

Jacob J. Capin, PT, DPT, PhD, MS

Assistant Professor
Department of Physical Therapy
Marquette University
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EDUCATION

University of Colorado, Physical Medicine and Rehabilitation, Aurora, CO
Postdoctoral Fellow, September 2019 – September 2021

University of Delaware, Biomechanics and Movement Science, Newark, DE
Doctor of Philosophy, August 2019

University of Delaware, Physical Therapy, Newark, DE
Doctor of Physical Therapy, December 2014

University of Delaware, Physical Therapy, Newark, DE
Master of Science in Anatomy and Clinical Health Sciences, August 2014

Christopher Newport University, Newport News, VA
Bachelor of Science in Psychology, *Summa Cum Laude*, May 2012

PROFESSIONAL EXPERIENCE

Adjunct Assistant Professor, March 2022 – present
Medical College of Wisconsin, Clinical and Translational Science Institute, Milwaukee, WI

Assistant Professor, September 2021 – present
Marquette University, Department of Physical Therapy, Milwaukee, WI

Director of Life After Sport Trajectories 'LAST' Laboratory, September 2021 – present
Marquette University, Department of Physical Therapy, Milwaukee, WI

Postdoctoral Fellow, September 2019 – September 2021
University of Colorado Anschutz Medical Campus, Department of Physical Medicine and Rehabilitation, Aurora, CO

Advanced Geriatrics Fellow, September 2019 – May 2020
Veterans Affairs Eastern Colorado Health Care System, Geriatric Research Education and Clinical Center, Aurora, CO

Research Assistant, January 2015 – August 2019
University of Delaware, Biomechanics and Movement Science, Newark, DE

Physical Therapist, February 2015 – May 2019
University of Delaware Physical Therapy (UDPT) Clinic, Newark, DE

Teaching and Laboratory Assistant, January 2014 – May 2019
University of Delaware, Department of Physical Therapy, Newark, DE

Graduate Assistant, September 2012 – May 2014
University of Delaware, Physical Therapy and Motion Analysis Lab, Newark, DE

CURRENTLY FUNDED GRANTS AND RESEARCH ACTIVITY

NIH/OD DP5-OD031833 NIH Director's Early Independence Research Award

Title: Life After Sport: Prior Injury and Sedentary Behavior as Mechanisms of Later Poor Health

Purpose: Evaluate the impact of prior knee injury and sedentary behavior as two potential determinants of later poor health and reduced function in male and female amateur athletes

Dates: 9/22/2021 – 8/31/2026

Role: Principal Investigator (PI)

COMPLETED GRANT ACTIVITY

NIH/NIA F32-AG066274 Ruth L. Kirschstein National Research Service Award F32 Postdoctoral Fellowship

Title: Contralateral knee osteoarthritis (OA) among older adults after primary total knee arthroplasty (TKA)

Purpose: Determine how aberrant movement patterns contribute to early, contralateral knee OA and how persistent aberrant movements after primary TKA contribute to accelerated contralateral knee OA progression

Dates: 5/31/2020 – 9/24/2021

Role: PI

Academy of Orthopaedic Physical Therapy (AOPT) Career Development Award

Title: Movement asymmetry and contralateral knee OA after primary TKA

Purpose: Support quantitative MRI analyses associated with the fellowship noted above (F32-AG066274) and career development training for the PI, an early post-professional PhD-trained physical therapist

Dates: 9/1/2019 – 8/31/2021

Role: PI

Veterans Health Administration Eastern Colorado Geriatric Research, Education, and Clinical Center Advanced Geriatrics Fellowship

Title: Contralateral knee OA among older adults including Veterans after primary total knee arthroplasty

Purpose: Determine how aberrant movement patterns contribute to early, contralateral knee OA in older adults including Veterans undergoing TKA

Dates: 9/1/2019 – 5/30/2020

Role: PI

NIH/NICHD F30-HD096830 Ruth L. Kirschstein National Research Service Award Predoctoral Fellowship

Title: Walking mechanics, early OA development, and neuromuscular training after traumatic knee injury

Purpose: Quantify the association of movement patterns and post-traumatic knee OA and how a return-to-sport training program influences movement patterns in young athletes after ACL reconstruction

Dates: 8/2/2018 – 8/31/2019

Role: PI

PEER-REVIEWED PUBLICATIONS

MyNCBI Bibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/1paZsfARfntkw/bibliography/public/>

1. Zarzycki R, Cummer K, Arhos EK, Failla M, **Capin JJ**, Smith AH, Snyder-Mackler L. Female Athletes with Higher Psychological Readiness are at Higher Risk for Second ACL injury after Primary ACL Reconstruction. *Sports Health*. Accepted Dec 8, 2022.
2. Williams JR, Neal K, Alfayyadh A, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Patellofemoral contact forces and knee gait mechanics 3 months after ACL reconstruction are associated with cartilage degradation 24 months after surgery. *Osteoarthritis Cartilage*. 2023 Jan;31(1):96-105. doi: 10.1016/j.joca.2022.10.007. Epub 2022 Oct 14. PMID: 36252943; PMCID: PMC9771964.
3. **Capin JJ**, Minick K, Stevens-Lapsley JE, Snow G, Woodfield D, Dibblee P, Brennan G, Hunter SJ. Variation in outcomes and number of visits following care guideline implementation: Part 2 of an analysis of 12,355 patients after total knee arthroplasty. *Journal of Orthopaedic & Sports Physical Therapy*. 2022. Dec 12;:1-26. doi: 10.2519/jospt.2022.11370. [Epub ahead of print] PMID: 36503269.
4. Minick K, Hunter SJ, Capin JJ, Stevens-Lapsley J, Snow G, Woodfield D, Dibblee P, Brennan G. Improved Outcomes Following a Care Guideline Implementation: Part 1 of an Analysis of 12,355 Patients after Total Knee Arthroplasty. *Journal of Orthopaedic & Sports Physical Therapy*. 2022 Dec 12;1-26. doi: 10.2519/jospt.2022.11369. [Epub ahead of print] PMID: 36507694.
5. Ito N, **Capin JJ**, Khandha A, Buchanan TS, Silbernagel KG, Snyder-Mackler L. Bone-Patellar Tendon-Bone Autograft Harvest Prolongs Extensor Latency during Gait 2 yr after ACLR. *Med Sci Sports Exerc*. 2022 Dec 1;54(12):2109-2117. doi: 10.1249/MSS.0000000000003009. Epub 2022 Aug 6. PMID: 35941514; PMCID: PMC9669131.
6. Neal K, Williams JR, Alfayyadh A, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Knee joint biomechanics during gait improve from 3 to 6 months after anterior cruciate ligament reconstruction. *Journal of Orthopaedic Research*. 2022 Sep;40(9):2025-2038. doi: 10.1002/jor.25250. PMID: 34989019; PMCID: PMC9256843.
7. **Capin JJ**, Jolley S, Morrow M, Connors M, Hare K, MaWhinney S, Nordon-Craft A, Rauzi MR, Flynn S, Stevens-Lapsley JE, Erlandson KM. Safety, feasibility, and initial efficacy of an app-facilitated telerehabilitation (AFTER) program for COVID-19 survivors: a pilot randomized study. *BMJ Open*. 2022 Jul 26;12(7):e061285. doi: 10.1136/bmjopen-2022-061285. PMID: 35882451; PMCID: PMC9329728.
8. **Capin JJ**, Bade MJ, Jennings JM, Snyder-Mackler L, Stevens-Lapsley JE. Total Knee Arthroplasty Assessments Should Include Strength and Performance-Based Functional Tests to Complement Range-of-Motion and Patient-Reported Outcome Measures. *Phys Ther*. 2022 Jun 3;102(6). doi: 10.1093/ptj/pzac033. PMID: 35358318.
9. Ito N, **Capin JJ**, Khandha A, Buchanan TS, Snyder-Mackler L. Identifying Gait Pathology after ACL Reconstruction Using Temporal Characteristics of Kinetics and Electromyography. *Med Sci Sports Exerc*. 2022 Jun 1;54(6):923-930. doi: 10.1249/MSS.0000000000002881. PMID: 35184098; PMCID: PMC9117412.
10. **Capin JJ**, Wilson MP, Hare K, Vempati S, Little CE, McGregor D, Castillo-Mancilla J, Stevens-Lapsley JE, Jolley SE, Erlandson KM. Prospective telehealth analysis of functional performance, frailty, quality of life, and mental health after COVID-19 hospitalization. *BMC Geriatr*. 2022 Mar 26;22(1):251. doi: 10.1186/s12877-022-02854-6. PMID: 35337276; PMCID: PMC8956362.

11. Jolley S, Nordon-Craft A, Wilson MP, Ridgeway K, Rauzi MR, **Capin J**, Heery LM, Stevens-Lapsley J, Erlandson KM. Disparities in the allocation of inpatient physical and occupational therapy services for patients with COVID-19. *J Hosp Med*. 2022 Feb;17(2):88-95. doi: 10.1002/jhm.12785. PMID: 35446466; PMCID: PMC9088325.
12. Williams JR, Neal K, Fayyadh AB, Lennon K, **Capin JJ**, Khandha A, Manal K, Potter H, Snyder-Mackler L, Buchanan TS. Knee Cartilage T2 Relaxation Times 3 Months after ACL Reconstruction Are Associated with Knee Gait Variables Linked to Knee Osteoarthritis. *Journal of Orthopaedic Research*. 2022 Jan;40(1):252-259. doi: 10.1002/jor.25043. PMID: 33783867; PMCID: PMC8481340.
13. Zarzycki R, Arhos EK, Failla M, **Capin JJ**, Smith AH, Snyder-Mackler L. Positive psychological response to the ACL-SPORTS training program yields better self-reported function two years after ACL reconstruction compared to non-responders. *American Journal of Sports Medicine*. 2021 Nov;49(13):3495-3501. doi: 10.1177/03635465211045388. PMID: 34623939
14. Christensen JC, **Capin JJ**, Hinrichs L, Aljehani M, Stevens-Lapsley J, Zeni J. Gait mechanics are influenced by quadriceps strength, age and sex after total knee arthroplasty. *Journal of Orthopaedic Research*. 2021 Jul;39(7):1523-1532. doi: 10.1002/jor.24878. PMID: 33034899.
15. Ito N, **Capin JJ**, Arhos E, Khandha A, Buchanan TS, Snyder-Mackler L. Sex and Mechanism of Injury Influence Knee Joint Loading Symmetry During Gait 6 Months after ACLR. *Journal of Orthopaedic Research*. 2021 May;39(5):1123-1132. doi: 10.1002/jor.24822. PMID: 32761919; PMCID: PMC7864984.
16. Arhos E, **Capin JJ**, Buchanan TS, Snyder-Mackler L. Quadriceps Strength Symmetry Does Not Modify Gait Mechanics After ACL Reconstruction, Rehabilitation, and Return-to-Sport Training. *American Journal of Sports Medicine*. 2021 Feb;49(2):417-425. doi: 10.1177/0363546520980079. PMID: 33373534; PMCID: PMC7863565
17. Knobel R, Ito N, Arhos E, **Capin JJ**, Buchanan TS, Snyder-Mackler L. Patients Walking Faster After Anterior Cruciate Ligament Reconstruction Have More Gait Asymmetry. *The International Journal of Sports Physical Therapy*. 2021 Feb 1;16(1):169-176. PMID: 33604147; PubMed Central PMCID: PMC7872452.
18. Wellsandt E, Khandha A, **Capin J**, Buchanan T, Snyder-Mackler L. Operative and Non-Operative Management of Anterior Cruciate Ligament Injury: Differences in Gait Biomechanics at 5 Years. *Journal of Orthopaedic Research*. 2020 Dec;38(12):2675-2684. doi: 10.1002/jor.24652. PMID: 32159239; PMCID: PMC7808330.
19. Arhos E, **Capin JJ**, Ito N, Snyder-Mackler L. Functional Measures Do Not Differ in Late Stage Rehabilitation After Anterior Cruciate Ligament Reconstruction According to Mechanism of Injury. *The International Journal of Sports Physical Therapy*. 2020; Oct;15(5):744-754. doi: 10.26603/ijsp20200744. PMID: 33110693.
20. Johnson JL, **Capin JJ**, Arundale AJH, Smith AH, Zarzycki R, Snyder-Mackler, L. Secondary injury prevention program may decrease contralateral ACL injuries in female athletes: 2-year injury rates in the ACL-SPORTS randomized control trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2020 Sep;50(9):523-530. doi: 10.2519/jospt.2020.9407. PMID: 32741328; PMCID: PMC7484246.
21. *Smith AH, **Capin JJ**, Zarzycki R, Snyder-Mackler, L. Athletes With Bone-Patellar Tendon Bone Autograft for ACL Reconstruction Were Months Slower to Meet Rehabilitation Milestones and Return to Sport Criteria Than Athletes With Hamstring Tendon Autograft or Soft Tissue Allograft: Secondary Analysis From the ACL-SPORTS Trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2020 May;50(5):259-266. doi: 10.2519/jospt.2020.9111. PMID: 31775553; PMCID: PMC7196003. *Article selected for JOSPT Read-for-Credit program.

22. **Capin JJ**, Williams JR, Neal K, Khandha A, Durkee L, Ito N, Stefanik JJ, Snyder-Mackler L, Buchanan TS. Slower walking speed is related to early femoral trochlear cartilage degradation after ACL reconstruction. *Journal of Orthopaedic Research*. 2020 Mar;38(3):645-652. doi: 10.1002/jor.24503. PMID: 31710115; PMCID: PMC7028512.
23. **Capin JJ**, Snyder-Mackler L, Risberg MA, Grindem H. Keep Calm and Carry On Testing—A Substantive Reanalysis and Critique of “What is the Evidence for and Validity of Return-to-Sport Testing after Anterior Cruciate Ligament Reconstruction Surgery? A Systematic Review and Meta-Analysis.” *British Journal of Sports Medicine*. 2019 Dec;53(23):1444-1446. doi: 10.1136/bjsports-2019-100906. PMID: 31289039; PMCID: PMC6858490.
24. **Capin JJ**, Khandha A, Buchanan TS, Snyder-Mackler L. Partial medial meniscectomy leads to altered walking mechanics two years after anterior cruciate ligament reconstruction: Meniscal repair does not. *Gait & Posture*. 2019 Oct;74:87-93. doi: 10.1016/j.gaitpost.2019.08.017. PMID: 31491565; PMCID: PMC6790293.
25. **Capin JJ**, Zarzycki R, Ito N, Khandha A, Dix C, Manal K, Buchanan TS, Snyder-Mackler L. Gait Mechanics in Women of the ACL-SPORTS Randomized Control Trial: Interlimb Symmetry Improves Over Time Regardless of Treatment Group. *Journal of Orthopaedic Research*. 2019; Aug;37(8):1743-1753. doi: 10.1002/jor.24314. PMID: 31042301; PMCID: PMC6824924.
26. **Capin JJ**, Failla M, Zarzycki R, Dix C, Johnson JL, Smith AH, Risberg MA, Huston LJ, Spindler KP, Snyder-Mackler L. Superior 2-Year Functional Outcomes Among Young Female Athletes after ACL Reconstruction in 10 Return-to-Sport Training Sessions: Comparison of ACL-SPORTS Randomized Control Trial With Delaware-Oslo and MOON Cohorts. *Orthopaedic Journal of Sports Medicine*. 2019; 7(8): 2325967119861311. doi: 10.1177/2325967119861311. PMID: 31413963; PMCID: PMC6676263.
27. Khandha A, Manal K, **Capin JJ**, Wellsandt E, Marmon A, Snyder-Mackler L, Buchanan T. High muscle co-contraction does not result in high joint forces during gait in anterior cruciate ligament deficient knees. *Journal of Orthopaedic Research*. 2019 Jan;37(1):104-112. doi: 10.1002/jor.24141. PMID: 30230006; PMCID: PMC6393175.
28. ***Capin JJ**, Khandha A, Zarzycki R, Manal K, Buchanan TS, Snyder-Mackler L. Gait Mechanics After ACL Reconstruction Differ According to Medial Meniscal Treatment. *Journal of Bone & Joint Surgery*. 2018; 100(14): 1209-1216. doi: 10.2106/JBJS.17.01014. PMID: 29575090; PMCID: PMC6157011. *Article selected for *JBJS/JOSPT* article exchange.
29. **Capin JJ**, Khandha A, Zarzycki R, Arundale AJH, Ziegler ML, Manal K, Buchanan TS, Snyder-Mackler L. Gait mechanics and tibiofemoral loading in men of the ACL-SPORTS randomized control trial. *Journal of Orthopaedic Research*. 2018; 36(9):2364-2372. doi: 10.1002/jor.23895. PMID: 31042301; PMCID: PMC6824924.
30. **Capin JJ**, Snyder-Mackler L. The Current Management of Patients with Patellofemoral Pain from the Physical Therapist’s Perspective. *Annals of Joint*. 2018; 3(40). doi: 10.21037/aoj.2018.04.11 PMID: 31414069; PMCID: PMC6693858.
31. Arundale A, **Capin JJ**, Zarzycki R, Smith A, Snyder-Mackler L. Functional and Patient-Reported Outcomes Improve Over the Course of Rehabilitation: A Secondary Analysis of the ACL-SPORTS Trial. *Sports Health*. 2018; 10(5):441-452. doi: 10.1177/1941738118779023. PMID: 29924719; PMCID: PMC6116107.
32. Arundale A, **Capin JJ**, Zarzycki R, Smith A, Snyder-Mackler L. Two Year ACL Reinjury Rate of 2.5%: Outcomes Report of the Men in a Secondary ACL Injury Prevention Program (ACL-SPORTS). *International Journal of Sports Physical Therapy*. 2018;13(3):422-431. doi:10.26603/ijsp20180422. PMID: 30038828; PMCID: PMC6044585.

33. Zarzycki R, Failla M, **Capin JJ**, Snyder-Mackler L. Psychological Readiness to Return to Sport is Associated with Knee Kinematic Asymmetry During Gait Following ACL Reconstruction. *Journal of Orthopaedic and Sports Physical Therapy*. 2018; 48(12):968-973. doi: 10.2519/jospt.2018.8084. PMID: 30053791; PMCID: PMC6501559.
34. **Capin JJ**, Khandha A, Zarzycki R, Manal K, Buchanan TS, Snyder-Mackler L. Gait mechanics and second ACL rupture: Implications for delaying return-to-sport. *Journal of Orthopaedic Research*. 2017;35(9):1894-1901. doi:10.1002/jor.23476. PMID: 27859527; PMCID: PMC5423861.
35. ***Capin JJ**, Behrns W, Thatcher K, Arundale A, Smith AH, Snyder-Mackler, AH. Clinical Commentary: On-ice return-to-hockey progression after anterior cruciate ligament reconstruction. *Journal of Orthopaedic and Sports Physical Therapy*. 2017;47(5):324-333. doi: 10.2519/jospt.2017.7245. PMID: 28355976; PMCID: PMC5480966. *Article featured on cover of May 2017 issue of *JOSPT*.
36. **Capin JJ**, Zarzycki R, Arundale AJH, Cummer K, Snyder-Mackler L. Report of the Primary Outcomes for Gait Mechanics in Men of the ACL-SPORTS Trial: Secondary Prevention With and Without Perturbation Training Does Not Restore Gait Symmetry in Men 1 or 2 Years After ACL Reconstruction. *Clinical Orthopaedics and Related Research*. 2017;475(10):2513-2522. doi: 10.1007/s11999-017-5279-8. PMID: 28224442; PMCID: PMC5599383.
37. Arundale AJH, Cummer K, **Capin JJ**, Zarzycki R, Snyder-Mackler L. Report of the Clinical and Functional Primary Outcomes in Men of the ACL-SPORTS Trial: Similar Outcomes in Men Receiving Secondary Prevention With and Without Perturbation Training 1 and 2 Years After ACL Reconstruction. *Clinical Orthopaedics and Related Research*. 2017;475(10):2523-2534. doi: 10.1007/s11999-017-5280-2. PMID: 28224443; PMCID: PMC5599384.
38. Khandha A, Manal K, Wellsandt E, **Capin J**, Snyder-Mackler L, Buchanan T. Gait mechanics in those with/without medial compartment knee osteoarthritis five years after anterior cruciate ligament reconstruction. *Journal of Orthopaedic Research*. 2017;35(3):625-633. doi 10.1002/jor.23261. PMID: 27082166; PMCID: PMC5065735.

BOOK CHAPTERS

1. Arhos EK, **Capin JJ**, Risberg MA, Snyder-Mackler L. Extended Preoperative Rehabilitation: Does It Influence Return to Sports After Surgery? In: Barber-Westin S, Noyes F, eds. *Return to Sport After ACL Reconstruction and Other Knee Operations: Limiting the Risk of Reinjury and Maximizing Athletic Performance*. 1st Ed. Springer Nature Switzerland AG; 2019.
2. **Capin JJ**, Snyder-Mackler L. Return to play criteria: The Delaware experience. In: Musahl V, Karlsson J, Krutsch W, Mandelbaum BR, Espregueira-Mendes J, D'Hooghe P, eds. *Return to Play in Football: An Evidence-Based Approach*. 1st Ed. Berlin: Springer-Verlag Berlin Heidelberg; 2018.

INVITED PRESENTATIONS: NATIONAL/INTERNATIONAL

1. **Capin JJ**, et al. Student-Researcher Roundtable Session. Invited Speaker for Roundtable Discussion. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2023)*: San Diego, CA, February 24, 2023.
2. **Capin JJ**, Mills D, Norman E. You've got the job, what's next? VCU-Marquette Challenge Event. *Foundation for Physical Therapy Research*. Webinar. March 28, 2022.
3. **Capin JJ**, Segal R, Petersen EJ, Wagner A. Student-Researcher Roundtable Session. Invited Speaker for Roundtable Discussion. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2022)*: San Antonio, TX, February 4, 2022.
4. Hall JB, **Capin JJ**, Nitkin R, Jackson L, McGee R, Pinto D. Research Funding Symposium Part 2: Early career opportunities, techniques, and success. Educational Session. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2022)*: San Antonio, TX, February 3, 2022.
5. **Capin JJ**. Geriatrics Scholars Toolkit – Tele-Rehabilitation for COVID-19 Survivors. *U.S. Department of Veterans Affairs, Employee Education System*. Virtual Webinar. November 9, 2021.
6. **Capin JJ**. Sports Medicine, Moderator. *International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) Congress 2019*: Cancun, Mexico, May 14, 2019.
7. **Capin JJ**. Rehabilitation After Hip Arthroscopy. *International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) Congress 2019*: Cancun, Mexico, May 13, 2019.
8. **Capin JJ**. Knee – Sports Medicine, Moderator. *International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) Congress 2019*: Cancun, Mexico, May 12, 2019.
9. **Capin JJ**, Jain T, Zeni J, Wassinger C, Kelly S, Tevald M, Lebec M. Developing and Implementing Your Teaching Philosophy for Quality Instruction. Educational Session. *American Physical Therapy Association Combined Sections Meeting (CSM) 2019*: January 24, 2019.
10. **Capin JJ**. Knee Kinesiology. *Orthopaedic Research Society (ORS) Basic Science Course*: San Diego, CA, March 18, 2017.

INVITED PRESENTATIONS: REGIONAL/UNIVERSITY/LOCAL

1. **Capin JJ**. The Impact of Foundation for Physical Therapy Research Funding. Marquette Challenge Gala, Milwaukee, WI, September 24, 2022.
2. **Capin JJ**. Life After Sport: Identifying Risks and Extending Healthspans. Exercise and Rehabilitation Science Seminar: Marquette University, Milwaukee, WI, February 17, 2022.
3. **Capin JJ**. Life After Sport: Identifying Risks and Extending Healthspans. *Badger Athletic Performance*: University of Wisconsin, Madison, WI, December 16, 2021.
4. **Capin JJ**. The App-Facilitated Tele-Rehabilitation (AFTER) Program for COVID-19 Survivors. *34th Annual Gersten Day Rehabilitation Scientific Symposium*: University of Colorado School of Medicine, Aurora, CO, June 18, 2021.
5. **Capin JJ**. Walk this Way – Gait Biomechanics, Knee Osteoarthritis, and Rehabilitation. *The Modern Human Anatomy Program Seminar Series*: University of Colorado School of Medicine, Aurora, CO, October 29, 2020.

TEACHING EXPERIENCE

- Department of Physical Therapy, Marquette University, Milwaukee, WI
 - Course Instructor:
 - PHTH 7525: Kinesiology I (2022-present)
 - Contributing Faculty (Principal Investigator Mentor):
 - EXRS 6958: Readings and Research I (2022-present)
 - Guest Lecturer:
 - PHTH 1001: Introduction to Physical Therapy and Medical Terminology (2022-present)
 - PHIL 1001: Foundations in Philosophy (2023)
- Department of Physical Therapy, University of Delaware, Newark, DE, 2014 – 2019
 - Lecturer, 2015 – 2019
 - PHYT 604: Functional Anatomy and Biomechanics (September 17, 2018)
 - PHYT 608: Musculoskeletal Evaluation and Treatment (June 2017 and 2018)
 - PHYT 633: Applied Physiology II (May 2015-2019)
 - PHYT 635: Thermal Agents and Soft Tissue (September 2015-2018)
 - PHYT 642: Rounds (March 18, 2016)
 - Teaching Assistant, 2014 – 2019
 - PHYT 608: Musculoskeletal Evaluation and Treatment (2015-2018)
 - PHYT 626: Advanced Regional Anatomy (2014-2019)
 - PHYT 634: Electrotherapy (2015)
 - PHYT 635: Thermal Agents and Soft Tissue (2015-2018)
 - PHYT 802: Medical Science II: Orthopedics and Musculoskeletal Imaging (2015)
- Department of Kinesiology & Applied Physiology, University of Delaware, Newark, DE, 2018
 - Lecturer for KAAP 481: Lower Extremity and Spine Evaluation (April 17, 2018)

MENTORING**Postdoctoral Level | Primary Advisor**

- Kaycee Glattke, PhD: Postdoctoral Research Associate, Life After Sport Trajectories (LAST) Lab, Marquette University, Milwaukee, WI (2023-present)

Doctoral Level | Committee Member

- Michael H. Haischer, MS, CSCS: Exercise and Rehabilitation Science PhD student, Marquette University, Milwaukee, WI (2021-present)

Doctoral Level | External Committee Member

- Naoaki Ito, PT, DPT, MS: Biomechanics and Movement Science PhD student, University of Delaware, Newark, DE (2021-present)

Graduate Level | Student Research Technician Advisor

- Taylor Wolf, BS: Doctor of Physical Therapy student, Marquette University, Milwaukee, WI (2021-present)

Undergraduate Level

- Sammi Kindy: Exercise Physiology student research intern, Marquette University, Milwaukee, WI (Fall 2022)
- Roman de Guia: undergraduate student research technician (2023 – present)
- Grace Tostrud: undergraduate student research technician (2023 – present)
- Abigail Larson: undergraduate student research technician (2023 – present)

MENTORING (PRIOR TO MARQUETTE UNIVERSITY)**Masters Level** | Committee Member | University of Colorado, Aurora, CO

- Eliza Biondi, BA; Master of Human Anatomy, Capstone Research Project, 2020-2021

Undergraduate Level | University of Delaware, Newark, DE, 2016-2019

- Laura Durkee, Winter Session Intensive Research Experience, Winter 2019; ACL Lab research assistant, Spring 2019
- Georgia Gagianas, Summer Scholar, 2016; ACL Lab research assistant, 2016-2018

CERTIFICATIONS

- National Healthcareer Association Certified Phlebotomy Technician (2022 – present)
- APTA Credentialed Clinical Instructor (2015 – present)
- USA Triathlon Level-I Certified Coach (2018 – present)
- American Red Cross-certified in First Aid and CPR/AED (2011 – 2019, 2022-present)
- HeartCode® Basic Life Support (BLS) certified (2020 – 2022)
- American Red Cross-certified in Emergency Medical Response (2013 – 2019)
- American Council on Exercise (ACE)-Certified Personal Trainer (2011 – 2013)

PROFESSIONAL SERVICE | NATIONAL/INTERNATIONAL – CURRENT

- Chair, Early Career Researchers Special Interest Group, Academy of Physical Therapy Research, American Physical Therapy Association, 2022 – present
- Vice Chair, Biomechanics Special Interest Group, Academy of Physical Therapy Research, American Physical Therapy Association, 2021 – present
- Ad-hoc Reviewer: <https://publons.com/researcher/1313988/jacob-j-capin-pt-dpt-phd/>
 - *ACR Open Rheumatology*, 2020 – present
 - *American Journal of Sports Medicine*, 2020 – present
 - *Arthritis Care & Research*, 2017 – present
 - *BMC Musculoskeletal Disorders*, 2018 – present
 - *Bone & Joint Research*, 2020 – present
 - *British Journal of Sports Medicine*, 2018 – present
 - *Clinical Biomechanics*, 2021 – present
 - *Gait & Posture*, 2020 – present
 - *International Journal of Sports Physical Therapy*, 2015 – present
 - *Journal of Orthopaedic & Sports Physical Therapy*, 2017 – present
 - *Journal of Sports Science & Medicine*, 2017 – present
 - *Journal of Orthopaedic Research*, 2018 – present
 - *Medicine & Science in Sports & Exercise*, 2017 – present
 - *Orthopaedic Journal of Sports Medicine*, 2021 – present
 - *Osteoarthritis & Cartilage*, 2021 – present
 - *PLOS ONE*, 2017 – present
 - *Rheumatology*, 2021 – present
 - *Sports Health*, 2018 – present
 - *The Knee*, 2020 – present

PROFESSIONAL SERVICE | UNIVERSITY/COLLEGE/DEPARTMENT – CURRENT

- Member, Interprofessional Education and Collaborative Practice Committee, 2023 – present
- Invited Speaker, The 9th Marquette Challenge Fundraiser Gala, Marquette University Physical Therapy, September 2022

PROFESSIONAL SERVICE – PRIOR (SELECTED)

- Vice Chair, Early Career Researchers Special Interest Group, Academy of Physical Therapy Research, American Physical Therapy Association, 2021 – 2022
- Volunteer Head Coach, University of Delaware Triathlon Club Team, 2017 – 2020
- Ad hoc Committee, Foundation for Physical Therapy Research, 2019
- Grant Writer, NCAA Women's Triathlon Emerging Sport Grant for Delaware State University (DSU), USA Triathlon Foundation, 2019 (secured \$100,000 grant for DSU Varsity Triathlon)
- Student Committee, Center for Biomedical Engineering Research (CBER) 16th Annual Biomechanics Research Symposium, University of Delaware, 2019
- Graduate Student Government Senator, Biomechanics and Movement Science, University of Delaware, 2016 – 2018

PROFESSIONAL MEMBERSHIPS

- American College of Sports Medicine (ACSM), 2021 – present
- American Physical Therapy Association (APTA), 2012 – present
 - Academy of Orthopaedic Physical Therapy, 2017 – present
 - Academy of Physical Therapy Research, 2012 – 2015 and 2017 – present
 - American Academy of Sports Physical Therapy, 2015 – present
 - Delaware Chapter, 2012 – 2021
 - Colorado Chapter, 2020 – 2021
 - Wisconsin Chapter, 2021 – present
- Osteoarthritis Research Society International (OARSI), 2018 – 2019
- Orthopaedic Research Society (ORS), 2017, 2019

LICENSURE INFORMATION

- Wisconsin # 15933-24 (2022 – present)
- Delaware # J1-0003269 (2015 – present, currently inactive)
- Colorado # PTL.0016454 (2019 – present, currently inactive)
- West Virginia # 003442 (2015 – present, currently inactive)

PEER-REVIEWED ABSTRACTS AND PRESENTATIONS: NATIONAL/INTERNATIONAL

1. Mirkes LM, Boos ZP, Heck J, Wolf TL, Farquhar WB, Lennon SL, Smith CS, Hunter SK, Creasy SA, **Capin JJ**. College Varsity Athletes Have Longer and More Variable Sleep Patterns Than Matched Non-Athlete Peers. In Review. American College of Sports Medicine (ACSM) Annual Meeting & World Congresses: Denver, Colorado, May 30-June 2, 2023.
2. **Capin JJ**, Wolf TL, Heck J, Smith CS, Lennon SL, Hunter SK, Farquhar WB, Piacentine LB. Long-Term Benefits and Challenges of College Athletics: The Lived Experience of Midlife Former College Athletes. In Review. American College of Sports Medicine (ACSM) Annual Meeting & World Congresses: Denver, Colorado, May 30-June 2, 2023.
3. Williams JR, Neal K, Alfayyadh A, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Patellofemoral Knee Mechanics 3 Months after ACL Reconstruction are Associated with Markers of Patellofemoral Cartilage Degradation 24 Months after Surgery. Podium Presentation. Proceedings of the North American Congress on Biomechanics: Ottawa, Canada, August 21-25, 2022.
4. Ito N, **Capin JJ**, Khandha A, Buchanan TS, Snyder-Mackler L. Patients 6 Months After ACL Reconstruction Load Their Involved Knees at Slower Rates Compared to Their Uninvolved Knees During Gait. E-poster Presentation. 20th ESSKA Congress: Paris, France, April 27, 2022.

5. Williams JR, Neal K, Alfayyadh A, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Is Persistent Loading Symmetry After ACL Reconstruction The Key To Maintaining Long Term Cartilage Health? Podium Presentation. *Orthopaedic Research Society (ORS) 2022 Annual Meeting*: Tampa, FL, February 7, 2022.
6. Liles S, Ito N, **Capin JJ**, Hall S, Silbernagel K, Buchanan T, Snyder-Mackler L. Addition of Post-Operative Perturbation Training Does Not Eliminate Knee Loading Rate Asymmetries after ACL Reconstruction. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2022)*: San Antonio, TX, February 2-5, 2022.
7. Hinrichs L, **Capin JJ**, Judd D, Forster J, Samuelson M, McCandless M, Peters A, Christiansen C, Stevens-Lapsley J. Daily Step Count Is Not Associated with Gait Symmetry in Individuals with End-Stage Hip Osteoarthritis. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2022)*: San Antonio, TX, February 2-5, 2022. ***Selected as Top 10 Poster for Academy of Orthopaedic Physical Therapy.***
8. Hall S, Ito N, **Capin JJ**, Silbernagel K, Buchanan T, Snyder-Mackler L. Men and Women Walk with Asymmetrical Quadriceps Neuromuscular Function Six Months after ACL Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2022)*: San Antonio, TX, February 2-5, 2022.
9. Ito N, Arhos E, **Capin JJ**, Hall S, Buchanan TS, Snyder-Mackler L. Walking Speed is More Strongly Associated with Knee Rate of Moment Development in the Uninvolved than the Involved Knee after Anterior Cruciate Ligament Reconstruction. Podium Presentation. *45th Annual Meeting of the American Society of Biomechanics (ASB)*: Virtual Conference, August 10-13, 2021.
10. Rauzi MR, **Capin JJ**, Nordon-Craft A, Jolley S, Flynn S, MaWhinney S, Morrow M, Erlandson KM, Stevens-Lapsley JE. The App-Facilitated Tele-Rehabilitation (AFTER) Program for COVID-19 Survivors: Protocol for a Randomized Feasibility Trial. Poster presentation. *LeaRRN and CoHSTAR: Shaping the Future of TeleRehabilitation through Research*: Virtual Conference, April 20 & 23, 2021.
11. **Capin JJ**, Minick K, Stevens-Lapsley J, Van der Wees PJ, Woodfield D, Snow G, Dibblee P, Brennan GP, Hunter SJ. Reduced Variation Following a Care Guideline Implementation; Analysis of 11,120 Patients after Total Knee Arthroplasty. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021)*: Virtual Conference, February 24-27, 2021.
12. Hunter SJ, Minick K, Snow G, **Capin JJ**, Stevens-Lapsley J, Woodfield D, Van der Wees PJ, Dibblee P, Brennan GP. Improved Outcomes Following a Care Guideline Implementation; Analysis of 11,120 Patients after Total Knee Arthroplasty. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021)*: Virtual Conference, February 24-27, 2021.
13. Ito N, Arhos E, **Capin JJ**, Buchanan T, Snyder-Mackler L. Quadriceps Activity to Knee Flexion Moment Latency Is Longer in ACL Deficient Knees during Gait. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021)*: Virtual Conference, February 24-27, 2021.
14. Hinrichs LA, Christensen JC, **Capin JJ**, Aljehani MS, Zeni J, Stevens-Lapsley J. Gait Mechanics are Influenced by Quadriceps Strength, Age and Sex after Total Knee Arthroplasty. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021)*: Virtual Conference, February 24-27, 2021.
15. Arhos E, Ito N, **Capin JJ**, Buchanan T, Snyder-Mackler L. Patient-Reported Outcome Measures Do Not Identify Athletes with Asymmetrical Gait Mechanics after ACL Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021)*: Virtual Conference, February 24-27, 2021.

16. Knobel R, Ito N, **Capin JJ**, Arhos E, Buchanan T, Snyder-Mackler L. Men and Women Use Higher Hip/Knee Moment Ratios in the ACLR Versus Contralateral Limb. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021): Virtual Conference*, February 24-27, 2021.
17. Ito N, Arhos E, **Capin JJ**, Gardinier E, Manal K, Buchanan T, Snyder-Mackler L. Perturbation Training May Improve Tibiofemoral Joint Loading Symmetry during Gait in ACL Deficient Athletes. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2021): Virtual Conference*, February 24-27, 2021.
18. Ito N, Arhos E, **Capin JJ**, Wellsandt E, Buchanan T, Snyder-Mackler L. Athletes Who Developed Radiographic Knee Osteoarthritis 6-years After ACL Reconstruction Walked With Asymmetrical Quadriceps Muscle Activity Before Surgery. Poster Presentation. *Orthopaedic Research Society (ORS) 2021 Annual Meeting*: February 12-16, 2021.
19. Neal K, Williams JR, Ito N, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Do asymmetric gait patterns three months after anterior cruciate ligament reconstruction cause abnormal knee joint loading? E-poster Presentation. *19th ESSKA Congress: Virtual Conference*, September 1-4, 2020.
20. *Ito N, **Capin JJ**, Buchanan TS, Snyder-Mackler L. Latency between Peak Vastus Medialis Activation and Peak Knee Flexion Moment During Gait is Longer in Knees after Anterior Cruciate Ligament Reconstruction with a Bone-Patellar Tendon-Bone Graft. Presentation. *44th Annual Meeting of the American Society of Biomechanics (ASB)*: Virtual Conference, August 4-7, 2020. *Selected for 3-Minute Thesis Competition.
21. *Neal K, Williams JR, Ito N, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. Do Asymmetric Gait Patterns Three Months after Anterior Cruciate Ligament Reconstruction Cause Abnormal Knee Joint Loading? Poster Presentation. *Osteoarthritis Research Society International (OARSI) 2020 World Congress*: Vienna, Austria, April 30 – May 3, 2020. *OARSI 2020 World Congress canceled due to COVID-19.
22. *Williams JR, Neal K, Alfayyadh A, **Capin JJ**, Khandha A, Manal K, Potter HG, Snyder-Mackler L, Buchanan TS. Early Knee Loading Asymmetries May Be at the Root of Eventual Osteoarthritis Development after Anterior Cruciate Ligament Reconstruction. Poster Presentation. *Osteoarthritis Research Society International (OARSI) 2020 World Congress*: Vienna, Austria, April 30 – May 3, 2020. *OARSI 2020 World Congress canceled due to COVID-19.
23. Neal K, Williams JR, Ito N, **Capin JJ**, Khandha A, Manal K, Snyder-Mackler L, Buchanan TS. The effects of ACL Reconstruction on Knee Biomechanics Three Months after Surgery. Poster Presentation. *Orthopaedic Research Society (ORS) 2020 Annual Meeting*: Phoenix, AZ, February 8-11, 2020.
24. Smith AH, **Capin JJ**, Snyder-Mackler L. Women Who Go on to 2nd ACL Injury Restore Quadriceps Strength Symmetry Earlier after ACLR. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2020)*: Denver, CO, February 12-15, 2020.
25. Johnson JL, **Capin JJ**, Zarzycki R, Smith AH, Arundale AJH, Snyder-Mackler L. Perturbation Training and Second ACL Injury Prevention: An ACL-Sports Study. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2020)*: Denver, CO, February 12-15, 2020.
26. Ito N, **Capin JJ**, Buchanan T, Snyder-Mackler L. Single Leg Hop Symmetry May Predict Gait Symmetry 6 Months after Anterior Cruciate Ligament Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2020)*: Denver, CO, February 12-15, 2020.

27. Knobel R, Ito N, **Capin JJ**, Arhos E, Buchanan T, Snyder-Mackler L. Faster Walking Speed Is Associated with Greater Gait Asymmetry after Anterior Cruciate Ligament Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2020)*: Denver, CO, February 12-15, 2020.
28. **Capin JJ**, Khandha A, Williams JR, Durkee L, Neal K, Stefanik J, Snyder-Mackler L, Buchanan TS. Quadriceps Forces During Gait 3 Months after ACL Reconstruction Predict 6-Month Trochlear Cartilage T₂ Relaxation. Oral Presentation. XXVII Congress of the International Society of Biomechanics (ISB2019) / 43rd Annual Meeting of the American Society of Biomechanics (ASB2019): Calgary, Alberta, Canada, July 31 – August 4, 2019.
29. Arhos E, **Capin JJ**, Khandha A, Buchanan TS, Snyder-Mackler L. Quadriceps Strength Does Not Modify Gait Mechanics after ACL Reconstruction, Rehabilitation and Return to Sport Training. Oral Presentation. XXVII Congress of the International Society of Biomechanics (ISB2019) / 43rd Annual Meeting of the American Society of Biomechanics (ASB2019): Calgary, Alberta, Canada, July 31 – August 4, 2019.
30. Williams JR, Neal K, **Capin JJ**, Khandha A, Snyder-Mackler L, Buchanan TS. Medial Compartment Underloading 3 Months After Anterior Cruciate Ligament Reconstruction Is Associated with Lower Tibiofemoral Cartilage Glycosaminoglycan Content 24-Months After Surgery. Poster Presentation. XXVII Congress of the International Society of Biomechanics (ISB2019) / 43rd Annual Meeting of the American Society of Biomechanics (ASB2019): Calgary, Alberta, Canada, July 31 – August 4, 2019.
31. Neal K, Williams JR, Khandha A, **Capin J**, Snyder-Mackler L, Buchanan TS. Comparison of Involved and Uninvolved Limb Knee Cartilage T₂ Values 24 Months After Anterior Cruciate Ligament Reconstruction. Poster Presentation. XXVII Congress of the International Society of Biomechanics (ISB2019) / 43rd Annual Meeting of the American Society of Biomechanics (ASB2019): Calgary, Alberta, Canada, July 31 – August 4, 2019.
32. **Capin JJ**, Failla M, Smith AH, Zarzycki R, Dix C, Johnson JL, Risberg MA, Huston LJ, Spindler KP, Snyder-Mackler L. Superior 2-Year Functional Outcomes Among Young Female Athletes After ACL Reconstruction in Just 10 Post-Operative Return-to-Sport Training Sessions. Poster Presentation. *American Orthopaedic Society for Sports Medicine (AOSSM) 2019 Annual Meeting*: Boston, MA, July 11-15, 2019.
33. **Capin JJ**, Dix C, Smith AH, Johnson JL, Arundale A, Zarzycki R, Snyder-Mackler L. ACL-SPORTS Randomized Control Trial 1 And 2 Year Clinical And Functional Outcomes In Women: 100% Return-To-Sport Rates And High Outcome Scores, But No Between Group Differences. Paper (Oral) Presentation. *12th Biennial International Society of Arthroscopy, Knee Surgery & Orthopaedic Sports Medicine (ISAKOS) Congress*: Cancun, Mexico, May 13, 2019.
34. **Capin JJ**, Khandha A, Manal K, Buchanan TS, Snyder-Mackler L. Gait Mechanics Differ Two Years after Anterior Cruciate Ligament Reconstruction Based on Medial Meniscus Treatment. Poster Presentation. *American Academy of Orthopaedic Surgeons (AAOS) 2019 Annual Meeting*: Las Vegas, NV, March 12-16, 2019.
35. **Capin JJ**, Williams JR, Khandha A, Stefanik J, Neal K, Manal K, Snyder-Mackler L, Buchanan TS. Interlimb Differences in Trochlear T₂ Relaxation Times and Gait Mechanics Occur Early After ACL Reconstruction. Poster Presentation. *Orthopaedic Research Society (ORS) 2019 Annual Meeting*: Austin, TX, February 2-5, 2019.
36. **Capin JJ**, Thoma L, Khandha A, Manal K, Buchanan TS, Snyder-Mackler L. Response of Gait Mechanics to Return-to-Sports Training after ACL Reconstruction Based on Medial Meniscus Treatment. Oral and Poster Presentation. *Orthopaedic Research Society (ORS) 2019 Annual Meeting*: Austin, TX, February 2-5, 2019.

37. Neal K, Williams JR, Khandha A, **Capin JJ**, Snyder-Mackler L, Buchanan TS. Comparison of Gait Asymmetries and Quantitative MRI Variables in Patellar Cartilage 6-Months Post ACL Reconstruction. Poster Presentation. *Orthopaedic Research Society (ORS) 2019 Annual Meeting*: Austin, TX, February 2-5, 2019.
38. **Capin JJ**, Zarzycki R, Johnson JL, Dix C, Arundale AJ, Smith AH, Snyder-Mackler L. Fear May Not Predict Functional Performance, Activity Level, or Second Injury Among Athletes Who Meet Objective Return-to-Sport Criteria after ACL Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2019)*: Washington, DC, January 23-26, 2019.
39. Ito N, **Capin JJ**, Khandha A, Manal K, Buchanan T, Snyder-Mackler L. The Effect of Mechanism of Injury on Gait Mechanics, Tibiofemoral Loading, and Response to Post-Operative Return-to-Sport (RTS) Training in Male Athletes after ACL Reconstruction (ACLR). Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2019)*: Washington, DC, January 23-26, 2019.
40. Smith AH, **Capin JJ**, Zarzycki R, Snyder-Mackler L. 2nd ACL Injury Rates and Characteristics after Completion of a Secondary Prevention Program. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2019)*: Washington, DC, January 23-26, 2019.
41. Ito N, **Capin JJ**, Khandha A, Manal K, Buchanan T, Snyder-Mackler L. Sex and mechanism of injury (MOI) influence knee mechanics after anterior cruciate ligament reconstruction (ACLR). Thematic Poster Presentation. *42nd Annual Meeting of the American Society of Biomechanics (ASB)*: Rochester, MN, August 9, 2018.
42. Johnson JL, **Capin JJ**, Khandha A, Manal K, Buchanan T, Snyder-Mackler L. Gait Biomechanics Early After ACLR Do Not Predict Medial Compartment Joint Space Width 5 Years After ACLR. Poster Presentation. *42nd Annual Meeting of the American Society of Biomechanics (ASB)*: Rochester, MN, August 9, 2018.
43. Khandha A, **Capin J**, Williams JR, Manal K, Snyder-Mackler L, Buchanan TS. Correlation between inter-limb differences (ILDs) in knee biomechanical and biochemical variables 3 and 6 months after anterior cruciate ligament reconstruction (ACLR). Oral Presentation. *World Congress of Biomechanics 2018*: Dublin, Ireland, July 8-12, 2018.
44. **Capin JJ**, Khandha A, Zarzycki R, Arundale AJH, Ziegler ML, Manal K, Buchanan TS, Snyder-Mackler L. Gait Mechanics and Tibiofemoral Loading in Men of the ACL-SPORTS Randomized Control Trial. Oral Presentation. *2018 World Congress on Osteoarthritis (OARSI)*: Liverpool, England, April 29, 2018.
45. Khandha A, **Capin J**, Williams JR, Manal K, Snyder-Mackler L, Buchanan TS. Knee biomechanical and biochemical variables early after anterior cruciate ligament reconstruction (ACLR). Poster Presentation. *Orthopaedic Research Society (ORS) 2018 Annual Meeting*: New Orleans, LA, March 10-13, 2018.
46. Arundale A, **Capin J**, Zarzycki R, Smith A, Snyder-Mackler L. ACL-SPORTS Program improves functional outcomes with potential implications for reinjury risk. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2018)*: New Orleans, LA, February 24, 2018.
47. **Capin JJ**, Zarzycki R, Arundale AJ, Smith AH, Snyder-Mackler L. Concomitant meniscal status influences patient reported outcomes but not function for two years after ACL reconstruction. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2018)*: New Orleans, LA, February 23, 2018.
48. Bonner B, **Capin JJ**, Khandha A, Manal K, Buchanan TS, Snyder-Mackler L. Patient reported outcomes and frontal plane knee biomechanics improve between 3 and 6 months after ACL reconstruction, but sagittal plane asymmetries do not improve. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2018)*: New Orleans, LA, February 22, 2018.

49. Smith AH, **Capin JJ**, Zarzycki R, Snyder-Mackler L. Clinical and return to sport outcomes by graft type after completion of a secondary ACL prevention program. Platform Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2018)*: New Orleans, LA, February 22, 2018.
50. **Capin JJ**, Khandha A, Eckrich PM, Zarzycki R, Amelia AJH, Manal K, Buchanan TS, Snyder-Mackler L. The effect of return-to-sport training on gait mechanics and knee loading in men and women after anterior cruciate ligament reconstruction. Thematic Poster Presentation. *41st Annual Meeting of the American Society of Biomechanics (ASB)*: Boulder, CO, August 11, 2017.
51. Johnson JL, **Capin JJ**, Snyder-Mackler L. Male athletes who walk asymmetrically report similar function to those who walk symmetrically 1 year after ACL reconstruction. Poster Presentation. *41st Annual Meeting of the American Society of Biomechanics (ASB)*: Boulder, CO, August 8-11, 2017.
52. Khandha A, Manal K, **Capin J**, McGinnis K, Snyder-Mackler L, Buchanan TS. (2017) Relationship between interlimb differences in knee gait and cartilage T2 variables 3 months after anterior cruciate ligament reconstruction. Podium Presentation. *International Society of Biomechanics*: Brisbane, Australia, July 23-27, 2017.
53. Zarzycki R, Failla M, Arundale A, **Capin J**, Snyder-Mackler L. Athletes with a Positive Psychological Response to Return to Sport Training Have Better Outcomes One and Two Years after ACL Reconstruction. Poster Presentation. *American Orthopedic Society for Sports Medicine Annual Meeting*. July 20-23, 2017.
54. Khandha A, Manal K, **Capin J**, McGinnis K, Snyder-Mackler L, Buchanan TS. (2017) Inter-limb differences in knee gait and quantitative magnetic resonance imaging variables 3 months after anterior cruciate ligament reconstruction. Podium Presentation. *Summer Biomechanics, Bioengineering and Biotransport Conference (SB3 C)*: Tucson, AZ, June 21-24, 2017.
55. **Capin JJ**, Zarzycki R, Khandha A, Manal K, Buchanan TS, Snyder-Mackler L. Altered Knee Loading in Patients with Bone-Patellar Tendon-Bone ACL Reconstruction may Mediate Osteoarthritis Risk. E-Poster Presentation. *11th Biennial International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine Conference (ISAKOS)*: Shanghai, China, June 4-8, 2017.
56. Khandha A, **Capin JJ**, McGinnis K, Manal K, Buchanan TS, Snyder-Mackler L. Knee biomechanical and quantitative magnetic resonance imaging variables three months after anterior cruciate ligament reconstruction. Poster Presentation. *Proceedings of the Osteoarthritis Research Society International (OARSI)*: Las Vegas, April 27-30, 2017.
57. **Capin JJ**, Khandha A, Manal K, Buchanan TS, Snyder-Mackler L. Gait Mechanics Differ after ACL Reconstruction Based on Medial Meniscal Pathology and Surgical Treatment. Poster Presentation. *Orthopaedic Research Society 2017 Annual Meeting (ORS 2017)*: San Diego, CA, March 19-22, 2017.
58. Khandha A, **Capin JJ**, McGinnis K, Manal K, Buchanan TS, Snyder-Mackler L. Knee Gait and Quantitative Cartilage Imaging Variables After Anterior Cruciate Ligament Reconstruction: Preliminary Results. Poster Presentation. *Orthopaedic Research Society 2017 Annual Meeting (ORS 2017)*: San Diego, CA, March 19-22, 2017.
59. **Capin JJ**, Khandha A, Eckrich P, Manal K, Buchanan TS, Snyder-Mackler L. The effect of post-operative neuromuscular training on gait mechanics in men after ACL Reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2017)*: San Antonio, TX, February 15-18, 2017.
60. **Capin JJ**, Behrns W, Thatcher K, Arundale A, Smith AH, Snyder-Mackler, L. Clinical Commentary: On-ice return-to-hockey progression after anterior cruciate ligament reconstruction. Poster Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2017)*: San Antonio, TX, February 15-18, 2017.

61. Smith AH, Failla M, **Capin JJ**, Zarzycki R, Snyder-Mackler L. Women who go on to second ACL injury have more limb symmetry earlier after ACLR than those who do not. Podium Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2017)*: San Antonio, TX, February 15-18, 2017.
62. Zarzycki R, **Capin JJ**, Failla M, Snyder-Mackler L. Second ACL Injury Rates are Lower in Athletes with Fear of Reinjury and Lack of Confidence. Podium Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2017)*: San Antonio, TX, February 15-18, 2017.
63. **Capin JJ**, Khandha A, Zarzycki R, Manal K, Buchanan TS, Snyder-Mackler L. Lower knee flexor muscle forces during gait are associated with second anterior cruciate ligament injury in young female athletes. Thematic Poster Presentation. *40th Annual Meeting of the American Society of Biomechanics (ASB)*: Raleigh, NC, August 4, 2016.
64. Arundale A, **Capin J**, Snyder-Mackler L. Specialized return to sports training benefits self-reported knee function after ACLR. Platform. 2016 International Conference on Sports Rehabilitation and Traumatology; Football Medicine Strategies Return to Play Conference: London, England, April 9, 2016.
65. Khandha A, Manal K, Wellsandt E, **Capin J**, Buchanan T, Snyder-Mackler L. Peak knee flexion and adduction moments are inversely correlated in subjects with medial compartment osteoarthritis 5 years after anterior cruciate ligament reconstruction. Poster Presentation. *Proceedings of the Osteoarthritis Research Society International*: Amsterdam, Netherlands, March 31 - April 3, 2016.
66. **Capin JJ**, Zarzycki R, Failla M, Snyder-Mackler L. Functional measures do not differ in athletes based on mechanism of anterior cruciate ligament rupture. Podium Presentation. *Combined Sections Meeting of the American Physical Therapy Association (CSM 2016)*: Anaheim, CA, February 19, 2016.
67. **Capin JJ**, Failla M, Wellsandt E, Snyder-Mackler L. Does the addition of perturbation training improve gait asymmetries in athletes after ACLR with different mechanisms of injury? Poster Presentation. *39th Annual Meeting of the American Society of Biomechanics (ASB)*: Columbus, OH, August 5-8, 2015.
68. Khandha A, Gardinier E, **Capin J**, Manal K, Snyder-Mackler L, Buchanan T. Neuromuscular modeling of the knee joint before and after anterior cruciate ligament reconstruction – A five year follow-up study. *7th World Congress of Biomechanics*: Boston, MA, July 6-11, 2014.
69. Khandha A, Gardinier E, **Capin J**, Manal K, Snyder-Mackler L, Buchanan T. Do decreased medial compartment forces and loading asymmetries exist after anterior cruciate ligament reconstruction and rehabilitation? – A 5 year follow-up study. Poster Presentation. *Proceedings of the Osteoarthritis Research Society International (OARSI) World Congress*: Paris, France, April 24-27, 2014.

LOCAL AND REGIONAL ABSTRACTS AND PRESENTATIONS (SELECTED)

1. **Capin JJ**, Khandha A, Williams JR, Durkee L, Neal K, Stefanik JJ, Snyder-Mackler L, Buchanan TS. Identifying Early Risk Factors for Patellofemoral Osteoarthritis after Traumatic Knee Injury: An Interdisciplinary Team Approach to Clinical Research. Podium Presentation. *9th Annual University of Delaware Graduate Students' Forum*: Newark, DE, April 26, 2019.
2. Arhos EK, **Capin JJ**, Khandha A, Buchanan TS, Snyder-Mackler L. Quadriceps Strength Does Not Modify Gait Mechanics. Oral Presentation. *16th Annual Biomechanics Research Symposium*: Newark, DE, April 17, 2019.
3. Williams JR, Neal K, **Capin JJ**, Khandha A, Snyder-Mackler L, Buchanan TS. Medial Compartment Underloading 3 Months After Anterior Cruciate Ligament Reconstruction is Associated with Lower Tibiofemoral Glycosaminoglycan Content 24-Months After

- Surgery. Oral Presentation. *16th Annual Biomechanics Research Symposium*: Newark, DE, April 17, 2019.
4. Ito N, **Capin JJ**, Khandha A, Manal K, Buchanan T, Snyder-Mackler L. Return-to-sport training does not improve gait symmetry regardless of mechanism of injury in female athletes after anterior cruciate ligament reconstruction. Poster Presentation. *16th Annual Biomechanics Research Symposium*: Newark, DE, April 17, 2019.
 5. Ito N, **Capin JJ**, Khandha A, Manal K, Buchanan T, Snyder-Mackler L. Sex and mechanism of injury (MOI) influence knee mechanics after anterior cruciate ligament reconstruction (ACLR). *15th Annual Biomechanics Research Symposium*: Newark, DE, May 18, 2018.
 6. **Capin JJ**, Khandha A, Zarzycki R, Manal K, Buchanan TS, Snyder-Mackler L. Lower knee flexor muscle forces during gait are associated with second anterior cruciate ligament injury in young female athletes. Poster Presentation. *13th Annual Biomechanics Research Symposium*: Newark, DE, April 7, 2016.
 7. **Capin JJ**, Failla M, Snyder-Mackler L. Is there a relationship between noncontact versus contact mechanism of ACL rupture on functional outcomes following ACL reconstruction? Poster Presentation. *12th Annual Biomechanics Research Symposium*: Newark, DE, May 8, 2015.
 8. **Capin JJ**, Failla M, Snyder-Mackler L. Does the addition of perturbation training improve gait symmetries in athletes after ACLR with a non-contact mechanism of injury? Poster Presentation. *5th Annual Graduate Research Forum*: Newark, DE, April 21, 2015.
 9. **Capin JJ**, Stewart E, Wruble Hakim E. Passive movements / passive range of motion and early mobility in the intensive care unit (ICU). *The 4th Annual Johns Hopkins Hospital Rehabilitation Therapy Services Clinical Showcase*: Baltimore, MD, October 28, 2014.
 10. Khandha A, Gardinier E, **Capin J**, Manal K, Synder-Mackler L, Buchanan T. Peak medial compartment forces in the knee exist after anterior cruciate ligament reconstruction (ACLR) – A 5 year follow-up. Podium Presentation. *11th Annual Biomechanics Research Symposium*: University of Delaware, Newark, DE, April 21, 2014.

SELECTED CONTINUING EDUCATION COURSES AND CONFERENCES ATTENDED

February 2022	Combined Sections Meeting of the American Physical Therapy Association (APTA), San Antonio, TX
February 2021	Combined Sections Meeting of the American Physical Therapy Association (APTA), Virtual Conference
February 2020	Combined Sections Meeting of the American Physical Therapy Association (APTA), Denver, CO
January 2020	Endurance Exchange Conference, Arizona State University, Tempe, AZ
August 2019	International Society of Biomechanics – American Society of Biomechanics Conference, Calgary, Alberta, Canada
July 2019	2019 Annual Meeting, American Orthopaedic Society for Sports Medicine (AOSSM), Boston, MA
May 2019	12 th Biennial International Society of Arthroscopy, Knee Surgery & Orthopaedic Sports Medicine (ISAKOS) Congress, Cancun, Mexico
March 2019	American Academy of Orthopaedic Surgeons (AAOS) Annual Meeting, Las Vegas, NV
February 2019	Orthopaedic Research Society Annual Meeting, Austin, TX
January 2019	Combined Sections Meeting of the American Physical Therapy Association (APTA), Washington, DC
April 2018	Osteoarthritis Research Society International (OARSI) World Congress, Liverpool, UK

February 2018	Combined Sections Meeting of the American Physical Therapy Association (APTA), New Orleans, LA
August 2017	41 st Annual Meeting of the American Society of Biomechanics, Boulder, CO
March 2017	Orthopaedic Research Society Annual Meeting, San Diego, CA
February 2017	Combined Sections Meeting of the American Physical Therapy Association (APTA), San Antonio, TX
December 2016	Orthopaedic Summit, Las Vegas, NV
August 2016	40 th Annual Meeting of the American Society of Biomechanics, Raleigh, NC
February 2016	Combined Sections Meeting of the American Physical Therapy Association (APTA), Anaheim, CA
March 2016	Running Medicine Conference, University of Virginia, Charlottesville, VA
August 2015	39 th Annual Meeting of the American Society of Biomechanics, Columbus, OH
June 2015	APTA NEXT Conference, Washington, DC
March 2015	APTA Clinical Instructor Credentialing Course, University of Delaware, Newark, DE

HONORS AND AWARDS

2021	NIH Director's Early Independence Award (DP5) recipient
2020	NIH Ruth L. Kirschstein National Research Service Award F32 Postdoctoral Fellowship
2019	Outstanding Presentation Award, 9 th Graduate Students' Forum for Research and Creative Work, University of Delaware
2019	Best Original Research Paper, American Academy of Sports Physical Therapy: Arundale A, Capin JJ, Zarzycki R, Smith A, Snyder-Mackler L. Two Year ACL Reinjury Rate of 2.5%: Outcomes Report of the Men in a Secondary ACL Injury Prevention Program (ACL-SPORTS). <i>International Journal of Sports Physical Therapy</i> . 2018;13(3):422-431.
2019	Travel Award, Biomechanics Special Interest Group, Section on Research, American Physical Therapy Association
2019	Induction into <i>Phi Kappa Phi</i> Honor Society
2018	NIH Ruth L. Kirschstein National Research Service Award F30 Predoctoral Fellowship
2018	Promotion of Doctoral Studies (PODS) II Award, Foundation for Physical Therapy Research
2018	Dissertation Fellowship Award, University of Delaware
2018	Summer Doctoral Award, University of Delaware
2018	Award for Excellence in Basic, Clinical, and Translational Science, <i>Journal of Orthopaedic Research</i> : Capin JJ, Khandha A, Zarzycki R, Manal K, Buchanan TS, Snyder-Mackler L. Gait mechanics and second ACL rupture: Implications for delaying return-to-sport. <i>Journal of Orthopaedic Research</i> . 2017;35(9):1894-1901.
2018	Excellence in Research Award, Sports Physical Therapy Section of the American Physical Therapy Association: Smith AH, Capin JJ, Zarzycki R, Snyder-Mackler L. Clinical and return to sport outcomes by graft type after completion of a secondary ACL prevention program. Platform Presentation. <i>Combined Sections Meeting of the American Physical Therapy Association (CSM 2018)</i> .
2017	Promotion of Doctoral Studies (PODS) I Award: VCU-Marquette Challenge

- Award, Foundation for Physical Therapy Research
- 2017 Doctoral Fellowship Award, University of Delaware
- 2016 Best Poster Award, 13th Annual Biomechanics Research Symposium, University of Delaware
- 2015-present All-American Triathlete, USA Triathlon
- 2015 Doctorate in Physical Therapy Scholarship Award, University of Delaware
- 2014 Cathy Doetzer Kohlenstein Scholarship, University of Delaware
- 2012 Samuel Baeur Award (awarded to psychology major with the highest grade point average), Christopher Newport University
- 2011 & 2012 The Robert M. Usry Scholar Athlete Award, Christopher Newport University
- 2011 Induction into *Psi Chi*, The International Honor Society in Psychology
- 2011 Induction into *Omicron Delta Kappa*, Leadership Honor Society
- 2010-2011 Capital One Academic All-District Team, NCAA College Sports Information Directors of America
- 2009-2012 3-Time USA-South All-Academic Men's Basketball, Christopher Newport University, USA-South Conference
- 2007-2009 2-Time Atlantic Sun All-Academic Men's Basketball, Campbell University, Atlantic Sun Conference