David A. Sherman | PT, DPT, ATC, PhD

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EDUCATION

July 2024	Postdoctoral Fellow (T32) <i>Boston University, Boston, MA</i> Chobanian & Avedisian School of Medicine, Section of Rheumatology Boston University Rheumatology Research Training (PI: Neogi)
May 2023	Postdoctoral Associate Harvard University, Cambridge, MA Harvard John A. Paulson School of Engineering and Applied Sciences Biodesign Lab, MOVE Lab (PI: Walsh) Specialization: Low Back Pain, Clinical Trials, Wearable Robotics, Sensors, Biomechanics
	<i>Boston University, Boston, MA</i> College of Health and Rehabilitation Sciences: Sargent College Neuromotor Recovery Lab (PI: Awad)
May 2022	Doctor of Philosophy (PhD), Exercise Science University of Toledo, Toledo, OH College of Health & Human Services, School of Exercise & Rehabilitation Science Dissertation Title: Sensorimotor Neuroplasticity after ACL Reconstruction: Insights into Neuromodulation in Orthopedic Clinical Rehabilitation
Sept 2014	Doctor of Physical Therapy (DPT) Boston University, Boston, MA College of Health and Rehabilitation Sciences: Sargent College
Sept 2012	Bachelor of Science (BS), Athletic Training Boston University, Boston, MA College of Health and Rehabilitation Sciences: Sargent College

PROFESSIONAL POSITIONS

Academic

July 2024-Present	Northeastern University Bouvé College of Health Sciences & College of Engineering Assistant Professor (Tenure Track), Sensorimotor Rehabilitation/Neuromodulation Department of Physical Therapy, Movement and Rehabilitation Sciences Department of Electrical and Computer Engineering
May 2019-June 2022	University of Toledo Physical Therapy Program <i>Part-Time Faculty – Summer Semesters</i>
Aug 2018-June 2022	University of Toledo School of Exercise and Rehabilitation Science <i>Graduate Teaching Assistant – Fall & Spring Semesters</i>
Research	
June 2023-Present	Boston University Chobanian & Avedisian School of Medicine, Section of Rheumatology <i>Postdoctoral Fellow</i>
June 2022-Present	Harvard University Biodesign Lab, Motion Analysis Lab, MOVE Lab <i>Postdoctoral Researcher</i>
June 2022-May 2023	Boston University Neuromotor Recovery Lab, Boston University Physical Therapy Center <i>Postdoctoral Research</i>
Aug 2018-June 2022	University of Toledo

Curriculum Vitae	David A. Sherman, PT, DPT, ATC, PhD	Page 2 of 13	
	Motion Analysis & Integrative Neurophysiology Lab PhD Candidate		
Clinical			
Aug 2014 – Aug 2018 Aug 2017-Aug 2018 Jan 2016-Aug 2018 Feb 2015-Aug 2017 Aug 2014-Oct 2015	Physical Therapist Supervisor, Ben Hogan Sports Medicine Physical Therapist (Per Diem), Inpatient Physical Therapy Services Physical Therapist, Ben Hogan Sports Medicine		
Aug 2014-Feb 2015	Wise Regional Health System Physical Therapist, Fit-N-Wise Physical Therapy		
Jan 2013-July 2014	Precision Athletic Training LLC Athletic Trainer – Per Diem		
Leadership			
Jan 2021-Present	LIVE ⁴ Physical Therapy and Wellness, West Acton, MA Co-Owner & Vice President		
Advisory			
May 2021-May 2023	University of Toledo University Teaching Center Advisory Board Member, Office of the Provo	st	
Oct 2019-June 2023	O2X Specialist, Human Performance & Data Analyst Consultant O2X Human Performance, Scituate, MA		

RESEARCH FUNDING

Ongoing Research Support

NIH / NIAMS – Loan Repayment Program (L30AR084781), 07/2024-6/2026

<u>Title:</u> Effects of Effusion, Pain, and Pain Sensitivity on Muscle Strength and Function in Knee Osteoarthritis

Role: PI

<u>Amount:</u> \$108,317

Academy of Orthopedic Physical Therapy, 09/2023-08/2025

Title:Neurophysiologic Mechanisms of Quadriceps Voluntary Activation Failure in Knee OARole:Consultant, Clinical Neurophysiology (PI: Joshua Stefanik)Amount:\$40,000

NIH / NIAMS - Institutional Research Training Grant (T32) (T32AR080623), 07/2022-05/2027

<u>Title:</u> Boston University Rheumatology Research Training (BURRT) T32 Program Role: Trainee (PI: Neogi)

Role: Trainee (PI: Ne Amount: \$1,221,424

Pending Research Support

NIH / NICHD – Mentored Clinical Scientist Research Career Development Award (K23) (K23HD118599), 7/2025-6/2030

<u>Title:</u> Neural substrates of pain sensitization in knee osteoarthritis: a basis for neurofeedback therapies

<u>Role:</u> PI

Amount: \$814,160

NIH / NIA - Developmental Research Grant Program (R21) (R21AG088602), 2/2025-1/2027 Title: Sensorimotor contributions to quadriceps function in knee osteoarthritis

Role: Co-Investigator (PI: Joshua Stefanik) Amount: \$440,000

Completed Research Support

NIH / NIAMS - Cooperative Agreement (UH3AR076731), 09/2021-08/2024

Curriculum Vitae	David A. Sherman, PT, DPT, ATC, PhD	Page 3 of 13
<u>Title:</u> <u>Role:</u> <u>Amount:</u>	Development, Evaluation and Translation of Robotic Apparel for Alleviating Lov Postdoctoral Associate, Clinical Trial Director (PI: Conor Walsh) \$2,138,911	v Back Pain
<u>Title:</u>	n College of Sports Medicine (ACSM) – Doctoral Grant (#21-01419), 05/2021 Effect of Sensory and Attention Manipulations on Brain Activity and Motor Perfor Following ACL Reconstruction	
<u>Role:</u> <u>Amount:</u>	PI \$5,000	
Ohio Ath <u>Title:</u>	letic Trainers' Association (OATA) – Doctoral Grant , 01/2021-01/2022 Effect of Sensory Manipulation on Brain Activity and Balance Performance Follo Reconstruction	owing ACL
<u>Role:</u> <u>Amount:</u>	PI \$996	
Ohio Phy <u>Title:</u>	vsical Therapy Association (OPTA) , 01/2019-01/2020 Influence of sensory system constraints on electrocortical activity during postur	al control task
<u>Role:</u> <u>Amount:</u>	performance PI \$1,658	
National <u>Title:</u>	Athletic Trainers' Association (NATA) – Doctoral Grant, 01/2019-01/2020 Novel assessment of quadriceps motor unit behavior after anterior cruciate ligar reconstruction	nent
<u>Role:</u> Amount:	PI \$2,500	
deArce-M Title:	Koch Memorial Endowment Fund, The University of Toledo , 01/2019-01/202 Novel assessment of quadriceps motor unit behavior after anterior cruciate ligar reconstruction	
<u>Role:</u> <u>Amount:</u>	Co-I (PI: Norte) \$22,997	
Other Funding	Submissions	
NIH / NIĂ	MS – Loan Repayment Program (L30AR083194), 07/2023-6/2025	
<u>Title:</u> <u>Role:</u>	Scored 2.3 – Withdrawn due to change of institution Translation of Robotic Apparel for Alleviating Low Back Pain Pl	
	\$100,000	

NIH / NINDS - HEAL Initiative Career Enhancement Supplement (UH3AR076731),

*Withdrawn due to change of institution

<u>Title:</u> Cost-effectiveness and 6-month outcomes of exosuit-augmented physical therapy for low back pain

Role: Trainee (PI: Walsh)

<u>Amount:</u> \$62,728

PEER-REVIEWED PUBLICATIONS

- 1. Rush JL, **Sherman DA**, Gokeler A, Murray AM, Norte GE. Single Leg Hop Performance After Anterior Cruciate Ligament Reconstruction: Ready for Landing but Cleared for Take-Off? *Journal of Athletic Training*. ACCEPTED 2024 Mar 11.
- Sherman DA,* Smith EM,* Duncan S, Murray A, Chaput M, Murray AM, Bazett-Jones DM, Norte GE. Test-Retest Reliability and Visual Perturbation Performance Costs During Two Reactive Agility Tasks. *Journal of Sport Rehabilitation.* 2024 May 5.
- 3. **Sherman DA,** Darendeli A, Soto O, Tunik E, Stefanik JJ, and Yarossi M. Beyond Force Steadiness: Potential Challenges in Measuring Smoothness of Force Through Yank. *J Appl Physio.* ACCEPTED. 2024 *Mar 22.*
- 4. Schwartz AL, Norte GE, Bonnette S, Stock MS, Chaput M, **Sherman DA**. Steadiness, Smoothness, and Regularity: Looking Beyond Force Variability to Construct a Holistic Description of Force Quality. *J Appl Physio. 2024 Mar 22.* ACCEPTED.

- Fernandes C, Norte GE, Gokeler A, Schwab SM, Murray AM, Bazett-Jones DM, Sherman DA. Interpersonal Coordination between Female Soccer Players: Leader-Follower Roles within a Collision-Avoidance Task. *International Journal of Sports Physical Therapy. 2024 May 1. doi:* 10.26603/001c.116156.
- Collimore A, Alvarez J, Sherman DA, Gerez LF, Barrow N, Choe DK, Binder-Macleod S, Walsh C, Awad L. A Portable, Neurostimulation-Integrated, Force Measurement Platform for the Clinical Assessment of Plantarflexor Central Drive. *Bioengineering*.2024 Jan 30. doi: 10.3390/bioengineering11020137.
- Riehm CD, Bonnette S, Rush JL, Diekfuss J, Koohestanijavan M, Myer GD, Norte GE, Sherman DA. Cortico-muscular Cross Recurrence Analysis of Electroencephalography and Electromyography Signals Differentiates Individuals with ACLR and Controls. *Experimental Brain Research*. 2023 Dec 13. doi: 10.1007/s00221-023-06751-1.
- 8. **Sherman DA**, Rush JL, Stock M, Ingersoll CD, Norte GE. Neural drive and motor unit characteristics after anterior cruciate ligament reconstruction: Implications for quadriceps weakness. *PeerJ*. 2023. 11:e1626. doi: 10.7717/peerj.16261.
- Sherman DA, Stock MS, Baumeister J, Murray AM, Bazett-Jones DM, Norte GE. Brain Activation and Single-Limb Balance Deficits following Anterior Cruciate Ligament Reconstruction. *Clinical Neurophysiology*. 2023. doi: 10.1016/j.clinph.2023.02.175.
- Quirk DA, Chung J, Schiller G, Cherin J, Arens P, Sherman DA, Zeligson E, Dalton D, Awad L, Walsh C. Reducing back exertion and improving confidence of individuals with low back pain with a back exosuit: A feasibility study for use in BACPAC. *Pain Medicine*. 2023. doi: 10.1093/pm/pnad003.
- 11. Chaltron C, **Sherman DA**, Pamukoff D, Bazett-Jones DM, Glaviano NR, Norte GE. Whole-body vibration reduces hamstrings neuromuscular function in uninjured individuals. *Phys Ther Sport*. 2023. doi: 10.1016/j.ptsp.2023.01.004.
- Kuenze C, Weaver A, Grindstaff TL, Ulman S, Norte GE, Roman DP, Giampetruzzi N, Lisee C, Birchmeier T, Triplett A, Farmer B, Hopper H, **Sherman DA**, Ness BM, Collins K, Walaszek M, Baez S, Harkey MS, Tulchin-Francis K, Ellis H, Wilson PL, Chang E, Wilcox L, Schorfhaar A, Shingles M, Hart JM. Age-, Sex-, and Graft-specific Reference Values From 783 Adolescent Patients At 5-7 months After ACL Reconstruction: IKDC, PEDI-IKDC, KOOS, ACL-RSI, Single-leg Hop, and Thigh Strength. J Orthop Sports Phys. 2023. doi: 10.2519/jospt.2023.11389.
- Sherman DA, Stock MS, Baumeister J, Murray AM, Bazett-Jones DM, Norte GE. Weaker quadriceps corticomuscular coherence in individuals following anterior cruciate ligament reconstruction during force tracing. *Medicine & Science in Sports & Exercise*, Vol. 55, No. 3. pp. 00-00, 2023. doi: 10.1249/MSS.000000000003080.
- 14. **Sherman DA**, Baumeister J, Stock MS, Murray AM, Bazett-Jones DM, Norte GE. Inhibition of Motor Planning and Response Selection after Anterior Cruciate Ligament Reconstruction. *Medicine & Science in Sports & Exercise*, Vol. 55, No. 3. pp. 00-00, 2023. doi: 10.1249/MSS.00000000003072.
- Norte GE, Rush JL, Sherman DA. Arthrogenic Muscle Inhibition: Best Evidence, Mechanisms, and Theory for Treating the Unseen in Clinical Rehabilitation. *Journal of Sport Rehabilitation*. 2021 Dec 9; 31(6):717-735. https://doi.org/10.1123/jsr.2021-0139.
- Rush JL, Sherman DA, Bazett-Jones D, Ingersoll C, Norte GE. Understanding Athletic Trainers' knowledge, intervention, and barriers towards arthrogenic muscle inhibition. *Journal of Sport Rehabilitation*. 2021 Dec 1;31(6):667-675. doi: 10.1123/jsr.2021-0162.
- 17. **Sherman DA**, Lehmann T, Baumeister J, Grooms D, Norte GE. Somatosensory perturbations influence cortical activity associated with single limb balance performance. *Experimental Brain Research*. 2022 Feb;240(2):407-420. doi: 10.1007/s00221-021-06260-z.
- Sherman DA, Lehmann T, Gokeler A, Baumeister J, Donovan L, Norte GE. External focus of attention influences cortical activity associated with single limb balance performance. *Physical Therapy Journal*. 2021 Dec 1;101(12):pzab223. doi: 10.1093/ptj/pzab223.
- Sherman DA, Glaviano NR, Norte GE. Hamstrings neuromuscular function after anterior cruciate ligament reconstruction: a systematic review and meta-analysis. *Sports Med.* 2021 Aug;51(8):1751-1769. doi: 10.1007/s40279-021-01433-w
- Sherman DA, Rush JL, Glaviano NR, Norte GE. Hamstrings muscle morphology after anterior cruciate ligament reconstruction: a systematic review and meta-analysis. *Sports Med.* 2021 Aug; 51(8):1733-1750. doi: 10.1007/s40279-021-01431-y
- 21. Jacobson J, Chaltron C, **Sherman DA**, Glaviano NR. Blood flow restriction training in clinical musculoskeletal rehabilitation: A critically appraised paper. *International Journal of Athletic Therapy and Training.* 2020 Apr; 25(6):303-306. doi: 10.1123/ijatt.2019-0010.

- Scheurer SA, Sherman DA, Glaviano NR, Ingersoll CD, Norte GE. Corticomotor function is associated with quadriceps rate of torque development in individuals with ACL surgery. *Experimental Brain Research*. 2020 Feb;238(2):283-294. doi: 10.1007/s00221-019-05713-w.
- 23. **Sherman DA**, Birchmeier T, Kuenze C, Garrison CJ, Hannon J, Bothwell J, Bush CA, Norte GE. Thigh muscle and patient-reported function early after ACL reconstruction: clinical cutoffs unique to graft-type and age. *Journal of Athletic Training*. 2020 Jul;55(8):000-000. doi: 10.4085/1062-6050-370-19.
- 24. **Sherman DA**, Sherman SG, Norte GE. The power of language: utilizing the optimal theory to coach your patients to recovery. *Athletic Training & Sports Health Care*. 2020 Dec;12(6):246-248. doi: 10.3928/19425864-20200205-02.

*Denotes shared first author designation.

MANUSCRIPTS IN REVIEW / FINAL PREPARATION

- 1. Koohestani M, Chaput M, Schwartz A, Rush JR, **Sherman DA**, Gokeler A, Norte GE. The Effect of Dual-task Paradigm on Balance after Anterior Cruciate Ligament Reconstruction: A Systematic Review and Meta-Analysis. IN REVIEW. *Gait & Posture.*
- Schwartz AL, Koohestani M, Sherman DA, Stock MS, Norte GE. Quadriceps and Hamstrings Force Control After ACL Injury and Reconstruction: A Systematic Review & Meta-Analysis. IN REVIEW. Medicine & Science in Sports & Exercise.
- 3. Collimore A, **Sherman DA**, Bonato P, Awad L. The Dynamic Motor Control Index as a Marker of Impaired Neuromotor Control After Stroke. IN REVIEW. *Neurorehabilitation and Neural Repair.*
- Norte GE, Murray AM, Rush JL, Sherman DA, Glaviano NR. Hamstrings Volumetric Adaptations to a 4-Week Nordic Hamstring Exercise Protocol in Individuals with ACL Reconstruction: A Preliminary Case Series. IN REVIEW. *Physical Therapy in Sport.*
- 5. Araromi OA, Shah K, Baker L, Wendel N, Graule MA, Wu H, **Sherman DA**, Lui A, Chang A, Niemi J, Ellis TD, Wood RJ, Walsh CJ. Muscle deformation biomarkers for the detection of medication-induced changes in muscle rigidity in Parkinson's disease using wearable curvature sensors. IN REVIEW. *npj Parkinson's Disease*.
- 6. Norte GE, Glaviano NR, **Sherman DA**, Rush JL, Murray AM. Four-Week Nordic Hamstring Exercise Intervention for Individuals with ACL Reconstruction via Hamstrings Tendon Autograft: A Feasibility Trial. IN REVIEW. *BMC Pilot and Feasibility Studies.*
- 7. Norte GE, Sherman DA, Rush JL, Ingersoll CD, Bodkin SG, Snyder-Mackler L, Grindstaff TL, Burland JP, Hopkins JT, Blackburn T, Chaput M, Konishi Y, Rice DA, Hart JM, Harkey MS, Zarzycki R, Palmieri-Smith RM, Lepley LK, Lepley AS, Pamukoff DN, Park J, Lisee C, Pietrosimone B, Thomas AC, Goetschius J, Tourville TW, Kidgell DJ, Kuenze CM. Advancing Clinical Evaluation and Treatment of Arthrogenic Muscle Inhibition: A Need for Validation and Innovation. IN REVIEW. American Journal of Sports Medicine.

CONFERENCE PRESENTATIONS

National and International Conferences

- <u>Upcoming</u>: Chaput M, Toole A, Sherman DA, Norte GE. Beyond Strength: Rethinking Muscle Weakness and Optimizing Rehabilitation of Patients with Knee Joint Injury. (SESSION – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. Houston, TX. February 2025.
- <u>Upcoming</u>: Thoma, L, Sherman DA. To Post-Doc or Not... That Is the Question! (SESSION Academy of Research) American Physical Therapy Association Combined Sections Meeting. Houston, TX. February 2025.
- Norte GE, Murray AM, Sherman DA, Gokeler A, Rush JL. Quadriceps Strength Symmetry Influences Movement Generation During Single Leg Hop Performance Among Individuals with ACL Reconstruction. (POSTER) National Athletic Trainers' Association 2024 Annual Meeting. New Orleans, LA. June 2024.
- Smith EM, Sherman DA, Duncan S, Murray A, Chaput M, Murray AM, Bazett-Jones DM, Norte GE. Test-Retest Reliability and Visual Perturbation Performance Costs During Two Reactive Agility Tasks. (RAPID FIRE PRESENTATION) National Athletic Trainers' Association 2024 Annual Meeting. New Orleans, LA. June 2024.

- Caulfield B, Deegan K, Sherman DA, Stefanik JJ, Yarossi M. Personalisation and Optimisation of NMES to Enhance Adherence and Clinical Effectiveness. (INVITED TALK) International Society of Electrophysiology and Kinesiology (ISEK) 2024 Annual Meeting. Nagoya, Japan. June 2024.
- 6. Schwartz AL, Koohestani M, Sherman DA, Rush JL, Norte GE. Relationship Between Joint Angle and Patterns of Hamstrings Activation After ACL Reconstruction. (POSTER) International Society of Electrophysiology and Kinesiology (ISEK) 2024 Annual Meeting. Nagoya, Japan. June 2024.
- Sherman DA, Fernandes C, Schwab S, Gokeler A, Norte G. Interpersonal Coordination Between Female Soccer Players: Leader-Follower Roles. (ORAL) Isokinetic Medical Group 2024 Football Medicine Conference. Madrid, Spain. May 2024.
- Norte GE, Stock MS, Sherman DA. Injury History, Not Corticospinal Excitability, Explains Slower Quadriceps Motor Unit Firing After ACL Reconstruction. (POSTER) American College of Sports Medicine (ACSM) 2024 Annual Meeting. Boston, MA. May 2024.
- Sherman DA, Stock MS, Norte GE. Corticospinal Excitability Is Associated With Quadriceps Motor Unit Action Potential Amplitudes Irrespective of ACL Reconstruction. (POSTER) American College of Sports Medicine (ACSM) 2024 Annual Meeting. Boston, MA. May 2024.
- <u>Upcoming:</u> Schwartz AL, Koohestani M, Sherman DA, Stock MS, Norte GE. Quadriceps and Hamstrings Force Control After ACL Injury and Reconstruction: A Systematic Review & Meta-Analysis. (POSTER) American College of Sports Medicine (ACSM) 2024 Annual Meeting. Boston, MA. May 2024.
- Sherman DA, Neogi T, Stefanik J. Frequent Knee Pain Contributes To Lower Quadriceps Strength, But Not Decline In Strength Over 4-Years: Data From The Osteoarthritis Initiative. (POSTER) Osteoarthritis Research Society International (OARSI) 2024 World Congress. Vienna, Austria. April 2024.
- 12. Sherman DA, McGinley B, Neogi T, Felson D, LaValley M, Torner, JC, Lewis CE, Nevitt M, Stefanik J. Association Between Frequent Knee Pain And Pain Severity With Quadriceps Strength Over 5-Years: Multicenter Osteoarthritis Study. (POSTER) Osteoarthritis Research Society International (OARSI) 2024 World Congress. Vienna, Austria. April 2024.
- Sherman DA, Sherman SG, Chaput M, Hannon J, Kunz RT. Reconstructing our Athletes: Optimizing Rehabilitation of Persons with Anterior Cruciate Ligament Injury. (SESSION – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. Boston, MA. February 2024.
- Sherman DA, Capin JJ, DiStasi S, White DK, Michener L. Running a Research Lab is Like Running a Small Business. (SESSION – Academy of Research) American Physical Therapy Association Combined Sections Meeting. Boston, MA. February 2024.
- Schwab SM, Sherman DA, Corbin SF, Carver NS, Cooper D, DeSilva A. Methods, Tools, and Measurement for the Advancement of Interpersonal Motor Coordination Research in Physical Therapy. (SESSION – Academy of Research) American Physical Therapy Association Combined Sections Meeting. Boston, MA. February 2024.
- Sherman DA. Neural Determinants of Motor Function in ACL Rehabilitation. (INVITED TALK) Institute of Exercise Physiology and Rehabilitation Science 4th Annual Conference. University of Central Florida, Orlando, FL. February 2024.
- Collimore A, Alvarez J, Sherman DA, Walsh C, Binder-Macleod, Awad L. Plantarflexor Central Drive Symmetry is Associated with Poststroke Walking Function in Community Ambulators. American Society of Biomechanics. Knoxville, TN. August 2023.*

*American Society of Biomechanics Clinical Biomechanics Award Finalist

- Sherman DA, Sherman SG. Aclx: TED Style Dialogues Covering the Scope and Depth of ACL Injury, Rehabilitation, and Return to Sport. (FEATURE) National Athletic Training Association Convention & Expo. Indianapolis, IN. June 2023. Deferred due to family medical leave.
- Sherman DA, Stock M, Baumeister J, Murray AM, Bazett-Jones DM, Norte GE. Weaker quadriceps corticomuscular coherence in individuals following anterior cruciate ligament reconstruction during force tracing. (ORAL – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. San Diego, CA. February 2023.
- Sherman DA, Stock M, Baumeister J, Murray AM, Bazett-Jones DM, Norte GE. Brain activation and single-limb balance deficits following anterior cruciate ligament reconstruction: neuroplasticity and potential treatments. (ORAL – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. San Diego, CA. February 2023.

- Malafronte J, Sherman DA. 'AM I' doing this right? Treating Arthrogenic muscle inhibition after ACLR. (POSTER – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. San Diego, CA. February 2023.
- Collimore A, Alvarez J, Barrow N, Sherman DA, Walsh C, Binder-Macleod S, Awad L. Accuracy of a Portable Device for Measuring Plantarflexor Muscle Strength and Central Drive. (POSTER – Academy of Neurologic Physical Therapy) American Physical Therapy Association Combined Sections Meeting. San Diego, CA. February 2023.
- Sherman DA, Rush JL, Stock M, Ingersoll CD, Norte GE. Deficits in motor unit amplitude and recruitment threshold following ACL reconstruction: Evidence of diminished quadriceps motor neuron pool. (ORAL) National Athletic Training Association Convention & Expo. Philadelphia, PA. June 2022.
- 24. Chaput M, Sherman DA, Grooms D. Reframing the ACL Problem: Integrating a Neurological Approach to Rehabilitation. (SCIENCE MEETS PRACTICE SESSION – American Academy of Sports Physical Therapy). Dialogue: Open and Exploit: Leverage Sensory Pathways to Boost Muscle Activation and Motor Recovery. American Physical Therapy Association Combined Sections Meeting. San Antonio, TX. February 2022.
- Sherman DA, Rush J, Norte GE. Arthrogenic Muscle Inhibition: Best Evidence, Mechanisms, and Theory for Treating the Unseen in Clinical Rehabilitation. (POSTER – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. San Antonio, TX. February 2022.
- 26. **Sherman DA**, Rush J, Glaviano NR, Norte GE. Hamstrings muscle morphology in individuals with ACL reconstruction: Systematic review and meta-analysis. (ORAL) **National Athletic Training Association Convention & Expo.** Orlando, FL. June 2021.
- 27. Sherman DA, Vorst NT, Lehmann TL, Baumeister J, Norte GE. External focus of attention influences brain activity associated with single limb balance performance. (ORAL) National Athletic Training Association Convention & Expo. Orlando, FL. June 2021.
- Sherman DA, Lehmann TL, Baumeister J, Gokeler A, Donovan L, Norte GE. External focus of attention influences brain activity associated with single limb balance performance. (ePOSTER – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. February 2021.
- Sherman DA, Vorst NT, Lehmann TL, Baumeister J, Grooms D, Norte GE. Transcutaneous electrical nerve stimulation influences brain activity associated with single limb balance performance. (ePOSTER – American Academy of Sports Physical Therapy) American Physical Therapy Association Combined Sections Meeting. February 2021.
- Sherman DA, Glaviano NR, Norte GE. Hamstrings neuromuscular function in individuals with ACL reconstruction: Systematic review and meta-analysis. (ORAL) National Athletic Training Association Convention & Expo. Atlanta, GA. June 2020.
- 31. Sadeqi S; Erbulut D, Murray AM, Norte GE, Sherman DA, Noe K, Barnett M, Goel V. Comparison of ACL strain and knee kinematics during two tasks of single leg cross drop jump and single leg drop jump: a multibody and finite element study. (POSTER) Orthopedic Research Society Annual Meeting. Phoenix, AZ. February 2020.
- 32. Scheurer SA, **Sherman DA**, Glaviano NR, Ingersoll CD, Norte GE. Relationships Between Quadriceps Corticomotor and Neuromechanical Function after Anterior Cruciate Ligament Reconstruction. (POSTER) **National Athletic Trainers' Association Annual Meeting**. Las Vegas, NV. July 2019.
- 33. Sherman DA*, Kuenze C, Garrison CJ, Hannon J, Bothwell J, Bush CA, Norte GE. Thigh muscle and patient-reported function early after ACLR: Clinical cutoffs unique to graft type and age. (POSTER) National Athletic Training Association Convention & Expo. Las Vegas, NV. July 2019. *NATA Research & Education Foundation Doctoral Poster Award Finalist
- 34. Sherman DA, Scheurer SA, Glaviano NR, Ingersoll CD, Norte GE. Relationships between quadriceps corticomotor and neuromechanical function after anterior cruciate ligament reconstruction. (POSTER) Osteoarthritis Research Society International (OARSI) 2019 World Congress. Toronto, Ontario, Canada. May 2019.
- 35. Sherman DA, Hannon J, Goto S, Creed K, Bothwell J, Bush C, Garrison JC. Relationship between Y balance performance, single limb vertical jump displacement, and single limb hop tests following Anterior Cruciate Ligament Reconstruction. (POSTER American Academy of Sports Physical Therapy) American Physical Therapy Combined Sections Meeting. Washington, DC. January 2019.
- 36. **Sherman DA**, Garrison JC, Goto S, Creed K, Bothwell J, Hannon J. Differences in lower extremity energy absorption contribution between age groups in healthy female athletic cohorts during a jump

landing task. (POSTER – American Academy of Sports Physical Therapy) **American Physical Therapy Association Combined Sections Meeting.** New Orleans, LA. February 2018

37. Sherman DA, Robertson SM, Marinko LN. do deficits in hip strength and abdominal endurance correlate to incidence of shoulder injury in the collegiate throwing athlete: A pilot study. (POSTER – Academy of Orthopedic Physical Therapy) American Physical Therapy Association Combined Sections Meeting. Las Vegas, NV. February 2014

Regional Conferences

- 1. Sherman DA, Lehmann TL, Baumeister J, Gokeler A, Donovan L, Norte GE. External focus of attention influences brain activity associated with single limb balance performance. (ORAL) **Great Lakes Athletic Training Association Annual Meeting.** March 2021.
- Vorst NT, Sherman DA, Lehmann TL, Baumeister J, Grooms D, Norte GE. Transcutaneous electrical nerve stimulation influences brain activity associated with single limb balance performance. (ePOSTER) Great Lakes Athletic Training Association Annual Meeting. March 2021.
- Sherman DA, Lehmann T, Baumeister J, Gokeler A, Donovan L, Norte G. External focus of attention influences brain activity and single-limb balance performance in healthy individuals. (ORAL) Ohio Physical Therapy Association LEAP 2020. Columbus, OH. Sept 25th 2020.
- Sherman DA. Current Research topics: persistent muscle dysfunction after ACL reconstruction. (INVITED SPEAKER) Indiana State University Doctor of Athletic Training Weekend. Terre Haute, ID. April 2020.
- Norte GE, Sherman DA. Hamstrung by the hamstrings? Simple solutions for complex problems after ACL reconstruction. (FEATURE) Great Lakes Athletic Training Association Annual Meeting. Wheeling, IL. March 2020.
- Sherman DA, Norte GE. The effect of eccentric exercise on hamstrings corticomotor function among individuals with ACL reconstruction: A pilot study. (ORAL) Great Lakes Athletic Training Association Annual Meeting. Wheeling, IL. March 2020.
- 7. Norte GE, **Sherman DA**. Life after ACL-Reconstruction: How do I know when my patient is ready to return to activity? (INSTRUCTIONAL LAB). Toledo, OH. April 2019.
- Lee BJ, Sherman DA. Specific Rehabilitation Strategies after Periacetabular Osteotomy. (INSTRUCTIONAL LAB) Fifteenth Annual Dallas Fort Worth Sports Medicine Symposium. Southlake, TX. March 2018.
- Sherman DA. Do Deficits In Hip Strength and Abdominal Endurance Correlate to Incidence of Shoulder Injury in the Collegiate Throwing Athlete: A Pilot Study. (ORAL) American Physical Therapy Association of Massachusetts. Newton, MA. October 2013

MEDIA

- 1. **Sherman DA**. Masterclass: Neural Determinants of Quadriceps Muscle Recovery after LCA Reconstruction (Translated and Disseminated in French). *Full Physio*. February 2024. (https://www.fullphysio.com/)
- 2. **Sherman DA** and Reinold M. Neural Determinants of Muscle Function in ACL Rehabilitation. *Sports Physical Therapy Podcast*. October 2023. (https://sportsphysicaltherapypodcast.buzzsprout.com/)
- Synder-Mackler L, Lepley L, Wellsandt E, Grooms D, Norte G, Sherman DA. Quadriceps (dys)function after ACL Injury 2023. *Evidence & Practice*. Online Course & Virtual Q&A. June 2023. (https://www.evidenceandpractice.com)
- 4. Sherman DA. Unravelling the complexity: the future of ACL resilience remains hidden within the complex sensorimotor system. *Evidence & Practice*. Blog & Virtual Q&A. April 2021. (https://www.evidenceandpractice.com)

DIDACTIC IN-SERVICES

On Scholarship of Teaching and Learning

- 1. Kusina J, Martin C, Nonekowski S, **Sherman DA**, Bartell D. Course Design Institute. University of Toledo Center for Equity and Excellence in Teaching and Learning. Toledo, OH. May 2022.
- 2. **Sherman DA**, Bartell D. Teaching Assistant Training. University of Toledo Center for Equity and Excellence in Teaching and Learning. Toledo, OH. August 2021.

On Rehabilitation

- 1. **Sherman DA**. Sensorimotor Neuroplasticity after ACL Reconstruction: Insights into Neuromodulation in Orthopedic Clinical Rehabilitation. Residency Didactic Topic. Texas Health Resources. Texas Health Sports Medicine. Fort Worth, TX. September 2023.
- Sherman DA. Sensorimotor Neuroplasticity after ACL Reconstruction: Insights into Neuromodulation in Orthopedic Clinical Rehabilitation. Residency Didactic Topic. Texas Health Resources. Texas Health Sports Medicine. Fort Worth, TX. September 2022.
- 3. **Sherman DA**. Sensorimotor Neuroplasticity after ACL Reconstruction: Insights into Neuromodulation in Orthopedic Clinical Rehabilitation. Seminars in Neuroscience. University of Paderborn, Paderborn, Germany. May 18, 2022.
- 4. **Sherman DA**. Treating the patient with a knee injury: 2021 Updates. *Learning lab: the power of language: use of motor learning principles to improve movement and recovery.* University of Toledo College of Health and Human Services. Ohio Physical Therapy Association EBP Event. Toledo, OH. November 2021.
- 5. **Sherman DA**, Kuenze C, Garrison CJ, Hannon J, Bothwell J, Bush CA, Norte GE. Thigh muscle and patient-reported function early after ACLR: Clinical cutoffs unique to graft type and age. Motion Analysis and Integrative Neurophysiology Lab Inservice. University of Toledo, College of Health and Human Services. Toledo, OH. November 2019.
- 6. **Sherman DA**. Neuromuscular aspects of common musculoskeletal injuries. Physical Therapy Program Inservice. University of Toledo, College of Health and Human Services. Toledo, OH. September 2019.
- 7. **Sherman DA**. Progression and Regression of Therapeutic Exercise. Physical Therapy Program Inservice. University of Toledo, College of Health and Human Services. Toledo, OH. March 2019.
- 8. **Sherman DA**. Functional Anatomy of the Knee. Residency Didactic Topic. Texas Health Resources. Ben Hogan Sports Medicine. Fort Worth, TX. January 2019.
- Sherman DA. Overhead Throwing Athlete and the Ulnar Collateral Ligament (UCL): From Injury Prevention to Return to Throwing. Physical Therapy Program Inservice. University of Toledo, College of Health and Human Services. Toledo, OH. October 2018.
- 10. **Sherman DA**. Functional Anatomy of the Knee. Residency Didactic Topic. Texas Health Resources. Ben Hogan Sports Medicine. Fort Worth, TX. December 2017.
- 11. Hannon J, **Sherman DA**, Ortega K. Sports Medicine Seminar. Doctor of Physical Therapy Program Lecture Series. Texas Woman's University. Dallas, TX. April 2017.
- 12. **Sherman DA**, Garrison JC. Post-op ACL Reconstruction: From Three Months to Return to Sport. Residency Didactic Topic. Texas Health Resources. Ben Hogan Sports Medicine. Fort Worth, TX. January 2017.
- Sherman DA. Don't Be A Pain: Physical Therapist's Role in Pain Management Acutely Post-Operatively. In-service. University of Virginia Health System. Physical and Occupational Therapy Department. Charlottesville, VA. May 2014.
- 14. **Sherman DA.** Mindset and Its Role in Low Back Pain: Clinical Considerations for Management of Physiological and Psychological Aspects of Low Back Pain. In-service. EXOS. Frisco, TX. March 2013.

OTHER FUNDING

Sponsored Trainee Funding

Boston University – Undergraduate Research Opportunities Program

Student: Noah Barrow (Summer 2023)

<u>Title:</u> Translation of Robotic Apparel for Alleviating Low Back Pain <u>Role:</u> Project Lead (PI: Awad)

University of Toledo - Undergraduate Research and Creative Activities Program <u>Student:</u> Alekhya Varada (Fall 2021)

<u>Title:</u> Response selection, motor planning, and response execution following ACL reconstruction Role: Graduate Student Advisor (Sponsor & Advisor: Norte)

University of Toledo - Undergraduate Research and Creative Activities Program <u>Student:</u> Alekhya Varada (Summer 2021)

<u>Title:</u> Behavioral dynamics of collision avoidance in sport: Insights into ACL injury prevention <u>Role:</u> Graduate Student Advisor (Sponsor & Advisor: Norte)

University of Toledo - Undergraduate Research and Creative Activities Program <u>Student:</u> Alyssa Jordan (Summer 2021)

<u>Title:</u> Brain to muscle coherence quality between individuals following ACLR and controls: Differences and potential treatments.

Role: Graduate Student Advisor (Sponsor & Advisor: Norte)

University of Toledo - Undergraduate Research and Creative Activities Program Student: Nathan Vorst (Fall 2020)

<u>Title:</u> *Influence of sensory system constraints on brain activity during postural control task performance* <u>Role:</u> Graduate Student Advisor (Sponsor & Advisor: Norte)

University of Toledo - Undergraduate Research and Creative Activities Program Student: Trentin Harris (Summer 2020)

<u>Title:</u> Adaptation in quadriceps motor unit characteristics after ACL reconstruction <u>Role:</u> Graduate Student Advisor (Sponsor & Advisor: Norte)

University of Toledo - Undergraduate Research and Creative Activities Program <u>Student:</u> Noah Fiala (Summer 2019)

<u>Title:</u> Use of Nordic hamstring exercise to improve hamstrings function in patients after ACL reconstruction

Role: Graduate Student Advisor (Sponsor & Advisor: Norte)

Small Business

Town of Acton Economic Development Office - Acton Business Incubator, 6/27/2022

<u>Description:</u> Small business accelerator grant for the development of small business within the Acton, MA community. Awarded to the business whose mission and vision align with the Town's values and who demonstrates strong potential for growth.

Role: Vice President (President: Sarah Sherman)

Amount: \$5,000

HONORS AND AWARDS

June 2024	Nominee, The David H. Perrin Doctoral Dissertation Award, National Athletic
	Trainers Association Research and Education Foundation

- June 2021 **GLATA Living Pinky Newell Graduate Scholarship**, National Athletic Trainers Association
- April 2019 Robert N. Memorial Scholarship, The University of Toledo Graduate Council
- April 2016 Mosaic Pin Award for Exemplary Modelling of Promise Behaviors: Support of Diversity in the Workplace and Patient Satisfaction Texas Health Resources, Arlington, TX

LEADERSHIP

July 2021-July 2023	Center for Equity and Excellence in Teaching and Learning Advisory Council* Nominated Member, Two-Year Appointment *Institutional development role
Oct 2020-July 2021	University of Toledo Teaching Center Task Force* Sole Graduate Student Member, Office of the Provost, University of Toledo *Institutional development role
May 2020-June 2022	MAIN Lab Human Biomechanics Undergraduate Student Group Founder & Graduate Student Advisor, University of Toledo, Toledo, OH
Oct 2018-May 2020	Midwest Graduate Research Symposium Steering Committee Graduate Student Association, University of Toledo, Toledo, OH
May 2012-May 2013	Residence Assistant Residence Life, South Campus, Boston University, Boston, MA
Sept 2011-May 2012	Treasurer Residence Life, Student Village II, Boston University, Boston, MA

ADDITIONAL SCHOLARLY TRAINING

Spring 2023 –	Boston University Rheumatology Research Training (BURRT) T32 Program,
Present	Boston University, Chobanian & Avedesian School of Medicine, Rheumatology
Spring 2023	Program for Early Research Career Development (PERC), Boston University
	Clinical and Translational Science Institute, Boston University

Summer 2022	The Postdoc Academy: Building Skills for a Successful Career, Professional Development and Postdoctoral Affairs, Boston University
Spring 2021	Equity Champion, College Transition Collaborative Student Experience Project*, University of Toledo
	*Interdisciplinary community of practice surrounding course redesign to optimize principles of diversity, equity, and inclusion
Spring 2021	Advanced Leadership Academy, College of Business Innovation, University of Toledo
Spring 2018	Scholar Institute Program, Office of Research and Sponsored Programs (Grant Writing Workshop), University of Toledo

RESEARCH ADVISING

Doctor of Philosophy Student

Ashley Collimore - Boston University, Postdoctoral Advisor, 2022-Present <u>Project Title:</u> Neuromotor control after stroke: Understanding neuromechanical contributors to propulsion deficits.

Jonathon Alverez – Harvard University, Postdoctoral Advisor, 2022-Present <u>Project Title:</u> Neuromotor control after stroke: Understanding neuromechanical contributors to propulsion deficits.

Philipp Arens – Harvard University, Postdoctoral Advisor, 2022-Present <u>Project Title:</u> Development, Evaluation & Translation of Robotic Apparel for Alleviating Low Back Pain

Master of Athletic Training Students

Ellen Smith - University of Toledo, Primary Graduate Student Advisor, 2021-Present <u>Thesis Title:</u> Test-retest reliability and influence of visual constraint during two novel reactive-agility tasks.

Courtney Fernandes - University of Toledo, Primary Graduate Student Advisor, 2020-2022

<u>Thesis Title:</u> Self-organized interpersonal collision-avoidance: implications for sport and fear of injury. Mitchell Anderson – University of Toledo, Co-advisor, 2020-2022

<u>Thesis Title:</u> Effects of an Eccentric Biased at Home Exercise Program on Hamstrings Muscle Function Samantha Duncan – University of Toledo, Primary Graduate Student Advisor, 2019-2021

<u>Thesis Title:</u> Test-retest reliability and influence of visual constraint during two novel reactive-agility tasks.

Cale Chaltron – University of Toledo, Primary Graduate Student Advisor, 2018-2020

Thesis Title: Effects of whole-body vibration on hamstrings neuromuscular function.

John Walker – University of Toledo, Co-advisor, 2018-2019

<u>Thesis Title:</u> Use of Nordic hamstring exercise to improve hamstrings function in patients after ACL reconstruction.

Doctor of Physical Therapy Students

Kelsie Langenderfer - Physical Therapy, University of Toledo, 2019-2020 McKenna Shives - Physical Therapy, University of Toledo, 2019-2020

Undergraduate Researchers

Noah Barrow – Sargent College, Boston University, 2022-2023. Sanjana Nath – College of Engineering, University of Toledo, 2021-2022. Alekhya Varada – College of Engineering, University of Toledo, 2020-2022. Alyssa Jordan - College of Health and Human Services, University of Toledo. 2020-2022. Trentin Harris – College of Health and Human Services, University of Toledo. 2020. Nathan Vorst – College of Health and Human Services, University of Toledo. 2019-2021. Noah Fiala – College of Health and Human Services, University of Toledo. 2019-2021.

CLASSROOM TEACHING EXPERIENCE

Aug 2022–Dec 2022Lab Instructor, Boston UniversityFall 2022PT521 – Musculoskeletal Systems I (Upper Extremity)

May 2019–June 2022 Spring 2022 Fall 2021 Summer 2019 - 2021	Part-Time Instructor , University of Toledo EXSC 3200 – Advanced Human Anatomy ATTR6720 – Advanced Clinical Anatomy PHYT5000 – Gross Anatomy
Aug 2018–June 2022	Teaching Assistant, University of Toledo
Spring 2020-Fall 2020	Biomechanics of Human Motion
Spring 2019 - 2022	Biomechanical Instrumentation
Fall 2021	ATTR6730 – Optimization of Performance & Wellness
Spring 2020 - 2022	EXSC4640 – Neurological & Pathological Foundations of Rehabilitation
Fall 2019-Fall 2020	KINE1460- Fundamentals of Anatomy and Physiology (In-person & online sections)*
	*Revised course to incorporate principles of diversity, equity, and inclusion
Fall 2018-Spring 2019	KINE2460 - Anatomy and Physiology 1
Spring 2019	PHYT5070/5080- Neuroscience & Neuroscience Seminar

CLINICAL PRECEPTOR EXPERIENCE

Spring 2017–Fall 2018	Clinical Preceptor Doctor of Physical Therapy Program, UT Southwestern, Dallas, TX Doctor of Physical Therapy Program, Oklahoma University, Norman, OK Doctor of Physical Therapy Program, Texas Tech University, Lubbock, TX
Fall 2016–Fall 2018	Clinical Preceptor Masters' of Athletic Training Program, Texas Wesleyan University, Dallas, TX Masters' of Athletic Training Program, University of Texas Arlington, Arlington, TX Bachelor of Athletic Training Program, Texas Christian University, Fort Worth, TX
Summer 2016 & 2017	Clinical Preceptor SAR PT791 – Clinical Education Experience 1 Doctor of Physical Therapy Program, Boston University, Boston, MA Athletic Training Program, Boston University, Boston, MA

SCHOLARLY SERVICE

American Physical Therapy Association

June 2023-Present	Abstract Reviewer – American Physical Therapy Association, Academy of Physical Therapy Research
July 2021-Present	Abstract Reviewer - American Physical Therapy Association, American Academy of Sports Physical Therapy

University of Toledo Provost Office

July 2021-July 2023	Center for Equity and Excellence in Teaching and Learning Advisory Council
	Nominated Member, Two-Year Appointment
Oct 2020-July 2021	Teaching Center Task Force & Advisory Board
	Sole Graduate Student Member

Ad hoc Reviewer

Aug 2018-PresentBritish Journal of Medicine – Open
Clinical Biomechanics
Current Opinions in Biomechanical Engineering
Experimental Brain Research
International Journal of Sports Medicine
International Journal of Sports Physical Therapy
Journal of Athletic Training
Journal of Physiology
Journal of Science and Medicine in Sport
Journal of Sports Medicine and Allied Health Sciences
Journal of Sports Rehabilitation
Medicine & Science in Sport
Physical Therapy in Sport

Scandinavian Journal of Medicine & Science in Sports Scientific Reports Sports Health

LICENSURE

April 2022-Present	Licensed Physical Therapist (#26067), Commonwealth of Massachusetts Division of Professional Licensure in Allied Health Professions
June 2018-Present	Licensed Physical Therapist (#PT017750), State of Ohio Ohio Occupational Therapy, Physical Therapy, & Athletic Trainers Board
June 2018–Oct 2023	Licensed Athletic Trainer (#AT005713), State of Ohio Ohio Occupational Therapy, Physical Therapy, & Athletic Trainers Board
Aug 2014–Aug 2018	Licensed Physical Therapist (#1249019), State of Texas Texas Board of Physical Therapy Examiners
July 2014–July 2018	Licensed Athletic Trainer (#AT5955), State of Texas Texas Department of State Health Services
Dec 2012-Aug 2016	Licensed Athletic Trainer (#2414), Commonwealth of Massachusetts Division of Professional Licensure in Allied Health Professions

MEMBERSHIPS AND CERTIFICATIONS

	National Provider Identifier (NPI) 1184127136
June 2022-Present	Member, Academy of Physical Therapy Research
May 2019-Present	Community Member, Project DAWN (Deaths Avoided With Naloxone)
Sept 2018-Present	Member, Neuromodulation for Rehabilitation (NM4R)
Sept 2018-Present	Member, Osteoarthritis Research Society International (OARSI)
Mar 2018-Present	Member, American Academy of Sports Physical Therapists (AASPT)
June 2016-Aug 2018	Credentialed Trainer, EPIC/Care Connect Medical System
Feb 2015-Mar 2018	Member, Orthopedic Section of American Physical Therapy Association
Feb 2015-Present	Member, American Physical Therapy Association (APTA)
Sept 2012-Present	Certified Athletic Trainer, Board of Certification (BOC)
Jan 2010-Present	Member, National Athletic Trainers Association (NATA)
May 2009-Present	Emergency Cardiac Care Certified (BLS)

VOLUNTEER

Oct 2020-May 2022
Apr 2013-PresentPrecinct Election Official, Lucas County Board of ElectionsVolunteer Certified Athletic Trainer, Athletic Training Team
Boston Athletic Association Medical Team, Boston Marathon, Boston, MAApr 2010, Apr 2012Volunteer Student Athletic Trainer, Athletic Training Team

Boston Athletic Association Medical Team, Boston Marathon, Boston, MA

PERSONAL INFORMATION

Citizenship:United States of AmericaPronouns:He / Him / His