilitation.” Salt Lake City, UT.
- February 2010 Invited Speaker, Combined Sections Meeting of the APTA,: “Clinical Diagnosis for ACL Injury.” San Diego, CA
- November 2010 Invited Speaker: American College of Rheumatology Non-

pharmacological Treatment Guidelines Workshop. American College of Rheumatology Annual Conference. Atlanta GA.

- February 2011 Invited Speaker: Comparative Effectiveness Research Designs. Physical Therapy Journal Editorial Board Meeting. Combined Sections Meeting of the American Physical Therapy Association. New Orleans, LA.
- June 2011 Invited Speaker: Physical Therapy Journal Symposium on Disability Research. Annual Conference of the American Physical Therapy Association. National Harbor, MD.
- February 2012 Invited Speaker: Invited Speaker: Physical Therapy Journal Symposium on Disability Research. Combined Sections Meeting of the American Physical Therapy Chicago, IL.
- March 2012 Invited Speaker: Southwest District, Pennsylvania Physical Therapy Association, Mini-Combined Sections Meeting. "Evidence-based Considerations in Rehabilitation for Knee Osteoarthritis."
- March 2012 Invited Speaker: Northwest Central District, Pennsylvania Physical Therapy Association. "Clinically Applied Biomechanics for the Tibio-femoral Joint: Implications for Evaluation and Treatment."
- November 2012 Invited Speaker: Association for Rheumatological Health Professions Annual Meeting, Washington, D.C. Treating the Patient with Osteoarthritis: Interventions, Innovations and Clinical Insights Clinical Focus Course - Breakout Session I; "Neuromuscular training and joint mobilizations: Do we need both to optimize lower limb function?"
- May 2013 Invited Speaker: "Evaluation and Treatment Considerations for Lower Extremity Osteoarthritis." 1st Annual Meeting of the Orthopaedic Section, American Physical Therapy Association, Orlando FL.
- February 2014 Invited Speaker: Eugene Michels Forum. Combined Sections Meeting of the APTA. Las Vegas NV 2014. "In Defense of Impairment-Based Rehabilitation Approaches in Orthopaedic Rehabilitation."
- April 2014 Invited Speaker, Arthritis State of the Science Meeting. Hosted by Boston University. Pentagon City, VA. "Knee Pain/OA: Physical Therapy Approaches.
- May 2015 Invited Speaker: "Osteoarthritis: The Disease, The Challenges, and The Opportunities for Physical Therapy." 3rd Annual Meeting of the Orthopaedic Section, American Physical Therapy Association, Phoenix, AZ.

- October 2015 Invited Speaker: “Exercise, Manual Therapy, and Use of Booster Sessions in Physical Therapy for Knee OA: Experience From A Multi-Center RCT.” Robert L. Lamb Distinguished Lectureship. Virginia Commonwealth University, Department of Physical Therapy, Richmond VA.
- November 2015 Invited Speaker: “Fall Prevention Interventions: The Physical Therapy Perspective.” American College of Rheumatology/Associated Rheumatological Health Professions Annual Conference. San Francisco, CA.
- February 2016 Panelist: “Get in the Game With PCORI: A Successful Research Group’s Experience.” Combined Sections Meeting of the American Physical Therapy Association. Anaheim, CA.
- March 2016 Invited Speaker: “Exercise, Manual Therapy, and Use of Booster Sessions in Physical Therapy for Knee OA: Experience From A Multi-Center RCT.” Panther Rounds. University of Pittsburgh School of Medicine, Department of Rehabilitation Medicine.
- October 2016 Continuing Education Course: Osteoarthritis, Total Joint Replacement and the Medicare Comprehensive Care Joint Replacement Bundle Pilot (CCJR). Cambria-Somerset Council 2016 PT Workshop.
- May 2017 Continuing Education Courses: Evidence-Based Physical Therapy Management of Osteoarthritic and Chronic Knee Pain. Centers for Rehabilitation Services. Erie PA and Pittsburgh PA.
- August 2017 Continuing Education Courses: Evidence-Based Physical Therapy Management of Osteoarthritic and Chronic Knee Pain. Centers for Rehabilitation Services. Pittsburgh PA.
- September 2017 Invited Expert Discussion Panel Member: Center for Enhancing Activity and Participation among Persons with Arthritis (ENACT), Research Webinar, Boston University, Boston MA.