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EDUCATION

The University of North Carolina at Chapel Hill, Chapel Hill, NC

Doctor of Philosophy in Human Movement Science, Biomechanics Concentration (2004)

School of Medicine, Department of Allied Health Sciences, Program in Human Movement Science

Dissertation: *The Relationship between Muscle Stiffness and Spinal Stretch Reflex Sensitivity in the Triceps Surae*
(Recipient, National Athletic Trainers' Association *David H. Perrin Dissertation Award*)

The University of Pittsburgh, Pittsburgh, PA

Master of Science in Sports Medicine/Athletic Training (2000)

School of Education, Department of Health, Physical, and Recreation Education

Thesis: *The Relationship between Muscle Stiffness and Joint Stability at the Knee*

The University of North Carolina at Chapel Hill, Chapel Hill, NC

Bachelor of Arts in Exercise and Sport Science, **Highest Honors** (1998)

College of Arts and Sciences, Department of Exercise and Sport Science

CAAHEP Accredited Athletic Training Program

Honors Thesis: *Balance and Joint Stability: The Relative Contributions of Proprioception and Muscular Strength*

EMPLOYMENT HISTORY

The University of North Carolina at Chapel Hill

Associate Professor, Department of Exercise & Sport Science, College of Arts & Sciences (2011 – present)

Assistant Professor, Department of Exercise & Sport Science, College of Arts & Sciences (2006 – 2011)

Assistant Chair, Department of Exercise & Sport Science, College of Arts & Sciences (2015 – present)

Adjunct Associate Professor, Department of Orthopaedics, School of Medicine (2008 – present)

Adjunct Associate Professor, Department of Allied Health Sciences, School of Medicine (2013 – present)

Core Faculty, Doctoral Curriculum in Human Movement Science, School of Medicine (2006 – present)

Core Faculty, Injury Prevention Research Center (2013 – present)

Core Faculty, UNC/NCSU Rehabilitation Engineering Center (2012 – present)

Auburn University

Assistant Professor, Department of Health and Human Performance, College of Education (2004 – 2006)

HONORS & AWARDS

National Athletic Trainers' Association Research & Education Foundation *Freddie H. Fu New Investigator Award* (2009)

University of North Carolina at Chapel Hill Department of Exercise & Sport Science *Award of Excellence in Undergraduate Teaching* (2009)

2nd Runner-up, *Journal of Athletic Training* *Kenneth L. Knight Award for the Outstanding Research Manuscript* (2009)

National Athletic Trainers' Association Research & Education Foundation *David H. Perrin Doctoral Dissertation Award* (2007)

Graduated with Highest Honors from the University of North Carolina at Chapel Hill (1998)

RESEARCH EXPERIENCE

The University of North Carolina at Chapel Hill

Director, Neuromuscular Research Laboratory (2006 – present)

Research Associate, Sports Medicine Research Laboratory (2000 – present)

Auburn University

Director, Musculoskeletal Research Laboratory (2004 – 2006)

SCHOLARSHIP

Refereed Journal Publications (84)

Mills M, Frank B, **Blackburn T**, Cates S, Clark M, Aguilar A, Fava N, Padua D. Effect of restricted hip flexor muscle length on hip extensor muscle activity and lower extremity biomechanics in college-aged female soccer players. *International Journal of Sports Physical Therapy*

International Journal of Sports Physical Therapy

Luc BA, Harkey MH, Arguelles GD, Ryan ED, **Blackburn JT**, Pietrosimone B. Measuring voluntary quadriceps activation: Effect of visual feedback and stimulus delivery. *Journal of Electromyography & Kinesiology*

Pietrosimone B, **Blackburn JT**, Harkey MS, Luc BA, Hackney AC, Padua DA, Driban JB, Spang JT, Jordan JM. Walking speed as a potential indicator of cartilage breakdown following anterior cruciate ligament reconstruction. *Arthritis Care & Research*

Bennell KL, Van Ginckel A, Kean CO, Nelligan R, French SD, Stokes M, Pietrosimone BG, **Blackburn JT**, Batt ME, Hunter DJ, Spiers L, Hinman RS. Patient knowledge and beliefs about knee osteoarthritis after ACL injury and reconstruction. *Arthritis Care & Research*

Pietrosimone B, **Blackburn JT**, Harkey MS, Luc BA, Hackney AC, Padua DA, Driban JB, Spang JT, Jordan JM. Greater mechanical loading during walking is associated with less collagen turnover in individuals with anterior cruciate ligament reconstruction. *American Journal of Sports Medicine*

Pietrosimone B, **Blackburn JT**, Golightly YM, Harkey MS, Luc BA, DeFreese JD, Padua DA, Jordan JM, Bennell KL. Knowledge and perceptions of posttraumatic osteoarthritis following knee injury by certified athletic trainers. *Journal of Athletic Training*, 2015 (In Press).

Pamukoff DN, Bell SE, Ryan ED, **Blackburn JT**. The Myotonometer is not a valid measurement tool for active hamstrings musculotendinous stiffness. *Journal of Sport Rehabilitation*, 2015 (In Press).

Schwane B, Goerger BM, Goto S, **Blackburn JT**, Aguilar AJ, Padua DA. Trunk and lower extremity kinematics in individuals with and without patellofemoral pain. *Journal of Athletic Training*, 2015 (In Press).

Schmidt JD, Guskiewicz KM, Mihalik JP, **Blackburn JT**, Siegmund GP, Marshall SM. Does visual performance influence head impact severity among high school football athletes? *Clinical Journal of Sports Medicine*, 2015 (In Press).

Hibberd EE, Shutt CE, Oyama S, **Blackburn JT**, Myers JB. Physical contributors to glenohumeral internal rotation deficit in high school baseball players. *Journal of Sport & Health Science*, 2015 (In Press).

Begalle RL, Walsh MC, McGrath ML, Bolin MC, **Blackburn JT**, Padua DA. Ankle dorsiflexion displacement during landing is associated with initial contact kinematics but not joint displacement. *Journal of Applied Biomechanics* 31(4): 205-210, 2015.

Pietrosimone BG, **Blackburn JT**, Harkey MS, Luc BA, Pamukoff DN, Hart JM. Clinical strategies for addressing muscle weakness following knee injury. *Clinics in Sports Medicine* 34(2): 285-300, 2015.

Pamukoff DN, **Blackburn JT**. Comparison of plantarflexor musculotendinous stiffness, geometry, and architecture in male runners with and without a history of tibial stress fracture. *Journal of Applied Biomechanics* 31(1): 41-47, 2015.

Pamukoff DN, Ryan ED, **Blackburn JT**. The acute effects of local muscle vibration frequency on peak torque, rate of torque development, and electromyography. *Journal of Electromyography & Kinesiology* 24(6): 888-894, 2015.

Blackburn JT, Pamukoff DN, Sakr M, Vaughan AJ, Berkoff DJ. Whole body and local muscle vibration reduce artificially induced quadriceps arthroscopic inhibition. *Archives of Physical Medicine & Rehabilitation* 95(11): 2021-2028, 2015.

Mauntel TC, Frank BS, Begalle RL, **Blackburn JT**, Padua DA. Kinematic differences between those with and without medial Knee displacement during a single leg squat. *Journal of Applied Biomechanics* 30(6): 707-712, 2014.

Norcross MF, Lewek MD, Padua DA, Shultz SJ, Weinhold PS, **Blackburn JT**. The influences of sex and posture on joint energetics during drop landings. *Scandinavian Journal of Medicine and Science in Sports* 25(2): 166-175, 2015.

Oyama S, Yu BY, Padua DA, **Blackburn JT**, Li L, Myers JB. Improper trunk rotation sequence is associated with increased maximal shoulder external rotation angle and shoulder joint force during baseball pitching in high school baseball pitchers. *American Journal of Sports Medicine* 42(9): 2089-2094, 2014.

Schmidt JD, Guskiewicz KM, **Blackburn JT**, Mihalik JP, Siegmund GP, Marshall SM. The influence of cervical muscle characteristics on head impact biomechanics in football. *American Journal of Sports Medicine* 42(9): 2056-2066, 2014.

Collins A, **Blackburn JT**, Olcott C, Jordan J, Singh B, Yu B, Weinhold P. A kinetic and kinematic analysis of the effect of stochastic resonance electrical stimulation and knee sleeve during gait in osteoarthritis of the knee. *Journal of Applied Biomechanics* 30(1): 104-112, 2014.

Bell DR, **Blackburn JT**, Hackney AC, Marshall SW, Beutler AI, Padua DA. Jump landing biomechanics and knee laxity change across the menstrual cycle in females with ACL reconstruction. *Journal of Athletic Training* 49(2): 154-162, 2014.

Goerger BM, Marshall SW, Beutler AI, **Blackburn JT**, Wilckens JH, Padua DA. Anterior cruciate ligament injury alters pre-injury lower extremity biomechanics in both the injured and uninjured leg: The JUMP-ACL Study. *British Journal of Sports Medicine* 49:188-195, 2015.

Blackburn JT, Norcross MF. The effects of isometric and isotonic strength training on hamstring muscle stiffness. *Journal of Electromyography & Kinesiology* 24(1):98-103, 2014.

Blackburn JT, Pamukoff DN. Geometric and architectural contributions to hamstring musculotendinous stiffness. *Clinical Biomechanics* 29(1):105-110, 2014.

Struminger AH, Lewek MD, Goto S, Hibberd E, **Blackburn JT**. Comparison of gluteal and hamstrings activation during five commonly used plyometric exercises. *Clinical Biomechanics* 28(7):783-9, 2013.

Oyama S, Yu B, Padua DA, **Blackburn JT**, Myers JB. Effects of excessive lateral trunk tilt on pitching biomechanics and performance in high school baseball pitchers. *American Journal of Sports Medicine* 41(10):2430-8, 2013.

Frank B, Bell DR, Norcross MF, **Blackburn JT**, Padua DA. Trunk and hip biomechanics influence anterior cruciate loading mechanisms in physically active participants. *American Journal of Sports Medicine* 41(11):2676-2683, 2013.

Norcross MF, Lewek MD, Padua DA, Shultz SJ, Weinhold PS, **Blackburn JT**. Lower extremity energy absorption and biomechanics during landing. Part I: Sagittal plane analyses. *Journal of Athletic Training* 48(6):748-756, 2013.

- Norcross MF, Lewek MD, Padua DA, Shultz SJ, Weinhold PS, **Blackburn JT**. Lower extremity energy absorption and landing biomechanics. Part II: Frontal plane analyses and inter-planar energy absorption relationships. *Journal of Athletic Training* 48(6):757-63, 2013.
- Mauntel TC, Begalle RL, Cram TR, Frank BS, Hirth CJ, **Blackburn JT**, Padua DA. The effects of lower extremity muscle activation and flexibility on single leg squat performance. *Journal of Strength and Conditioning Research* 27(7):1813-1823, 2013.
- Blackburn JT**, Norcross MF, Cannon LN, Zinder SM. The influence of hamstring stiffness on landing biomechanics linked to anterior cruciate ligament loading. *Journal of Athletic Training* 48(6): 764-772, 2013.
- Cruz A, Bell D, McGrath M, **Blackburn T**, Padua D, Herman D. The effects of three jump landing tasks on kinetic and kinematic measures: implications for ACL injury research. *Research in Sports Medicine* 21(4): 330-342, 2013.
- Teel EF, Register-Mihalik JK, **Blackburn JT**, Guskiewicz KM. Balance and cognitive performance during a dual-task: Implications for use in concussion assessment. *Journal of Science and Medicine in Sport* 16: 190-194, 2013.
- Homan KJ, Norcross MF, Goerger BM, Prentice WE, **Blackburn JT**. The effects of hip strength on gluteal activity and lower extremity kinematics. *Journal of Electromyography & Kinesiology* 23(2): 411-415, 2013.
- Begalle RL, Distefano LJ, **Blackburn JT**, Padua DA. Quadriceps and hamstrings co-activation during common therapeutic exercises. *Journal of Athletic Training* 47(4): 396-405, 2012.
- Walsh M, Boling MC, McGrath M, **Blackburn JT**, Padua DA. The influence of lower extremity muscle activation on knee flexion angle during a jump-landing task. *Journal of Athletic Training* 47(4): 406-413, 2012.
- Collins A, **Blackburn JT**, Olcott C, Jordan J, Singh B, Yu B, Weinhold P. The assessment of postural control with stochastic resonance electrical stimulation and a neoprene knee sleeve in the osteoarthritic knee. *Archives of Physical Medicine & Rehabilitation*, 93(7):1123-1128, 2012.
- Bell DR, **Blackburn JT**, Norcross MF, Ondrak KS, Hudson JD, Hackney AC, Padua DA. Estrogen and muscle stiffness have a negative relationship in females. *Knee Surgery, Sports Traumatology, & Arthroscopy*. 20(2): 361-367, 2012.
- Mihalik JP, Guskiewicz KM, Marshall SW, **Blackburn JT**, Cantu RC, & Greenwald RM. Head impact biomechanics in youth hockey: Comparisons across playing position, event types, and impact locations. *Annals of Biomedical Engineering*, 40(1): 141-149, 2012.
- Collins AT, **Blackburn JT**, Olcott CW, Miles J, Jordan J, Dirschl DR, Weinhold PS. Stochastic resonance electrical stimulation to improve proprioception in knee osteoarthritis. *The Knee* 18(5):317-22, 2011.
- Bell DR, **Blackburn JT**, Ondrak KS, Hackney AC, Hudson JD, Norcross MF, Padua DA. The effects of oral contraceptive use on muscle stiffness across the menstrual cycle. *Clinical Journal of Sports Medicine* 21(6):467-73, 2011.
- Liu S-Y, **Blackburn T**, Padua D, Creighton A, Weinhold P. In vivo ultrasonographic evaluation of patellar tendon Stiffness after anterior cruciate ligament reconstruction with patellar tendon autograft. *Applied Bionics & Biomechanics* 8(3-4): 367-376, 2011.
- Distefano LJ, Padua DA, **Blackburn JT**, Garrett W, Guskiewicz KM, Marshall SW. The effects of an age-specific ACL injury prevention program on lower extremity biomechanics in children. *American Journal of Sports Medicine*, 39(5): 949-957, 2011.
- Kuenze CM, Norcross MF, **Blackburn JT**, Zinder SM. The effect of functional ankle instability and induced fatigue on ankle stiffness. *Athletic Training & Sports Health Care* 3(5): 211-217, 2011.

Mihalik JP, Guskiewicz KM, Marshall SW, Greenwald RM, Blackburn JT, Cantu RC. Does cervical muscle strength in youth ice hockey players affect head impact biomechanics? *Clinical Journal of Sports Medicine* 21(5): 416-421, 2011.

Collins A, **Blackburn JT**, Olcott C, Jordan J, Grewal B, Yu B, Jordan J, Weinhold P. The impact of stochastic resonance electrical stimulation and knee sleeve on impulsive loading and muscle co-contraction during walking gait in the osteoarthritic knee. *Clinical Biomechanics* 26(8): 853-858, 2011.

Blackburn JT, Norcross MF, Padua DA. Influences of hamstring stiffness and strength on anterior knee joint stability. *Clinical Biomechanics* 26(3): 278-283, 2011.

Oyama S, Myers JB, **Blackburn JT**. Changes in infraspinatus cross-sectional area and shoulder range of motion with repetitive eccentric external rotator contraction. *Clinical Biomechanics* 26(2): 130-135, 2011.

Tenan M, **Blackburn JT**, McGrath M, McMurray R. The relationship between blood potassium, blood lactate, and EMG spectral properties during a progressive cycling test. *Journal of Electromyography & Kinesiology* 21(1): 25-32, 2011.

Fong C-M, **Blackburn JT**, Norcross MF, McGrath M, Padua DA. Ankle dorsiflexion and landing biomechanics. *Journal of Athletic Training* 46(1): 5-10, 2011.

Norcross MF, **Blackburn JT**, Goerger BM, Padua DA. The association between lower extremity absorption and risk factors for anterior cruciate ligament injury. *Clinical Biomechanics* 25(11): 1031-1036, 2010.

Mihalik JP, **Blackburn JT**, Cantu RC, Greenwald RM, Marshall SW, Guskiewicz KM. Collision type and player anticipation affect head impact severity among youth ice hockey players. *Pediatrics* 125:e1394-1401, 2010.

Holman GT, **Blackburn JT**, Maghsoodloo S. The effects of restricting space on patient handling. *Professional Safety* 7:38-46, 2010.

East M, **Blackburn JT**, DiStefano LJ, Zinder SM, Norcross MF. Effects fibular repositioning tape on ankle kinematics and muscle activity. *Athletic Training & Sports Health Care* 2(3):113-122, 2010.

Mihalik JP, Greenwald RM, **Blackburn JT**, Cantu RC, Marshall SW, Guskiewicz KM. Effect of infraction type on head impact severity in youth ice hockey. *Medicine & Science in Sports & Exercise* 42(8):1431-1438, 2010.

Distefano LJ, Padua DA, **Blackburn JT**, Garrett W, Guskiewicz KM, Marshall SW. Integrated injury prevention program improves balance and vertical jump height in children. *Journal of Strength & Conditioning Research* 24(2):332-342, 2010.

Norcross MF, **Blackburn JT**, Goerger BM. Reliability and interpretation of single leg stance and maximum voluntary isometric contraction methods of electromyography normalization. *Journal of Electromyography & Kinesiology* 20(3): 420-425, 2010.

Myers JB, Hwang J, Pasquale MR, **Blackburn JT**, Lephart SM. Rotator cuff coactivation ratios in participants with subacromial impingement syndrome. *Journal of Science & Medicine in Sport* 12(6):603-608, 2009.

Norcross MF, Hawkey T, Halverson SD, Padua DA, **Blackburn JT**. Evaluation of the lateral step-down test as a clinical assessment of hip musculature strength. *Athletic Training & Sports Health Care* 1(6):272-278, 2009.

Myers JB, Oyama S, Goerger BM, Rucinski TJ, **Blackburn JT**, Creighton RA. Influence of humeral torsion on interpretation of posterior shoulder tightness measures in overhead athletes. *Clinical Journal of Sports Medicine* 19(5):366-371, 2009.

Bell DR, Myrick M, Padua DA, Guskiewicz KM, **Blackburn JT**, Shultz SJ. The effect of menstrual cycle phase on hamstring extensibility and muscle stiffness. *Journal of Sport Rehabilitation*, 18: 1-12, 2009.

- Blackburn JT**, Bell DR, Norcross MF, Hudson JD, Engstrom LA. Comparison of hamstrings neuromechanical properties between healthy males and females and the influence of musculotendinous stiffness. *Journal of Electromyography & Kinesiology* 19(5):e362-e369, 2009.
- Distefano LJ, **Blackburn JT**, Marshall SW, Padua DA. Gluteal muscle activation during therapeutic exercise. *Journal of Orthopaedic & Sports Physical Therapy* 39(7):532-540, 2009.
- Blackburn JT**, Padua DA. Sagittal-plane trunk position, landing forces, and quadriceps electromyographic activity. *Journal of Athletic Training* 44(2):174-179, 2009.
- Collins AT, **Blackburn JT**, Olcott CW, Dirschl DR, Weinhold PS. The effects of stochastic resonance electrical stimulation and neoprene sleeve on knee proprioception. *Journal of Orthopaedic Surgery & Research* 4(3), 2009.
- Blackburn JT**, Bell DR, Norcross MF, Hudson JD, Kimsey MH. Sex comparison of hamstring structural and material properties. *Clinical Biomechanics* 29(1): 65-70, 2009.
- Bennett DR, **Blackburn JT**, Boling MC, McGrath M, Walusz H, Padua DA. The relationship between anterior tibial shear force during a jump landing task and quadriceps and hamstring strength. *Clinical Biomechanics* 23(9):1165-1171, 2008.
- Fox ZG, Mihalik JP, **Blackburn JT**, Battaglini CL, Guskiewicz KM. Return of postural control to baseline after anaerobic and aerobic exercise protocols. *Journal of Athletic Training* 43(5):455-462, 2008.
- Garner J, **Blackburn JT**, Weimar W, Campbell B. Comparison of electromyographic activity during an eccentrically loaded versus concentrically loaded isometric contractions. *Journal of Electromyography & Kinesiology* 18(3):466-471, 2008.
- Hanson AM, Padua DA, **Blackburn JT**, Prentice WE, Hirth CJ. Muscle activation during side-step cutting maneuvers in male and female soccer athletes. *Journal of Athletic Training* 43(3):133-143, 2008.
- Blackburn JT**, Padua DA. Influence of trunk flexion on hip and knee joint kinematics during a controlled drop landing. *Clinical Biomechanics* 23(3):313-319, 2008.
- Blackburn JT**, Padua DA, Guskiewicz KM. Muscle stiffness and spinal stretch reflex sensitivity in the triceps surae. *Journal of Athletic Training* 43(1):29-36, 2008. **2nd Runner-up, Kenneth L. Knight Award for the Outstanding Research Manuscript.**
- Ross SE, Arnold BL, **Blackburn JT**, Brown CA, Guskiewicz KM. Enhanced balance associated with coordination training with stochastic resonance stimulation in subjects with functional ankle instability: an experimental trial. *Journal of NeuroEngineering & Rehabilitation* 4: 47-54, 2007.
- Michell T, Ross SE, **Blackburn JT**, Hirth CJ, Guskiewicz KM. Functional balance training with or without exercise sandals for subjects with stable or unstable ankles. *Journal of Athletic Training* 41(4): 393-398, 2006.
- Boling MC, Padua DA, **Blackburn JT**, Petschauer MA, Hirth CJ. Hip adduction does not affect VMO EMG amplitude or VMO:VL ratios during a dynamic squat exercise. *Journal of Sport Rehabilitation* 15(3): 195-205, 2006.
- Blackburn JT**, Padua DA, Weinhold PS, Guskiewicz KM. Comparison of triceps surae structural stiffness and material modulus across sex. *Clinical Biomechanics* 21(2): 159-167, 2006.
- Blackburn JT**, Mynark RG, Padua DA, Guskiewicz KM. Influences of experimental factors on spinal stretch reflex latency and amplitude in the human triceps surae. *Journal of Electromyography & Kinesiology* 16(1): 42-50, 2006.
- Blackburn JT**, Padua DA, Riemann BL, Guskiewicz KM. The relationships between active extensibility, and passive and active stiffness of the knee flexors. *Journal of Electromyography & Kinesiology* 14(6): 683-691, 2004.

Blackburn JT, Riemann BL, Padua DA, Guskiewicz KM. Sex comparison of active extensibility, passive, and active stiffness of the knee flexors. *Clinical Biomechanics* 19(1): 36-43, 2004.

DeMorat G, Weinhold P, **Blackburn T**, Chudik S, Garrett W. Aggressive quadriceps loading can induce noncontact anterior cruciate ligament injury. *American Journal of Sports Medicine* 32(2): 477-483, 2004.

Blackburn JT, Hirth CJ, Guskiewicz KM. Exercise sandals increase lower extremity electromyographic activity during functional activities. *Journal of Athletic Training* 38(3): 38-43, 2003.

Padua DA, **Blackburn JT**. Muscle stiffness and biomechanical stability. *Athletic Therapy Today* 8(6): 45-47, 2003.

Blackburn JT, Riemann BL, Myers JB, Lephart SM. Kinematic analysis of the hip and trunk during bilateral stance on firm, foam, and multiaxial support surfaces. *Clinical Biomechanics* 18(7): 655-661, 2003.

Blackburn JT, Guskiewicz KM, Busby MA, Prentice WE. Balance and joint stability: the relative contributions of proprioception and muscular strength. *Journal of Sport Rehabilitation* 9(4): 315-328, 2000.

Manuscripts In Review (13)

Blackburn JT, Pietrosimone BG, Harkey MS, Luc BA, Pamukoff DN. Comparison of three methods for identifying the heelstrike transient during walking gait. *Medical Engineering & Physics*

Mauntel TC, Begalle RL, Cram TR, Frank BS, Hirth CJ, **Blackburn JT**, Padua DA. Kinematic and neuromuscular relationships between lower extremity clinical movement assessments. *Sport Biomechanics*

Blackburn JT, Pietrosimone BG, Harkey MS, Luc BA, Pamukoff DN. Inter-limb differences in impulsive loading following anterior cruciate ligament reconstruction in females: implications for post-traumatic osteoarthritis. *Journal of Biomechanics*

Adelman DL, Pamukoff DN, Goto S, Guskiewicz KM, Ross SE, **Blackburn JT**. Acute effects of whole body vibration on dynamic postural control and muscle activity in individuals with functional ankle instability. *Athletic Training & Sports Health Care*

Begalle RL, Fulton M, McGrath ML, Boling MC, **Blackburn JT**, Padua DA. Sagittal plane ankle motion affects frontal and transverse plane motion at the knee and hip during a jump landing. *Journal of Applied Biomechanics*

Tenan M, **Blackburn JT**, McMurray RG. Exercise-induced glycogen reduction increases muscle activity. *International Journal of Exercise Science*

Pamukoff DN, Lewek MD, **Blackburn JT**. Greater vertical loading rate in obese compared to normal weight young adults. *Clinical Biomechanics*

Blackburn JT, Pietrosimone BG, Harkey MS, Luc BA, Pamukoff DN. Quadriceps function is associated with impulsive loading during gait in individuals with anterior cruciate ligament reconstruction. *American Journal of Sports Medicine*

Harkey MS, Luc BA, Lepley AS, Grindstaff T, Gribble P, **Blackburn JT**, Spang JT, Pietrosimone B. Persistent muscle inhibition after ACL reconstruction: Role of reflex excitability. *Medicine & Science in Sport & Exercise*

Pietrosimone B, Lepley AS, Harkey MS, Luc BA, **Blackburn JT**, Gribble PA, Spang JT, Sohn DH. Prediction of self-reported function following anterior cruciate ligament reconstruction using common clinical measures of quadriceps strength. *American Journal of Sports Medicine*

Pamukoff DN, Pietrosimone B, Lewek MD, Ryan ED, Weinhold PS, Lee DR, **Blackburn JT**. Whole body and local muscle vibration improve quadriceps neuromuscular function in individuals with anterior cruciate ligament reconstruction. *Archive of Physical Medicine & Rehabilitation*

Pamukoff DN, Pietrosimone B, Ryan ED, Weinhold PS, Lewek MD, Lee RD, **Blackburn JT**. Immediate effects of whole body and local muscle vibration on neuromuscular function. *Muscle & Nerve*

Schmidt JD, Guskiewicz KM, Mihalik JP, **Blackburn JT**, Siegmund GP, Marshall SW. The influence of high school American football play features on head impact severity. *Pediatrics*

Manuscripts In Preparation (8)

Blackburn JT, Pietrosimone BG, Harkey MS, Luc BA, Pamukoff DN. Ultrasonic assessment of quadriceps muscle quality does not reflect self-report or muscle function in individuals with ACL reconstruction. *Medicine & Science in Sport & Exercise*

Blackburn JT, Pietrosimone BG, Harkey MS, Luc BA, Pamukoff DN. Swing phase kinematic contributors to the heel strike transient during walking gait. *Clinical Biomechanics*

Goodwin JS, Creighton RA, Pietrosimone BG, Spang JT, **Blackburn JT**. Medial unloader braces and lateral heel wedges do not alter walking gait biomechanics in young healthy adults with neutral knee alignment. *Clinical Biomechanics*

Goerger BM, Marshall SW, Beutler AI, **Blackburn JT**, Wilckens JH, Padua DA. Anterior cruciate ligament injury and reconstructive surgery does not alter pre-injury hip and knee joint coordination: The JUMP-ACL study. *British Journal of Sports Medicine*

Luc BA, Harkey MS, Stanley LE, **Blackburn JT**, Padua DA, Pietrosimone B. Knee flexion excursion associates with kinetics during walking gait in individuals with anterior cruciate ligament reconstruction. *Archives of Physical Medicine and Rehabilitation*

Pamukoff DN, Pietrosimone B, Ryan ED, **Blackburn JT**. Quadriceps function and hamstring co-contraction following anterior cruciate ligament reconstruction.

O'Leary CB, Frank BS, **Blackburn JT**, Hackney AC. The effect of music on tibial accelerations in recreationally active runners.

Waxman J, **Blackburn JT**, Shultz SJ. Effects of segmental fat distribution on hamstring stiffness.

Book Chapters (1)

Lephart SM, Swanik CB, **Blackburn JT**, Huxel K, Fu FH. *Reestablishing Neuromuscular Control in Rehabilitation Techniques in Sports Medicine*, 5th Ed.

Refereed Abstract Publications & Presentations (138)

Blackburn JT, Pietrosimone BG, Padua DA, Harkey MS, Luc BA, Pamukoff DN, Stanley LE, Spang JT, Jordan JM. Quadriceps function is associated with impulsive loading during gait in individuals with anterior cruciate ligament reconstruction. *2016 Osteoarthritis Research International World Congress on Osteoarthritis*, Amsterdam, The Netherlands.

Pamukoff DN, Pietrosimone B, Ryan ED, Weinhold PS, Lewek MD, Lee DR, **Blackburn JT**. Vibratory stimuli improve quadriceps function in individuals with ACL reconstruction: Implications for post-traumatic knee osteoarthritis. *2016 Osteoarthritis Research International World Congress on Osteoarthritis*, Amsterdam, The Netherlands.

Pietrosimone B, Nissman DB, Harkey MS, Creighton A, Kamath G, **Blackburn JT**, Padua DA, Marshall SW, Golightly YM, Nelson AE, Schmitz R, Driban JB, Loeser R, Jordan JM, Spang J. Decreased proteoglycan composition in the articular cartilage of the lateral femoral condyle of the knee associates with decreased quality of life in individuals twelve months following anterior cruciate ligament reconstruction: A preliminary study. *2016 Osteoarthritis Research International World Congress on Osteoarthritis*, Amsterdam, The Netherlands.

Bennell KL, Van Ginckel A, Kean CO, Nelligan RK, French SD, Stokes M, Pietrosimone B, Blackburn JT, Batt M, Hunter DJ, Spiers L, Hinman RS. Patient knowledge and beliefs about knee osteoarthritis after ACL injury and reconstruction. *2016 Osteoarthritis Research International World Congress on Osteoarthritis*, Amsterdam, The Netherlands.

Ward SH, **Blackburn JT**, Padua DA, Stanley LE, Harkey MS, Luc BA, Pietrosimone B. Associations between quadriceps spinal reflex excitability, corticomotor excitability and jump-landing mechanics in individuals with anterior cruciate ligament reconstructions. *2016 Osteoarthritis Research International World Congress on Osteoarthritis*, Amsterdam, The Netherlands.

Pietrosimone B, Schmitz RJ, Nissman D, Harkey MS, **Blackburn JT**, Padua DA, Marshall SW, Healy K, Duncan A, Wallace KG, Driban JB, Kraft RA, Loeser R, Jordan JM, Spang J. Evidence for early posttraumatic osteoarthritis in the lateral femoral condyle at twelve month follow-up exams in patients with anterior cruciate ligament reconstruction. *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

Harkey MS, Luc BA, Stanley LE, Lane A, Hackney AC, Driban JB, Spang J, Padua DA, **Blackburn JT**, Pietrosimone B. Collagen turnover in anterior cruciate ligament reconstructed individuals differs based on knee extension moment inter-limb symmetry during gait. *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

Luc BA, Harkey MS, Stanley LE, **Blackburn JT**, Padua DA, Pietrosimone B. Knee flexion excursion predicts magnitude of loading during walking gait in individuals with an anterior cruciate ligament reconstruction. *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

Fegley J, Harkey MS, Luc BA, Stanley LE, **Blackburn JT**, Padua DA, Pietrosimone B. Quadriceps active motor threshold does not associate with kinetic asymmetries during walking gait in individuals with an anterior cruciate ligament reconstruction. *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

Pamukoff DN, Pietrosimone B, Ryan ED, **Blackburn JT**. Quadriceps function and hamstring co-contraction following anterior cruciate ligament reconstruction. *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

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Blackburn JT, Guskiewicz KM, Marshall SW, McCrea MA. Effect of concussion history on postural stability and neuropsychological recovery following subsequent injury. *2001 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Los Angeles, CA.

Blackburn JT, Riemann BL, Myers JB, Lephart SM. Kinematic analysis of the hip and trunk during bilateral stance on firm, foam, and multiaxial support surfaces. *2000 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Nashville, TN.

Blackburn JT, Guskiewicz KM, Busby MA, Prentice WE. Balance and joint stability: the relative contributions of proprioception and muscular strength. *1999 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Kansas City, MS.

Invited Presentations

Blackburn JT. Can vibration reduce the risk of post-traumatic osteoarthritis following ACL injury? Clinical Evidence Based Practice Lecture, *2016 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Baltimore, MD.

Blackburn JT. Whole body vibration for treatment of orthopaedic injury and disease. Clinical Evidence Based Practice Lecture, *2014 National Athletic Trainers' Association Annual Meeting & Clinical Symposia*, Indianapolis, IN.

Blackburn JT. Neuromechanical contributors to osteoarthritis development and progression. *2014 UNCG Motor Behavior Research Network Lecture Series*, Greensboro, NC.

Blackburn JT. Neuromechanical contributors to osteoarthritis development, progression, and treatment. *2013 North Carolina Cartilage-Arthritis Research Alliance Meeting*, Winston Salem, NC.

Blackburn JT. Effects of whole body and local muscle vibratory stimuli on muscle function following experimental knee effusion. *2012 UNC-CH/NCSU Rehabilitation Engineering Center Symposium*, Durham, NC.

Blackburn JT. Linking the Lab to the Clinic: The Role of Neuromechanics in Prevention and Rehabilitation of Knee Injury and Disease. *2012 UNC-CH Injury Prevention Research Center Seminar Series*, Chapel Hill, NC.

Blackburn JT. Do Exercise Programs to Prevent Lower Extremity Injury Work? *2010 American Medical Society for Sports Medicine Annual Meeting*, Cancun, Mexico.

Blackburn JT. Neuromuscular Influences on Knee Joint Stability. *2010 American Medical Society for Sport Medicine Annual Meeting (NATA-AMSSM Exchange Lecture)*, Cancun, Mexico.

Blackburn JT. The Influence of Musculotendinous Properties on Injury Risk Factors. *2009 National Athletic Trainers' Association Annual Meeting & Clinical Symposia – Distinguished Scholar Presentations*, San Antonio, TX.

Blackburn JT. The Role of Musculotendinous Stiffness in Joint Stability 2008 Virginia Commonwealth University Sports Medicine Doctoral Seminar Series, Richmond, VA.

Hart J, **Blackburn JT.** Point and counter point: Core stability's role in protecting the ACL. 2008 Mid-Atlantic Athletic Trainers' Association Annual Symposium, Virginia Beach, VA.

Prentice WE, **Blackburn JT.** Current concepts in the use of ultrasonic energy. 2008 Mid-Atlantic Athletic Trainers' Association Annual Symposium, Virginia Beach, VA.

Blackburn JT. The Role of Musculotendinous Stiffness in Joint Stability 2007 University of Virginia Sports Medicine Lecture Series, Charlottesville, VA.

Blackburn JT. Anterior Cruciate Ligament Injury: From Research to Reality. **Keynote Address**, 2007 Mid-Atlantic Athletic Trainers' Association Annual Symposium, Virginia Beach, VA.

Blackburn JT, Shultz SJ. The role of the thigh muscles in knee joint stability. 2007 National Athletic Trainers' Association Annual Meeting & Clinical Symposia – Knee Joint Special Interest Group, Anaheim, CA.

Blackburn JT, Earle J. Influences of the trunk and hip on the knee joint. 2006 National Athletic Trainers' Association Annual Meeting & Clinical Symposia – Knee Joint Special Interest Group, Atlanta, GA.

RESEARCH FUNDING SUPPORT

Support In Review

Haddix (PI)

Clinical and functional outcomes following intramedullary fixation in subtrochanteric femur fractures

AO North America, Resident Research Grant

Role: Co-investigator (No salary support)

Funding Requested: \$9,245

Current Support

Blackburn (PI)

Vibratory stimuli: A novel rehabilitation method for preventing post-traumatic knee osteoarthritis

United States Department of Defense, Defense Medical Research and Development Program

Clinical and Rehabilitative Medicine Research Program, Neuromusculoskeletal Injuries Research Award

Role: Principal Investigator (27% effort)

Funding Awarded: \$772,058

Pietrosimone (PI)

Improving disability in knee osteoarthritis by targeting neuromuscular deficits

National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Pilot and Feasibility Clinical Research Grants Program (R21)

Role: Co-Investigator (7% effort)

Funding Awarded: \$418,000

Pietrosimone (PI)

Posttraumatic Osteoarthritis: Establishing a Comprehensive Evaluation Strategy

National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Small Grant Program for New Investigators (R03)

Role: Consultant (No salary support)

Funding Awarded: \$152,000

Completed Support

External

Myers (PI) (7/2009 – 6/2012)

Physical contributors to throwing injuries: A prospective study

National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Small Grant Program for New Investigators (R03)

Role: Co-Investigator

Funding Awarded: \$214,407

Padua (PI) (10/2009 – 11/2011)

Effects of whole body vibration training on strength, power, stability, and muscle activation

National Academy of Sports Medicine

Role: Co-Investigator

Funding Awarded: \$108,822

Blackburn (Project Leader/Co-Investigator) (8/2009 – 7/2011)

Influence of hamstring muscle stiffness on knee joint stability

National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

Component of UNC-Chapel Hill Injury Prevention Research Center Grant (PI, Runyan: 8/2009 – 7/2014)

Project Funding Awarded: \$149,503

Total Funding Awarded: \$4,527,500

Weinhold (PI) (7/2008 – 6/2010)

Electrical stimulation to improve proprioception in knee osteoarthritis

Arthritis Foundation (Carolinas Chapter), Innovative Research Grant Program

Role: Co-Investigator

Funding Awarded: \$191,696

Segal (PI) (1/2007 – 1/2008)

Interdisciplinary fundamental studies of mechanisms underlying human movement

North Carolina Biotechnology Center Institutional Development Grant Program

Role: Co-Investigator

Funding Awarded: \$249,500

Blackburn (PI) (7/2002 – 10/2003)

The relationship between muscle stiffness and muscle spindle sensitivity in the triceps surae

National Athletic Trainers' Association Research and Education Foundation Doctoral Research Grant Program

Role: Principal Investigator

Funding Awarded: \$2,350

Internal

Blackburn/Harrysson (Co-PI) (7/2012 – 6/2013)

The effects of local and whole body vibration on arthrogenic quadriceps inhibition

UNC-NCSU Rehabilitation Engineering Center Seed Grant Program

Role: Co-Principal Investigator

Funding Requested: \$24,920

Blackburn (PI) (8/2010 – 7/2011)

The effects of increasing hamstring stiffness on anterior tibial translation: Implications for anterior cruciate ligament injury

UNC-Chapel Hill Injury Prevention Research Center Faculty Small Grant Program

Role: Principal Investigator

Funding Awarded: \$15,522

Blackburn (PI) (8/2008 – 7/2009)
Longitudinal assessment of musculoskeletal injury risk factors
UNC-Chapel Hill College of Arts and Sciences – Grants for Interdisciplinary Initiatives
Role: Co-Principal Investigator
Funding Awarded: \$10,000

Blackburn (PI) (1/2007 – 12/2007)
Sex comparison of hamstring musculotendinous stiffness and neural and mechanical contributions to knee joint stability
UNC-Chapel Hill Award Program for Junior Faculty Development
Role: Principal Investigator
Funding Awarded: \$7,500

Blackburn (PI) (10/2005 – 5/2006)
The effects of trunk kinematics on knee kinematics and kinetics, and lower extremity EMG during controlled drop landing
Auburn University College of Education Grant-In-Aid Program
Role: Principal Investigator
Funding Awarded: \$800

Support Not Funded

Blackburn (PI)
Vibratory stimuli: A novel treatment for knee osteoarthritis
National Science Foundation
General & Age Related Disabilities Engineering (GARDE) Program
Role: Principal investigator

Yu (PI) (2014)
Validity and reliability of a knee angle in-field measurement device
National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Pilot and Feasibility Clinical Research Grants (R21)
Role: Co-Investigator

Pietrosimone (PI) (2014)
The influence of joint metabolism, joint inflammation, and biomechanics on cartilage health following ACL injury
Arthritis Foundation Innovative Research Grant Program
Role: Co- Investigator

Blackburn (PI) (2013)
Effects of local and whole body vibration on quadriceps function and gait biomechanics in individuals with knee osteoarthritis
United States Department of Defense Congressionally Directed Medical Research Programs
Peer Reviewed Medical Research Program Investigator-Initiated Research Award
Role: Principal Investigator

Lewek (PI) (2013)
Maximizing spinal circuits: 'Forced' arm/leg pedaling as a gait training adjunct post-stroke
American Heart Association
Role: Co-Investigator

Pietrosimone (PI) (2013)
Post traumatic knee osteoarthritis: Linking biochemical and biomechanical pathogenesis
United States Department of Defense Congressionally Directed Medical Research Programs
Peer Reviewed Medical Research Program Investigator-Initiated Research Award
Role: Co-Investigator

Spang (PI) (2013)
Functional and biomechanical comparison of double-bundle and single-bundle hamstring ACL reconstruction
International Society of Arthroscopy, Knee Surgery, and Orthopaedic Sports Medicine (ISAKOS)
Multi-Center Research Grant
Role: Co-Investigator

Myers (PI) (2013)
Tracking of upper extremity adaptation and injury in adolescent baseball players
National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Research Project Grants in Arthritis and Musculoskeletal and Skin Diseases (R01)
Role: Co-Investigator

Blackburn (PI) (2012)
Effects of local and whole body vibration on characteristics of knee osteoarthritis patients
Arthritis Foundation
Innovative Research Grant Program
Role: Principal Investigator

Blackburn (PI) (2011)
The effects of increasing hamstring stiffness on anterior cruciate ligament loading mechanisms
National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
Pilot and Feasibility Clinical Research Grants in Arthritis and Musculoskeletal and Skin Diseases (R21)
Role: Principal Investigator

Blackburn (PI) (2011)
Enhancement of hamstring stiffness to improve knee joint stability
National Athletic Trainers' Association Research and Education Foundation General Grant Program
Role: Principal Investigator

Blackburn (PI) (2010)
Enhancement of knee joint stability via heightened hamstring stiffness
National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases (R01)
Role: Principal Investigator

Blackburn (PI) (2008)
Neuromuscular and biomechanical derivations of female quadriceps dominance
National Athletic Trainers' Association Research and Education Foundation General Grant Program
Role: Principal Investigator

Blackburn (PI) (2008)
Influence of hamstring musculotendinous stiffness on neuromuscular and mechanical contributions to knee joint stability
National Institutes of Health, National Institute of Arthritis and Musculoskeletal and Skin Diseases
Small Grant Program for New Investigators (R03)
Role: Principal Investigator

Weinhold & Olcott (Co-PIs) (2008)
Stochastic resonance electrical stimulation to improve proprioception in patients with knee osteoarthritis
Orthopedic Research and Education Foundation
Role: Co-Investigator

Myers (PI) (2008)

Contributors of dysfunction in rotator cuff tears: A comparison between symptomatic and asymptomatic tears

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Grants for Injury Control Research Centers - UNC-CH Injury Prevention Research Center

Role: Co-Investigator

Blackburn (PI) (2007)

Effects of surgical and non-surgical interventions on paraspinal muscle atrophy and clinical outcomes in patients with chronic low back pain

Medtronic – Sofamor Danek, Inc.

Role: Co-Principal Investigator

Miller (PI) (2007)

Comparative Biomechanics and Biological Fluid Mechanics

National Science Foundation, Integrative Graduate Education and Research Traineeship Program (IGERT)

Role: Co-Investigator

Weinhold (PI) (2006)

Electrical stimulation to improve proprioception in the osteoarthritic knee

Stryker Corporation

Role: Co-Investigator

Blackburn (PI) (2005)

The effects of trunk kinematics on knee kinematics and kinetics, and lower extremity EMG (2005)

Centers for Disease Control and Prevention, Dept. of Health and Human Services

New Investigator Training Awards for Unintentional Injury, Violence Related Injury, Injury Biomechanics, and Acute Injury Care Research

Role: Principal Investigator

Blackburn (PI) (2005)

Influences of trunk flexion on knee joint kinetics and kinematics, and lower extremity EMG (2005)

National Athletic Trainers' Association Research and Education Foundation General Grant Program

Role: Principal Investigator

Internal

Blackburn (PI) (2013)

UNC-Chapel Hill Technology Development Grant Program

A novel rehabilitation device for treating knee osteoarthritis

Role: Principal Investigator

Blackburn (PI) (2013)

Effects of local and whole body vibration on characteristics of knee osteoarthritis patients

Arts and Sciences Grants for Interdisciplinary Initiatives

Role: Principal Investigator

Blackburn (PI) (2012)

The effects of whole body vibration on arthrogenic muscle inhibition

UNC-Chapel Hill University Research Council Small Grant Program

Role: Principal Investigator

Battaglini (PI) (2009)

Examining under-treated symptoms in post-treated breast cancer patients

UNC-Chapel Hill Lineberger Comprehensive Cancer Center, Clinical/Translational Research Awards

Role: Co-Investigator

Blackburn (PI) (2009)
Enhancement of knee joint stability via heightened hamstring stiffness
UNC-Chapel Hill University Research Council Small Grant Program
Role: Principal Investigator

Blackburn (PI) (2006)
The influence of hamstring musculotendinous stiffness on neural and mechanical contributions to knee joint stability
UNC-Chapel Hill University Research Council Small Grant Program
Role: Principal Investigator

Blackburn (PI) (2005)
Dependency of knee kinematics, knee kinetics, and lower extremity EMG on trunk position during running and cutting tasks
Auburn University Biogrant Program
Role: Principal Investigator

CURRICULUM EXPERIENCE

The University of North Carolina at Chapel Hill

Teaching Experience

Undergraduate Courses

Neuromuscular Control and Learning
Research in Exercise and Sport Science
Human Anatomy
Biomechanics of Sport and Exercise

Graduate Courses

Muscle Mechanics and Electromyographic Kinesiology
Laboratory Techniques in Sports Medicine
Research in Sports Medicine
Applied Statistics Seminar

Research Mentorship Experience

Doctoral Dissertation Committees (21)

Luc BA, **Blackburn JT**, Pietrosimone B. *Program in Human Movement Science*, 2017.

Harkey MS, **Blackburn JT**, Pietrosimone B. *Program in Human Movement Science*, 2017.

Waxman J, **Blackburn JT**, Henson R, Rhea C, Schmitz R, Shultz SJ. The influence of hamstring musculo-articular stiffness on biomechanical factors indicative of anterior cruciate ligament loading. *UNC-Greensboro Department of Kinesiology*, 2017.

Frank BS, Battaglini CL, **Blackburn JT**, Hackney AC, Marshall SW, Padua DA. The influence of baseline movement profile on the female athlete's musculoskeletal system tissue damage, systemic stress, and biomechanical responses to high-intensity exercise exposure. *Program in Human Movement Science*, 2016.

Lynall RC, **Blackburn JT**, Guskiewicz KM, Marshall SW, Plummer P, Mihalik JP. Functional movement deficits following sport-related concussion. *Program in Human Movement Science*, 2016.

Pamukoff DN, Lewek M, Pietrosimone BG, Weinhold PS, **Blackburn JT (advisor)**. The effect of vibratory stimuli on measures of neuromuscular function. *Program in Human Movement Science*, 2015.
Recipient of the 2016 Graduate Education Advancement Board Impact Award

- Goto S, **Blackburn JT**, Padua DA. Effects of integrated exercise program on lower extremity biomechanics in females with medial knee displacement. *Program in Human Movement Science*, 2015.
- Begalle R, Lewek M, **Blackburn JT**, Padua DA. The effects of anterior cruciate ligament injury and reconstruction on lower extremity landing biomechanics and symmetry in female adolescent athletes. *Program in Human Movement Science*, 2014.
- Wutzke C, **Blackburn JT**, Lewek M. The influence of lower extremity sensory impairment on inter-limb asymmetry and balance stroke patients. *Program in Human Movement Science*, 2014.
- Schmidt JD, **Blackburn JT**, Marshall SM, Mihalik JP, Siegmund GP, Guskiewicz KM. The role of the cervical musculature, visual function, and anticipation in mitigating head impact severity in football. *Program in Human Movement Science*, 2013.
- Goerger BM, Beutler AI, **Blackburn JT**, Boden B, Marshall SM, Padua DA. The effect of anterior cruciate ligament injury and reconstruction on lower extremity biomechanics, coordination, and variability. *Program in Human Movement Science*, 2012.
- Oyama S, **Blackburn JT**, Li L, Padua DA, Yu BY, Myers JB. Effects of trunk movement on pitching biomechanics and performance in high school baseball pitchers. *Program in Human Movement Science*, 2012.
- Norcross MF, Lewek M, Padua DA, Shultz SJ, Weinhold PS, **Blackburn JT (advisor)**. Energetic analysis of landing: A novel approach to understanding anterior cruciate ligament injuries. *Program in Human Movement Science*, 2011.
- Makihara Y, **Blackburn JT**, Lewek M, Mercer V, Segal R. Effects of soleus H-reflex conditioning on locomotion in humans. *Program in Human Movement Science*, 2011.
- Collins A, **Blackburn JT**, Jordan J, Tomerdahl M, Yu BY, Weinhold PS. Stochastic resonance electrical stimulation to improve proprioception and walking biomechanics in knee osteoarthritis. *Department of Biomedical Engineering*, 2010.
- Bell DR, Padua DA, Hackney AC, **Blackburn JT**, Marshall SW, Beutler AI. Hamstring neuromuscular properties and biomechanics in an ACL injured population. *Program in Human Movement Science*, 2010.
- Wendt J, Adalsteinsson D, Bishop G, **Blackburn JT**, Pitz G, Whitton M, Brooks F. Improving stationary-user locomotion interfaces via simulation-driven locomotion feedback. *Department of Computer Science*, 2010.
- McGrath ML, Padua DA, **Blackburn JT**, Lewek M, Stergiou N. Alterations in lower extremity coordination and variability due to muscular fatigue and verbal feedback. *Program in Human Movement Science*, 2009.
- Distefano LJ, Padua DA, **Blackburn JT**, Garret W, Guskiewicz KM, Marshall SW. The effects of a pediatric ACL injury prevention program. *Program in Human Movement Science*, 2009.
- Mihalik J, Guskiewicz KM, Marshall S, **Blackburn JT**, Greewald RM. The study of head impact biomechanics in adolescent and youth minor ice hockey players. *Program in Human Movement Science*, 2009.
- Liu HY, Weinhold PS, **Blackburn JT**, Gross MT, Padua DA, Yu BY. In vivo evaluation of the stiffness of the patellar tendon after knee injury. *Program in Human Movement Science*, 2008.

Master's Thesis Committees (54)

- Mackrell C, Goodwin JS, Mihalik JP, **Blackburn JT (advisor)**. *Department of Exercise & Sport Science*, 2017.
- Biese K, Stanley L, **Blackburn JT**, Padua DA. *Department of Exercise & Sport Science*, 2017.
- Hunt C, Harkey MS, **Blackburn JT**, Pietrosimone B. *Department of Exercise & Sport Science*, 2017.
- Dewig D, Pietrosimone BG, Goodwin JS, **Blackburn JT (advisor)**. Relationships between eccentric hamstring strength, hamstring stiffness, and landing biomechanics. *Department of Exercise & Sport Science*, 2016.
- Langton M, **Blackburn JT**, Campbell K, Petschauer MA. Comparison of dorsiflexion range of motion, triceps surae stiffness, and posterior talar glide between collegiate gymnasts and matched female athletes. *Department of Exercise & Sport Science*, 2016.
- Shipp M, Pamukoff DN, Prentice WE, **Blackburn JT (advisor)**. Effects of lower extremity resistance exercise on shoulder injury biomechanics associated with the tennis serve. *Department of Exercise & Sport Science*, 2016.
- Jungclas G, Pamukoff DN, Pietrosimone B, **Blackburn JT (advisor)**. The relationship between voluntary quadriceps activation and gait biomechanics in patients with anterior cruciate ligament reconstruction. *Department of Exercise & Sport Science*, 2015.
- Fegley J, Harkey M, **Blackburn JT**, Pietrosimone B. Association between active motor threshold, EMG onset times, and GRF rate of loading during gait in patients with anterior cruciate ligament reconstruction. *Department of Exercise & Sport Science*, 2015.
- O'Leary C, **Blackburn JT**, Frank BS, Hackney AC. The effect of music on ground reaction forces in recreationally active runners. *Department of Exercise & Sport Science*, 2014.
- Hawkinson L, Begalle B, **Blackburn JT**, Goto S, Padua DA. The effect of instructions on lower extremity biomechanics and performance measures. *Department of Exercise & Sport Science*, 2014.
- Jones S, **Blackburn JT**, Mauntel T, Pamukoff DN, Myers JM. The effects of tactile and verbal cuing on scapular muscle activation during common rehabilitation exercises. *Department of Exercise & Sport Science*, 2014.
- Bonney J, Aguilar A, **Blackburn JT**, Frank BS, Goto S, Padua DA. Influence of core neuromuscular control on pelvic position during a dynamic overhead squat. *Department of Exercise & Sport Science*, 2014.
- Young P, **Blackburn JT**, Hibberd EE, Mauntel T, Myers JB. Muscle stiffness of the superficial shoulder musculature and its relationship to subacromial space width. *Department of Exercise & Sport Science*, 2014.
- Adelman DL, Pamukoff DN, Goto S, Guskiewicz KM, Ross SE, **Blackburn JT (advisor)**. The acute effects of whole body vibration on dynamic balance and muscle activity in subjects with functional ankle instability. *Department of Exercise & Sport Science*, 2013.
- Bell SE, Pamukoff DN, Hibberd EE, **Blackburn JT (advisor)**. Reliability and validity of the Myotonometer as a measure of hamstring musculotendinous stiffness. *Department of Exercise & Sport Science*, 2013.

- Little W, Frank BF, Padua DA, Schmidt JD, **Blackburn JT (advisor)**. Comparison of lower extremity biomechanics and muscle activity between pronators and non-pronators. *Department of Exercise & Sport Science*, 2013.
- Mills M, Frank B, Goto S, **Blackburn JT**, Padua DA. Effect of restricted hip flexors on biomechanical risk factors for ACL injury. *Department of Exercise & Sport Science*, 2013.
- Bartlett M, Battaglini CL, **Blackburn JT**, Hackney AC. Effect of severe-heavy work-work exercise transitions on oxygen uptake kinetics in male athletes. *Department of Exercise & Sport Science*, 2012.
- Koltun K, **Blackburn JT**, Ryan ED, Hackney AC. The effect of estradiol on IL-6 concentration in response to an acute bout of exercise. *Department of Exercise & Sport Science*, 2012.
- Shatten C, Battaglini CL, **Blackburn JT**, Hackney AC, Mihalik JR. Postural stability in women with breast cancer: Comparison between sophisticated and clinical measures of postural control. *Department of Exercise & Sport Science*, 2012.
- Gibb E, Begalle B, Frank B, Petschauer M, **Blackburn JT (advisor)**. The Immediate Effects of Graston Technique and Self Myofascial Release on range of motion and local neuromuscular activity in the triceps surae group. *Department of Exercise & Sport Science*, 2012.
- Struminger A, Goto S, Hibberd E, Lewek M, **Blackburn JT (advisor)**. A comparison of gluteus medius, gluteus maximus, and hamstrings activation during five commonly used plyometric exercises. *Department of Exercise & Sport Science*, 2012.
- Cram T, Begalle B, Norcross MF, Halverson D, Padua DA, **Blackburn JT (advisor)**. The relationship between hip muscular stiffness and biomechanical risk factors associated with ACL injury. *Department of Exercise & Sport Science*, 2011.
- Homan K, Goerger BM, Norcross MF, Prentice WE, **Blackburn JT (advisor)**. The effects of hip muscle strength and electromyographic activity on landing biomechanics. *Department of Exercise & Sport Science*, 2011.
- Schwane B, Agular A, Goerger BM, Goto S, **Blackburn JT**, Padua DA. Trunk and lower extremity kinematics in individuals with and without patellofemoral pain syndrome. *Department of Exercise & Sport Science*, 2011.
- Mauntel T, Begalle B, Frank B, Hirth C, **Blackburn JT**, Padua DA. Group comparison of lower extremity muscle activation and flexibility and their effects on single leg squat performance. *Department of Exercise & Sport Science*, 2011.
- Young SJ, **Blackburn JT**, Hackney A. The influence of neuromechanical factors of muscle performance. *Department of Exercise & Sport Science*, 2011.
- Pearson C, Aguilar A, Battaglini CL, **Blackburn JT**, Hackney AC. Relationship between cortisol and non-invasive physiological variables with exercise. *Department of Exercise & Sport Science*, 2011.
- Peck MJ, **Blackburn JT (advisor)**, Zinder SM, Norcross MF. Balance training performed after exertion versus before exertion. *Department of Exercise & Sport Science*, 2010.
- Frank B, Padua DA, **Blackburn JT**, Bell DR, Norcross MF. The relationship between dynamic trunk stability and lower extremity and trunk biomechanics during an unanticipated cutting task. *Department of Exercise & Sport Science*, 2010.

- Fong C-M, **Blackburn JT (advisor)**, Padua DA, Norcross M, McGrath M. The influence of ankle plantarflexor stiffness and extensibility on lower extremity biomechanics during a jump landing. *Department of Exercise & Sport Science*, 2009.
- Kuenze C, Zinder SM, **Blackburn JT**, Norcross MF, Harrington S. The effects of functional ankle instability and induced fatigue on ankle stiffness. *Department of Exercise & Sport Science*, 2009.
- Stephenson L, Padua DA, **Blackburn JT**, DiStefano L, Bell D. The effects of augmented feedback on landing mechanics of pediatric female soccer players. *Department of Exercise & Sport Science*, 2009.
- Tenan M, McMurray R, **Blackburn JT**, McGrath M, Quint S. The relationship between blood potassium, blood lactate, and EMG signals related to local muscle fatigue in a progressive cycling test. *Department of Exercise & Sport Science*, 2009.
- Fanney B, Osborne B, Southall R, **Blackburn JT**. The effect of one-and-done basketball players on college basketball programs' winning percentages, NCAA tournament games played, attendance, and merchandise sales. *Department of Exercise & Sport Science*, 2009.
- Hudson J, **Blackburn JT (advisor)**, Padua DA, Bell D. The effect of oral contraceptive use on skeletal muscle properties across the menstrual cycle. *Department of Exercise & Sport Science*, 2008.
- East M, **Blackburn JT (advisor)**, Zinder S, DiStefano L, Norcross M. The acute effects of fibular repositioning tape. *Department of Exercise & Sport Science*, 2008. **Recipient, EXSS Outstanding Graduate Student Research Award**
- Walsh M, Padua DA, **Blackburn JT**, Boling MC, McGrath M, Goerger B. The relationship between lower extremity muscle activity and anterior tibial shear force. *Department of Exercise & Sport Science*, 2008.
- Howell JA, Shields E, Osborne B, **Blackburn JT**. Collegiate baseball bat comparison: -5 weight vs. -3 weight. *Department of Exercise & Sport Science*, 2008.
- Limmer M, Shields E, **Blackburn JT**, Hedgpeth E. Comparison of spectator demographic descriptors and attendance motivators at University of North Carolina sporting events. *Department of Exercise & Sport Science*, 2008.
- Collins A, Weinhold PS, **Blackburn JT**, Jordan J. Electrical stimulation to improve proprioception in the osteoarthritic knee. *Department of Biomedical Engineering*, 2007.
- Bennett D, **Blackburn JT (advisor)**, Padua DA, Boling MC, McGrath M. The relationship between quadriceps and hamstring strength and anterior tibio-femoral shear force during a jump-landing task. *Department of Exercise & Sport Science*, 2007.
- Fox Z, Guskiewicz KG, **Blackburn JT**, Battaglini C, Mihalik J. The effects of aerobic and anaerobic exertion protocols on postural control. *Department of Exercise & Sport Science*, 2007.
- Walusz H, Padua DA, **Blackburn JT**, Boling MC, McGrath M, Hirth CJ. The relationship between lower extremity kinematics and anterior tibio-femoral shear force during a jump-landing task. *Department of Exercise & Sport Science*, 2007.
- Gorman T, Osborne B, **Blackburn JT**, Gallo L. An Examination of the NCAA Men's Soccer Championship. *Department of Exercise & Sport Science*, 2007.
- Pate M, Padua DA, Guskiewicz KM, **Blackburn JT**, Schultz SM. Effects of menstrual cycle phase on active muscle stiffness. *Department of Exercise & Sport Science*, 2007.

DiStefano M, Padua DA, Prentice WE, Karas S, **Blackburn JT**. Comparison of hip kinematics across gender in Division I collegiate soccer athletes during a cutting maneuver. *Department of Exercise & Sport Science*, 2004.

Van Doren A, Padua DA, Prentice WE, Hirth CJ, **Blackburn JT**. Muscle activation around the hip and knee during a sidestep cutting maneuver in male and female soccer players. *Department of Exercise & Sport Science*, 2004.

Halverson SD, Prentice WE, Padua DA, **Blackburn JT**, Hirth CJ. The relationship between characteristics of hip musculature and femoral internal rotation during dynamic movements. *Department of Exercise & Sport Science*, 2004.

Pike T, Shields EW, Padua PA, **Blackburn JT**, Mays S. Effects of fatigue on muscle activation of select trunk musculature in intermediate golfers. *Department of Exercise & Sport Science*, 2003.

Gardiner L, Mynark RG, Guskiewicz KM, Prentice WE, **Blackburn JT**. Fatigue-related compensation in core musculature during a lacrosse shot. *Department of Exercise & Sport Science*, 2003.

Fava N, Padua DA, **Blackburn JT**, Gross MT, Prentice WE. The effect of subtalar joint pronation on gluteal activity and function during running gait. *Department of Exercise & Sport Science*, 2003.

Michell T, Guskiewicz KM, Prentice WE, Petschauer MA, Hirth CJ, **Blackburn JT**. Traditional ankle rehabilitation vs. exercise sandal ankle rehabilitation in functionally stable and unstable ankles. *Department of Exercise & Sport Science*, 2002.

Raba S, Mynark RM, Guskiewicz KM, **Blackburn JT**. Effect of DOMS in the ankle dorsiflexors and plantarflexors on postural sway. *Department of Exercise & Sport Science*, 2002.

Undergraduate Honors Thesis Committees (20)

Durrington I, Harkey M, Pietrosimone BG, **Blackburn JT (advisor)**. Evaluation of novel techniques for assessing cartilage health via ultrasound imaging. *Department of Exercise & Sport Science*, 2016. *Awarded UNC Summer Undergraduate Research Fellowship.*

Allen A, Goodwin JS, Pietrosimone BG, **Blackburn JT (advisor)**. Effects of whole body vibration on gait biomechanics in following anterior cruciate ligament injury. *Department of Exercise & Sport Science*, 2016

Drews A, **Blackburn JT**, Harkey MS, Pietrosimone BG. Clinical Implications of Walking Speed for Individuals with an Anterior Cruciate Ligament Reconstruction. *Department of Exercise & Sport Science*, 2016

Lee D, Pamukoff DN, Ryan ED, **Blackburn JT (advisor)**. Comparison of the effects of whole body and local muscle vibration on quadriceps strength and rate of force production. *Department of Exercise & Sport Science*, 2015.

Bhat S, Goodwin JS, Pietrosimone BG, **Blackburn JT (advisor)**. The effects of a medial unloader brace and a lateral heel wedge orthotics on gait biomechanics. *Department of Exercise & Sport Science*, 2015.

Kim R, **Blackburn JT**, Gaynor B, Harkey MS, Pietrosimone BG. Development of a conversion equation for active motor threshold for the Magstim Bistim transcranial magnetic stimulation unit. *Department of Exercise & Sport Science*, 2015.

Mosher M, Michell T, Petschauer MA, **Blackburn JT (advisor)**. The effect of a novel arching taping method on pronation kinematics during dynamic tasks. *Department of Exercise & Sport Science*, 2013.

- Sutton K, Michell T, Petschauer MA, **Blackburn JT (advisor)**. The effect of a novel arching taping method on lower extremity EMG during dynamic tasks. *Department of Exercise & Sport Science*, 2013.
- Shutt C, Hibberd E, **Blackburn JT**, Myers JM. Physical contributors to glenohumeral internal rotation deficit in high school baseball players. *Department of Exercise & Sport Science*, 2012.
- Pratson L, **Blackburn JT**, Mihalik JP, Schmidt JD, Guskiewicz KM. An In-Vivo Biomechanical Study of Collegiate Football Players: The Inter-Instrument Reliability of the X2Impact Mouthpiece and the Head Impact Telemetry System *Department of Exercise & Sport Science*, 2012.
- Cannon L, Norcross MF, Zinder SM, **Blackburn JT (advisor)**. The influence of hamstring stiffness on landing biomechanics. *Department of Exercise & Sport Science*, 2011.
- Cawthorn K, Goerger BM, Frank B, **Blackburn JT**, Padua DA. The relationships between hip muscle strength and flexibility and knee valgus moment. *Department of Exercise & Sport Science*, 2011.
- Teel E, **Blackburn JT**, Guskiewicz KM. Effects of a novel dual-task model on postural stability and neurocognitive function. *Department of Exercise & Sport Science*, 2011.
- Gonzalez J, Ondrak KS, Falvo R, **Blackburn JT**. The relative influences of mental and neuromuscular fatigue on force production. *Department of Exercise & Sport Science*, 2010.
- Kimsey M, **Blackburn JT (advisor)**, Zinder S, Bell D. Sex comparison of hamstring stiffness and elastic modulus. *Department of Exercise & Sport Science*, 2008. **Awarded Highest Honors**
- Engstrom L, **Blackburn JT (advisor)**, Zinder S, Bell D. Sex comparison of hamstring electromechanical delay. *Department of Exercise & Sport Science*, 2008.
- LaGrow E, Petschauer MA, **Blackburn JT**. Survey of neurological symptoms in commercial divers. *Department of Exercise & Sport Science*, 2008.
- Cruz A, Padua DA, **Blackburn JT**, Bell DR, McGrath ML. The effects of three jump landing tasks on kinetics and kinematic measures: ACL injury implications. *Department of Exercise & Sport Science*, 2007.
- Boling MC, Padua DA, Hirth CJ, Petschauer MA, **Blackburn JT**. The effects of hip adductor activity on EMG of the vastus medialis. *Department of Exercise & Sport Science*, 2002.
- Styers AJ, Petschauer MA, Hirth CJ, **Blackburn JT**. An EMG assessment of the lower abdominals and gluteal muscles during core stabilization exercises. *Department of Exercise & Sport Science*, 2001.

Auburn University

Teaching Experience

Undergraduate Courses

Applied Human Anatomy

Biomechanical Analysis of Human Movement

Graduate Courses

Neuromotor Control

Electromyographic Analysis of Human Movement

Research Mentorship Experience

Doctoral Dissertation Committees (3)

Holman GT, Thomas R, Davis J, **Blackburn JT**. The influence of restricted space on patient handling in a hospital environment. *Department of Industrial & Systems Engineering*, 2007.

McAlister RB, Fischman MG, **Blackburn JT**. Relative efficacy of internal vs. external focus on motor learning of a novel task using an arm prosthesis. *Department of Health & Human Performance*, 2006.

Campbell B, Weimar W, **Blackburn JT**. Influence of grip intensity on wrist extensor EMG: a mechanism for lateral epicondylalgia. *Department of Health & Human Performance*, 2006.

Master's Thesis Committees (1)

Thompson M, Davis J, Thomas R, **Blackburn JT**. Estimation of reach envelopes for the seated workspace. *Department of Industrial & Systems Engineering*, 2005.

SERVICE

Professional

Editorial Boards

Journal of Athletic Training (2010 – present)

Athletic Training & Sports Health Care (2008 – present)

Manuscript Reviewer

American Journal of Sports Medicine

Applied Physiology, Nutrition, & Metabolism

Clinical Biomechanics

Journal of Applied Biomechanics

Journal of Athletic Training

Journal of Biomechanics

Journal of Electromyography & Kinesiology

Journal of Novel Physiotherapies

Journal of Orthopaedic Research

Journal of Science & Medicine in Sport

Journal of Sport Rehabilitation

Journal of Sports Sciences

Medicine & Science in Sports & Exercise

Research in Sports Medicine

Sports Biomechanics

Sports Health

Grant Reviewer

National Athletic Trainers' Association Research and Education Foundation

Injury Prevention Research Center, University of North Carolina at Chapel Hill

National Operating Committee on Standards for Athletic Equipment

UNC-NCSU Rehabilitation Engineering Center

Health Research Board (Ireland)

Austrian Science Fund

National Athletic Trainers' Association

Research and Education Foundation Research Committee (2013 – present)

Vice Chair for Awards (2015 – present)

Annual Meeting and Clinical Symposia

Convention Program Committee

Special Topics Subcommittee, proposal reviewer (2009, 2013)

Free Communication Subcommittee, external abstract reviewer (2006)

The University of North Carolina at Chapel Hill

Biomedical Institutional Review Board (Appointment beginning 1/2016)

Biomedical Stakeholders Consortium for Office of Human Research Ethics Director Search (2015)
Selection Committee, Summer Undergraduate Research Fellowships for the Natural Sciences (2014, 2015)
Search Committee, Biomedical Engineering Faculty (2015)
Search Committee, Athletic Training Football Clinical Staff Position (2013)
Search Committee, Athletic Training Women's' Basketball Clinical Staff Position (2013)
Search Committee, Director of Campus Recreation (2012)
Search Committee, Director of Injury Prevention Research Center (2011)
Search Committee, Associate Vice Chancellor for Student Affairs (2010)

UNC Department of Exercise and Sport Science

Assistant Department Chair (2015 – present)
Chair, Human Subjects in Research Committee (2006 – present)
Master Plan Committee (2015 – present)
Chair, Athletic Training/Neuromuscular Control Faculty Search Committee (2015)
Search Committee, Exercise Physiology Faculty (2014)
Search Committee, Departmental Accountant (2013)
Search Committee, Sports Epidemiology/Research and Statistical Methods Faculty (2013)
Strategic Planning Committee (2013-2014)
Ronald W. Hyatt Scholarship Committee (2006 – 2011)
Patrick F. Earey Undergraduate Excellence Award Committee (2008 – 2010)
Search Committee, Sport Administration/Academic Advising Faculty (2009)
Chair, Athletic Training/Anatomy Faculty Search Committee (2008)
Public Relations Committee (2006 – 2007)

UNC Interdisciplinary Program in Human Movement Science

Educational Review Committee (2009 – 2013; Chair 2013 – present)
Advisory Committee (2013 – present)
Task Force Committee (2013)

CLINICAL EXPERIENCE

The University of North Carolina at Chapel Hill

Assistant Certified Athletic Trainer (2000 – 2002)
Student Athletic Trainer (1996 – 1998)

The University of Pittsburgh

Graduate Assistant Certified Athletic Trainer (1998 – 2000)

PROFESSIONAL ORGANIZATIONS AND CERTIFICATIONS

Osteoarthritis Research Society International (2015 – present)

American Society of Biomechanics (2014 – present)

American College of Sports Medicine (2013 – present)

National Athletic Trainers' Association Board of Certification, Inc.
Certified Athletic Trainer (ATC) (1998 – present)