

CURRICULUM VITAE
University of Pittsburgh
School of Health and Rehabilitation Sciences

BIOGRAPHICAL

Name: Sara R. Piva, PhD, PT

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EDUCATION and TRAINING

List entries in each section chronologically

UNDERGRADUATE:

1982-1984	Universidade de Passo Fundo, Passo Fundo, RS, Brazil	B.S., 1984	Physical Education
1987-1991	Federação de Estabelecimentos de Ensino Superior em Novo Hamburgo Novo Hamburgo, RS, Brazil	B.S., 1991	Physical Therapy

GRADUATE:

1987-1988	Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, RS, Brazil	Specialist, 1988	Sports Medicine and Scholar Health
1998-1999	University of Pittsburgh Pittsburgh, Pennsylvania	MS, 1999	Musculoskeletal Physical Therapy
2000-2005	University of Pittsburgh Pittsburgh, Pennsylvania	PhD, 2005	Rehabilitation Science

POSTGRADUATE:

1996	Centre Hospitalier Lyon Sud, Lyon, France – Knee Disorders - Henry Dejour, MD		Visiting Fellow in Orthopedic Physical Therapy
2000-2004	Spine Specialty Center, UPMC, Pittsburgh, PA - Richard E. Erhard, DC, PT		Visiting Fellow in Manual Therapy
2002 - present	American Academy of Orthopaedic Manual Physical Therapy		Fellow <i>Fellow status was</i>

APPOINTMENTS and POSITIONS
ACADEMIC:

1999-2003	Department of Physical Therapy University of Pittsburgh, Pittsburgh, PA	Research Associate
2004-2006	Department of Physical Therapy University of Pittsburgh, Pittsburgh, PA	Visiting Instructor
2006-2014	Department of Physical Therapy (primary) University of Pittsburgh, Pittsburgh, PA	Assistant Professor
2008-2014	Clinical and Translational Science Institute (secondary), University of Pittsburgh, PA	Assistant Professor
2014-present	Department of Physical Therapy (primary) University of Pittsburgh, Pittsburgh, PA	Associate Professor
2008-present	Clinical and Translational Science Institute (secondary), University of Pittsburgh, PA	Associate Professor
2009-present	Physical Therapy- Clinical and Translational Research Center -Clinical and Translational Science Institute, University of Pittsburgh, PA	Co-Director

NON-ACADEMIC:

1989-1991	Escola Estadual the 1º e 2º Graus Cohab Feitoria São Leopoldo, RS, Brazil	Physical Education Teacher
1991-1992	MEDFIS Ltda Porto Alegre, RS, Brazil	Staff Physical Therapist
1993-1998	Governo do Estado do RS/ Escola Rio Branco Carazinho, RS, Brazil	Staff Physical Therapist
		Private Practice Owner

1992-1998 Fisio & Forma Carazinho, RS, Brazil

CERTIFICATION and LICENSURE

SPECIALTY CERTIFICATION:

American Board of Physical Therapy Specialties Certification: 2002 - 2012
Board Certified Specialist in Orthopaedic Physical Therapy Recertification: 2011 - 2021

Fellow of American Academy of Orthopaedic Manual Physical Therapy Certification: 2002 - 2012
Recertification: 2012 - 2022

PROFESSIONAL LICENSURE:

Physical Therapy Licensure:

Conselho Regional de Fisioterapia e Terapia Ocupacional da 5ª região – Brazil 1991-1999

Pennsylvania State Board of Physical Therapy (#012326L) 1999-present

MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

American Physical Therapy Association - Orthopaedic and Research Sections. 2000-present

Pennsylvania Physical Therapy Association. 2002-present

American Academy of Orthopaedic Manual Physical Therapy. 2002-present

Association of Rheumatology Health Professionals of the American College of Rheumatology. 2007-present

HONORS

Health Professional of the Year, Jornal Diário da Manhã, Carazinho, RS, Brazil 1997

George J. Davies - James A. Gould Award Excellence in Clinical Inquiry Award best article published in the Journal of Orthopaedic and Sports Physical Therapy 2004

Outstanding Faculty Member, School of Health and Rehabilitation Sciences, University of Pittsburgh 2006

Inducted into the Academy of Advanced Item Writers for consistent, lasting contribution to both the quality and quantity of the National Physical Therapy Examination item bank- Federation of State Boards of Physical Therapy	2006
American College of Rheumatology Research Education Foundation – New Investigator Award	2007
Inducted to Wall of Fame as Item Writer of the National Physical Therapy Examination item bank- Federation of State Boards of Physical Therapy	2013
Rose Excellence in Research Award. The Best Research Article of 2015 in Orthopaedic Physical Therapy. Orthopaedic Section, American Physical Therapy Association.	2015

PUBLICATIONS

Refereed Articles:

1. **Piva SR**, Diacoles D, Poletto JM. Effects of ultrasound on rat muscles after metallic implantation. *Annais Científicos da Pontifícia Universidade Católica do Rio Grande do Sul* 1989; 02:54–63.
2. **Piva SR**, Erhard RE, Al-Hugail M. Cervical radiculopathy: A case problem using a decision-making algorithm. *Journal of Orthopaedic and Sports Physical Therapy*. 2000; 30(12):745-754.
3. Bizzini M, Childs JD, **Piva SR**, Delitto A. Systematic review of the quality of randomized controlled trials for patellofemoral pain syndrome. *Journal of Orthopaedic and Sports Physical Therapy*. 2003; 33 (1): 4 – 20.
4. Childs JD, Fritz JM, **Piva SR**, Erhard RE. Clinical decision-making in the identification of patients likely to benefit from spinal manipulation: A traditional versus an evidence-based approach. *Journal of Orthopaedic and Sports Physical Therapy*. 2003; 33 (5): 259-272.
5. Childs JD, **Piva SR**, Erhard RE, Hicks GE. Side-to-side weight-bearing asymmetry in patients with low back pain. *Manual Therapy*. 2003; 8(3): 166-169.
6. **Piva SR**, Erhard RE, Childs JD, Hicks G. Reliability of measuring iliac crest height in the standing and sitting position using a new measurement device. *Journal of Manipulative and Physiologic Therapeutics*. 2003; 26 (7): 437 – 441.
7. Fritz JM, **Piva SR**. The Physical Impairment Index: Reliability, Validity, and Responsiveness in Patients with Acute Low Back Pain. *Spine*. 2003; 28(11):1189-94.
8. Fitzgerald GK, **Piva SR**, Irrgang JJ. A modified neuromuscular electrical stimulation protocol for quadriceps strength training following anterior cruciate ligament reconstruction. *Journal of Orthopaedic and Sports Physical Therapy*. 2003; 33(9):492-501.
9. Fitzgerald GK, **Piva SR**, Irrgang JJ, Bouzabar F, Starz TW. Quadriceps activation failure as a moderator of the relationship between quadriceps strength and physical function in individuals with knee osteoarthritis. *Arthritis & Rheumatism*. 2004; 51(1):40-8.

10. **Piva SR**, Fitzgerald GK, Irrgang JJ, Bouzabar F, Starz TW. The get up and go test in patients with knee osteoarthritis. *Archives of Physical Medicine and Rehabilitation*. 2004; 85(2): 284-289.
11. Childs JD, **Piva SR**, Erhard RE. Immediate Improvements in Side-to-Side Weight-Bearing and Iliac Crest Symmetry after Manipulation in Patients with Low Back Pain. *Journal of Manipulative and Physiologic Therapeutic*. 2004; 27(5):306-13.
12. Childs MJ, Fritz JM, **Piva SR**, Whitman JM. Proposal of a classification system for patients with neck pain. *Journal of Orthopaedic and Sports Physical Therapy*. 2004; 34(11):686-96.
13. Fitzgerald GK, **Piva SR**, Irrgang JJ. Reports of joint instability in knee osteoarthritis: its prevalence and relationship to physical function. *Arthritis & Rheumatism*. 2004; 15;51(6):941-6.
14. Browder DA, Erhard RE, **Piva SR**, Intermittent Cervical Traction and Manipulation for Management of Mild Cervical Compressive Myelopathy Attributed to Cervical Herniated Disc. *Journal of Orthopaedic and Sports Physical Therapy*. 2004; 34(11):701-12.
15. Childs JD, Flynn TW, Fritz JM, **Piva SR**, Whitman JM, Wainner RS, Greenman PE. Screening for Vertebrobasilar Insufficiency in Patients with Neck Pain: Manual Therapy Decision-Making in the Presence of Uncertainty. *Journal of Orthopaedic and Sports Physical Therapy*. 2005; 35; 5: 300-6.
16. Fritz JM, **Piva SR**, Childs JD. Accuracy of the Clinical Examination to Predict Radiographic Instability of the Lumbar Spine. *European Spine Journal*. 2005; 14(8): 743-50.
17. Childs JD, **Piva SR**. Psychometric properties of the functional rating index in patients with low back pain. *European Spine Journal*. 2005;14(10):1008-12.
18. Childs JD, **Piva SR**, Fritz JM. Responsiveness of the numeric pain rating scale in patients with low back pain. *Spine*. 2005; 30; 11: 1331-4.
19. Mamula CJ*, Erhard RE, **Piva SR**. Cervical Radiculopathy or Parsonage-Turner Syndrome: Inclusion of Parsonage-Turner Syndrome in the Differential Diagnosis of a Patient with Neck and Upper Extremity Symptoms. *Journal of Orthopaedic and Sports Physical Therapy*. 2005; 35; 10: 659-664.
20. **Piva SR**, Goodnite EA, Childs JD. Strength around the Hip and Flexibility of Soft Tissues in Individuals With and Without Patellofemoral Pain Syndrome. *Journal of Orthopaedic and Sports Physical Therapy*. 2005; 35 (12): 793-801.
21. **Piva SR**, Childs JD, Erhard RE, Browder DA. Inter-tester Reliability of Passive Intervertebral and Active Movements of the Cervical Spine. *Manual Therapy*. 2006; 11 (4): 321 – 30.
22. **Piva SR**, Fitzgerald K, Irrgang JJ, Jones S, Hando BR, Browder DA, Childs JD. Reliability of measures of impairments associated with patellofemoral pain syndrome. *BMC Musculoskeletal Disorders*. 2006; Mar 31;7(1):33.
23. **Piva SR**, Goodnite A, Azuma K, Woolard JD, Goodpaster BH, Wasko MC, Fitzgerald GK. Neuromuscular Electrical Stimulation and Volitional Exercise for Individuals with Rheumatoid Arthritis – Multiple-Patient Case Report. *Physical Therapy Journal*. 2007; 87(8):1064-77.
24. **Piva SR**, Gil AB, Moore CG, 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. *Journal of Rehabilitation Medicine*. 2009; 41(3): 129-135.
25. **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. *Archives of Physical Medicine and Rehabilitation*. 2009; 90: 285-295.
26. **Piva SR**, Childs JD, Klucinec BM, Irrgang JJ, Almeida GJM, Fitzgerald GK. Patella Fracture during Rehabilitation after Bone-patellar-tendon-bone Anterior Cruciate Ligament Reconstruction: Two Case Reports. *Journal of Orthopaedic and Sports Physical Therapy*. 2009; 39(4): 278 – 286.
 27. **Piva SR**, Fitzgerald GK, Wisniewski S, Delitto A. Predictors of pain and function outcome after rehabilitation in patients with patellofemoral pain syndrome. *Journal of Rehabilitation Medicine*. 2009; 41(8): 604-12.
 28. Scopaz K*, **Piva SR**, Gil AB, Woollard JD, Oddis CV, Fitzgerald GK. Effect of baseline quadriceps activation on changes in quadriceps strength after exercise therapy in subjects with knee osteoarthritis. *Arthritis & Rheumatism*. 2009; 15; 61(7): 951-7.
 29. Scopaz K*, **Piva SR**, Wisniewski, Fitzgerald GK. Relationships of fear, anxiety, and depression with physical function in patients with knee osteoarthritis. *Archives of Physical Medicine and Rehabilitation*. 2009; 90(11):1866-73.
 30. Hess R*, Brach J, **Piva SR**, VanSwearingen J. Walking skill can be assessed in older adults: validity of the Figure-of-8 Walk Test. *Physical Therapy Journal*. 2010; 90(1):89-99.
 31. **Piva SR**, Almeida GJM, Gil AB, Fitzgerald GK. A balance exercise program appears to improve function for patients with total knee arthroplasty: a randomized clinical trial. *Physical Therapy Journal*. 2010; 90(6):880-94.
 32. Almeida GJM*, Schroeder CA, Gil AB, **Piva SR**. Interrater reliability and validity of the stair ascend/descend test in subjects with total knee arthroplasty. *Archives of Physical Medicine and Rehabilitation*. 2010; 91(6):932-8.
 33. **Piva SR**, Almeida GJM, Wasko MC. Association of Physical Function and Physical Activity in Women with Rheumatoid Arthritis. *Arthritis & Rheumatism*. 2010; 62(8):1144-51.
 34. **Piva SR**, Teixeira PEP, Gil AB, Almeida GJM, DiGioia AM, Levison JT, Fitzgerald GK. Contribution of Hip Abductor Strength to Physical Function in Patients with Total Knee Arthroplasty. *Physical Therapy Journal*. 2011; 91(2): 225-233.
 35. Fitzgerald GK, **Piva SR**, Gil A, Wisniewski SR, Oddis C, Irrgang JJ. Agility and perturbation training techniques in exercise therapy for improving pain and function in subjects with knee osteoarthritis: A randomized clinical trial. 2011; *Physical Therapy Journal*. 91(4): 452-469.
 36. Teixeira PEP, **Piva SR**, Fitzgerald GK. The Effects of Exercise on Specific Self-Reported Functional Task Performance in Individuals with Knee Osteoarthritis. *Physical Therapy Journal*. 2011 Dec;91(12):1752-65.
 37. Almeida GJM*, Wasko MC, Kilby LL, Smith JL, Jakicic JM, **Piva SR**. Physical Activity Measured by SenseWear Armband in Women with Rheumatoid Arthritis: a Feasibility Study. *Physical Therapy Journal*. 2011 Sep;91(9):1367-76.
 38. 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: A Case Series. *Journal of Orthopaedic and Sports Physical Therapy*. 2011 Oct;41(10):708-22.
 39. Williams VJ*, **Piva SR**, Irrgang JJ, Crossley C, Fitzgerald GK. Comparison of Reliability and Responsiveness of Three Patient-Reported Clinical Outcome Measures in Knee

- Osteoarthritis Rehabilitation. *Journal of Orthopaedic and Sports Physical Therapy*. J Orthop Sports Phys Ther. 2012 Aug; 42(8):716-23.
40. Fitzgerald GK, White DK, **Piva SR**. Associations for change in physical and psychological factors and treatment response following exercise in knee osteoarthritis: An exploratory study. *Arthritis Care Res (Hoboken)*. 2012 Nov; 64(11):1673-80.
 41. 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 Res (Hoboken)*. 2013 Apr; 65(4):544-51.
 42. **Piva SR**, Lasinski S, Almeida GJM, Fitzgerald GK, Delitto, A. Psychological Predictors of Tolerance to Neuromuscular Electrical Stimulation in Subjects with Rheumatoid Arthritis. *Physiotherapy Practice and Research* 34 (2013) 57–66.
 43. Roy TC*, Lopez HP, **Piva SR**. Loads worn by soldiers predict episodes of low back pain during deployment to Afghanistan. *Spine (Phila Pa 1976)*. 2013 Jul 1;38(15):1310-7. doi: 10.1097/BRS.0b013e31829265c4.
 44. Roy TC*, Fish KL, Lopez HP, **Piva SR**. Preliminary validation of the military low back pain questionnaire. *Mil Med*. 2014 Feb;179(2):121-5. doi: 10.7205/MILMED-D-13-00341.
 45. Baldon R de M*, Serrão FV, Scattone Silva R, **Piva SR**. Effects of functional stabilization training on pain, function, and lower extremity biomechanics in women with patellofemoral pain: a randomized clinical trial. *J Orthop Sports Phys Ther*. 2014 Apr;44(4):240-A8. doi: 10.2519/jospt.2014.4940.
 46. Suzuki S*, Irrgang JJ, Ellenbecker TS, **Piva SR**. Characteristics of clinicians working in professional tennis setting: a survey study. *Journal of Medicine and Science in Tennis*. 2014; 19 (1): 25-34.
 47. Schneider MJ, Ammendolia C, Murphy D, Glick R, **Piva S**, Hile E, Tudorascu D, Morton SC. Comparison of non-surgical treatment methods for patients with lumbar spinal stenosis: protocol for a randomized controlled trial. *Chiropr Manual Ther*. 2014; 22:19. doi:10.1186/2045-709X-22-19 844
 48. Khoja SS*, Susko AM, Josbeno DA, **Piva SR**, Fitzgerald GK. Comparing physical activity programs for managing osteoarthritis in overweight or obese patients. *J. Compar. Effect. Res*. 3(3), 283-299 (2014).
 49. Almeida GJ*, Wert DM, Brower KS, **Piva SR**. Validity of physical activity measures in individuals after total knee arthroplasty. *Arch Phys Med Rehabil*. 2015 Mar;96(3):524-31. doi: 10.1016/j.apmr.2014.10.009.
 50. **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. *Clinics in Geriatric Medicine*. 2015 Feb;31(1):67-87, viii. doi: 10.1016/j.cger.2014.08.019.
 51. Roy TC*, **Piva SR**, Christiansen BC, Leshner JD, Doyle PM, Waring RM, Irrgang JJ, Moore CG, Brininger TL, Sharp MA. Description of musculoskeletal injuries occurring in female soldiers deployed to Afghanistan. *Mil Med*. 2015 Mar;180(3):269-75. PMID: 25735016.
 52. Baldon RM*, **Piva SR**, Scattone Silva R, Serrão FV. Evaluating Eccentric Hip Torque and Trunk Endurance as Mediators of Changes in Lower Limb and Trunk Kinematics in Response to Functional Stabilization Training in Women with Patellofemoral Pain. *Am J Sports Med*. 2015 Mar 19. pii: 0363546515574690. [Epub ahead of print] PMID: 25790834

53. Delitto A, **Piva SR**, Moore CG, Fritz JM, Wisniewski SR, Josbeno DA, Fye M, Welch WC. Surgery versus nonsurgical treatment of lumbar spinal stenosis: a randomized trial. *Ann Intern Med.* 2015 Apr 7;162(7):465-73. PMID: 25844995
54. **Piva SR**, Moore CG, Schneider M, Gil AB, Almeida GJ, Irrgang JJ. A randomized trial to compare exercise treatment methods for patients after total knee replacement: protocol paper. *BMC Musculoskelet Disord.* 2015 Oct 16;16:303. doi: 10.1186/s12891-015-0761-5. PMID: 26474988 Free PMC Article
55. Delitto A, **Piva SR**, Moore CG, Welch WC. Surgery Versus Nonsurgical Treatment of Lumbar Spinal Stenosis. *Ann Intern Med.* 2015 Sep 1;163(5):397-8. doi: 10.7326/L15-5129-4. PMID: 26322703
56. Khoja SS*, Almeida GJ, Wasko MC, Terhorst L, **Piva SR**. Light Intensity Physical Activity is Associated with Lower Cardiovascular Risk Factor Burden in Rheumatoid Arthritis. *Arthritis Care Res (Hoboken).* 2015 Aug 28. doi: 10.1002/acr.22711. [Epub ahead of print] PMID: 26314559
57. Farrokhi S, Chen YF, **Piva SR**, Fitzgerald GK, Jeong JH, 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] PMID: 26308705
58. Almeida GJ*, **Piva SR**, Irrgang JJ, Fitzgerald GK, Jakicic J. Reliability of Physical Activity Measures During Free-Living in Individuals After Total Knee Arthroplasty. *Physical Therapy Journal. Phys Ther.* 2015 Nov 19. [Epub ahead of print] PMID: 26586856
59. **Piva SR**, Almeida GJ, Gil AB, Levison T, DiGioia A. Dose-associated changes in gait parameters in response to exercise programs after total knee arthroplasty: Secondary analysis of two randomized studies. *International Journal of Physical Medicine & Rehabilitation.* *Int J Phys Med Rehabil.* 2015;3(6):3-7.
60. Khoja SS*, Browder D, Daliman D, **Piva SR**. Benefits of Thoracic Thrust Manipulation when Applied with a Multi-Modal Treatment Approach in Individuals with Mechanical Neck Pain: A Pilot Randomized Trial. (2015) *Int J Phys Med Rehabil* 3:306. doi:10.4172/2329-9096.1000306
61. American Academy of Orthopaedic Surgeons. Surgical Management of osteoarthritis of the Knee Evidence-Based Clinical Practice Guideline. [Http://www.aaos.org/SMOAK_guideline.aspx](http://www.aaos.org/SMOAK_guideline.aspx). Published December 4, 2015.

*** Trainee mentored to publication**

Invited Papers:

Continuing Education Through Professional Associations

1. Childs JD, **Piva SR**, Whitman JM. Lower Cervical Spine. In: *Physical Therapy for the Cervical Spine and Temporomandibular Joint. Home Study Course 13.3, Orthopaedic Section of the American Physical Therapy Association, La Crosse, WI, 2003.*
2. **Piva SR**. Sistema americano de classificação para o tratamento conservador de pacientes com dor lombar. Sistema de Educação em Saúde Continuada a Distância (SESCAD) e Programa de Atualização em Fisioterapia Esportiva e Traumatologia da Sociedade Nacional de Fisioterapia Esportiva (In Press-30 pages) (*Portuguese*).

Book Chapters

1. Erhard RE, **Piva SR**. Manipulation Therapy. In: *Orthopaedic Physical Therapy Secrets,*

- edited by JD Placzek and DA Boyce, Hanley & Belfus, Philadelphia, PA, 2001.
2. **Piva SR**, Irrgang JJ, Evaluation of Patellofemoral Conditions. In: Patellofemoral Disorders, a Rehabilitative Approach. 2nd Edition. Sports Section of the American Physical Therapy Association, La Crosse, WI, 2003.
 3. **Piva SR**. Fisioterapia para Pacientes com Lesões de Ombro – Sistema Classificatório da Universidade de Pittsburgh In: Fundamentos em Cirurgia do Ombro – Ortopedia e Reabilitação, 2nd Edition, edited by Lech O, Rio de Janeiro, Brazil, 2005 (*Portuguese*).
 4. **Piva SR**. Fisioterapia para Pacientes com Lesões de Ombro – Sistema Classificatório da Universidade de Pittsburgh In: Membro Superior – Abordagem Fisioterapeutica das Patologias Ortopédicas mais Comuns, edited by Lech O, Ranzzi A, Bordin F, Faggion M, Zillmer V, Piluski P, Revinter, Rio de Janeiro, Brazil, 2005 (*Portuguese*).
 5. Khoja SS, **Piva SR**, Toledo FGS. Physical Activity in Obesity and Diabetes. In: A practical Guide to Obesity. Springer, London UK. In Press

Monograph

Doctoral Dissertation: Association between impairments and function in individuals with patellofemoral pain syndrome, etd-05162005-115955, University of Pittsburgh, 2005.

Published Abstracts

1. **Piva SR**, Diacoles D, Poletto JM. Effects of ultrasound on muscles of rats after metallic implantation. Anais of 18Aniversario do instituto de biocienciass 1988; 1POA:58.
2. Childs JD, **Piva SR**, Erhard RE. Side-to-side weight-bearing asymmetry in patients with low back pain. The Journal of Manual and Manipulative Therapy. 2002; 10 (3):156-157.
3. **Piva SR**, Erhard RE, Childs JD, Hicks G, Al-Abdulmohsin, Hamza. Reliability of measuring iliac crest level in the standing and in sitting position using a new measurement device. The Journal of Manual and Manipulative Therapy. 2002; 10 (3):164-165.
4. Fitzgerald GK, **Piva SR**, Irrgang JJ, Bouzabar F, Starz TW. Quadriceps activation failure as a moderator of the relationship between quadriceps strength and physical function in individuals with knee osteoarthritis. Arthritis & Rheumatism. 2002; 46 (9): S198, #447.
5. **Piva SR**, Fitzgerald GK, Irrgang JJ, Bouzabar F, Starz TW. Reliability and validity of the get up and go test in patients with knee osteoarthritis. Arthritis & Rheumatism. 2002: 46 (9): S228, #534.
6. Baum E, Irrgang JJ, Childs JD, **Piva SR**, Fitzgerald GK. Measurement of anterior laxity of the knee: A comparison of two arthrometers. 2003 Proceedings of the 70th Annual American Academy of Orthopaedic Surgeons Meeting, #228.
7. Childs JD, **Piva SR**, Bizzini M, Delitto A. Systematic review of the quality of randomized controlled trials for Patellofemoral Pain Syndrome - Part II: Implications for the conduct of clinical trials. Journal of Orthopaedic Sports Physical Therapy. 2003; 33 (2): A-10.
8. Bizzini M, Childs JD, **Piva SR**, Delitto A. Systematic review of the quality of randomized controlled trials for Patellofemoral Pain Syndrome: Part I. Journal of Orthopaedic Sports Physical Therapy. 2003; 33 (2): A-9.
9. Childs JD, Fritz JM, **Piva SR**, Erhard RE. Clinical decision-making in the identification of patients likely to benefit from lumbosacral manipulation: A traditional versus an evidence-

- based approach. *Journal of Orthopaedic Sports Physical Therapy*. 2003; 33 (2): A-20.
10. Fitzgerald GK, **Piva SR**, Irrgang JJ. The effectiveness of neuromuscular electrical stimulation for quadriceps strengthening in postoperative ACL rehabilitation: standard versus criterion based application. *Journal of Orthopaedic Sports Physical Therapy*. 2003; 33 (2): A-9.
 11. **Piva SR**, Erhard RE, Childs JD, Browder DA. Inter-tester Reliability of Measurements of Passive Intervertebral and Active Movements of the Cervical Spine. *The Journal of Manual and Manipulative Therapy*. 2003; 11 (3):165-166.
 12. Childs JD, **Piva SR**, Erhard RE. Immediate Improvements in Side-to-side Weight-bearing and Iliac Crest symmetry after Manipulation in Patients with Low Back Pain. *The Journal of Manual and Manipulative Therapy*. 2003; 11 (3):168-169.
 13. Childs JD, **Piva SR**, Fritz JM. Validation of the Psychometric Properties of the Physical Impairment Index in Patients with Chronic Back Pain. *Journal of Orthopaedic Sports Physical Therapy*. 2004; 34 (1): PL- 10.
 14. Fitzgerald GK, **Piva SR**, Irrgang JJ. The Prevalence of Self-Reported Joint Instability in Knee Osteoarthritis and Its Relationship to Physical Function. *Journal of Orthopaedic Sports Physical Therapy*. 2004; 34 (1): PL- 19.
 15. Delitto A, Fritz JM, Wisniewsky SR, **Piva SR**, Welch WC. Predictors of Walking Capacity in Patients with Lumbar Spinal Stenosis. *Journal of Orthopaedic Sports Physical Therapy*. 2004; 34 (1): PL-16.
 16. Childs JD, **Piva SR**, Fritz JM. Responsiveness of the Numeric Pain Rating Index in Patients with Chronic Low Back Pain. *Journal of Orthopaedic Sports Physical Therapy*. 2004; 34 (1): PL- 14.
 17. Childs JD, **Piva SR**, Fritz JM. Psychometric Properties of the Functional Rating Index in Patients with Chronic Low Back Pain. *Journal of Orthopaedic Sports Physical Therapy*. 2004; 34 (1): PL- 12.
 18. **Piva SR**, Fitzgerald GK, Irrgang JJ, Jones S, Hando B, Childs J. Reliability of measures of impairments associated with patellofemoral pain syndrome. *Journal of Orthopaedic and Sports Physical Therapy*. 2006; 36:A3.
 19. Scopaz K*, **Piva SR**, Fitzgerald GK. The Mediating Effect of Knee Pain on the Relationship of Biobehavioral Factors to Function in Patients with Knee Osteoarthritis. *Arthritis & Rheumatism*. 2007; 56 (9): S511.
 20. Altubasi IM, Teixeira PEP, **Piva SR**, Fitzgerald GK. Knee Joint Laxity, as Measured by Stress Radiograph, does not alter the Relationship between Strength and Function in Patients with Knee OA. *Arthritis & Rheumatism*. 2008; 58 (9): S439 - 735.
 21. Scopaz K*, **Piva SR**, Fitzgerald GK. The Relationship of Fear, Anxiety, and Depression with Physical Function in Patients with Knee Osteoarthritis. *Arthritis & Rheumatism*. 2008; 58 (9): S440 - 736.
 22. **Piva SR**, Gil AB, Almeida GJM, Fitzgerald GK. Improvements in Muscle Impairments are Associated with Improvement in Physical Function in Patients with Total Knee Arthroplasty. *Arthritis & Rheumatism*. 2008; 58 (9): S596 - 1151.
 23. Almeida GJM*, Wasko MC, Kilby LL, Smith JL, Jakicic JM, **Piva SR**. Physical Activity Measured by SenseWear Armband in Women with Rheumatoid Arthritis: a Feasibility Study. *Arthritis & Rheumatism*. 2008; 58 (9): S607 - 1181.

24. Almeida GJM*, **Piva SR**, Kilby LL, Penn SK, Wasko MC. Factors Associated with Physical Activity in Women with Rheumatoid Arthritis. *Arthritis & Rheumatism*. 2008; 58 (9): S608 - 1184.
25. 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 & Rheumatism*. 2008; 58 (9): S892 - 1977.
26. **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. *Journal of Orthopaedic and Sports Physical Therapy*. 2009; 39 (1): A29-30.
27. Almeida GJM*, Wasko MC, Kilby LL, Penn SK, Smith JL, Jakicic JM, **Piva SR**. Physical Activity Measured by SenseWear Armband in Women with Rheumatoid Arthritis: a Pilot Study. *Journal of Orthopaedic and Sports Physical Therapy*. 2009; 39 (1): A25.
28. Almeida GJM*, Gil AB, Fitzgerald GK, **Piva SR**. Asymmetries in Physical Impairments and Spatial-Temporal Parameters of Gait in Total Knee Arthroplasty. *Journal of Orthopaedic and Sports Physical Therapy*. 2009; 39 (1): A48.
29. Teixeira PEP*, Gil AB, Almeida GJM, **Piva SR**. Reliability and Validity of Hip Muscle Strength Measures after Total Knee Arthroplasty. *Journal of Orthopaedic and Sports Physical Therapy*. 2009; 39 (1): A28.
30. **Piva SR.**, Strudle N, Almeida GJM, Wasko MC, Fitzgerald GK, Delitto A; Associates of Tolerance to Neuromuscular Electrical Stimulation in Rheumatoid Arthritis. *Arthritis & Rheumatism*. 2009; 60 Suppl 10 :1134
31. **Piva SR**, Almeida JM, Murphy Y, Wasko MC; Association of Physical Function and Disability with Physical Activity in Women with Rheumatoid Arthritis. *Arthritis & Rheumatism*. 2009;60 Suppl 10 :1976
32. Teixeira PEP*, **Piva SR**, Fitzgerald GK; Exercise Effects on Self-Reported Functional Tasks in Knee Osteoarthritis. *Arthritis & Rheumatism*. 2009;60 Suppl 10 :1881
33. Almeida GJM*, Wasko MC, Jeong K, Moore CG, **Piva SR**; Number of Days Necessary to Wear Portable Activity Monitors in Patients with Rheumatoid Arthritis. *Arthritis & Rheumatism*. 2009;60 Suppl 10 :1862
34. Gil AB*, Sparto P, **Piva SR**, Fitzgerald GK; The Influence of Hip Muscle Strength and Hip Frontal Plane Moment On the Knee Adduction Moment in People with Knee Osteoarthritis. *Arthritis & Rheumatism*. 2009;60 Suppl 10 :1934
35. Fitzgerald GK, **Piva SR**, Wisniewski SR. Clinical Measures Associated with Self-Reported Knee Instability in Knee Osteoarthritis (KOA). *Arthritis & Rheumatism*. 2010; 62 Suppl 10: 2052.
36. Maia Neto FJ*, Almeida GJM, Fitzgerald GK, **Piva SR**. The Effect of an Exercise Program in Gait Asymmetry in Patients after Total Knee Arthroplasty. *Arthritis & Rheumatism*. 2010; 62 Suppl 10: 2059.
37. Khoja SS*, Daliman D, **Piva SR**. The Effectiveness of Thoracic Spine Manipulation on Pain and Disability in Patients with Neck Pain: A Pilot Randomized Clinical Trial. *Arthritis & Rheumatism*. 2010; 62 Suppl 10: 2060.
38. Almeida GJM*, Brower KS, Celik D, Chang HC, **Piva SR**. Validity of Portable Devices To Assess Physical Activity in Patients with Total Knee Arthroplasty. *Arthritis & Rheumatism*. 2010; 62 Suppl 10: 2061.

39. Khoja SS*, Almeida GJM, Goodpaster BH, **Piva SR**. Muscle Area and Muscle Quality Relate to Physical Activity in Subjects with Rheumatoid Arthritis. *Arthritis Rheum* 2011; 63 Suppl 10: 1561.
40. Khoja SS*, Goodpaster BH, **Piva SR**. Muscle Quality Contributes More to Postural Balance Than Muscle Atrophy in People with Rheumatoid Arthritis. *Arthritis Rheum* 2011; 63 Suppl 10: 1560.
41. Almeida GJ*, **Piva SR**. Associations between Changes in Physical Function and Physical Activity in Response to an Exercise Program in Patients with Rheumatoid Arthritis. *Arthritis Rheum* 2011; 63 Suppl 10: 1561.
42. 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-S264.
43. Farrokhi, S.; **Piva, SR**. R.; Gil, A. B. Severity of Patellofemoral Joint Disease Is Associated With Increased Functional Limitations and Lower Limb Impairments In Patients With Coexisting Tibiofemoral Osteoarthritis. 2012; 20: S15-S15.
44. Jayabalan P, Almeida GJ, Huang W, Sowa GA, **Piva SR**. The identification of candidate biomarkers to assess the efficacy of a novel rehabilitation regimen for patients following a total knee arthroplasty: a pilot study. 9th Annual Rehab Institute Research Day 2013, Pittsburgh, PA.
45. Almeida GJ*, **Piva SR**. Physical Activity Behavior in Patients with Arthritis. *Arthritis Rheum* 2013; 65 Suppl 10: 354-355.
46. **Piva SR**, Catelani MB, Almeida GJ. Comprehensive Behavioral Intervention Compared to Standard of Care Exercise Program after Total Knee Arthroplasty: A Pilot Randomized Trial. *Arthritis Rheum* 2013; 65 Suppl 10: 356.
47. Khoja SS*, Goodpaster B, **Piva SR**. Skeletal Muscle Fat and Its Association with Physical Function and Physical Activity in Adults with Rheumatoid Arthritis. *Arthritis & Rheumatology*. Vol66. Number 10 (Suppl). October 2014.1091, S481.
48. Catelani MB*, Khoja SS, Almeida GJ, **Piva SR**. Investigation of Parameters Used to Test Quadriceps Muscle Power Using Isokinetic Dynamometer in Arthritis. *Arthritis & Rheumatology*. Vol66. Number 10 (Suppl). October 2014. 2326, S1015.
49. Almeida GJ*, Irrgang JJ, **Piva SR**. Reliability of physical activity measures during free-living in individuals with knee osteoarthritis. *J Orthop Sports Phys Ther*. 2015; 45(1):A188.
50. Almeida GJ*, Khoja S, Catelani M, **Piva SR**. Perceived barriers to exercise reported by older adults after total knee replacement. *J Orthop Sports Phys Ther*. 2014; 44(1):A145.
51. Almeida GJ*, Irrgang JJ, **Piva SR**. Reliability of physical activity measures during free-living in individuals with knee osteoarthritis. *J Orthop Sports Phys Ther*. 2015; 45(1):A188.
52. Almeida GJ*, Irrgang JJ, **Piva SR**. Responsiveness of Physical Activity Measures Following Exercise Intervention in Individuals after Total Knee Arthroplasty [abstract]. *Arthritis Rheumatol*. 2015; 67 (suppl 10)

* Trainee mentored to publication

PROFESSIONAL ACTIVITIES

TEACHING:

Undergraduate

- 2005- present REHSCI 1285 - Introduction to Evidence-Based Rehabilitation (approximately 60 students, 3-credit course; 3 contact hours/week). Course coordinator; primary responsibility for defining content, lecturing, identifying guest speakers and group facilitators, and evaluating students' work.
- 2007- 2008 Mentor of Students from Honors College:
- Kelly Brower. Role: Committee Chair of BPhil - Project Title: Validation of a Portable Activity Monitors in patients with Rheumatoid Arthritis.
 - Rebecca Hess. Role: Committee member; Dr. Jessie Van Swearingen, committee chair. Project Title: Measuring Skill in Walking of Older Adults, Validity and Responsiveness of Figure of 8 Walk.

Graduate

- 2005-present PT 2030 - Advanced Musculoskeletal Anatomy (approximately 50 students, 4 credit course). Lecturer for several topics: elbow, wrist, hand, facial muscles, and PBL sessions facilitator (15 hours/term).
- 2007- present Evidence-Based Practice VI and VII (approximately 45 students, 1 credit course each class). Primary responsibility to help developing data sets and grading students' project (10 hours/term).
- 2005-2006 Musculoskeletal Physical Therapy II (approximately 50 students, 3 credit course). Lecturer for upper extremity content (3 hours/week).
- 2006 – present Coordinate or present during Physical Therapy Clinical Rounds (1 -2 a year).
- 2012 – present Guest lecturer on best research practices - Institute of Clinical Research Education.
- 2006 – present Advise 9-12 DPT students on a regular basis (3-4 from each year of DPT program). When the 3rd year students undergo their full-time clinical internship, I communicate with them quarterly, and at the mid-point of the experience I visit the clinic and discuss their progress along with the clinical instructor.
- 2007 – present Mentor of trainees during research internship program:
- Kristen Scopaz
 - Shuhei Suzuki
- Mentor of several trainees of institutional Ruth L. Kirschstein-National Service Research Award (Kirschstein-NRSA) - Start-Up Research

Experience Program:

- Carolyn Schroeder – project titled “The reliability and validity of the stair climbing test in individuals with total knee arthroplasty”
- Stephanie Lasinski- project titled “Psychosocial correlates of NMES tolerance in subjects with rheumatoid arthritis”
- Francisco Maia - project titled “Can intense exercise promote symmetry in gait parameters following total knee replacement?”
- Amy Trotnick – project titled “Dose-response of Neuromuscular Electrical Stimulation in Patients with Rheumatoid Arthritis”.

These students have been successful and presented their projects at several national conferences and have published 4 peer-reviewed articles and 2 are under review.

2007-2008 Mentor of thesis of MS student Paulo E.P. Teixeira, PT, School of Health and Rehabilitation Sciences. Project Title: Reliability of Measures of Hip Muscle Strength in Individuals with Total Knee Replacement. Mr. Teixeira is currently the Director of the Centro Avançado de Fisioterapia Ortopédica e Esportiva (CEAFE), Brazil.

Postgraduate

- 2006- present Doctoral Seminar (approximately 10 students, 1 credit course). Invited lecturer for the weekly meetings. Lecture and lead discussions (2 hours/term).
- 2006 - present Member Graduate Faculty Committee, Evidence Based Practice/Clinical Epidemiology Core, School of Health and Rehabilitation Sciences, University of Pittsburgh. I have developed several testing questions for the preliminary exam and along with other faculty members assess student's competence during written and oral tests.
- 2009- present Teaching Internship (approximately 1-2 students, 1 credit course during Fall). Course coordinator. This is a required course for the PhD candidates in rehabilitation sciences. In this course I actively mentor PhD candidates to excel in teaching by providing hands-on teaching experience (2 contact hours/week).
- 2006 – present Presenter of several continuing education programs at the local, national, and international levels. These sessions are always interactive and aim to hone in on the specific needs of the audience to minimize content and maximize useful pearls of evidence-based physical therapy.
- 2006- present Advisor of 10 PhD students (5 current; 5 have graduated). I meet one-to-one with the PhD students that I am the primary advisor on a monthly basis. This is a very active group of students who, while enrolled in the program,

have published over 30 abstract and 23 peer-reviewed manuscripts, and the ones who graduated are in academic positions in US or abroad.

2014- present Research mentor of Ashley Young – Orthopaedic Resident.

2015- present Mentor of Andrew D. Lynch PhD, PT in Comprehensive Opportunities in Rehabilitation Research Training (COORT) training program.

Doctoral Dissertation Contribution (*chronologic order*)

1. Ovande Furtado, PhD, PE. Role: Dissertation Committee 2007-2009; Dr. Jere Gallagher, committee chair. Project Title: “Development and Validation of a Gross Motor Development Test for Field Studies.” Dr. Furtado received his PhD in the Department of Health and Physical Activity, University of Pittsburgh in 2009. He is an Assistant Professor at Eastern Illinois University.

2. Alexandra B. Gil, PhD, PT. Role: Mentor from 2005-2010; Dr. Kelley Fitzgerald, committee chair. Project Title: “The Association between Lower Extremity Movement Patterns and Physical Function in People with Knee Osteoarthritis”. Dr. Gil received her PhD in Rehabilitation Sciences at the University of Pittsburgh in 2010. She is a Research Assistant Professor at the Department of Physical Therapy University of Pittsburgh.

3. Ali Hamad Alnahdi PhD, PT. Role: Dissertation Committee 2011-2013; Dr. Lynn Snyder-Mackler, committee chair. Project Title: “Altered Loading and Quadriceps Strength after Unilateral Total Knee Arthroplasty”. Mr. Alnahdi received her PhD in Biomechanics and Movement Science at the University of Delaware in 2012. He is an Assistant Professor in King Saud University, Saudi Arabia.

4. Jason D. Woollard, PhD, MPT. Role: Dissertation Committee 2009-2012; Dr. James Irrgang, committee chair. Project Title: “Development of a Clinical Prediction Rule for Maximizing the Probability of Successful Arthroscopic Subacromial Decompression in Patients with Chronic Subacromial Impingement Syndrome.” Dr. Woollard received her PhD in Rehabilitation Sciences at the University of Pittsburgh in 2012. He is an Assistant Professor in Chatham University, PA.

5. Ibrahim Altubasi, PhD, PT. Role: Dissertation Committee 2008-2012; Dr. Kelley Fitzgerald, committee chair. Project Title: “The effect of neuromuscular electrical stimulation (NMES) in inducing muscle hypertrophy and improvement in muscle torque output within the quadriceps muscle of elderly people”. Mr. Altubasi received his PhD in Rehabilitation Sciences at the University of Pittsburgh in 2012. He is an Assistant Professor in Jordan University, Jordan.

6. Tanja Roy, MS, PT. Doctoral student, Rehabilitation Sciences. Role: Primary Advisor, Chair Doctoral Committee, 2011-2014. Project Title: “Risk Factors for Musculoskeletal Injuries in Female Soldiers Deployed to Afghanistan”. Dr. Roy is the Chief of Injury Epidemiology, US Army Public Health Command, Aberdeen Proving Ground, MD.

7. Rodrigo de Marche Baldon, MSc, PT. PhD student, Universidade de São Carlos, Brazil. Role: Dissertation Committee 2011-2014; Dr. Fábio Viadanna Serrão, committee chair. Project Title: “Efeito do treinamento de estabilização lombo-pélvica em mulheres com Síndrome da Dor

Femoropatellar”. Dr. Baldon is an Assistant Professor in University of Sao Carlos, Brazil.

8. Gustavo J. Almeida, MS, PT. Doctoral student, Rehabilitation Sciences. Role: Primary Advisor, Chair Doctoral Committee, 2007-2015. Project Title: “Psychometrics of Measures of Physical Activity in Individuals with Arthritis.” Dr. Almeida is a faculty in the Department of Physical Therapy, University of Pittsburgh.

9. Samannaaz Khoja, MS, PT. Doctoral student, Rehabilitation Sciences. Role: Primary Advisor, Chair Doctoral Committee, 2009-2016. Project Title: “Skeletal Muscle Fat and Its Association with Physical Function In Rheumatoid Arthritis”. Dr. Khoja is a Research Associate at the University of Pittsburgh.

10. Giovanna Distefano Ferrari, PT, MS. Doctoral student, Rehabilitation Sciences. Role: Dissertation Committee 2013-2015. Dr. Bret Goodpaster, committee chair. Project title: “The associations between age-associated changes in mitochondrial function and sarcopenia. Currently at the Transitional Research Institute for Metabolism and Diabetes, Florida Hospital and Sanford, Orlando, FL.

11. Allyn Bove, PT, MS. Role: Member of Doctoral Committee (Chair – Fitzgerald). “Racial and Ethnic Disparities in Functional Outcomes and Physical Therapy Utilization after Total Knee Arthroplasty”. SHRS. Plan do defend in 2017.

12. Annalisa Na, DPT, OCS. Role: Member Doctoral Committee (Chair- Buchanan). “Influences of Biomechanical and Neuromuscular Strategies on Physical Function in Patients with Knee Osteoarthritis”. University of Delaware. Plan to defend in 2017.

13. Sara Peterson, MBA, CPO. Role: Member Doctoral Committee (Chair – Koontz). “Neuromuscular Electrical Stimulation Use in Transtibial Amputations: A Pilot Study.” SHRS. Plan to defend in 2017.

14. Sarah R. Bass, BS. Role: Member Doctoral Committee (Chair – Koontz). “Effects of Vibration Training on Upper Limb Strength, Function and Pain in Individuals with Paraplegia”. SHRS. Plan to defend in 2018.

15. Mary Winger. Role: Member of Doctoral Committee (Chair – Strotmeyer). “Muscle power and strength and their relationship with physical function and fall injuries in older adults”. Department of Epidemiology, University of Pittsburgh. Plan to defend in 2018.

RESEARCH

Current Grant Support

Patient-Centered Outcomes Research Institute (PCORI) (Piva–PI)

Term: 2014 – 2017 35% effort

Title: A Comparison of Treatment Methods for Patients Following Total Knee Replacement

To compare the outcome of physical function and physical activity between the 3 treatment groups (Clinic-based individual outpatient rehabilitative exercise, community-based group exercise classes, and usual medical care). Physical function will be assessed by a self-reported questionnaire of knee function (Western Ontario and McMaster Universities Arthritis Index-WOMAC) and a battery of validated performance-based tests germane to patients after TKR.

Physical activity will be measured in real-time using a portable monitor (SenseWear Armband) and by a self-reported questionnaire (Community Healthy Activities Model Program for Seniors-CHAMPS).

Patient-Centered Outcomes Research Institute (PCORI) (Piva-Co-I; Schneider-PI)

Term: 2013 – 2016 10% effort

Title: A Comparison of Non-Surgical Treatment Methods for Patients with Lumbar Spinal Stenosis

This is a 3-year comparative effectiveness trial that will recruit 180 older adults with lumbar spinal stenosis. Eligible subjects will be randomized into one of three pragmatic treatment approaches: 1) usual medical care; 2) community-based group exercise; or 3) clinic-based individualized manual therapy and rehabilitative exercise. All subjects will be treated for a 6-week course of care. Primary outcome measures are two validated research measurement tools; the Swiss Spinal Stenosis Questionnaire (self-reported pain/function) and the Shuttle Walk Test (performance-based walking measure).

Department of Defense (Williams- PI; Piva- Co-I)

Term: 10/15 to 09/19 4 calendar months

Title: Effect of Three Regional Anesthetics on Rehabilitation Outcome for Veterans 1-2 Days after Knee or Hip Replacement.

Prior Grant Support (chronologic order)

Pittsburgh Pepper Center Pilot. (Piva- Co-PI; Strotmeyer- Co-PI)

Term: 01/15 to 09/15 2015 10% effort

Title: "Peripheral nerve function changes with exercise intervention after total knee replacement."

This proposal will 1) relate clinical neuropathic symptoms and impaired monofilament detection to total knee replacement and physical function after total knee replacement and the exercise intervention; and 2) evaluate effect of a 3-month exercise intervention on improvement in clinical neuropathic symptoms and impaired monofilament detection among participants with total knee replacement.

Epidemiology Small Grant (Piva- Co-PI; Strotmeyer- Co-PI)

Term: 01/15 to 12/15 5% effort

Title: "Neuromuscular function improvement with exercise intervention after total knee replacement."

This pilot project will relate clinical symptoms and sensory nerve impairments in unilateral total knee replacement to the non-operative knee, as well as evaluate if these impairments are related pre- and post-exercise intervention to worse physical function and additional

measures of leg power that we have developed.

Rehabilitation Institute –University of Pittsburgh (Piva – Co-I; Farrokhi – PI)

Term: 2012- 2013

Title: Dose-response of walking exercise on lower extremity biomechanics and inflammatory biomarkers in knee osteoarthritis.

To quantify the effects of increasing walking exercise volume either as a single continuous bout versus multiple intermittent shorter bouts and mode of walking exercise participation on the acute changes in lower extremity biomechanics and to determine the influence of increasing walking exercise volume either as a single continuous bout versus multiple intermittent shorter bouts and mode of walking exercise participation on the acute changes in serum concentrations of biological markers of cartilage metabolism, joint inflammation, and pain.

Rehabilitation Institute –University of Pittsburgh (Piva – PI)

Term: 2011-2012

Title: The Feasibility of a Comprehensive Behavioral Intervention for Patients with TKA

To test the effectiveness of the Comprehensive Behavioral Intervention (CBI) to improve physical function, increase physical activity, maintain body weight, and decrease blood pressure in patients post TKA with random assignment to two treatments: CBI and Standard of Care Exercise program (SCE).

3K01HD058035- 01A1W1 PI – Administrative Supplement (Piva-PI)

NIH/ NICHD/ NCMRR-Recovery Act Funds

Term: 2010-2011

Title: Request to buy equipment to be used during the implementation of the research proposed for the K01.

1 K01 HD058035 - Mentored Research Scientist Development Award (K01) (Piva – PI)

NIH/ NICHD/ NCMRR

Term: 2009 - 2014

Title: Neuromuscular electrical stimulation in individuals with rheumatoid arthritis (RA).

Career development goal is to pursue bench training in the assessment of morphological and metabolic muscle adaptations in response to neuromuscular electrical stimulation (NMES) in patients with RA. The research aims are to determine the effect of NMES on functional outcome and muscle hypertrophy in individuals with RA and to determine the mechanism by which NMES affects muscle hypertrophy and physical function.

SHRS Research Development Fund (Piva-PI)

Term: 2008

Title: Validation of the Sense Wear armband and Actigraph in patients with Rheumatoid Arthritis.

To compare energy costs measured by 2 portable monitors, the SenseWear armband (SWA) and the ActiGraph (ACT), against measures taken by indirect calorimetry - the MedGraphics VO2000 and to characterize physical activity in patients with Rheumatoid Arthritis.

Health Professional New Investigator Award (Piva – PI)

American College of Rheumatology Research & Education Foundation.

Term: 2007-2008

Title: Neuromuscular electrical stimulation (NMES) to reverse muscle atrophy in patients with RA.

The aim of the research is to determine the relative effectiveness of NMES on increasing lean muscle mass, muscle strength, and physical function in patients with RA.

K12 RR024154-02 - University of Pittsburgh Multidisciplinary Clinical Research Scholars Program (CTSA KL2) (Piva-Scholar)

Clinical and Translational Science Award/NCRR-NIH

Term: 2006-2009

Title: Neuromuscular electrical stimulation (NMES) to reverse muscle atrophy in patients with RA.

Career development goals are to advance knowledge of design, implementation and analysis of intervention trials, and to become competent in techniques to measure lean muscle mass and muscle fiber type composition. The overall aim of the research proposal is to determine the therapeutic dose of the NMES treatment in patients with RA and then to generate pilot data to determine the effectiveness of NMES as an adjunct treatment for muscle hypertrophy in patients with RA.

Pepper Center Scholars Pilot Program (Piva – PI)

Older Americans Independence Center.

Term: 2006-2007

Title: The effect of a balance training program on function in patients with total knee arthroplasty – A pilot study

The aim of this research is to perform a preliminary test of the feasibility and effectiveness of balance training as an adjunct to the traditional exercise program to improve function following TKA. Specific aims: 1) Compare the effects of balance training between groups in improving performance-based and self-reported measures of function; 2) Determine the safety and tolerance of applying the balance training in patients with TKA.

Central Research Development Fund (Piva – PI)

Office of Research, University of Pittsburgh.

Term: 2006-2008

Title: The effect of a balance training program on function in patients with total knee arthroplasty – A pilot study

The aim of this research is to perform a preliminary test of the feasibility and effectiveness of balance training as an adjunct to the traditional exercise program to improve function following TKA. Specific aims: 1) Compare the effects of balance training between groups in improving performance-based and self-reported measures of function; 2) Determine the safety and tolerance of applying the balance training in patients with TKA.

UPMC Health System Competitive Medical Research Fund (Piva -PI)

Office of Research Health Sciences, University of Pittsburgh.

Term: 2006 – 2008

Title: The effect of a balance training program on function in patients with total knee arthroplasty – A pilot study

The aim of this research is to perform a preliminary test of the feasibility and effectiveness of balance training as an adjunct to the traditional exercise program to improve function following TKA. Specific aims: 1) Compare the effects of balance training between groups in improving performance-based and self-reported measures of function; 2) Determine the safety and tolerance of applying the balance training in patients with TKA.

R01-AR048760-02s1- Research Supplements to Promote Diversity in Health-Related Research

NIAMS/NIH

(Fitzgerald-PI; Piva- applicant and beneficiary)

Term: 2006-2008

Title: Knee Stability Training In Individuals with Knee OA

Minority supplement to provide Dr. Piva with the skills and experience needed to develop into a successful independent investigator in arthritis rehabilitation.

American Academy of Orthopaedic Manual Physical Therapists (Piva – PI)

Cardon Rehabilitation Products Grant

Term: 2003-2004

Title: The effectiveness of thoracic spine manipulation on success rate, disability, function and impairments in patients with neck pain.

Compare individuals with neck dysfunction who receive a standard physical therapy (PT) program for the neck to those who receive the same standard program, supplemented with thoracic spine manipulation. The primary outcome is neck disability while secondary outcomes include pain, and neck range of motion.

PPTA Research Fund

Piva – PI)

Pennsylvania Physical Therapy Association.

Term: 2002-2003

Title: Association between Impairments and Function in Response to Physical Therapy in Individuals with Patellofemoral Pain Syndrome

Aims were to identify impairments associated with physical function in patients with PFPS prior to rehabilitation, and change in impairments associated with outcome of function in response to rehabilitation.

Clinical Research Grant Program

(Piva – PI)

Orthopaedic Section, American Physical Therapy Association.

Term: 2002-2004

Title: Association between Impairments and Function in Response to Physical Therapy in Individuals with Patellofemoral Pain Syndrome

Aims were to identify impairments associated with physical function in patients with PFPS prior to rehabilitation, and change in impairments associated with outcome of function in response to rehabilitation.

Small Grant Program; Childs – PI

(Piva – Co-Investigator)

Sports Section American Physical Therapy Association

Term: 2002

Title: The Relationship of Strength and Flexibility of Soft Tissues around the Hip to the Presence or Absence of Patellofemoral Pain Syndrome

To investigate whether differences exist in lower extremity muscle strength and soft tissue length between patients with patellofemoral pain syndrome and age- and gender-matched control subjects.

Seminars and Invited Lectureships (*chronologic order*):

1. Effects of ultrasound on rat muscles after metallic implantation. IX Brazilian Congress of Physical Therapy and I Physical Therapy Congress of São Paulo, São Paulo, Brazil, October 1989.
2. Treatment of patellar pain of adolescents and young adults by global reeducation. III Brazilian Congress of Orthopedic Physical Therapy and V South American Congress of Sports Physical Therapy, Porto Alegre, Brazil, June 1997.
3. Shoulder Rehabilitation - the Lyon School. Jornada de Ombro e Cotovelo do Estado do Rio Grande do Sul, Passo Fundo, Brazil, August 1997.
4. Manual Therapy for Shoulder and Knee. I Congresso do RS e VI Jornada de Ortopedia e Traumatologia do Planalto Medio, Passo Fundo, Brazil, May 1998.
5. Managing Patients with Cervical Spine Dysfunction: An Introduction to a Classification System. Southwest District of the Pennsylvania Physical Therapy Association: Spring Seminar, Pittsburgh, PA, May 2000.
6. Quadriceps femoris muscle inhibition in patients with knee osteoarthritis: Preliminary results. Third Annual University of Pittsburgh Arthritis Institute Research Symposium, Pittsburgh, December 2000.
7. Decreasing the amplitude of the electrical stimulus during the burst-superimposition maximum voluntary quadriceps isometric force test. Second Annual Marilyn Gossman Graduate Student Seminar, Combined Sections Meeting of the American Physical Therapy Association, San Antonio, February 2001.
8. Reliability of measuring iliac crest height in standing and in sitting position using a new measurement device. Fourth Interdisciplinary World Congress on Low Back and Pelvic Pain, Montreal, Canada, November 2001.
9. Systematic review of the quality of randomized controlled trials for Patellofemoral Pain Syndrome. Combined Sections Meeting of the American Physical Therapy Association, Tampa, Feb 2003.
10. Responsiveness of the Numeric Pain Rating Index in Patients with Chronic Low Back Pain. Combined Sections Meeting of the American Physical Therapy Association, Nashville, Feb 2004.
11. Research Information Exchange - Clinical Prediction Rules, Combined Section Meeting 2005 Presentation: New Orleans, February 2005.
12. Association between impairments and function in individuals with patellofemoral pain syndrome. Combined Section Meeting. San Diego, CA, February 2006.
13. Reliability of measures of impairments associated with patellofemoral pain syndrome. Combined Sections Meeting of the American Physical Therapy Association, Feb 2006.

14. Research Information Exchange - Clinical Prediction Rules. Combined Section Meeting of the American Physical Therapy Association. Orthopaedic Section. San Diego, CA. February 2006.
15. Neuromuscular Electrical Stimulation and Volitional Exercise for Individuals with Rheumatoid Arthritis. Clinical and Translational Science Institute Annual Meeting. Washington DC. April 2007.
16. Evidence Based Evaluation and Treatment of Cervical Radiculopathy in the Performing Artist. Combined Sections Meeting of the American Physical Therapy Association. Performing Arts SIG– Orthopaedic Section. Nashville, Feb/08.
17. Improvements in Muscle Impairments are Associated with Improvement in Physical Function in Patients with Total Knee Arthroplasty. American College of Rheumatology Annual Scientific Meeting. San Francisco, October 2008.
18. Effectiveness and Feasibility of a Balance Training Program Post Total Knee Arthroplasty - Pilot Randomized Trial. Combined Sections Meeting of the American Physical Therapy Association. Las Vegas, Feb 2009.
19. Research Information Exchange – Case Studies. Combined Sections Meeting of the American Physical Therapy Association. Las Vegas, Feb/09.
20. Managing the Push-Pull of Two Careers: Clinical Scientists. 2009 Women in Medicine and Science Forum. University of Pittsburgh. Pittsburgh, April 2009.
21. Feasibility of wearing an activity monitor to measure physical activity in patients with RA. 2009 Within Our Reach Investigators' Meeting. San Diego, June/2009.
22. Factors associated with the tolerance of the neuromuscular electrical stimulation in patients with RA. American College of Rheumatology Annual Scientific Meeting. Philadelphia, October 2009.
23. The Efficacy of a Balance Exercise Program in Patients with Total Knee Replacement – Results of a Pilot Study. Claude D. Pepper Center Research Series. University of Pittsburgh, October 2009.
24. The Effect of an Exercise Program in Gait Asymmetry in Patients after Total Knee Arthroplasty. American College of Rheumatology Annual Scientific Meeting. Atlanta, October 2010.
25. Use of Portable Devices to Assess Physical Activity in Patients with Total Knee Arthroplasty. American College of Rheumatology Annual Scientific Meeting. Atlanta, October 2010.
26. Muscle Area and Muscle Quality Relate to Physical Activity in Subjects with Rheumatoid Arthritis. American College of Rheumatology Annual Scientific Meeting. Atlanta, October 2010.
27. Physical Therapy Management of Patients following Total Knee Replacement. Marquette Challenge CE Course. University of Pittsburgh, April 2011.
28. Physical Therapy Management in Patients following Total Knee Replacement. Congresso Fisioterapico Santa Casa de Misericordia. São Paulo, Brazil, June 2011.
29. New Approaches of Physical Therapy Management in Knee Osteoarthritis. Congresso Fisioterapico Santa Casa de Misericordia. São Paulo, Brazil, June 2011.
30. Physical Therapy Management in Patients following Total Knee Replacement. III Congresso Sulbrasileiro de Fisioterapia Traumatolo-Ortopédica. Passo Fundo, Brazil, September 2011.
31. Treatment Based Classification for Patients with Low Back Pain. III Congresso Sulbrasileiro de Fisioterapia Traumatolo-Ortopédica. Passo Fundo, Brazil, September 2011.

32. Workshop - When to use Manipulation for Patients with Low Back Pain. III Congresso Sulbrasileiro de Fisioterapia Traumato-Ortopédica. Passo Fundo, Brazil, September 2011.
33. Participant of Round Table on Treatment of Patients with Spine Disorders. III Congresso Sulbrasileiro de Fisioterapia Traumato-Ortopédica. Passo Fundo, Brazil, September 2011.
34. Participant of Round Table on Lower Extremities Dysfunctions. III Congresso Sulbrasileiro de Fisioterapia Traumato-Ortopédica. Passo Fundo, Brazil, September 2011.
35. Muscle Quality Contributes More to Postural Balance Than Muscle Atrophy in People with Rheumatoid Arthritis. American College of Rheumatology Annual Scientific Meeting. Chicago, 2011.
36. Associations between Changes in Physical Function and Physical Activity in Response to an Exercise Program in Patients with Rheumatoid Arthritis. American College of Rheumatology Annual Scientific Meeting. Chicago, 2011.
37. The Aging Institute annual meeting: Celebrating Research on Aging- Building collaborations for the future. Associations between Changes in Physical Function and Physical Activity in Response to an Exercise Program in Patients with Rheumatoid Arthritis. Pittsburgh, April 2012.
38. Muscle quality contributes to Postural Balance in Rheumatoid Arthritis. Combined Section Meeting of American Association of Physical Therapy. San Diego, January 2013.
39. Associations between Changes in Physical Function and Physical Activity in Response to an Exercise Program in Patients with Rheumatoid Arthritis. Podium presentation at the American College of Rheumatology Annual Meeting, October 2013.
40. Comprehensive behavioral intervention compared to standard of care program after total knee arthroplasty: a pilot randomized trial. Podium presentation at the American College of Rheumatology Annual Meeting, October 2013.
41. Invited presentation at the American College of Rheumatology Annual Meeting. Boston, October 2014. Best Practices of Rehabilitation following Total Knee Arthroplasty.
42. VA Pittsburgh Health System – Lecture: Rehabilitation after total knee arthroplasty. Are we on the right path? Pittsburgh, October 2014.
43. Reliability of physical activity measures during free-living in individuals with knee osteoarthritis. Combined Sections Meeting 2015, Indianapolis, IN.
44. Physical activity in adults with arthritis and its contribution to health outcomes. Combined Sections Meeting 2015, Indianapolis, IN.
45. Investigation of parameters used to test quadriceps muscle power using isokinetic dynamometer in arthritis. Combined Sections Meeting 2015, Indianapolis, IN.
46. Responsiveness of Physical Activity Measures Following Exercise Intervention in Individuals after Total Knee Arthroplasty. ACR/ARHP Combined Abstract Session: Rehabilitation Session. American College of Rheumatology Annual Meeting. Nov 2015, San Francisco, CA.
47. Sleep Efficiency and Cardiovascular Risk Burden in Rheumatoid Arthritis. ARHP III: Epidemiology and Public Health. American College of Rheumatology Annual Meeting. Nov 2015, San Francisco, CA.
48. Are General and Central Adiposity Associated with MRI-Assessed Structural Changes in the Knees of Older Adults? ARHP III: Epidemiology and Public Health III. American College of Rheumatology Annual Meeting. Nov 2015, San Francisco, CA.
49. Get in the Game with PCORI: A Successful Research Group's Experience. Combined Sections Meeting, APTA. Anaheim, CA. February 2016.
50. Exercise and Arthritis. Arthritis Foundation Even – Take a Swing at Arthritis. Wildwood Country Club, Pittsburgh, PA. May 2016.

OTHER RESEARCH RELATED ACTIVITIES:

Editorial Board Member

2007- present Editorial Review Board Member for the Journal of Orthopaedic and Sports Physical Therapy (at least 4 manuscripts a year)

Manuscript Reviewer (At least 6 manuscripts a year)

2002-present Journal of Physiotherapy Theory and Practice

2002-present Journal of Orthopaedic and Sports Physical Therapy.

2003-present Physical Therapy Journal.

2005-present Arthritis and Rheumatism - Arthritis Care and Research.

2016-present Arthritis Research & Therapy

Extra-Mural Grant Reviewer

2003-2004 Grant Reviewer for the American Academy of Orthopaedic Manual Physical Therapy.

2010- 2012 Member External Review Grant Committee of Orthopaedic Section APTA.

2011- 2012 Grant Reviewer Member of the Musculoskeletal, Oral and Skin Sciences (MOSS) Integrated Review Group Study Section- National Institute of Health

2012 - 2013 External reviewer for the Portuguese Foundation for Science and Technology (FCT). The FCT is the Portuguese Research Council that funds all scientific areas of science and technology.

2012 -2014 Reviewer of Innovative Research Grant and Arthritis Foundation Investigator Award - The Arthritis Foundation.

2016 Reviewer Patient-Centered Outcomes Research Institute (PCORI) for the Cycle 3, 2015 Merit Review, Pragmatic Clinical Studies funding announcement.

Other

2006-present Abstract Reviewer for Orthopaedic Section of APTA, Combined Sections Meeting.

2007-2010 Sentinel Reader for McMaster Online Rating of Evidence – Clinical

Relevance Online Rating System, McMaster University.

Specialty Board Membership

Board Certified Specialist in Orthopaedic Physical Therapy by the American Board of Physical Therapy Specialties since 2002.

Fellow of the American Academy of Orthopaedic Manual Physical Therapy since 2002.

SERVICE

COMMITTEES

National

2013- present Nominated to represent the American Physical Therapy Association as a member of the Surgical Management of Osteoarthritis of the Knee (SMOAK) Clinical Practice Guideline (CPG) Work Group.

2011-2012 Member of Total Knee Quality Measure Work Group- Physician Consortium for Performance Improvement and American Association of Hip and Knee Surgeons. Nominated by American Association of Physical Therapy.

2010 Nominated by the American Physical Therapy Association to be a reviewer of "Knee disorders. In: Hegmann KT, editor(s). Occupational medicine practice guidelines. Evaluation and management of common health problems and functional recovery in workers. 3rd ed. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM)".

2011-2012 Member Award Committee- Section on Research- American Physical Therapy Association.

2013- 2014 Chair Award Committee- Section on Research- American Physical Therapy Association.

University and School

2005 - present Member of Department of Physical Therapy Admissions Committee, University of Pittsburgh.

2007- present Member of the IRB-Scientific Review Committee of the Department of Physical Therapy, University of Pittsburgh.

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| 2009 - present | Co-Director of the Physical Therapy- Clinical and Translational Research Center. |
| 2009 - present | Member of Department of Physical Therapy and School of Health and Rehabilitation Search Committee, University of Pittsburgh. |
| 2006 - present | Member Graduate Faculty Committee, Evidence Based Practice/Clinical Epidemiology Core, School of Health and Rehabilitation Sciences, University of Pittsburgh. |
| 2007 - 2010 | Member of Pepper Junior Scholar's Working Group. Supported by Pittsburgh Claude D. Pepper Older Americans Independence Center. |
| 2012 - 2014 | Co-Chair of Development and Implementation of PT Department Website. |
| 2012 - 2015 | Member of Space Committee of the Department of Physical Therapy |