

**Liang-Ching Tsai, PT, PhD**  
Curriculum Vitae – September 2018

Full Name: Liang-Ching Tsai  
Rank: Assistant Professor  
Department: Department of Physical Therapy, Georgia State University  
Office Address: 140 Decatur Street Suite 1271, Atlanta, GA 30303, USA

**I. EDUCATION**

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- 12/2011-09/2013 **Post-doctoral Fellow**, Department of Physical Medicine and Rehabilitation, Northwestern University, Chicago, IL
- 08/2011-11/2011 **Post-doctoral Fellow**, Biodynamics Laboratory, Sensory Motor Performance Program, Rehabilitation Institute of Chicago, Chicago, IL
- 08/2005-05/2011 **Doctor of Philosophy**, Biokinesiology  
University of Southern California, Los Angeles, CA
- 09/2003-06/2005 **Master of Science**, Human Movement Science  
University of North Carolina at Chapel Hill, Chapel Hill, NC
- 09/1996-06/2000 **Bachelor of Science**, Physical Therapy  
National Taiwan University, Taipei, Taiwan

**II. PROFESSIONAL CREDENTIALS CERTIFICATIONS AND LICENSURE**

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**a. Academic and Research Experiences:**

- 02/2017 – Present **Adjunct Faculty**, Department of Kinesiology and Health, Georgia State University, Atlanta, GA
- 04/2015 – Present **Adjunct Faculty**, Center of Advanced Brain Imaging, Georgia Institute of Technology / Georgia State University, Atlanta, GA
- 02/2014 – Present **Assistant Professor**, Department of Physical Therapy, Georgia State University, Atlanta, GA
- 10/2013 – 01/2014 **Research Associate**, Department of Physical Medicine and Rehabilitation, Northwestern University, Chicago, IL
- 09/2005 – 12/2010 **Teaching Assistant**, Division of Biokinesiology & Physical Therapy, University of Southern California, Los Angeles, CA
- 09/2003 – 05/2004 **Research Assistant**, Division of Physical Therapy, University of North Carolina at Chapel Hill, Chapel Hill, NC
- 03/2002 – 05/2003 **Research Assistant**, School and Graduate Institute of Physical Therapy, National Taiwan University, Taipei, Taiwan

**b. Professional and Clinical Experiences:**

- 08/2002-12/2002 **Physical Therapist**, Schmidt Group Practice Clinic, Taipei, Taiwan

**c. Licensure:**

- 2000 - Present **Physical Therapist**, Examination Yuan of the Republic of China, Taiwan

### III. SCHOLARSHIP AND PROFESSIONAL DEVELOPMENT

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#### a. Publications

##### i. Journal Articles (Published):

1. Cheng CH, Chen RW, **Tsai LC**, Chang YJ, Tang WT, Liu WY. Comparisons of fatigue effect due to competitive tennis match or simulated tennis stroke on exercise physiology and performance of tennis players: a literature review. *Physical Education Journal (in Chinese) (in press)*
2. **Tsai LC**, Ko, YA, Hammond KE, Xerogeanes JW, Warren GL, Powers CM. Increasing hip and knee flexion during a drop landing task reduces tibiofemoral shear and compressive forces: implications for ACL injury prevention training. *J Sports Sci.* 35:2405-2411, 2017
3. **Tsai LC**, Ren Y, Gaebler-Spira DJ, Revivo G, Zhang LQ. Effects of an off-axis pivoting elliptical training program on gait function in persons with spastic cerebral palsy: a preliminary study. *Am J Phys Med Rehabil.* 96:515-522, 2017
4. Lin YC, **Tsai LC**, Cheng HYK, Lin YH, Cheng CH. Postural steadiness after prolonged standing on different sloped surface in young healthy adults. *Biomed. Eng. Appl. Basis Commun.* 28:1-7, 2016
5. Lin C, **Tsai LC**, Press JM, Zhang LQ. Lower limb muscle activation patterns during off-axis elliptical compared to conventional gluteal muscle strengthening exercises. *J Sport Rehabil.* 25:164-72, 2016.
6. Wu YN, Ren Y, **Tsai LC**, Gao F, Zhang LQ. In vivo simultaneous evaluations of sarcomere imaging and muscle fiber tension. *J Biomech.* 49:797-801, 2016
7. Cheng CH, **Tsai LC**, Chung HC, Chien A, Wang SF, Wang, JL, Lai DM, Hsu WL. Exercise training for non-operative and post-operative patients with cervical radiculopathy: a literature review. *J Phys Ther Sci.* 27:3011-8, 2015.
8. Wang YT, Limroongreungrat W, Chang LS, Ke X, **Tsai LC**, Chen YP, Lewis J. Immediate video feedback on ramp, wheelie, and curb wheelchair skill training for persons with spinal cord injury. *J Rehabil Res Dev.* 52:421-30, 2015.
9. **Tsai LC**, Lee SJ, Yang AJ, Ren Y, Press JM, Zhang LQ. Effects of off-axis elliptical training on reducing pain and improving knee function in individuals with patellofemoral pain. *Clin J Sport Med.* 25:487-93, 2015.
10. **Tsai LC**, Powers CM. Increased hip and knee flexion during landing decreases tibiofemoral compressive loads in females who have undergone anterior cruciate ligament reconstruction. *Am J Sports Med.* 41:423-9, 2013.
11. **Tsai LC**, Scher IS, Powers CM. Quantification of tibiofemoral shear and compressive loads using a MRI-based EMG-driven knee model. *J Appl Biomech.* 29:229-34, 2013.
12. **Tsai LC**, McLean S, Colletti PM, Powers CM. Greater muscle co-contraction results in increased tibiofemoral compressive forces in females who have undergone anterior cruciate ligament reconstruction. *J Orthopaed Res.* 30:2007-14, 2012.
13. **Tsai LC**, Colletti PM, Powers CM. Magnetic resonance imaging-measured muscle parameters improved knee moment prediction of an EMG-driven model. *Med Sci Sports Exerc.* 42:305-12, 2012.
14. Lyle MA, Sigward SM, **Tsai LC**, Pollard CD, Powers CM. Influence of maturation on instep kick biomechanics in female soccer athletes. *Med Sci Sports Exerc.* 43:1948-54, 2011.

15. **Tsai LC**, Sigward SM, Pollard CD, Fletcher MJ, Powers CM. Effects of fatigue and recovery on knee mechanics during side-step cutting. *Med Sci Sports Exerc.* 41:1952-7, 2009.
  16. **Tsai LC**, Yu B, Mercer VS, Gross MT. Comparison of different structural foot types for measures of standing postural control. *J Orthop Sports Phys Ther.* 36:942-53, 2006.
- ii. Journal Articles (In Review):
1. **Tsai LC**, Zhao Z, Fridenmaker SM, Warren GL. Modest enhancement of knee extensor voluntary and electrically-evoked strength with the body tilted backward. *Int J Sports Med (in review)*.
  2. Adolph S, Jones A, **Tsai LC**, Natour J. Exercises for hand osteoarthritis: A systematic review and meta-analysis. *Ageing Res Rev (in review)*.
- iii. Letter to the Editor:
1. **Tsai LC**, Lyle MA, Popovich JM. Re: Hip strength and knee pain in high school runners: a prospective study (Letter to the Editor). *PM R.* 4:634-5, 2012.
- iv. Conference Proceedings and Abstracts:
1. Mossbarger T, Palo KA, White A, **Tsai LC**, Morelli KM. Lack of association of functional movement screen and y-balance scores with short term injury risk in general adults. American Physical Therapy Association Combined Sections Meeting; Washington, DC, January 2019. (*Accepted*)
  2. Jensen JC, Brown JJ, Chambliss CP, Lauterbach KN, Miller AL, Davis EM, White GM, Kokx ML, Lyle MA, **Tsai LC**. Clinically accessible measures that may help modulate knee loading during gait. American Physical Therapy Association Combined Sections Meeting; Washington, DC, January 2019. (*Accepted*)
  3. Miller AL, Lauterbach KN, Hendley CL, Chambliss CP, Brown JJ, Jensen JC, Woodard AK, Hoey OM, Johnson JE, **Tsai LC**. Age and characteristics of surgery and rehabilitation as risk factors for re-injury in adolescents with anterior cruciate ligament reconstruction. American Physical Therapy Association Combined Sections Meeting; Washington, DC, January 2019. (*Accepted*)
  4. Brown JJ, Chambliss CP, Jensen JC, Lauterbach KN, Miller AL, Hoey OM, Woodard AK, Lyle MA, **Tsai LC**. Identification of clinically accessible measures to assist in modulating knee joint loading during gait. Association of Schools of Allied Health Professions Conference; St. Petersburg, FL, October 2018. (*Podium Presentation*)
  5. Jensen JC, Miller AL, Corbin KN, Kawamura JY, Patel RG, Hammond KE, Xerogeanes JW, **Tsai LC**. Varying degrees of atrophy among individual quadriceps muscles following anterior cruciate ligament reconstruction. Physical Therapy Association of Georgia Annual Meeting; Athens, GA, April 2018.
  6. Brown JJ, Chambliss PC, Lauterbach KN, Kawamura JY, Patel RG, Corbin KN, Newsome MA, **Tsai LC**. Static standing postural control and knee muscle strength may not be informative of Y-Balance test performance. Physical Therapy Association of Georgia Annual Meeting; Athens, GA, April 2018.
  7. Jeanfreau CM, Hamblin KA, Warren GL, Leslie SL, **Tsai LC**. Knee extensor strength in the uninjured leg following anterior cruciate ligament reconstruction: A meta-analysis. American College

- of Sports Medicine 65th Annual Meeting; Minneapolis, MN, May 2018. In *Med Sci Sports Exerc.* 50(5S): 505. 2018
8. Cooper ES, **Tsai LC**, Hetzendorfer KM, Chang YH, Willett NJ. Region-specific knee cartilage degeneration associates with altered kinematics in exercise and immobilized osteoarthritis rats. 2018 Osteoarthritis Research Society International World Congress; Liverpool, UK: April 2018.
  9. Corbin KN, Kawamura JY, Jensen JC, Patel RG, Miller AL, Hammond KE, Xerogeanes JW, **Tsai LC**. Muscle atrophy varies among the four quadriceps muscles in patients following ACL reconstruction: MRI evaluation. American Physical Therapy Association Combined Sections Meeting; New Orleans, LA, February 2018. In *J Orthop Sports Phys Ther.* 48(1) A36. 2018. (Podium Presentation)
  10. Jeanfreau CM, Hamblin KA, Leslie SL, Warren GL, **Tsai LC**. Factors explaining varying knee extensor strength deficits post ACL reconstruction: a meta-analysis. American Physical Therapy Association Combined Sections Meeting; New Orleans, LA, February 2018. In *J Orthop Sports Phys Ther.* 48(1) A13. 2018. (Podium Presentation)
  11. Patel RG, Kawamura JY, Corbin KN, Lauterbach KN, Chambliss PC, Brown JJ, Newsome MA, **Tsai LC**. Are postural stability and knee strength associated with the Y-Balance Test in ACLR and healthy individuals? American Physical Therapy Association Combined Sections Meeting; New Orleans, LA, February 2018. In *J Orthop Sports Phys Ther.* 48(1) A52-3. 2018. (Podium Presentation)
  12. Frank R, Chong B, Hodgens M, **Tsai LC**, Garcia J, Morelli KM. Knee extensor voluntary activation and strength following lumbopelvic manipulation and exercises. American Physical Therapy Association Combined Sections Meeting; New Orleans, LA, February 2018.
  13. Corbin KN, Kawamura JY, Jensen JC, Patel RG, Miller AL, Hammond KE, Xerogeanes JW, **Tsai LC**. Do individual quadriceps muscles atrophy the same in patients following anterior cruciate ligament reconstruction? Association of Schools of Allied Health Professions Conference; San Antonio, TX, October 2017. (Podium Presentation)
  14. Cooper ES, Hetzendorfer KM, **Tsai LC**, Willett NJ, Chang YH. 3D X-ray motion analysis indicates treadmill exercise exacerbates knee osteoarthritis in MMT rats. 2017 Annual American Society of Biomechanics Meeting; Boulder, CO: August 2017. (Podium Presentation)
  15. **Tsai LC**, Cooper ES, Hetzendorfer KM, Reece DS, Chang YH, Waters CR, Guldberg RE, Warren GL, Willett NJ. Altered joint loading affects cartilage degeneration and limb function in rats following knee meniscal transection. American College of Sports Medicine 64th Annual Meeting; Denver, CO: June 2017. In *Med Sci Sports Exerc.* 49(5S): 949. 2017.
  16. Waters CR, Balfour TS, Talley BL, Corbin KN, Hammond KE, Xerogeanes JW, **Tsai LC**. Distinct altered knee and hip landing mechanics in women with ACL reconstruction using an allograft. American Physical Therapy Association Combined Sections Meeting; San Antonio, TX, February 2017. In *J Orthop Sports Phys Ther.* 47(1) A222-3. 2017.
  17. Balfour TS, Waters CR, Talley BL, Corbin KN, Patel RG, Kawamura JY, **Tsai LC**. Limb asymmetry in landing knee mechanics is associated with isokinetic quadriceps strength not degree of voluntary activation. American Physical Therapy Association Combined Sections Meeting; San Antonio, TX, February 2017. In *J Orthop Sports Phys Ther.* 47(1) A165-6. 2017.
  18. **Tsai LC**, Hetzendorfer KM, Cooper ES, Reece DS, Chang YH, Waters CR, Guldberg RE, Warren GL, Willett NJ. Effects of altered joint loading on cartilage degeneration, voluntary activity, and knee

kinematics in rats after medial meniscal transection. Fifth Annual Symposium on Regenerative Rehabilitation; Atlanta, GA, October 2016.

19. Waters CR, Balfour TS, Talley BL, Corbin KN, Hammond KE, Xerogeanes JW, **Tsai LC**. Altered hip and knee landing mechanics persist in women with allograft ACL reconstruction. Physical Therapy Association of Georgia Annual Fall Meeting; Chattanooga, TN, October 2016.
20. Piletsky GG, Patel AY, Suarez TP, Buuck DJ, Warren GL, Powers CM, **Tsai LC**. Associations of MRI-measured thigh muscle volumes with knee mechanics. American Physical Therapy Association Combined Sections Meeting; Anaheim, CA, February 2016. *In J Orthop Sports Phys Ther.* 46(1) A194-5. 2016.
21. Patel AY, Piletsky GG, Suarez TP, Buuck DJ, Waters CR, Powers CM, **Tsai LC**. Associations of MRI-measured thigh muscle volumes with knee mechanics following anterior cruciate ligament reconstruction. Physical Therapy Association of Georgia Annual Fall Meeting; Pine Mountain, GA, October 2015.
22. **Tsai LC**, Cheuy VA, Warren GL, Hammond KE, Xerogeanes JW, Patel A, Powers CM. Quadriceps and hamstring muscle volume following anterior cruciate ligament reconstruction using an allograft: MRI evaluation. American College of Sports Medicine 62<sup>nd</sup> Annual Meeting; San Diego, CA: May 2015. *In Med Sci Sports Exerc.* 47(5S): 78. 2015.
23. Bhuiyan MA, Kistenberg R, Wang K, Dugenske A, Zhang C, Wang B, **Tsai LC**, McIntire I, Deems J, Butler AJ. Multiple sensor embedded prosthetic sockets with wireless data communication capabilities for improved quality-of-life for transtibial prosthesis wearers. American Academy of Orthotists & Prosthetists Annual Meeting; New Orleans, LA, February 2015.
24. **Tsai LC**, Ren Y, Wang L, Gaebler-Spira DJ, Revivo GA, Zhang LQ. Improved gait function in children with cerebral palsy following an off-axis elliptical training program. American Physical Therapy Association Combined Sections Meeting; Indianapolis, IN, February 2015. (*Podium Presentation*)
25. **Tsai LC**, Ren Y, Wang W, Lee SJ, Kang SH, Gaebler-Spira DJ, Zhang LQ. Off-axis elliptical training to reduce gait abnormalities in children with Cerebral Palsy. 67th Annual American Academy for Cerebral Palsy and Developmental Medicine Meeting; Milwaukee, WI: October 2013.
26. **Tsai LC**, Liu SQ, Wu YN, Liu C, Ren Y, Zhang LQ. Changes in passive muscle tension and sarcomere length following stroke. 2013 Annual American Society of Biomechanics Meeting; Omaha, NE: September 2013.
27. **Tsai LC**, Lee SJ, Lin C, Yang A, Ren Y, Gaiger F, Chang AH, Press JM, Zhang LQ. Effectiveness of an off-axis training on improving knee function in individuals with patellofemoral pain. 2012 American Congress of Rehabilitation Medicine Annual Conference; Vancouver, British Columbia, Canada: October 2012. *In Arch Phys Med Rehabil.* 93(10): e13. 2012. (*Podium Presentation*)
28. **Tsai LC**, Pollard CD, Salem GJ, Powers CM. Post-training increased hip and knee flexion during landing decreases tibiofemoral compressive forces in females who have undergone anterior cruciate ligament reconstruction. American Physical Therapy Association Combined Sections Meeting; Chicago, IL: February 2012. (*Podium Presentation*)
29. **Tsai LC**, McLean S, Colletti PM, Powers CM. Increased tibiofemoral compressive loads in females who have undergone anterior cruciate ligament reconstruction. 2011 Annual American Society of Biomechanics Meeting; Long Beach, CA: August 2011.

30. Lyle MA, **Tsai LC**, Valero-Cuevas F, Gregor RJ, Powers CM. Dynamic coordination of leg musculature is associated with agility in high school soccer athletes. 2011 Annual American Society of Biomechanics Meeting; Long Beach, CA: August 2011.
31. **Tsai LC**, Joiner DG, Powers CM. Altered knee biomechanics persist in females who have undergone ACL reconstruction using an allograft. American College of Sports Medicine 58<sup>th</sup> Annual Meeting; Denver, CO: May 2011. *In Med Sci Sports Exerc.* 43(5S): 807. 2011.
32. Hashish R, Samarawickrame S, Wang M-Y, Yu S-Y, **Tsai LC**, Salem GJ. The influence of different marker sets on lower extremity dynamics during walking. American College of Sports Medicine 58th Annual Meeting; Denver, CO: May 2011. *In Med Sci Sports Exerc.* 43(5S): 918. 2011.
33. Lyle MA, **Tsai LC**, Stearns KM, Valero-Cuevas FJ, Gregor RJ, Powers CM. Male and female soccer athletes perform differently on a test of lower extremity coordination. Herman Ostrow School of Dentistry of USC Research Day; Los Angeles, CA: February 2011.
34. Yang NH, **Tsai LC**, Powers CM. Biomechanical analysis of knee cartilage stress for individuals with anterior cruciate ligament reconstruction. 2010 Summer Bioengineering Conference; Naples, FL: June 2010.
35. **Tsai LC**, Lyle MA, Popovich JM, Powers CM. Post-training increases in knee and hip flexion during landing decreases tibiofemoral joint shear and compressive loads. ACL Research Retreat V; Greensboro, NC: March 2010. (*Podium Presentation*)
36. Sterns KM, Pitch E, Lyle MA, **Tsai LC**, Fisher BE, Powers CM. The effect of lower extremity strength vs. skill acquisition training protocols on corticomotor excitability and hip biomechanics during landing. APTA Combined Sections Meeting; San Diego, CA: February 2010.
37. **Tsai LC**, Powers CM. Subject-specific anatomic parameters in an EMG-driven musculoskeletal model results in improved knee joint moment predictions when compared to generic and scaled models. 2009 Annual American Society of Biomechanics Meeting; State College, PA: August 2009. (*Podium Presentation*)
38. **Tsai LC**, Popovich JM, Lyle MA, Powers CM. Subject specific parameters improve joint moment prediction of an EMG-driven knee joint model. 2008 North American Congress on Biomechanics; Ann Arbor, MI: August 2008. (*Podium Presentation*)
39. **Tsai LC**, Sigward SM, Pollard CD, Fletcher MJ, Powers CM. The effects of fatigue and recovery on knee kinetics and kinematics during side-step cutting. ACL Research Retreat IV; Greensboro, NC: March 2008. (*Podium Presentation*)
40. **Tsai LC**, Sigward SM, Pollard CD, Fletcher MJ, Powers CM. The effects of fatigue and recovery on knee kinetics and kinematics during side-step cutting. XXI International Society of Biomechanics; Taipei, Taiwan: July 2007. *In J Biomechanics.* 40(S2): S102, 2007. (*Podium Presentation*)

## **b. Research Support & Grantsmanship**

### **i. Extramural Grants and Funding**

1. Georgia Foundation for Physical Therapy Research Grant  
*Title:* Quadriceps muscle function and knee loading following quadriceps tendon autograft anterior cruciate ligament reconstruction: comparison to the gold standard patella tendon autograft  
05/2018 – 04/2020; Amount Awarded: \$10,000  
*Role:* Principal Investigator

2. Alliance for Regenerative Rehabilitation Research & Training (AR3T) Pilot Funding Program, (supported by National Institute of Health) (Re-submission)  
Title: Joint Load Modulation on Post-Injury Knee OA  
07/01/2017 – 06/20/2019 (1 yr no-cost extension); Amount Awarded: \$45,807 (\$42,414 direct cost)  
Role: Principal Investigator
  3. RR&D Small Projects in Rehabilitation Research (SPiRE) (I21) (Re-submission), Department of Veterans Affairs  
Title: Combined Stem Cell and Rehabilitation Therapies for Osteoarthritis  
07/2017 – 06/2019; Amount Awarded: \$200,000 (GSU Portion: \$44,050)  
Role: Co-Investigator (10% effort)
  4. 2016 Research Grant, Physical Therapy Association of Georgia  
Title: Alterations in Knee Mechanics and Quadriceps Muscle Function during Rehabilitation in Adolescent Patients following ACL Reconstruction  
10/2016 – 09/2017; Amount Awarded: \$300  
Role: Principal Investigator
  5. 2016 Research Grant, Physical Therapy Association of Georgia  
Title: The Effect of Lumbopelvic Joint Manipulation and Traditional Quadriceps Strengthening on Knee Extensor Muscle Activation  
10/2016 – 09/2017; Amount Awarded: \$150  
Role: Co-Investigator
  6. H133F130031, National Institute on Disability and Rehabilitation Research  
Title: The Effectiveness of an Off-axis Elliptical Training Program on Improving Gait Function in Children with Cerebral Palsy  
10/2013-09/2014; Amount Awarded: \$65,000  
Role: Principal Investigator
  7. H133P110013, National Institute on Disability and Rehabilitation Research  
Title: Rehabilitation Sciences for Engineers and Basic scientists: An Advanced Training Program.  
10/2011-09/2016; Amount Awarded: N/A  
Role: Trainee (Training completed: 12/2011-09/2013)
  8. Matching Dissertation Grant, International Society of Biomechanics  
Title: Biomechanical Analysis of Knee Joint Loading for Individuals with Anterior Cruciate Ligament Reconstruction  
04/2010-03/2011; Amount Awarded: \$5,000  
Role: Principal Investigator
  9. Student Grant-in-Aid Award, American Society of Biomechanics  
Title: Will subject-specific anatomic parameters improve moment prediction of an EMG-driven knee model?  
05/2009-04/2010; Amount Awarded: \$2,000  
Role: Principal Investigator
- ii. Intramural Grants and Funding
1. Research Initiation Grant, Georgia State University  
Title: Effects of Knee Loading Modulation and Timing of Intervention on Cartilage Degeneration and Gait Kinematics

07/2017-06/2019; Amount Awarded: \$19,926

Role: Principal Investigator

2. Lewis Foundation Research Award, Georgia State University  
*Title: Effects of Knee Loading Modulation and Timing of Intervention on Cartilage Health and Gait Kinematics in Rats after Traumatic Knee Injuries*  
07/2017-06/2019; Amount Awarded: \$10,000 (*Declined*)  
Role: Principal Investigator
  3. The Student Technology Fee, Georgia State University  
*Title: Wireless Pressure Mat for Learning of Human Gait*  
08/2015-06/2016; Amount Awarded: \$28,493.88  
Role: Principal Investigator
  4. Byrdine F. Lewis School Intramural Grant, Georgia State University  
*Title: Cartilage Degeneration and Functional Capacities following Knee Injuries: The Effect of Exercise Training Volume and Association with Lower Limb Biomechanics*  
10/2014-06/2015; Amount Awarded: \$10,470  
Role: Principal Investigator
- iii. Extramural Non-Funded Proposals
1. Veterans Affairs Merit Award (Re-submission), Department of Veterans Affairs (Score: 204/500)  
*Title: Functional outcomes following stem cell-based joint cartilage regeneration*  
Submitted in 12/2017; Amount Requested: \$1,095,900  
Role: Co-Investigator (5% effort)
  2. Veterans Affairs Merit Award, Department of Veterans Affairs (Score: 236/500)  
*Title: Functional outcomes following stem cell-based joint cartilage regeneration*  
Submitted in 06/2017; Amount Requested: \$1,095,900  
Role: Co-Investigator (5% effort)
  3. R15 (Re-submission), National Institute of Health  
*Title: Knee Compressive Load and Muscle Function during ACL Repair Rehabilitation*  
Submitted in 06/2016; Amount Requested: \$290,644 (direct cost)  
Role: Principal Investigator (25% effort)
  4. RR&D Small Projects in Rehabilitation Research (SPiRE) (I21), Department of Veterans Affairs  
*Title: Combined Stem Cell and Rehabilitation Therapies for Osteoarthritis (Score: 233/500)*  
Submitted in 03/2016; Amount Requested: \$200,000 (GSU Portion: \$44,050)  
Role: Co-Investigator (10% effort)
  5. Alliance for Regenerative Rehabilitation Research & Training (AR3T) Pilot Funding Program, (supported by National Institute of Health)  
*Title: Stem Cells and Joint Load Modulation on Knee OA*  
Submitted in 02/2016; Amount Requested: \$47,762 (*awarded for a fellowship of \$17,500*)  
Role: Principal Investigator
  6. R15, National Institute of Health  
*Title: Knee Compressive Load and Muscle Function during ACL Repair Rehabilitation (Score: 69/100)*  
Submitted in 06/2015; Amount Requested: \$299,870 (direct cost)  
Role: Principal Investigator (25% effort)



7. Research Endowment Grant, American College of Sports Medicine  
*Title:* Altered Knee Compressive Loading and Its Association with Changes in Muscle Function following Anterior Cruciate Ligament Reconstruction  
Submitted in 01/2015; Amount Requested: \$10,000  
*Role:* Principal Investigator
  8. Veterans Affairs Merit Award, Department of Veterans Affairs  
*Title:* Monitoring Lower Limb Amputee using Embedded Sensors and Wireless Communication  
Submitted in 10/2014; Amount Requested: \$1,018,628 (direct cost)  
*Role:* Co-Investigator (25% effort)
  9. PRORP Idea Development Award, Department of Defense  
*Title:* Cartilage Degeneration and Functional Capacities following Knee Injuries: The Effect of Exercise Training Volume and Association with Lower Limb Biomechanics  
Submitted in 06/2014; Amount Requested: \$300,000 (direct cost)  
*Role:* Co-Investigator
- iv. Intramural Non-Funded Proposals
1. Lewis Foundation Grant Program  
*Title:* Comparison of quadriceps tendon autograft and patella tendon autograft anterior cruciate ligament reconstruction in quadriceps muscle function and knee loading  
Submitted in 03/2018; Amount Requested: \$10,000  
*Role:* Principal Investigator
  2. Research Initiation Grant (Revision/Resubmission), Georgia State University  
*Title:* Altered Knee Compressive Loading and Its Association with Changes in Muscle Function following Anterior Cruciate Ligament Reconstruction  
Submitted in 01/2016; Amount Requested: \$25,000  
*Role:* Principal Investigator
  3. The Center of Advanced Brain Imaging Seed Grant (10/2015-06/2016)  
*Title:* Evaluation of Knee Compressive Load and Muscle Function during Post ACL Reconstruction Rehabilitation  
Submitted in 10/2015; Amount Awarded: \$8,500  
*Role:* Principal Investigator
  4. Research Initiation Grant, Georgia State University  
*Title:* Altered knee compressive loading and its association with changes in muscle function following anterior cruciate ligament reconstruction  
Submitted in 01/2015; Amount Requested: \$25,000  
*Role:* Principal Investigator
- v. Pending Extramural and Intramural Proposals  
N/A
- c. **Other Professional Presentations**
1. 11/2017; “*Rehabilitative principle on delaying osteoarthritis following traumatic knee injuries?*”. Seminar, Atlanta Department of Veterans Affairs.

2. 10/2017; “*Impaired Muscle Function and Altered Joint Loading following Knee Injuries: Implication for Post-Injury Rehabilitation*”. KH-9560 Neuromechanics of Human Locomotion (Fall 2017), Department of Kinesiology and Health, Georgia State University
3. 04/2017; “*What is the rehabilitative principle of joint loading modulation on delaying osteoarthritis following traumatic knee injuries?*”. KH-8980 Seminar in Biomechanics (Spring 2017), Department of Kinesiology and Health, Georgia State University
4. 11/2015; “*Joint Loading and Muscle Function following Anterior Cruciate Ligament Reconstruction*”. KH-9560 Neuromechanics of Human Locomotion (Fall 2015), Department of Kinesiology and Health, Georgia State University
5. 03/2015; “*Knee Joint Loading following ACLR: Implications for Joint Health and Post-Surgical Rehabilitation*”. Brownbag Lunchtime Seminar, School of Applied Physiology, Georgia Institute of Technology.
6. 04/2011; “*Increased Knee Compressive Loading in Females with Anterior Cruciate Ligament Reconstruction*”. SMPP Seminar, Rehabilitation Institute of Chicago. April 2011.
7. 01/2010; “*Basics of Joint Kinematics & Muscle Anthropometry*”. PT 554 Analytical Anatomy, Division of Biokinesiology & Physical Therapy, University of Southern California. January 2010.
8. 10/2008; “*Biomechanical Analysis of Knee Joint Loading in Individuals with Anterior Cruciate Ligament Reconstruction*”. Biokinesiology Division Seminar, University of Southern California. October 2008.

#### IV. INSTRUCTION

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##### a. Teaching

2017 – Present	PT 8100 – Introductory Clinical Research, Department of Physical Therapy, Georgia State University (Summer; 40-44 students; <u>Role: Instructor</u> )
2016 – Present	PT 7135 – Therapeutic Application of Physical Agents, Department of Physical Therapy, Georgia State University (Spring; 36-44 students; <u>Role: Instructor</u> )
2015 – Present	PT 8999 – Capstone Project in Physical Therapy, Department of Physical Therapy, Georgia State University (Fall/Spring; 10-12 students; <u>Role: Instructor</u> )
2015 – Present	PT 7825 – Prosthetics and Orthotics, Department of Physical Therapy, Georgia State University (Summer; 36-44 students; <u>Role: Course Coordinator</u> )
2014 – Present	PT 7615 – Human Movement Science I, Department of Physical Therapy, Georgia State University (Fall; 36-40 students; <u>Role: Instructor</u> )
2015 – 2016	PT 8600 – Research III, Department of Physical Therapy, Georgia State University (Fall; 4 students; <u>Role: Instructor</u> )
2014 – 2016	PT 7700 – Research II, Department of Physical Therapy, Georgia State University (Fall; 10-12 students; <u>Role: Instructor</u> )
2015	PT 8800 – Research IV, Department of Physical Therapy, Georgia State University (Summer; 32 students; <u>Role: Instructor</u> )
2010	PT 529 – Life Span Motor Control, Division of Physical Therapy & Biokinesiology, University of Southern California (Fall; 90-96 students; <u>Role: Teaching Assistant</u> )

- 2010 PT 574 – Clinical Biomechanics, Division of Physical Therapy & Biokinesiology, University of Southern California (Summer; 90-96 students; Role: *Teaching Assistant*)
- 2008 – 2009 PT 514 – Musculoskeletal Gross Anatomy, Division of Physical Therapy & Biokinesiology, University of Southern California (Fall; 90-96 students; Role: *Teaching Assistant*)
- 2007 PT 582 – Mechanics of Human Gait, Division of Physical Therapy & Biokinesiology, University of Southern California (Fall; 90-96 students; Role: *Teaching Assistant*)
- 2006 – 2009 PT 554 – Analytical Anatomy, Division of Physical Therapy & Biokinesiology, University of Southern California (Spring; 90-96 students; Role: *Teaching Assistant*)
- 2006 – 2008 PT 551 – Therapeutic Application of Physical Agents, Division of Physical Therapy & Biokinesiology, University of Southern California (Summer; 90-96 students; Role: *Teaching Assistant*)

**b. Student Advisement**

- 07/2018 – Present Dissertation Committee, *Doctoral Student: Diego M Ferreira, M.S* Department of Kinesiology and Health, GSU (in progress; Role: *Committee Member*)
- 07/2017 – Present Dissertation Committee, *Doctoral Student: Rebecca J. Ban, M.S* Department of Kinesiology and Health, GSU (in progress; Role: *Committee Member*)
- 10/2016 – 07/2018 Dissertation Committee, *Doctoral Student: Susan A. Basile, M.S* Department of Kinesiology and Health, GSU (in progress; Role: *Committee Member*)
- 04/2015 – 07/2018 Dissertation Committee, *Doctoral Student: Matt J. Beerse, M.S.* Department of Kinesiology and Health, GSU (in progress; Role: *Committee Member*)
- 10/2017 Alpha Eta Student Research Award, Alpha Eta National Honor Society (awarded to *Jonathan J. Brown, SPT*; Role: *Research Advisor*)
- 04/2018 Lewis College Student Research Poster Award, Georgia State University (1<sup>st</sup> Place; awarded to *Jake C. Jensen, SPT*; *Ashley L. Miller, SPT*; *Emma M. David, SPT*; and *Madeleine L. Kokx, SPT*; Role: *Research Advisor*)
- 03/2018 Physical Therapy Student Research Award, Georgia State University (awarded to *Katelyn N. Corbin, SPT*; Role: *Academic and Research Advisor*)
- 01/2018 Student Research Award, Physical Therapy Association of Georgia (awarded to *Jake C. Jensen, SPT*; Role: *Research Advisor*)
- 01/2018 Research Grant, Physical Therapy Association of Georgia (awarded to *Ashley M. Miller, SPT*; Role: *Research Advisor*)
- 10/2017 Alpha Eta Student Research Award, Alpha Eta National Honor Society (awarded to *Katelyn N. Corbin, SPT*; Role: *Academic and Research Advisor*)
- 04/2017 Lewis School Student Research Poster Award, Georgia State University (1<sup>st</sup> Place; awarded to *Katelyn N. Corbin, SPT*; *Ashley L. Miller, SPT*; and *Jake Jensen, SPT*; Role: *Research Advisor*)
- 03/2017 Physical Therapy Student Research Award, Georgia State University (awarded to *Carly R. Waters, SPT*; Role: *Academic and Research Advisor*)

- 02/2016 – 11/2016 Post-Doctoral Internship, *Post-Doctoral Fellow: Dr. Sandra Mara Meireles Adolph, PhD*, Universidade Federal de São Paulo, Brazil (completed; Role: Supervisor)
- 10/2016 Georgia Foundation for Physical Therapy Student Scholarship (awarded to *Caroline R. Waters, SPT*; Role: Academic and Research Advisor)

## **V. SERVICES**

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- 07/2017 – Present IACUC Committee, Georgia State University (Role: Member)
- 08/2016 – Present Research Committee, Byrdine F. Lewis School of Nursing and Health Professions, GSU (Role: Member; Chair: 09/2018-Present)
- 08/2015 – Present Admission Committee, Department of Physical Therapy, GSU (Role: Reviewer and Interviewer since 08/2015; Member since 05/2018)
- 02/2014 – Present Research Committee, Department of Physical Therapy, GSU (Role: Chair)
- 02/2014 – Present Curriculum Committee, Department of Physical Therapy, GSU (Role: Member)
- 02/2015 – 09/2017 Georgia State Undergraduate Research Conference, GSU (Role: Reviewer/Judge)
- 04/2015 – 08/2017 Faculty Appeals Committee, Byrdine F. Lewis School of Nursing and Health Professions, GSU (Role: Member; Chair: 08/2016-08/2017)
- 08/2016 – 11/2016 Faculty Search Committee for the Department of Occupational Therapy, Byrdine F. Lewis School of Nursing and Health Professions, GSU (Role: Member)
- 08/2015 – 08/2016 Student Retention Committee, Department of Physical Therapy, GSU (Role: Member)

## **VI. PROFESSIONAL AND HONOR ORGANIZATION ACTIVITIES**

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### **a. Membership**

- 2014 – Present American Physical Therapy Association
- 2011 – Present American College of Sports Medicine
- 2008 – Present American Society of Biomechanics
- 2007 – Present International Society of Biomechanics
- 2012 – 2013 American Congress of Rehabilitation Medicine

### **b. Manuscript/Abstract Reviewer**

- 2018 – Present American College of Sports Medicine – Biomechanics Interest Group
- 2018 – Present Journal of Biomechanics
- 2017 – Present Journal of Orthopaedic Research
- 2016 – Present American Physical Therapy Association - Sports Section
- 2015 – Present International Journal of Sports Medicine
- 2015 – Present Medicine and Science in Sports and Exercise

2014 – Present	Journal of Applied Physiology
2014 – Present	American Journal of Sports Medicine
2013 – Present	Scandinavian Journal of Medicine and Science in Sports
2013 – Present	American Society of Biomechanics
2012 – Present	Journal of Applied Biomechanics
2012 – Present	Clinical Anatomy

**c. Grant Reviewer**

05/2017	Department of Physical Therapy, University of Nevada, Las Vegas, NV
04/2017	National Institute on Disability, Independent Living, and Rehabilitation Research, Washington, DC

**VII. HONOR/AWARDS/ SCHOLARSHIPS**

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10/2018	<b>Travel Award</b> , International Symposium on Regenerative Rehabilitation
02/2017	<b>Faculty Member Induction</b> , Alpha Eta Honor Society
03/2013	<b>OpenSim Travel Award</b> , National Center for Simulation in Rehabilitation Research
02/2012	<b>Marilyn Gossman Graduate Student Seminar Award</b> , American Physical Therapy Association
05/2011	<b>Golden Cane Award</b> , University of Southern California
11/2010	<b>Excellence in Teaching Award</b> , University of Southern California
08/2010	<b>Jacquelin Perry Scholar Award</b> , University of Southern California
02/2010	<b>Biokinesiology Student Research Award</b> , University of Southern California
08/2009	<b>Co-Chair</b> , Session of Computational Biomechanics, 2009 Annual American Society of Biomechanics Meeting, State College, PA
05/2008	<b>Outstanding Mentorship Award</b> , University of Southern California
02/2008	<b>Biokinesiology Student Research Award</b> , University of Southern California
05/2006	<b>Outstanding Thesis Award</b> , University of North Carolina at Chapel Hill
05/2005	<b>Mary Clyde Singleton Award</b> , University of North Carolina at Chapel Hill
09/2003	<b>Merit Scholarship</b> , University of North Carolina at Chapel Hill