

# CURRICULUM VITA

## ADAM S. LEPLEY, PHD, ATC

### CONTACT INFORMATION

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University of Michigan  
2126 Observatory Lodge (OBL)  
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### EDUCATION

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#### University of Toledo, Toledo OH

*Doctor of Philosophy*

Major: Exercise Science; College of Health Sciences; Department of Kinesiology

Conferred: May 2014

Dissertation: Examining Neural Alterations as the Origins of Disability in Patients Following Anterior Cruciate Ligament Reconstruction

#### University of Minnesota, Minneapolis MN

*Master of Arts*

Major: Kinesiology; College of Education and Human Development; Department of Kinesiology

Conferred: July 2010

Thesis: Certified Athletic Trainer's Treatment of Low Back Pain and Utilization of Chiropractic Services

#### Grand Valley State University, Allendale MI

*Bachelor of Science*

Major: Athletic Training; College of Liberal Arts & Sciences; Department of Movement Science

Conferred: April 2008

### PROFESSIONAL EXPERIENCE

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#### University of Michigan, Ann Arbor MI. Fall 2019 - Present

- *Clinical Assistant Professor*, School of Kinesiology
- *Clinical Education Coordinator*, Athletic Training Program

#### University of Connecticut, Storrs CT. Fall 2015 - 2019

- *Assistant Professor in Residence*, Department of Kinesiology (College of Agriculture, Health and Natural Resources)
- *Joint Appointment: Assistant Professor*, Department of Orthopaedic Surgery (School of Medicine)
- *Program Director*, Athletic Training Program (2018-Present)
- *Clinical Education Coordinator*, Athletic Training Program (2017-2018)
- *Program Coordinator*, Lifetime Sports Program (2015-2018)
- *Program Coordinator*, Strength and Conditioning Internships (2015-2016)

#### University of Kentucky, Lexington KY. Fall 2014 - Summer 2015

- *Lecturer*, Department of Kinesiology and Health Promotion (College of Education)
- *Adjunct Assistant Professor*, Department of Rehabilitation Sciences (College of Health Sciences)

**PROFESSIONAL EXPERIENCE (CONTINUED...)**

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**University of Toledo**, Toledo OH. Fall 2010 - Spring 2014

- *Graduate Student Instructor*, Department of Kinesiology (College of Health Sciences)
- *Research Assistant*, Musculoskeletal Health and Movement Science Laboratory

**TEACHING EXPERIENCE**

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**University of Connecticut**Graduate Courses Instructed

PT 5448	Capstone Scholarly Report Prep (Spring; 2018)
PT 5420	Foundation in Clinical Pathophysiology (Fall; 2016-2018)
KINS 5099	Independent Study: Neurophysiology (Fall 2017)
PT 5452	Therapeutic Interventions I (Summer; 2016-2018)
PT 5410	Human Anatomy of the Trunk and Upper Extremity (Summer; 2016)
PT 5412	Human Anatomy of the Lower Extremity (Summer; 2017-2018)
PT 5414	Clinical Human Physiology (Summer; 2016-2018)
PT 5416	Clinical Neuroscience (Fall; 2015-2018)

Undergraduate Courses Instructed/Coordinated

KINS 3615	Honors Literature Review (Fall 2018)
KINS 3610	Intro to Honors Research (Spring 2018)
KINS 3103	Therapeutic Interventions II (Spring 2018)
KINS 3530W	Aerobic and Resistance Training for Performance (Spring 2018)
KINS 3530W	Physiological Assessment of Competitive Athletes (Spring; 2016-2017)
KINS 3099	Independent Study (Spring 2016-Spring 2018)
KINS 3091	Strength and Conditioning Internship; <i>Program Coordinator</i> (Fall 2015-Spring 2016)
KINS 1160	Lifetime Sports Program; <i>Program Coordinator</i> (Fall 2015-Spring 2018)

Courses Developed

KINS 3530W	Aerobic and Resistance Training for Performance (Implemented Spring 2018)
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**University of Kentucky**Undergraduate Courses Instructed

KHP 240	Nutrition and Physical Fitness (Fall 2014-Spring 2015)
KHP 450	Introduction to Exercise Testing and Prescription (Fall 2014-Spring 2015)

**University of Toledo**Undergraduate Courses Instructed

KINE 2470	Human Anatomy and Physiology II Laboratory (Fall 2010-Spring 2012)
KINE 2520	Human Anatomy Laboratory (Fall 2010-Spring 2014)
KINE 2630	Clinical Anatomy I: Lower Extremity Focus (Fall 2012; Fall 2013)
KINE 2640	Clinical Anatomy II: Upper Extremity Focus (Spring 2013; Spring 2014)
KINE 2610	Evaluation of Lower Extremity Injuries ( <i>TA</i> ; Fall 2013)
KINE 4720	Clinical Skills Development IV for Athletic Training ( <i>TA</i> ; Spring 2012)
KINE 4710	Clinical Skills Development V for Athletic Training ( <i>TA</i> ; Fall 2011)
KINE 2640	Clinical Anatomy II: Upper Extremity Focus ( <i>TA</i> ; Spring 2011)
KINE 2720	Clinical Skills Development II for Athletic Training ( <i>TA</i> ; Spring 2011)
KINE 1650	Care and Prevention of Injuries ( <i>TA</i> ; Spring 2011)

Graduate Courses Instructed

KINE 8130	Biomechanics of Human Motion ( <i>Partial instructor</i> , Fall 2013)
MIME 5230	Advanced Biomechanics for Engineering ( <i>Partial instructor</i> , Fall 2013)

## CLINICAL EXPERIENCE

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**University of Minnesota Athletics**, July 2008-July 2010

*Graduate Assistant Athletic Trainer*

Sport Assignments: Football and Spirit Squad Programs

**NCAA Division I Men's Ice Hockey Championships**, December 2008-March 2010

*Drug Testing Site Coordinator, West Regional*

**Grand Rapids Rampage; Arena Football League**, December 2007-June 2008

*Athletic Training Intern*

**West Ottawa High School**, Spring 2007

*Athletic Training Student*

**Grand Valley State University Athletics**, January 2006-January 2008

*Athletic Training Student*

Sport Assignments: Football and Volleyball

## PUBLICATIONS

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### Published Referred Manuscripts

1. Burland JP, **Lepley AS**, Distefano LJ, Lepley LK. No Shortage of Disagreement Between Biomechanical and Clinical Hop Symmetry after Anterior Cruciate Ligament Reconstruction. Accepted for publication in *Clinical Biomechanics*. 2019; 68. 144-150. PMID: 31212209.
2. **Lepley AS**, Grooms DR, Burland JP, Davi SM, Kinsella-Shaw JM, Lepley LK. Quadriceps muscle function following anterior cruciate ligament reconstruction: Systemic differences in neural and morphological characteristics. *Experimental Brain Research*. 2019; 237. 1267-1278. PMID: 30852644.
3. Burland JP, **Lepley AS**, Cormier M, Distefano LJ, Arciero R, Lepley LK. Learned Helplessness after anterior cruciate ligament reconstruction: An altered neurocognitive state? *Sports Medicine*. 2019; 49(5). 647-657. PMID: 30659498.
4. Lisee C, **Lepley AS**, Birchmeier T, O'Hanan K, Kuenze C. Quadriceps strength and volitional activation after anterior cruciate ligament reconstruction (ACLR): A systematic-review and meta-analysis. *Sports Health*. 2019; 11(2).163-179. PMID: 30638441.
5. Kuenze C, Pietrosimone B, Lisee C, Rutherford M, Birchmeier T, **Lepley AS**, Hart J. Demographic and surgical factors affect quadriceps strength after ACL reconstruction. Accepted for publication in *Knee Surgery, Sports Traumatology, Arthroscopy*. 2019; 27. 921-930. PMID: 30327821.
6. **Lepley AS**, Cormier ML, Pietrosimone B. Knee Pain, Quadriceps Function, and Self-Reported Outcomes in Patients with Anterior Cruciate Ligament Reconstruction. *Journal of Athletic Training*. 2018; 53(4). 337-346. PMID: 29667429.
7. Lepley LK, Grooms D, Burland J, Davi S, Mosher J, Cormier ML, **Lepley AS**. Eccentric cross-exercise after ACL reconstruction: Novel case-series to enhance neuroplasticity. *Physical Therapy in Sport*. 2018; 34. 55-65. PMID: 30223234.

8. **Lepley AS**, Joseph MF, Daigle NR, Digiacomio JE, Galer J, Rock E, Rosier SB, Sureja PB. Sex differences in mechanical properties of the Achilles tendon: Longitudinal response to repetitive loading exercise. *Journal of Strength and Conditioning Research*. 2018; 32(11). 3070-3079. PMID: 29373429.
9. Pietrosimone B, Kuenze CK, Hart JM, Thigpen C, **Lepley AS**, Blackburn JT, Padua DA, Grindstaff TL, Davis H, Bell D. Weak associations between body mass index and self-reported disability in people with unilateral anterior cruciate ligament reconstruction. *Knee Surgery, Sports Traumatology, Arthroscopy*. 2018; 26(5). 1326-1334. PMID: 28849248.
10. **Lepley AS**, Kuenze CK. Hip and knee kinematics and kinetics during landing tasks following ACL reconstruction: A systematic review and meta-analysis. *Journal of Athletic Training*. 2018. 53(2): 144-159. PMID: 29350551.
11. Glenney SS, Ng AC, Smolgovskiy V, Smolewski M, Brockamer D, **Lepley AS**. Effect of Exercise Training on Cardiac Biomarkers in At-Risk Populations: A Systematic Review. *Journal of Physical Activity and Health*. 2017; 14(12). 968-969. PMID: 28682654.
12. Lepley LK, **Lepley AS**, Grooms DR, Onate JA. Eccentric exercise to enhance neuromuscular control: an injury prevention perspective. *Sports Health*. 2017; 9(4). 333-340. PMID: 28571492.
13. Needle AR, **Lepley AS**, Grooms DR. Central nervous system adaptations after ligamentous injury: A summary of theories, evidence and, clinical interpretation. *Sports Medicine*. 2017; 47(7). 1271-1288. PMID: 28005191.
14. Harkey MS, Luc-Harkey BA, **Lepley AS**, Grindstaff TL, Gribble PA, Blackburn JT, Spang JT, Pietrosimone B. Persistent muscle inhibition after ACL reconstruction: Role of reflex excitability. *Medicine & Science in Sport & Exercise*. 2016; 48(12). 2370-2377. PMID: 27434085.
15. Pietrosimone BG, **Lepley AS**, Harkey MS, Luc-Harkey BA, Blackburn JT, Gribble PA, Spang JT, Sohn DH. Quadriceps strength predicts self-reported function post ACL reconstruction. *Medicine & Science in Sport & Exercise*. 2016; 48(9). 1671-1677. PMID: 27054675.
16. **Lepley AS**, Gribble PA, Thomas AC, Sohn DH, Tevald MA, Pietrosimone B. Longitudinal evaluation of stair walking biomechanics in patients with anterior cruciate ligament injury. *Medicine & Science in Sports & Exercise*. 2016; 48(1). 7-15. PMID: 26225766.
17. Whiteside D, Martini DN, **Lepley AS**, Zernicke RF, Goulet GC. Predictors of ulnar collateral ligament reconstruction in Major League Baseball pitchers. *American Journal of Sports Medicine*. 2016; 44(9). 2202-2209. PMID: 27159303.
18. Gabler CM, **Lepley AS**, Uhl TL, Mattacola CG. Comparison of transcutaneous electrical nerve stimulation and cryotherapy for increasing quadriceps activation in patients with knee pathologies. *Journal of Sport Rehabilitation*. 2016; 25(3) 294-300. PMID: 25559303.
19. Gribble PA, Terada M, Beard ME, Kosik K, **Lepley AS**, McCann RS, Pietrosimone BG, Thomas AC. Prediction of lateral ankle sprains in football players based on clinical tests and BMI. *American Journal of Sports Medicine*. 2016; 44(2). 460-467. PMID: 26646517.

20. **Lepley AS**, Gribble PA, Thomas AC, Tevald MA, Sohn DH, Pietrosimone BG. Quadriceps neural alterations in anterior cruciate ligament reconstructed patients: a 6-month longitudinal investigation. *Scandinavian Journal of Medicine and Science in Sport*. 2015; 25(6). 828-839. PMID: 25693627.
21. Pietrosimone BG, **Lepley AS**, Ericksen HM, Clements AE, Sohn DH, Gribble PG. Neural excitability alterations after anterior cruciate ligament reconstruction. *Journal of Athletic Training*. 2015; 50(6). 665-674. PMID: 25844855.
22. **Lepley AS**, Bahhur NO, Murray AM, Pietrosimone BG. Quadriceps corticomotor excitability following an experimental knee joint effusion. *Knee Surgery, Sports Traumatology and Arthroscopy*. 2015; 23(4). 1010-1017. PMID: 24326780.
23. Pietrosimone BG, **Lepley AS**, Murray AM, Thomas AC, Bahhur NO, Schwartz TA. Changes in voluntary quadriceps activation predict changes in muscle strength and knee biomechanics following knee joint effusion. *Clinical Biomechanics*. 2014; 29(8). 923-929. PMID: 25062605.
24. **Lepley AS**, Ericksen HM, Sohn DH, Pietrosimone BG. Contributions of neural excitability and voluntary activation to quadriceps muscle strength following anterior cruciate ligament reconstruction. *The Knee*. 2014; 21(3). 736-742. PMID: 24618459.
25. Luc BA, **Lepley AS**, Tevald MA, Gribble PA, White DB, Pietrosimone BG. Reliability of corticomotor excitability in leg and thigh musculature at 14 and 28 days. *Journal of Sport Rehabilitation*. 2014; 23(4): 330-338. PMID: 24084315.
26. **Lepley AS**, Strouse AM, Ericksen HM, Pfile KR, Gribble PA, Pietrosimone BG. Relationship between gluteal muscle strength, corticospinal excitability and jump-landing biomechanics in healthy females. *Journal of Sport Rehabilitation*. 2013; 22(4). 239-247. PMID: 23628863.
27. Pietrosimone BG, **Lepley AS**, Ericksen HM, Gribble PA, Levine J. Quadriceps strength and corticospinal excitability as predictors of disability following anterior cruciate ligament reconstruction. *Journal of Sport Rehabilitation*. 2013; 22(1). 1-6. PMID: 22951289.
28. **Lepley AS**, Gribble PA, Pietrosimone BG. Effects of electromyographic biofeedback on quadriceps strength: A systematic review. *Journal of Strength and Conditioning Research*. 2012; 26(3). 873-882. PMID: 22289696.
29. Pietrosimone BG, McLeod MM, **Lepley AS**. A theoretical framework for understanding neuromuscular response to lower extremity joint injury. *Sports Health*. 2012; 4(1). 31-35. PMID: 23016066.
30. **Lepley AS**, Hatzel BM. Effects of weight lifting and breathing technique on blood pressure and heart rate. *Journal of Strength and Conditioning Research*. 2010; 24(8). 2179-2183. PMID: 20634749.

#### Accepted Refereed Manuscripts in Press

31. Hausmann M, Ober J, **Lepley AS**. The effectiveness of deep oscillation therapy on reducing swelling and pain in athletes with acute lateral ankle sprains. Accepted for publication in the *Journal of Sport Rehabilitation*, October 2018. In Press [epub ahead of print]. PMID: 30526277.

### Published Invited/Non-Refereed Manuscripts

1. Casa DJ, Hosokawa Y, Huggins RA, Stearns RL, Adams WM, Beltz EM, Belval LN, Curtis RM, DiStefano LJ, Eason CM, Fortunati AR, Iannicelli JP, Katch RK, **Lepley AS**, Lepley LK, Mazerolle SM, Pike AM, Rafeldt DA, Root HJ, Scarneo SE, Vandermark LW. (2016, January) "Concern Emerges About Proper Implementation of Consensus Statement Guidelines." [Letter to the Editor] *NATA News*, 8-9.
2. **Lepley AS**. Invited commentary for the article: Immediate changes in pressure pain threshold in the iliotibial band after using a myofascial (foam) roller. *International Journal of Therapy and Rehabilitation*. 2014.

### Manuscripts Submitted for Publication

1. Rush JL, Lepley LK, Davi SM, **Lepley AS**. The immediate effects of transcranial direct current stimulation on quadriceps muscle function in individuals with a history of anterior cruciate ligament reconstruction. *Journal of Sports Rehabilitation*. May 2019. In Review.
2. Lepley LK, Davi SM, Burland JP, **Lepley AS**. Muscle atrophy after traumatic joint injury: implications for clinical practice. *Sports Medicine*. May 2019. In Review.
3. Burland JP, **Lepley AS**, Cormier ML, DiStefano LJ, Lepley LK. Examining the influence of neuroplasticity on learned helplessness after ACLR: early versus late recovery. Submitted for consideration to *Sports Health*. April 2019. In Review.
4. Burland JP, Howard JS, **Lepley AS**, Distefano LJ, Lepley LK. What are our patients really telling us? Psychological constructs associated with patient-reported outcomes after ACLR. Submitted for consideration to the *Journal of Athletic Training*. March 2019. In Review.
5. Davi SM, **Lepley AS**, Denegar CR, DiStefano LJ, Edgar CM, Lepley LK. Influence of naturally occurring patellar tendon damage and pain on quadriceps dysfunction. Submitted for consideration to the *Journal of Athletic Training*. January 2019. In Review.
6. Earp LE, Stearns RL, Stranieri A, Agnostinucci J, **Lepley AS**, Zeramby J, Matson T, Ward-Ritacco CL. Electricity induced cramping threshold responses with electrolyte beverage consumption. Submitted for consideration to *Muscle and Nerve*. September 2018. In Review.
7. Zoubek J, Kranz T, Perrotti L, Stark E, Stella M, **Lepley AS**. Effect of foot posture and posting orthotics on jumping performance. Medial Post Foot Orthotics Influence Knee Valgus Angle Excursions During a Vertical Jump Task. Submitted for consideration to the *Journal Sport Rehabilitation*, May 2018. In Review.

### Manuscripts in Preparation

1. **Lepley AS**, Lepley LK, Kinsella-Shaw JM, Grooms DR. Association between motor cortex activation and excitability of the quadriceps: An fMRI and TMS study. *Experimental Brain Research*. In preparation/Data analysis.
2. **Lepley AS**, Grooms DR, Froeling M, Burland JP, Davi SM, Kinsella-Shaw J, Lepley LK. Neural and morphological contributions to quadriceps muscle strength: Implications following ACLR. *Sports Medicine*. In preparation/Data analysis.

3. **Lepley AS**, Froeling M, Grooms DR, Burland JP, Davi SM, Kinsella-Shaw J, Lepley LK. Morphological changes of the quadriceps muscle following ACLR. *Journal of Bone and Joint Surgery/Journal of Orthopaedic Research*. In preparation/Data analysis.
4. Smith D, Cappaert T, Ehlers GG, **Lepley AS**. Does multiplanar stretching reduce pain, increase range of motion, and facilitate return to performance in individuals with acute muscle damage? *Journal of Sport Rehabilitation*. In preparation.
5. Burland JP, **Lepley AS**, Lepley LK. Rate of knee extension moment and vastus lateralis onset time in ACL patients. In preparation.

## PRESENTATIONS

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### Refereed Abstracts Presented

1. Burland JP, **Lepley AS**, Davi SM, Lepley LK. Temporal delays in quadriceps muscle activation influence patient perceived function after ACLR. Presented at the International Society of Biomechanics/American Society of Biomechanics, Calgary, Alberta, Canada. August 2019.
2. **Lepley AS**, Grooms DR, Burland JP, Davi SM, Kinsella-Shaw JM, Lepley LK. Systemic quadriceps muscle failure following ACL reconstruction: Neural and morphological considerations. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2019.
3. Rush JL, Lepley LK, Davi SM, **Lepley AS**. The effects of transcranial direct current stimulation on quadriceps neural activity after anterior cruciate ligament reconstruction. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2019.
4. Burland JP, **Lepley AS**, Davi SM, DiStefano LJ, Lepley LK. How does it all measure up? Interrelationships between biomechanical, clinical symmetry and self-reported function after ACLR. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2019.
5. Ly M, Scarneo S, **Lepley AS**, Coleman K, Chen C, Casa D. Classifying concussion in university athletes using diffusion tensor imaging and cognitive evaluation. Presented at the Organization for Human Brain Mapping (OHMB) Annual Meeting, Rome, Italy. June 2019
6. Masiello, E, Lepley LK, Davi SM, Lepley AS. Muscle activation in patients with a history of anterior cruciate ligament reconstruction (ACLR). Presented at the 22<sup>nd</sup> Annual Frontiers in Undergraduate Research Exhibition. April 12, 2019.
7. **Lepley AS**, Froeling M, Davi SM, Burland JP, Lepley LK. Quadriceps muscle structure following ACL reconstruction: Influence on muscle weakness. Presented at the ACL Research Retreat VIII, Greensboro, North Carolina. March 2019.
8. Lepley LK, Froeling M, Davi SM, Burland JP, Curtis RM, **Lepley AS**. Investigating the neural-morphologic link on quadriceps strength after ACLR. Presented at the ACL Research Retreat VIII, Greensboro, North Carolina. March 2019.
9. White MS, Burland JP, Davi SM, **Lepley AS**, Lepley LK. Hidden asymmetries in ACLR patients who pass triple hop test following ACLR. Presented at the ACL Research Retreat VIII, Greensboro, North Carolina. March 2019.

10. Burland JP, Howard JS, **Lepley AS**, DiStefano LJ, Lepley LK. What are our patients really telling us? Psychological constructs associated with patient-reported outcomes after ACLR. Presented at the ACL Research Retreat VIII, Greensboro, North Carolina. March 2019.
11. Davi SM, **Lepley AS**, Burland JP, Curtis RM, Lepley LK. The mediated link: Evaluating quadriceps neuromechanics and dynamic muscle function after ACLR. Presented at the ACL Research Retreat VIII, Greensboro, North Carolina. March 2019.
12. Kuenze CM, Pietrosimone B, Lisee C, Rutherford M, Birchmeier T, **Lepley AS**, Hart JM. Sex differences in quadriceps strength among adolescents within 1 year of ACL reconstruction. Presented at the Pediatric Research in Sports Medicine (PRiSM) Society Annual Meeting, Atlanta, Georgia. January 2019.
13. Ly M, Scarneo S, **Lepley AS**, Coleman K, Chen C, Casa D. Classifying concussion in university athletes using diffusion tensor imaging. Presented at the Society for Neuroscience Annual Meeting, San Diego, California. November 2018.
14. **Lepley AS**, Grooms DR, Burland JP, Davi SM, Lepley LK. Underlying contributors to quadriceps strength in anterior cruciate ligament reconstructed patients: Morphological and neurological adaptations. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2018. Published in the Journal of Athletic Training 53(6s): S-189.
15. Burland JP, Lepley LK, Davi SM, **Lepley AS**. Quadriceps cross-sectional area, not neural activity, is associated with improved self-reported function after ACLR. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2018. Published in the Journal of Athletic Training 53(6s): S-188.
16. Davi SM, **Lepley AS**, Burland JP, Earp JE, Lepley LK. Elucidating the underlying architectural and neural mechanisms of strength loss that influence patient reported outcomes after ACL reconstruction. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2018. Published in the Journal of Athletic Training 53(6s): S-192.
17. Lepley LK, Davi SM, Woxholdt CK, Burland JP, **Lepley AS**. Investigating the underlying neurological factors that regulate quadriceps muscle activation after ACL reconstruction. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2018. Published in the Journal of Athletic Training 53(6s): S-192.
18. Lisee C, **Lepley AS**, Birchmeier T, O'Hahan K, Kuenze C. Knee extension strength and quadriceps activation after anterior cruciate ligament reconstruction: A systematic-review and meta-analysis. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2018. Published in the Journal of Athletic Training 53(6s): S-190.
19. Burland JP, Lepley LK, Davi SM, **Lepley AS**. Fear of reinjury and psychological dysfunction after ACLR: What are our patients telling us? Presented at the Athletic Trainers' Osteoarthritis Consortium Annual Meeting, New Orleans, Louisiana. June 2018.
20. **Lepley AS**, Lepley LK, Burland JP, Davi SM, Grooms DR. Association between motor cortex activation and excitability of the quadriceps: An fMRI and TMS study. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in Medicine and Science in Sport and Exercise 50(5S): 566.



21. Davi SM, **Lepley AS**, Burland JP, Lepley LK. Examining the relationships between the mode of quadriceps contraction and clinical outcomes after ACL reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in *Medicine and Science in Sport and Exercise* 50(5S): 42.
22. Burland JP, Lepley LK, DiStefano LJ, Davi SM, **Lepley AS**. Fear of reinjury is associated with knee biomechanics during single limb landing after ACL reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in *Medicine and Science in Sport and Exercise* 50(5S): 253.
23. Lepley LK, Burland JP, Davi SM, **Lepley AS**. Lack of association between clinical measures of symmetry and knee loading mechanics after ACL reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in *Medicine and Science in Sport and Exercise* 50(5S): 388.
24. Digiacomio JE, Rock E, Daigle NR, Rosier SB, Sureja PB, **Lepley AS**. Gender differences in mechanical properties of the Achilles tendon: Longitudinal response to heavy loading exercise. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in *Medicine and Science in Sport and Exercise* 50(5S): 38.
25. Zoubek J, Kranz T, Perotti L, Stark E, Stella M, **Lepley AS**. Medial post foot orthotic influences knee valgus angle excursions during a vertical jump task. Presented at the American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota. May 2018. Published in *Medicine and Science in Sport and Exercise* 50(5S): 686-687.
26. Davi SM, **Lepley AS**, Denegar CR, Aerni G, DiStefano LJ, Lepley LK. Influence of anterior knee pain with/without structural patellar tendon damage on arthrogenic muscle inhibition. Presented at the National Athletic Trainers' Association Annual Meeting, Houston, Texas. June 2017. Published in the *Journal of Athletic Training* 52(6): S-107.
27. Pietrosimone B, Kuenze CK, Hart JM, Thigpen C, **Lepley AS**, Blackburn JT, Padua DA, Grindstaff TL, Davis H, Bell D. Association between body mass index and self-reported disability in people with unilateral anterior cruciate ligament reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Denver, Colorado. May 2017. Published in *Medicine and Science in Sport and Exercise* 49(5S): 419.
28. **Lepley AS**, Cormier ML, Gribble PA, Pietrosimone B. Pre-surgical and post-surgical quadriceps strength and knee pain as predictors of readiness to return to activity following anterior cruciate ligament reconstruction. Presented at the National Athletic Trainers' Association Annual Meeting. Baltimore, Maryland. June 2016. Published in the *Journal of Athletic Training* 51(6): S-18.
29. Kuenze CK, **Lepley AS**. Lower extremity jump landing kinematics and kinetics after ACL reconstruction: A systematic review. Presented at the National Athletic Trainers' Association Annual Meeting. Baltimore, Maryland. June 2016. Published in the *Journal of Athletic Training* 51(6): S-249.
30. Harkey MS, Luc BA, **Lepley AS**, Grindstaff TL, Gribble PA, Blackburn JT, Spang JT, Pietrosimone B. Spinal reflex excitability does not associate with persistent muscle inhibition after anterior cruciate ligament reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Boston, Massachusetts. May 2016. Published in *Medicine and Science in Sport and Exercise* 48(5S): 1490: 301.

31. Pietrosimone BG, **Lepley AS**, Harkey MS, Luc BA, Blackburn JT, Gribble PA, Spang JT, Sohn DH. Quadriceps strength as a predictor of self-reported function in individuals with anterior cruciate ligament reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Boston, Massachusetts. May 2016. Published in *Medicine and Science in Sport and Exercise* 48(5S): 1110: 403.
32. **Lepley AS**, Thomas AC, Gribble PA, Sohn DH, Pietrosimone BG. Preoperative neural excitability is associated with postoperative neural excitability in anterior cruciate ligament reconstructed patients. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2015. **Doctoral Student Oral Award Finalist**. Published in the *Journal of Athletic Training* 50(6): S-93.
33. Gribble PA, Terada M, Beard ME, Kosik K, **Lepley AS**, McCann R, Pietrosimone BG, Thomas AC. A novel approach for prediction of lateral ankle sprains in football players using function test performance. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2015. Published in the *Journal of Athletic Training* 50(6): S-102.
34. Kosik K, Terada M, Beard ME, **Lepley AS**, McCann RS, Pietrosimone BG, Thomas AC, Gribble PA. Influence of BMI, age, and level of competition on functional performance tests. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2015. Published in the *Journal of Athletic Training* 50(6): S-137.
35. **Lepley AS**, Thomas AC, Gribble PA, Sohn DH, Pietrosimone BG. Quadriceps strength is associated with quality of life and readiness to return-to-sport in ACLr patients. Presented at the American College of Sports Medicine Annual Meeting, San Diego, California. May 2015. Published in *Medicine and Science in Sport and Exercise* 47(5S): 257.
36. **Lepley AS**, Thomas AC, Gribble PA, Sohn DH, Pietrosimone BG. Anterior cruciate ligament reconstructed patients exhibit limb asymmetry in sagittal-plane knee joint mechanics during stair ascent and descent. Presented at the ACL Research Retreat VII, Greensboro, North Carolina. March 2015. Published in the *Journal of Athletic Training* 50(10): 1108.
37. **Lepley AS**, Gribble PA, Thomas AC, Sohn DH, Tevald MA, Pietrosimone BG. Prospective analysis of quadriceps spinal-reflexive and corticospinal excitability in anterior cruciate ligament reconstructed patients. Presented at the National Athletic Trainers' Association Annual Meeting, Indianapolis, Indiana. June 2014. **Doctoral Student Oral Award Winner**. Published in the *Journal of Athletic Training* 49(3): S-86.
38. **Lepley AS**, Sohn DH, Tevald MA, Thomas AC, Gribble PA, Pietrosimone BG. Evaluation of self-reported and neuromuscular function following anterior cruciate ligament injury and reconstruction. Presented at the American College of Sports Medicine Annual Meeting, Orlando, Florida. May 2014. Published in *Medicine and Science in Sport and Exercise* 46(5S): 202.
39. **Lepley AS**, Clements AE, Ericksen HM, Sohn DH, Levine JW, Gribble PA, Pietrosimone BG. Quadriceps activation and spinal-reflexive excitability predicts quadriceps strength following anterior cruciate ligament reconstruction. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2013. Published in the *Journal of Athletic Training* 48(3): S-36.

40. Clements AE, **Lepley AS**, Ericksen HM, Sohn DH, Levine JW, Gribble PA, Pietrosimone BG. Anterior cruciate ligament reconstruction participants exhibit deficits in quadriceps strength and up-regulation of corticospinal excitability. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2013. **Master's Student Oral Award Finalist**. Published in the Journal of Athletic Training 48(3): S-12.
41. Murray AM, **Lepley AS**, Bahhur NO, Thomas AC, Pietrosimone BG. Effects of arthroscopic muscle inhibition on sagittal plane knee kinetics and kinematics during stair descent. Presented at the National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 2013. Published in the Journal of Athletic Training 48(3): S-36.
42. Luc BA, **Lepley AS**, Tevald MA, Gribble PG, White D, Pietrosimone BG. Intrarater reliability of transcranial magnetic stimulation in lower extremity musculature. Presented at the American College of Sports Medicine Annual Meeting, Indianapolis, Indiana. May 2013. Published in Medicine and Science in Sport and Exercise 45(5S): 357-363.
43. **Lepley AS**, Bahhur NO, Murray AM, Pietrosimone BG. Contributions of neural excitability and voluntary activation to quadriceps muscle strength. Presented at the American College of Sports Medicine Annual Meeting, Indianapolis, Indiana. May 2013. Published in Medicine and Science in Sport and Exercise 45(5S): 357-363.
44. Murray AM, **Lepley AS**, Bahhur NO, Armstrong C, Gribble PA, Pietrosimone BG. The relationship of changes in voluntary quadriceps activation to changes in knee flexion during gait. Presented at the Ohio Physical Therapy Association, Columbus, Ohio. October 2012.
45. **Lepley AS**, Murray AM, Bahhur NO, Gribble PA, Pietrosimone BG. Relationship between corticospinal excitability and muscle activation of the quadriceps following an experimental knee joint effusion. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-36.
46. Murray AM, **Lepley AS**, Bahhur NO, Armstrong C, Gribble PA, Pietrosimone BG. Changes in quadriceps corticospinal excitability correlate with changes in knee flexion angle during stair descent following an experimental knee joint effusion. Presented at the National Athletic Trainers' Association, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-36.
47. Ericksen HM, **Lepley AS**, Doebel SC, Armstrong CW, Pfile KR, Gribble PA, Pietrosimone BG. Changes in sagittal plane kinematics during jump landing immediately following implementation of real time feedback. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-84.
48. Strouse AM, **Lepley AS**, Ericksen HM, Doebel SC, Pfile KR, Gribble PA, Pietrosimone BG. Maximal gluteal strength does not correlate with jump-landing biomechanics. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-20.
49. Doebel, SC, Ericksen HM, **Lepley AS**, Strouse AM, Pfile KR, Gribble PA, Pietrosimone BG. Immediate effects of real time feedback during jump-landing on the Landing Error Scoring System. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-149.

50. Dahlmann EJ, Hoffman AL, Pfile KR, Pietrosimone PG, Harkey M, Ericksen HH, **Lepley AS**, Luc B, McLeod MM, Morrell M, Nelson B, Stout M, Sugiura S, Terada M, Gribble PA. A comparison of Functional Movement Screen™ and Star Excursion Balance Test performance among female collegiate athletes. Presented at the National Athletic Trainers' Association Annual Meeting, St. Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-125.
51. Brown M, Pfile KR, Pietrosimone BG, Ericksen HM, **Lepley AS**, McLeod MM, Terada M, Gribble PA. The Functional Movement Screen™ as a predictor of ankle and knee injuries in female collegiate athletes. Presented at the National Athletic Trainers' Association Annual Meeting, St Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-43.
52. Ford A, KR, Pietrosimone BG, Ericksen HM, **Lepley AS**, McLeod MM, Terada M, Gribble PA. Star excursion balance test as a predictor of ankle and knee injuries in collegiate football athletes. Presented at the National Athletic Trainers' Association Annual Meeting, St Louis, Missouri. June 2012. Published in the Journal of Athletic Training 47(3): S-44.
53. **Lepley AS**, Ericksen HM, Gribble PA, Levine J, Pietrosimone BG. Quadriceps strength and corticospinal excitability as predictors of disability following anterior cruciate ligament reconstruction. Presented at the American College of Sports Medicine Annual Meeting, San Francisco, California. May 2012. Published in Medicine and Science in Sport and Exercise 44(2): 552.
54. **Lepley AS**, Murray AM, Bahhur NO, Gribble PA, Pietrosimone BG. Relationship between corticospinal excitability and muscle activation of the quadriceps following an experimental knee joint effusion. Presented at the Great Lakes Athletic Trainers' Association, Wheeling, Illinois. March 2012.
55. Ericksen HM, **Lepley AS**, Doebel SC, Armstrong CW, Pfile KR, Gribble PA, Pietrosimone BG. Immediate decreases in peak vertical ground reaction force following real-time feedback during jump landing. Presented at the ACL Research Retreat VI, Greensboro, North Carolina. March 2012.
56. **Lepley AS**, Ericksen HM, Gribble PA, Pietrosimone BG. Relationship between spinal reflexive and cortical excitability of the quadriceps in individuals with unilateral anterior cruciate ligament reconstructions. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2011. Published in the Journal of Athletic Training 46(3): S-107.
57. Ericksen HM, **Lepley AS**, Gribble PA, Pietrosimone BG. Cortical excitability of the quadriceps is decreased in individuals with unilateral anterior cruciate ligament reconstructions. Presented at the National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2011. **Doctoral Student Oral Award Winner**. Published in the Journal of Athletic Training 46(3): S-36.
58. **Lepley AS**, Gribble PA, Pietrosimone BG. Effects of electromyographic biofeedback on quadriceps strength: A systematic review. Presented at the Midwest Graduate Research Symposium, Toledo, Ohio. March 2011.
59. **Lepley AS**, Hatzel BM. Effects of weight lifting and breathing technique on blood pressure and heart rate. Presented at the American College of Sports Medicine Annual Meeting, Indianapolis, Indiana. May 2008. Published in Medicine and Science in Sport and Exercise 40(5): S260.

## Invited/Symposia Presentations

1. **Lepley AS.** Bear in Mind: Clinical Impact of Brain and CNS Changes after Knee Injuries. Special Topic Lecture. National Athletic Trainers' Association Annual Meeting, Las Vegas, Nevada. June 27, 2019.
2. **Lepley AS.** Impact of Systemic Nervous System Changes on Patient Recovery. Invited Lecture. Spring Grand Rounds, Department of Kinesiology, University of Connecticut. Storrs, Connecticut. April 5, 2019.
3. **Lepley AS.** Neuroplasticity Following Musculoskeletal Injury: A Clinical Perspective. Invited Lecture. Eastern Athletic Trainers' Association Convention. Valley Forge, Pennsylvania. January 12, 2019.
4. Lepley LK, **Lepley AS**, Burland JP. Mind Games: The Clinical Implications of ACL Injury on Neurological Function. Invited Lecture. New England American College of Sports Medicine Fall 2018 Conference. Providence, Rhode Island. November 8, 2018.
5. **Lepley AS.** Use of Neurophysiological Testing in the Evaluation of Musculoskeletal Injuries. Invited Lecture. University of Connecticut Health Center Brain Research Symposium. Hartford, Connecticut. June 8, 2018.
6. **Lepley AS.** Neuroplastic Changes following Musculoskeletal Injury: Origin for Motor Impairments. Invited Lecture. The Connecticut Institute for the Brain and Cognitive Science Annual Meeting. Storrs, Connecticut. May 8, 2018.
7. **Lepley AS.** Neuromuscular Changes Following ACL Injury Measured via TMS and fMRI. Invited Lecture. The University of Connecticut Brain Imaging Research Center Brownbag Talks. Storrs, Connecticut. March 21, 2018.
8. Grooms DR, **Lepley AS**, Needle AR. Remembering the Brain in Orthopedic Rehabilitation: Translational Neuroscience to Understand Musculoskeletal Injury. 51<sup>st</sup> Meeting of the Winter Conference on Brain Research. Whistler, British Columbia, Canada. January 15, 2018.
9. **Lepley AS.** Neuromuscular Control in Lower Extremity Rehabilitation. Invited Lecture. Arkansas Athletic Trainers' Association 2017 Annual Meeting. Little Rock, Arkansas. April 29, 2017.
10. **Lepley AS.** Barriers to Effective ACL Rehabilitation: A Neural Perspective. Invited Lecture. Presented for the General Administration of Sport of China. University of Connecticut Sports Healthcare Symposium. Storrs, Connecticut. October 27, 2016.
11. **Lepley AS.** Neural Origins of Dysfunction Following Joint Injury. Invited Lecture. Presented for the General Administration of Sport of China. University of Connecticut Sports Healthcare Symposium. Storrs, Connecticut. October 26, 2016.
12. **Lepley AS**, Grooms D, Needle A. The Clinical Implications of Neuroplasticity after Musculoskeletal Injury. Symposium Featured Presentation. National Athletic Trainers' Association Annual Meeting. Baltimore, Maryland. June 24, 2016.
13. **Lepley AS**, Grooms DR, Needle AR. New Frontiers in Musculoskeletal Research: Neurophysiological Testing in Sports Medicine. Tutorial Lecture. American College of Sports Medicine Annual Meeting. Boston, Massachusetts. June 1, 2016

14. **Lepley AS**. Neural Changes Following Knee Injury: A Barrier to Optimal Recovery. Invited Lecture. Fall Grand Rounds, Department of Kinesiology, University of Connecticut. Storrs, Connecticut. September 25, 2015.
15. **Lepley AS**. ACL Injury: Neural Mechanism of Disability. Invited Lecture. Exercise Science Seminar Series, Department of Kinesiology and Health Promotion, University of Kentucky. Lexington, Kentucky. February 6, 2015.

### **Clinical Workshops/Laboratory Sessions**

1. Gribble PA, Ericksen HM, **Lepley AS**, McLeod MM, Pfile K, Webster K. New Approaches to Ankle Rehabilitation. Learning Lab. National Athletic Trainers' Association Annual Meeting, New Orleans, Louisiana. June 2011.

### **Abstracts Submitted for Consideration**

1. Butler CR, Huggins RA, **Lepley AS**, Curtis RM, Benjamin CL, Sekiguchi Y, Casa DJ. Biomarker differences between starters and non-starters throughout a collegiate soccer season. Submitted for consideration to the New England American College of Sports Medicine Fall Meeting, Providence, Rhode Island. November 2019.
2. Taylor BA, Panza GA, **Lepley AS**, Thompson PD. Novel techniques to diagnose statin-associated muscle symptoms. Submitted for consideration to the American Heart Association Scientific Sessions Annual Meeting, Philadelphia, Pennsylvania. November 2019.

## **FUNDING ACTIVITIES**

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### **Extramural Grants Funded**

Title: Two Novel Approaches for the Diagnosis of Statin-Associated Muscle Symptoms (SAMS)

Source: Hartford Hospital HealthCare

PI: Thompson PD

CO-I: **Lepley AS**, Taylor BA, Panza GA,

Period: 2017

Amount: \$10,035

Description: To investigate how muscle performance is affected by statin use and to develop novel and accurate tools to diagnose and treat statin-associated muscle symptoms (SAMS)

Title: Eccentric Cross-Exercise: A Novel Approach to Promote Recovery of Muscle Strength and Lower Extremity Function After ACL Reconstruction

Source: New England American College of Sports Medicine

PI: Lepley LK (PI)

Co-I: **Lepley AS** and Grooms DR

Period: 2016

Amount: \$2,500

Description: To examine the effectiveness of an eccentric cross-exercise intervention to improve neural excitability, muscle strength and lower extremity function in ACL reconstructed patients early after surgery.

Title: The Effect of Knee Injury on Brain Function

Source: Great Lakes Athletic Trainers' Association Thomas Weidner Research Assistance Award

PI: **Lepley AS**

CO-I: Pietrosimone BG and Bahhur NO

Period: 2011

Amount: \$1,476.50

Description: Determine how corticospinal excitability of the quadriceps is affected by knee joint effusion and explore how changes in corticospinal excitability influence changes in neuromuscular quadriceps function following an experimental knee joint effusion.

### **Extramural Grants (Pending)**

Title: Improving Soldier Readiness After Traumatic Joint Injury by Targeting Neuromuscular Deficits

Source: Department of Defense

CO-PIs: Lepley LK and Grooms DR

Co-Is: **Lepley AS**, Huedo-Medina T, Arcerio R, Pacheco R, Cameron K

Period: 2018-2020

Amount: \$750,000

Description: Study patients after ACLR to identify the specific neural and morphological deficits that underlie muscle weakness due to traumatic joint injury and to determine the potential for these factors to be ameliorated with a non-surgical rehabilitation approach and influence soldier readiness.

Title: Neurostimulation to Accelerate Recovery from Physical Injury

Source: Department of Defense

PI: Cates, A

CO-Is: **Lepley AS**, Smith D

Period: 2018-2020

Amount: \$2,000,000

Description: Determine the effectiveness of transcranial direct current stimulation (tDCS) to improve neural and clinical outcomes in patients with neuromusculoskeletal injury, using patients with ACL injury as a model.

### **Extramural Grants (Not Funded)**

Title: Neuromuscular and Psychological Dysfunction: A Novel Multi-Faceted Approach for Evaluating Learned Helplessness after ACL Injury

Source: National Athletic Trainers' Association Research and Education Foundation

PI: Burland JP

CO-Is: Lepley LK, **Lepley AS**, DiStefano LJ, Arciero R, Cormier ML.

Amount: \$2,500

Description: investigate the neural impairments after ACL injury that limit successful rehabilitation and potentially initiate a cycle of learned helplessness, where alterations in biomechanics, strength, and self-reported function persist long after ACL reconstruction.

Title: Learned Helplessness after ACL Injury

Source: Eastern Athletic Trainers' Association

PI: Burland JP

CO-Is: Lepley LK, **Lepley AS**, DiStefano LJ, Arciero R, Cormier ML.

Amount: \$10,000

Description: investigate the neural impairments after ACL injury that limit successful rehabilitation and potentially initiate a cycle of learned helplessness, where alterations in biomechanics, strength, and self-reported function persist long after ACL reconstruction.

Title: Comprehensive Neural and Morphological Approach to Identifying the Origins of Dysfunction Following ACL Reconstruction.

Source: Eastern Athletic Trainer's Association (Submitted March 3, 2016)

PI: **Lepley AS**

CO-I: Lepley LK and Kinsella-Shaw JM

Period: 2017

Amount: \$10,000

Description: To determine the contributions of neural and morphological adaptations after ACL reconstruction to quadriceps weakness and clinical dysfunction.

Title: Influence of Patellar Tendinopathy on Neuromuscular Function: New Insights into a Clinical Challenge

Source: National Basketball Association and General Electric Healthcare Collaboration (Submitted February 10, 2016)

PI: Lepley LK (PI)

CO-I: **Lepley AS**, DiStefano LJ, Denegar CR

Period: 2016-2018

Amount: \$300,000

Description: To investigate potential neuromuscular abnormalities in athletes with patellar tendinopathy for the purpose of identifying modifiable risk factors that can be targeted and treated, thereby providing a mechanism to improve rehabilitation outcomes.

Title: Examining Neural Alterations as the Origins of Disability in Patients Following Anterior Cruciate Ligament Reconstruction

Source: National Athletic Trainers' Association Doctoral Research Grant

PI: **Lepley AS**

CO-I: Pietrosimone BG, Gribble PA, Sohn DH

Period: 2013

Amount: \$2,500

Description: Longitudinally investigate neural excitability of the quadriceps muscle following ACL injury and subsequent reconstruction and determine if alterations exist in the injured limb compared to the uninjured limb and healthy matched controls, and how these alterations ultimately affect biomechanical and self-reported function.

### **Intramural Grants (Funded)**

Title: Motor control deficits after ACL reconstruction: underlying cortical adaptations

Source: The University of Connecticut's Institute for Collaboration on Health, Intervention and Policy (InCHIP) and The Connecticut Institute for the Brain and Cognitive Sciences (IBACS) Seed Grants for Collaborative Research in Brain and Cognitive Science and Health

CO-PI: **Lepley AS**, Lepley LK, Harrison SJ

CO-I: Kinsella-Shaw JM, Molfese P

Period: 2017 - 2018

Amount: \$15,000

Description: Investigate the role of visual information on lower limb coordination in ACLR patients by examining brain activation of the visual-motor control areas during an inter-knee coordination task in magnet.

Title: Contributions of Cortical Activation and Neural Excitability on Quadriceps Muscle Function in Patients with ACL Reconstruction

Source: The University of Connecticut's Brain Imaging Research Center (Submitted January 16, 2016)

PI: **Lepley AS**

CO-I: Lepley LK and Kinsella-Shaw JM



Period: 2017

Amount: \$10,000

Description: To determine the contributions of brain activation (motor, somatosensory and visual-motor cortices) and neural excitability (corticospinal and spinal reflexive pathways) on clinical measures of quadriceps function (muscle strength and voluntary activation).

Source: The University of Connecticut's Department of Kinesiology Equipment Fund

PI: **Lepley AS**

Period: 2016

Amount: \$22,000

Description: Collaborative, small equipment grant used for the purchase of an upgrade to the existing transcranial magnetic stimulation equipment housed at the Brain Imaging Research Center.

Title: Effects of Weightlifting and Breathing Technique on Blood Pressure and Heart Rate

Source: Grand Valley State University College of Interdisciplinary Studies Student Summer Scholars Grant

PI: **Lepley AS**

CO-I: Hatzel BH

Period: Summer 2007

Amount: \$3,000

Description: Determine the effect of two different breathing techniques used during weight training on heart rate and blood pressure.

#### **Intramural Grants (Pending)**

Title: Peripheral and Central Neuromuscular Characteristics of Upper Extremity Ligament Injury

Source: The University of Connecticut's Brain Imaging Research Center

CO-PI: Devaney LL, Kinsella-Shaw JM

CO-I: **Lepley AS**, Bissell S, Bernard A, Harrison SJ

Period: 2019-2020

Amount: \$10,000

Description: Examine differences in neural support, dynamical coordination and morphological characteristics of forearm muscle function between participants with ulnar collateral ligament injuries with subsequent surgical reconstructions (UCL-R) and healthy matched controls

#### **Intramural Grants (Not Funded)**

Title: Perceptual-motor organizations in patients after anterior cruciate ligament reconstruction

Source: The Connecticut Institute for Brain and Cognitive Sciences (Submitted October 31, 2016)

CO-PI: Lepley LK, **Lepley AS**, Harrison SJ

CO-I: Kinsella-Shaw JM, Molfese P

Period: 2017

Amount: \$20,000

Description: Investigate differences in structural brain connectivity between participants with ACLR and controls, and to understand the functional differences in cortical activation during perceptual inter-knee coordination tasks.

Title: The Comprehensive and Interdisciplinary Assessment of Clinical Neuroscience

Source: The University of Connecticut's Office of the Provost; Academic Vision Proposal (Submitted March 30, 2016)

PI: Kinsella-Shaw JM and Dixon JA

CO-I: **Lepley AS**, Lepley LK, Chon KH, Molfese P, Rueckl J

Period: 2016-2018

Amount: \$200,000

Description: To acquire supplementary equipment to enhance the clinical and translational research conducted at the University of Connecticut's Brain Imaging Research Center (BIRC)

## MENTORING

### Doctoral Dissertation Committees

1. Davi, Steven. The effect of dynamic quadriceps function on disability and illness after ACLR. Anticipated completion May 2020. Committee Member. (University of Connecticut).
2. Coleman, Kelly. Leadership in Athletic Training Education. Anticipated completion May 2020. Committee Member. (University of Connecticut).
3. Burland, Julie. Learned Helplessness: Barriers and Facilitators to Physical Function following Anterior Cruciate Ligament Reconstruction. Anticipated completion May 2019. Committee Member. (University of Connecticut).
4. Devaney, Laurie. The Relationship Between Spinal Mobility Measures and Shoulder and Elbow Injury in College Baseball Pitchers. August 2019. Committee Member. (University of Connecticut).
5. Smith, Darrin. Does Multiplanar Stretching Reduce Pain, Increase Range of Motion, and Facilitate Return to Performance in Individuals with Acute Muscular Damage? February 2017. **Committee Chair, Dissertation Advisor.** (University of Connecticut; Rocky Mountain University of Health Professions).

### Physical Therapy Doctoral Research Projects

1. Bodner, Hannah; Brunault, Josee; Clement, Nate; Stringer, Michael. Anticipated completion May 2021. **Research Advisor.** (University of Connecticut).
2. Newton, Kathryn; Ng, Allison. Novel Use of Diffusion Tensor Imaging for the Assessment of Quadriceps Muscle Morphology. Anticipated completion May 2020. **Research Advisor.** (University of Connecticut).
3. Ayotte, Caitlyn; Houseworth, Sydney; Keeley, Kaitlin; Murray, Kaitlyn; Tepper, Yarden. Anticipated completion May 2020. Lower Corticospinal Tract Volume in Patients with Anterior Cruciate Ligament Reconstruction. **Research Advisor.** (University of Connecticut).
4. Cascone, Michael; Kinsella, Pat; Scavo, Matthew; Sirois, Kyle; St Louis, Marissa; Velasquez, Michael. Using Novel Techniques of Neural Imaging to Predict Clinical Function in Patients with ACL Reconstruction. Anticipated completion May 2019. **Research Advisor.** (University of Connecticut).
5. Kallas, Ryker. The Effect of the High Intensity CrossFit Workout on Knee Joint Biomechanics. Anticipated completion May 2019. **Research Advisor.** (University of Connecticut).
6. Drake, Jordan; Hayes, Amy; Poole, John; Shenoi, Arjun. Neural Adaptations in the Contralateral Limb following Eccentric Cross-Education Exercise. May 2018. **Research Advisor.** (University of Connecticut).
7. Daigle, Nathan; DiGiacomo, Jessica; Rock, Emily; Rosier, Sam; Sureja, Parth. Gender differences in mechanical properties of the Achilles tendon: Longitudinal response to heavy loading exercise. May 2018. **Research Advisor.** (University of Connecticut).
8. Kranz, Timothy; Perrotti, Lindsey; Stark, Elle; Stella, Michelle; Zoubek, Jerry. Effect of Foot Posture and Posting Orthotics on Performance. May 2018. **Research Advisor.** (University of Connecticut).
9. Galer, John. Change in tendon mechanics immediately following acute exercise. May 2017. **Research Advisor.** (University of Connecticut).
10. Brockamer, Derrick; Ng, Andy; Smolewski, Michael; Smologvoskiy, Vladimir. Effects of Chronic Exercise on Cardiometabolic Profiles: A Systematic Review. Anticipated completion May 2017. **Research Co-Advisor.** (University of Connecticut).

### Master's Thesis Committees

1. Rush, Justin. Effects of Transcranial Direct Current Stimulation on Quadriceps Muscle Function in Individuals with a History of Anterior Cruciate Ligament Reconstruction. Anticipated completion May 2019. **Committee Chair, Thesis Advisor.** (University of Connecticut).
2. Stibb, Josh G. Effects of a Reactive Neuromuscular Training Program on H-reflex in Overhead Throwing Athletes. Anticipated completion May 2019. Committee Member (Concordia University).
3. Schnee, Mason H. Effects of a Reactive Neuromuscular Training Program on Kerlan-Jobe Orthopedic Clinic Shoulder and Elbow Scores in Overhead Throwing Athletes. Anticipated completion May 2019. Committee Member (Concordia University).
4. Davi, Steven. Examining altered neural activation in patients with patellar tendinopathy: a preliminary study. May 2016. Committee Member (University of Connecticut).
5. Frissora, Kimberly. Reliability of Measuring Voluntary Quadriceps Activation Using the Burst Superimposition and Interpolated Twitch Techniques. May 2014. Doctoral Student Mentor (University of Toledo).
6. Lefevre, Caitlin. Neuromuscular Adaptations Following a Real-Time Jump-Landing Feedback Intervention. May 2014. Doctoral Student Co-Mentor (University of Toledo).
7. Clements, Amy. Neuromuscular Dysfunction Following Anterior Cruciate Ligament Reconstruction. May 2013. Doctoral Student Mentor (University of Toledo).
8. Luc, Brittney. Intrarater Reliability of Transcranial Magnetic Stimulation in Lower Extremity Musculature. May 2012. Doctoral Student Mentor (University of Toledo).
9. Strouse, Allison. Relationship Between Landing Error Scoring System, Cortical Excitability and Strength of the Gluteus Medius and Gluteus Maximus in Females. May 2012. Doctoral Student Mentor (University of Toledo).

### Undergraduate Honors Thesis Projects

1. Baker, Jiana. Diffusion Tensor Imaging to Assess Neural and Muscle Structure in Patients with Anterior Cruciate Ligament Reconstruction. Graduation: May 2019. **Honors Thesis Advisor.** (University of Connecticut).
2. Masiello, Elena. Lower extremity biomechanical and electromyographical changes in patients with Anterior Cruciate Ligament Reconstruction. Graduation: May 2019. **Honors Thesis Advisor.** (University of Connecticut).

### Undergraduate Senior Research Projects

1. Randazzo, Ericka. Diffusion Tensor Imaging to assess Corticospinal Track Volume in Patients with Anterior Cruciate Ligament Reconstruction. 2019. **Research Advisor.** (University of Connecticut).
2. Lavine, Jessica. MRI analysis techniques to assess structural tissue changes. 2018. **Research Advisor,** KINS 3099 Independent Study. (University of Connecticut).
3. Stringer, Michael. Morphological Changes in the Quadriceps Muscle in Patients with Anterior Cruciate Ligament Reconstruction. 2017. **Research Advisor,** KINS 3099 Independent Study. (University of Connecticut).
4. Sheil, Tyler. Methodological Considerations for the Hoffmann Reflex: Implications for Patients with Patellar Tendinopathy. 2016. **Research Advisor,** KINS 3099 Independent Study. (University of Connecticut).
5. Tirrell, Kathryn. Neuromuscular Control following Anterior Cruciate Ligament Reconstruction. 2016. **Research Advisor,** KINS 3099 Independent Study. (University of Connecticut).
6. Lefevre, Caitlin. Relationship between Gluteal Corticomotor Excitability, Strength and Landing Biomechanics in Females. Spring 2012. Doctoral Student Mentor. (University of Toledo).
7. Distal, Amanda. Knee Effusion and Quadriceps Corticomotor Excitability. Spring 2012. Doctoral Student Mentor. (University of Toledo).
8. Sheldon, James. The Effect of Artificial Knee Joint Effusion on Voluntary Quadriceps Activation. Spring 2012. Doctoral Student Mentor (University of Toledo).

9. Dahlman, Elizabeth. A Comparison of Functional Movement Screen™ and Star Excursion Balance Test Performance Among Female Collegiate Athletes. Spring 2012. Doctoral Student Mentor. (University of Toledo).
10. Staley, Katelyn. Reliability of Lower Extremity Transcranial Magnetic Stimulation. Spring 2012. Doctoral Student Mentor. (University of Toledo).
11. Cugliari, Brianna. Neuromuscular Consequences of Knee Joint Injury. Spring 2011. Doctoral Student Mentor. (University of Toledo).

#### **Undergraduate Academic Advisor**

1. Served as the **Primary Academic Advisor** for 36 undergraduate students in the department of Kinesiology at the University of Connecticut.

#### **PROFESSIONAL AFFILIATIONS/CERTIFICATIONS**

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1. **National Provider Identifier (NPI):** 1720568686
2. **The Connecticut Institute for the Brain and Cognitive Sciences (IBaCS)**, Affiliate (2016-2019)
3. **Rocky Mountain University of Health Professions**, Adjunct Research Fellow (2016-2019)
4. **University of Connecticut's Institute for Collaboration on Health, Intervention, and Policy (InCHIP)**, Affiliate (2015-2019)
5. **State of Connecticut Licensed Athletic Trainer**, License # 1067 (2015-2019)
6. **Athletic Trainers' Osteoarthritis Consortium (ATOAC)**, Member (2014-Present)
7. **American College of Sports Medicine (ACSM)**, Membership # 696849 (2011-Present)
8. **ACSM New England Chapter**, Member (2015-2019)
9. **State of Minnesota Registered Athletic Trainer**, Registration # 2098 (2008-2010)
10. **NATA BOC Certified Athletic Trainer**, Certification # 050802078 (2008-Present)
11. **National Athletic Trainers' Association (NATA)**, Membership # 1014536 (2007-Present)
12. **American Red Cross CPR/AED Professional Rescuer Certification** (2006-Present)
13. **American Red Cross First Aid Certified** (2005-Present)
14. **Professional Honor Society in Athletic Training: Iota Tau Alpha**. Member (2005-2008)

#### **PROFESSIONAL DEVELOPMENT**

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1. University of Connecticut College of Agriculture Health and Natural Resources. Advancing Your Research and Teaching with Entrepreneurship. Workshop. January 17, 2019.
2. University of Connecticut College of Agriculture Health and Natural Resources. Transforming Lab Research into Products for Public Benefit. Workshop. January 11, 2018.
3. NATA Research & Education Foundation's Research/Faculty Mentor Program. 2016 – 2018. Research/Faculty Mentor: Steve Tucker Ph.D., ATC, University of Central Arkansas
4. University of Kentucky Center for the Enhancement of Learning & Teaching (CELT). Spring 2015. New Faculty Teaching Workshops.

#### **PROFESSIONAL SERVICE ACTIVITIES**

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##### **American College of Sports Medicine**

1. ACSM Biomechanics Interest Group (BIG). Neuromuscular Control Poster Committee. June 2, 2016.
2. Registration Area Volunteer. American College of Sports Medicine Annual Meeting. Indianapolis, Indiana. May 2013.

##### **National Athletic Trainers' Association**

1. Doctoral Poster Awards Judge. National Athletic Trainer's Association Annual Meeting and Clinical Symposium, New Orleans, Louisiana. June 2018.

2. Masters Poster Awards Judge. National Athletic Trainer's Association Annual Meeting and Clinical Symposium, New Orleans, Louisiana. June 2018.
3. Symposium Moderator. Functional Testing for the Upper Extremity. National Athletic Trainers' Association Annual Meeting and Clinical Symposium, New Orleans, Louisiana. June 28 2018.
4. Symposium Moderator. Neurocognitive, Psychosocial, and Visuomotor Aspects of Musculoskeletal Injury Risk. National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Houston, Texas. June 29, 2017
5. Learning Lab Session Moderator. Expecting Immediate Changes in Shoulder Dysfunction: A Treatment-Based Classification Approach. National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Houston, Texas. June 27, 2017.
6. Free Communications Oral Session Moderator. Don't Walk this Way: Gait Changes following Knee Injury. National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Baltimore, Maryland. June 25, 2016.
7. Learning Lab Session Moderator. Establishing a Movement Profile: Science to Practice. National Athletic Trainers' Association Annual Meeting and Clinical Symposium, St. Louis, Missouri. June 24, 2015.
8. Undergraduate Poster Awards Judge. National Athletic Trainer's Association Annual Meeting and Clinical Symposium, Las Vegas, Nevada. June 2013.

#### **Athletic Trainers' Osteoarthritis Consortium (ATOAC)**

1. Session Moderator. Post-ACLR Biomechanical and Neuromuscular Changes. ATOAC Annual Meeting New Orleans, Louisiana. June 26, 2018
2. Finance Task Force Member (2016)
3. Annual Meeting Program Committee Member (2015-Present)

#### **Editorial Boards**

1. Associate Editor, BMC Musculoskeletal Disorders. Section: Rehabilitation, Physical Therapy and Occupational Health. 2017-Present

#### **Manuscript Reviewer**

1. Psychophysiology (2019-Present)
2. Clinical Biomechanics (2019-Present)
3. Journal of Knee Surgery (2019-Present)
4. Physical Therapy in Sport (2019-Present)
5. Gait & Posture (2018-Present)
6. Medicine and Science in Sports and Exercise (2018-Present)
7. Journal of Electromyography and Kinesiology (2018-Present)
8. Journal of Sports Sciences (2018-Present)
9. Scandinavian Journal of Medicine and Science in Sport (2018-Present)
10. PLOS One (2018-Present)
11. Journal of Orthopaedic Research (2017-Present)
12. Restorative Neurology and Neuroscience (2017-Present)
13. American Journal of Sports Medicine (2016-Present)
14. International Journal of Athletic Therapy and Training (2016-Present)
15. BMC Musculoskeletal Disorders (2016-Present)
16. International Journal of Sports Medicine (2016-Present)
17. Journal of Science and Medicine in Sport (2016-Present)
18. Muscle and Nerve (2015-Present)
19. Sports Health (2014-Present)
20. Journal of Sports Science and Medicine (2013-Present)
21. International Journal of Therapy and Rehabilitation (2013-Present)
22. Journal of Athletic Training (2011-Present)
23. Journal of Sport Rehabilitation (2011-Present)
24. Journal of Strength and Conditioning Research (2010-Present)

25. International Journal of Exercise Science (2008-Present)

#### **Abstract Reviewer**

1. Eastern Athletic Trainers' Association (EATA) Annual Meeting. 2016-2018.
2. World Federation of Athletic Training and Therapy (WFATT) World Congress. 2015.

#### **Grant/Research Quality Reviewer**

1. National Athletic Trainers' Research and Education Foundation (NATA REF). *Grant Reviewer*. 2019.
2. University of Nebraska's Collaborative Initiative Seed Grant. *Grant Reviewer*. 2017.
3. The University of Melbourne. *External Thesis Examiner/Reviewer*. 2016
4. South Africa's National Research Foundation (NRF). *Researcher Review Ratings*. 2015.

#### **Clinical/Medical Coverage**

1. Medical Volunteer. New Balance Falmouth Road Race. 2015-2016. Falmouth, Massachusetts.

### **INSTITUTIONAL SERVICE ACTIVITIES**

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#### **University of Connecticut**

1. Department of Kinesiology Leadership Cabinet. 2018-2019.
2. Department of Kinesiology ad hoc Web-Presence Committee. 2018-2019.
3. UConn Admissions Open House – Kinesiology Representative. October 21, 2018.
4. Kinesiology Leadership Team. 2017-2018.
5. University of Connecticut Annual Major Fair, co-sponsored by the Academic Center for Exploratory Students (ACES) and the College of Liberal Arts and Sciences. Wednesday, October 11<sup>th</sup>, 2017.
6. UConn Graduate School. Graduate Faculty Council. 2017-2019.
7. Brain Imaging Research Center and Department of Psychology. Assistant Director Search Committee. Spring 2017.
8. Brain Imaging Research Center. Technical Director Search Committee. Spring 2017.
9. College of Agriculture, Health and Natural Resources. Graduate Research Forum Judge. March 5, 2016.
10. Department of Kinesiology. Exercise Science Undergraduate Program Committee. Fall 2015-Spring 2016.
11. School of Medicine. Musculoskeletal Assessment Demonstrations. Fall 2015.

#### **University of Kentucky**

1. College of Education, Technology and Communications Work Group. 2014-2015.
2. Department of Kinesiology and Health Promotion, Selective Admissions Program Change for Exercise Science Committee. Fall 2014-Spring 2015.

#### **University of Toledo**

1. College of Health Science, Technology Fee Committee. 2013-2014.
2. Athletic Training Education Program, Undergraduate CAATE Reaccreditation Committee. Spring 2012.
3. Athletic Training Education Program, Undergraduate Athletic Training Student Interview Committee. Spring 2012.
4. Approved Clinical Instructor (ACI)/Preceptor, University of Toledo Undergraduate Athletic Training Education Program. 2010-2014.

## HONORS AND AWARDS

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1. International Journal of Sports Medicine. Top Reviewer of the Year. 2016
2. National Athletic Trainers' Association David H. Perrin Doctoral Dissertation Award Nominee, 2015
3. National Athletic Trainers' Association Doctoral Oral Award Winner. June 26, 2014
4. American College of Sports Medicine's Biomechanics Interest Group (BIG) Student Travel Award. May 28, 2014
5. Graduate Student Teacher of the Year, 2013-2014. Awarded by the University of Toledo's Department of Kinesiology
6. Kent and Maxine Falb Scholarship. Awarded by the National Athletic Trainers' Association Research and Education Foundation, sponsored by National Football League Charities. June 27, 2013
7. American College of Sports Medicine's Biomechanics Interest Group (BIG) Student Research Award. May 30, 2013
8. Department of Kinesiology Graduate Student Research Symposium Oral Presentation Award Winner. May 2012. University of Toledo
9. Outstanding Graduate Student Researcher of the Year, 2011-2012. Awarded by the University of Toledo's Department of Kinesiology
10. Outstanding Graduate Student Researcher of the Year, 2010-2011. Awarded by the University of Toledo's Department of Kinesiology
11. Student Summer Scholars Award. Grand Valley State University College of Interdisciplinary Studies. Summer 2007
12. Doug Woods Excellence in Athletic Training Scholarship. Awarded by Grand Valley State University Athletic Training Education Program. April 2007
13. Co-Head Athletic Training Student. Awarded by Grand Valley State University Athletic Training Education Program. 2007-2008 Academic Year

## MEDIA COVERAGE/APPEARANCES

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1. *Naturally@UConn*. Sports Optimization and Rehabilitation Laboratory Feature. April 9, 2019. <https://naturally.uconn.edu/2019/04/09/soar-lab/>
2. *University of Connecticut Brain, Cognition, and Language Digest*. Faculty Feature. 2018 edition. [https://issuu.com/crystal176/docs/brain\\_digest\\_pages\\_final](https://issuu.com/crystal176/docs/brain_digest_pages_final)
3. *Journal of Athletic Training (JAT) Podcasts*. JATCast Episode 001: Quadriceps Function after ACL. September 13, 2018. <https://www.podbean.com/media/share/pb-7xicf-99b252>
4. *UConn Today*. Poitras, Colin. Improving Outcomes for Serious Knee Injuries. June 20, 2018. <https://today.uconn.edu/2018/06/improving-outcomes-serious-knee-injuries/>
5. *UConn Today*. Krieger, Kim. At UConn, Great Minds Discuss Brain Research. May 30, 2018. <https://today.uconn.edu/school-stories/uconn-great-minds-talk-brain-research/#>