

# Nathan Schilaty, DC, PhD – Curriculum Vitae

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University of South Florida – Tampa, FL  
Department of Neurosurgery & Brain Repair



## EDUCATION

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- 2019**                      **Mayo Clinic – School of Medicine**  
Postdoc Certificate, *Clinical & Translational Science, cum Laude*  
Mentor: Timothy E. Hewett  
*Sex Disparities in Arthrogenic Muscle Inhibition Following ACL Injury*  
GPA: 3.61
- 2011 – 2014**              **Brigham Young University**  
PhD, *Neuroscience, Summa cum Laude*  
Mentor: Scott C. Steffensen  
*Hodology and Therapeutics for Addiction Recovery*  
GPA: 3.96
- 2004 – 2007**              **Parker University**  
BS, *Anatomy, Magna cum Laude*  
BS, *Health and Wellness, Magna cum Laude*  
DC, *Doctor of Chiropractic, Magna cum Laude*  
GPA: 3.87
- 1999 – 2003**              **Salt Lake Community College**  
AS, *Chemistry, Summa cum Laude*  
GPA: 4.00

## CAREER

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- 2024 – Present**              **Associate Professor, Neurosurgery & Brain Repair – University of South Florida**
- 2024 – Present**              **Associate Professor, Medical Engineering – University of South Florida**
- 2024 – Present**              **Affiliated Principal Investigator – James A. Haley Veterans’ Hospital**
- 2023 – Present**              **Research Workgroup Advisory Panel – Chiropractic Future Charitable Fund (unpaid)**  
*Chair, DASH sub-workgroup*
- 2023 – Present**              **Advisory Panel – Excite Medical of Tampa Bay, LLC (unpaid)**
- 2022 – Present**              **Director, Osman Spine Biomechanics Laboratory**
- 2022 – 2024**                **Assistant Professor, Medical Engineering – University of South Florida**
- 2021 – Present**              **Lincoln Endowed Chair of Biomechanics & Chiropractic Research**  
*Neuromusculoskeletal Biomechanics & Chiropractic (NeuBAC) Laboratory*
- 2021 – Present**              **Director, Center for Neuromusculoskeletal Research**
- 2021 – 2024**                **Assistant Professor, Neurosurgery & Brain Repair – University of South Florida**
- 2020 – Present**              **Consultant, Neuro-Based Research – Parker University**
- 2020 – 2021**                **Assistant Professor, Orthopedics – Mayo Clinic**
- 2019 – 2021**                **Assistant Professor, Physical Medicine & Rehabilitation – Mayo Clinic**
- 2017 – 2020**                **BIRCWH K12 Scholar (*Engineering appointment*) – Mayo Clinic**  
*Biodynamics Laboratory*  
*Sports Biodynamics / Neuromechanics*  
*Sex Differences of ACL Injury and Rehabilitation*
- 2017 – 2021**                **Associate Consultant I (*Engineering appointment*) – Mayo Clinic**  
*Sport Biodynamics / Neuromechanics*

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Modeling of ACL injury  
Concussion Injury Prevention  
Neuromechanics of ACL Injury Prevention and Rehabilitation

2016 – 2021

**Assistant Professor, Physiology – Mayo Clinic**

2016 – 2017

**Research Associate (*Engineering appointment*) – Mayo Clinic**

Laboratory of Timothy E. Hewett  
*Sport Biodynamics / Neuromechanics*  
Modeling of ACL injury

Proprioception of ACL for Injury Prevention and Rehabilitation

2015 – 2017

**NRSA T32 Musculoskeletal Research Fellow (*Engineering appointment*) – Mayo Clinic**

Laboratory of Timothy E. Hewett  
*Sport Biodynamics / Neuromechanics*  
Modeling of ACL injury

Proprioception of ACL for Injury Prevention and Rehabilitation

2014 – 2015

**Postdoctoral Researcher – Ohio State University**

Laboratory of Timothy E. Hewett  
*Sport Biodynamics*

Modeling of ACL injury

Proprioception of ACL for Injury Prevention and Rehabilitation

2011 – 2014

**Research Assistant – Brigham Young University**

Laboratory of Scott C. Steffensen  
*Addiction Hodology*

*Ex Vivo / In Vivo* / Neurobiochemical research of the nucleus accumbens and neuromelanin

2011 – 2019

**Manager – Circadian Wellness, LLC**

Health and Wellness Education

2011 – 2014

**Teaching Assistant – Brigham Young University**

*Advanced Neuroscience Laboratory* – Instructed use of trifocal camera microscopes, neuroanatomy histology, behavior, and electrophysiology research analysis  
*Neurobiology* – Instructed entry-level course of neuroscience for majors and non-majors, held bi-weekly review sessions, grading, teaching practicum at university level  
*Neuromechanics* – Instructed graduate-level course for mechanical engineers, exercise science, and neuroscience majors. Emphasis of instruction was on neuroscience of mechanics, spinal cord, and central nervous system.

2009 – 2011

**Online Instructor – Everest College Online**

Medical Department  
*Human Pathology*  
*Human Anatomy & Physiology*  
*Medical Terminology*  
*Medical Law & Ethics*

2009 – 2016

**Online Instructor – Missouri College Online**

Medical Department  
*Anatomy & Physiology*  
*Basic Anatomy & Physiology*

2007 – 2011

**President – Centra Chiropractic, Inc.**

Chiropractic Physician  
*Business management, marketing, record keeping, accounting, patient recruitment, hiring, and clinical expertise*

2007 – 2011

**Adjunct Instructor – Front Range Community College**

Department of Natural Applied and Environmental Sciences

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*Basic Human Anatomy & Physiology*  
*Human Anatomy & Physiology I*  
*Human Anatomy & Physiology II*  
*Human Anatomy & Physiology Laboratory*  
*Human Cadaver Dissection*

**2006**                      **Bilingual (Spanish) High School Teacher – Princeton Review**  
PSAT Preparation

## FUNDING

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**2012 – 2013**                      **BYU Graduate Fellowship Award**  
Brigham Young University Graduate Studies – \$15,000

**2015 – 2017**                      **NIH T32 NRSA Postdoctoral Fellowship (T32AR056950)**  
NIAMS – Mayo Clinic Musculoskeletal Group

**2016 – 2017**                      **Endowed Kelly Research Fellow**  
Mayo Clinic Orthopedic Research Group – \$30,000  
*Muscle Spindle Perturbation Induces Loss of Muscle Stiffness*

**2016 – 2022**                      **NIH Loan Repayment Program (L30AR070273)**  
NIAMS – Extramural Clinical Research – \$161,890  
*Multimodal Mechanisms of ACL Rehabilitation*  
(2 renewals)

**2017 – 2018**                      **Ultrasound Research Center Pilot Grant**  
Mayo Clinic Ultrasound Research Center – \$30,000  
*Sex Differences in Arthrogenic Muscle Inhibition Following ACL Injury*

**2017 – 2020**                      **NIH Clinical Scientist Career Development Award (K12HD065987)**  
NICHD – Mayo Clinic K12 BIRCWH Scholar  
*Sex Differences of Neuromechanical Components of ACL Injury*

**2017 – 2020**                      **Transform the Practice Grant**  
Mayo Clinic Children’s Research Center – \$150,000  
*Biofeedback Sleeve for Prevention and Rehabilitation of Knee Injury*

**2019 – 2020**                      **Ultrasound Research Center Pilot Grant**  
Mayo Clinic Ultrasound Research Center – \$30,000  
*Ultrasound-Based Neck Muscle Size, Mechanical Properties, and Sensorimotor Characteristics in Athletes with and without History of Sport-Related Concussion*

**2020 – 2021**                      **Women’s Health Research Enhancement Grant**  
Mayo Clinic Center for Women’s Health – \$50,000  
*Mayo Posture Positivity Power Program (MayoP4) for Active and Aging Women in Communities: Multimodal Intervention to Prevent Frailty in 15 minutes a day*

**2020 – 2021**                      **Orthopedic Surgery Department Research Grant**  
Mayo Clinic Department of Orthopedic Surgery – 0.25 FTE  
*Quattrone-Foderaro AI Innovation in Orthopedics*

**2020 – 2024**                      **Foundation Grant**  
NCMIC Foundation – \$177,600  
*Great Posture, Great Health*

**2020 – 2022**                      **Industry Grant**  
Tonal Inc. – \$272,000  
*Utilization of Tonal Exercise System to Improve Short- and Long-term Low Back Pain (LBP) Outcomes*

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2020 – 2021	<b>Orthopedic Research Review Committee</b> Mayo Clinic Department of Orthopedic Surgery – \$10,000 <i>Glymphatic and Sensorimotor Systems in Low Back Pain Patients with Potential Central Sensitization Syndrome</i>
2021 – 2022	<b>Ultrasound Research Center Pilot Grant</b> Mayo Clinic Ultrasound Research Center – \$25,000 <i>Validation of Shear Wave Elastography and 3D Ultrasound as Surrogate Measurement of Tissue Properties and Injury Diagnostic Tool for the ACL</i>
2022 – 2024	<b>Florida High Tech Corridor Matching Grant</b> Excite Medical of Tampa Bay LLC (FHT 23-01) – \$242,000 <i>Retrospective Review of Non-Surgical Spinal Decompression as a Therapeutic for Low Back Pain</i>
2023 – 2028	<b>Florida Department of State – Clinical Trial Grant</b> Florida Department of State – \$28,000,000 <i>Hyperbaric Oxygen Therapy Effectiveness in Treating PTSD and Traumatic Brain Injuries Among Veterans and Active-Duty Military Service Members</i>
2023 – 2024	<b>Fellowship Grant</b> National Board of Chiropractic Examiners – \$15,000 <i>Biomechanical and MRI-Based Outcomes of Lumbar Non-Surgical Spinal Decompression</i>
2023 – 2024	<b>Flex Pilot Grant (U24AT011978)</b> Collaboration with Ohio State University – \$65,000 <i>Spinal Manipulation in a Mouse Model of Discogenic Back Pain</i>
2023 – 2024	<b>Foundation Surgical Group</b> Spine Simulations – \$65,000 <i>Biomechanical Testing to Evaluate Stability Restoration of VertiWedge Implant</i>
2024 – 2025	<b>Florida High Tech Corridor Matching Grant</b> Excite Medical of Tampa Bay LLC (FHT 24-19) – \$175,000 <i>Retrospective Review of Non-Surgical Spinal Decompression as a Therapeutic for Low Back Pain (Phase II)</i>
2024 – 2026	<b>Chronic Pain Medical Research Program (HT9425-24-1-0868)</b> Department of Defense (CP230037) – \$374,999 <i>Biomechanical and MRI-Based Outcomes of Lumbar Non-Surgical Spinal Decompression</i>

## HONORS / AWARDS

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2021 – present	<b>Lincoln Endowed Chair of Chiropractic &amp; Biomechanics Research</b> University of South Florida
2016	<b>Endowed Kelly Research Fellow</b> Mayo Clinic Department of Orthopedic Surgery
2016	<b>Finalist - Mayo Orthopedic Patrick J. Kelly Research Fellow Award</b> Jay R. Lieberman, MD – Honorary Patrick J. Kelly, Visiting Professor Orthopedic Research
2013 – 2014	<b>Research Society on Alcoholism (2x recipient)</b> Graduate Travel Award
2013	<b>1st Place BYU Grad Talk</b> Double elimination process for finalist Presentation peer-voted for quality of research and presentation
2012 – 2014	<b>Research Presentation Award</b> Travel award to present original research of graduate student
2011 – 2014	<b>Research Assistant / Tuition Award</b>

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2006	Brigham Young University – Neuroscience <b>Outstanding Dallas Clinic Intern</b> – Parker University; Dallas, TX Honor for demonstration of high clinical knowledge and performance
2006	<b>Clinical Assistant</b> – Parker University; Dallas, TX Honorary program for high academic aptitude and clinical performance
2005	<b>Erchonia Scholarship</b> – Erchonia, Inc.; McKinney, TX
2004 – 2006	<b>Presidential Scholarship (3x recipient)</b> – Parker University; Dallas, TX
2000 – 2003	<b>Tuition Waiver Award</b> – Salt Lake Community College; Taylorsville, UT

## LICENSES

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2021 – present	<b>Florida Chiropractic Physician</b> (#CH13717) Granted by the Florida Board of Chiropractic Examiners
2017 – 2020	<b>Minnesota Chiropractic Physician</b> (#6289) Granted by the Minnesota Board of Chiropractic Examiners
2011 – 2017	<b>Utah Chiropractic Physician</b> (#8079968-1202) Granted by the Utah Department of Professional Licensing
2007 – 2011	<b>Colorado Chiropractic Physician</b> (#6020) Granted by the Colorado Board of Chiropractic Examiners

## CLINICAL CERTIFICATIONS

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2020	<b>Electromyostimulation (EMS) Certification</b> , GluckerKolleg Whole body vs local EMS, EMG training, spotting techniques, strength, and endurance
2007	<b>Applied Kinesiology, 120-Hour Certified</b> Neuromuscular biofeedback for diagnosis of neurovascular, neurolymphatic, acupuncture meridians, cranial faults, proprioceptive rehabilitation, neurology, and endocrinology
2006	<b>Physiotherapy</b> , National Board of Chiropractic Examiners

## INTERNSHIPS

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2005 – 2006	<b>Chiropractic Clinic Intern</b> – Parker University
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## PEER-REVIEWED PUBLICATIONS

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### Journal Articles

- 1) Connolly JA, Luginsland LA, Welsh S, Bexley JA, Pirone J, Martin WR, Thorpe S, **Schilaty ND**. Clinical and Imaging Outcomes of Non-Surgical Spinal Decompression for Lumbar Intervertebral Disc Lesions: A Case Series. *J Contemp Chiro* (2025).
- 2) Walters KF, Shukla R, Kumar V, Schueren S, Yadav H, **Schilaty ND**, Jain S. Resting-State EEG Power Spectral Density Analysis Between Healthy and Cognitively Impaired Subjects. *Brain Sciences* (2025).
- 3) Alzouhayli K, McPherson AL, **Schilaty ND**, Nagai T, Rigamonti L, Holmes BD, Bates NA. Artificial Intelligence-Guided Therapy: Clinic Versus Home Users. Long-Term Differences in Patient-Reported Outcomes in Patients with Low Back Pain. *J Orthopaedic Reports* (2025).
- 4) Hoffman EM, Brown L, Jolliffe E, Sechi E, Harmsen W, **Schilaty ND**, Weinshenker BG. McArdle Sign and Neck Flexion-induced Change in Central Motor Conduction in Multiple Sclerosis. *Mult Scler J* (2024).
- 5) McPherson AL, Larson DR, Shirley BM, Dancy ME, Bates NA, **Schilaty ND**. Anterior Cruciate Ligament Injury Does Not Increase the Risk for a Future Concussion: A Unidirectional Phenomenon. *J Sport Rehab*. 2024; DOI: 10.1123/jsr.2024-0030.

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- 6) Krothapalli M, Buddendorff L, Yadav H, **Schilaty ND**, Jain S. From Gut Microbiota to Brain Waves: The Potential of the Microbiome and EEG as Biomarkers for Cognitive Impairment. *International Journal of Molecular Sciences*. 2024; 25(12):6678.
- 7) Rigamonti L, Bates NA, **Schilaty ND**, Levy B, Milbrandt T, Bigoni M, Stuart M, Krych AJ. Graft Type and Diameter Are Predictors of Reinjury After Transphyseal Anterior Cruciate Ligament Reconstruction in Pediatric and Adolescent Patients. *Arthroscopy, Sports Medicine, and Rehabilitation*. 2024; DOI: 10.1016/j.asmr.2024.100964.
- 8) Wei Y, Alzouhayli K, **Schilaty ND**, Hooke AW, Sellon JL, Bates NA. Viability of shear wave elastography to predict mechanical/ultimate failure in the anterolateral and medial collateral ligaments of the knee. *Journal of Biomechanics* 2024; 174:112264. DOI: 10.1016/j.jbiomech.2024.112264.
- 9) Weiniger SW, **Schilaty ND**. Interoceptive Posture Awareness and Accuracy: A Novel Photographic Strategy Towards Actionable Posture. *Frontiers in Neuroscience: Translational Neuroscience* (2024) 14:1359594.
- 10) Sant DW, Nelson CA, Petrie J, Blotter JD, Feland JB, Adams D, Burrows M, Yorgason JT, **Schilaty ND**, Manwaring KH, Bills KB, Steffensen SC Amelioration of anxiety associated with opioid withdrawal by activation of spinal mechanoreceptors via novel heterodyned whole-body vibration. *J Psychiatry Cogn Behavior* (2024) 8:173. doi: 10.29011/2574-7762.000073
- 11) Nagai T, **Schilaty ND**, Wong H, Keller VC, Stiennon ST, Chang RW, Stuart MJ, Krause DA. Acute Effects of an Isometric Neck Warm-up Programme on Neck Performance Characteristics and Ultrasound-based Morphology. *Ann Medicine*. (2023) 55(2):2295402. DOI: 10.1080/07853890.2023.2295402.
- 12) **Schilaty ND**, Bates NA. Commentary on The Deterministic Condition for the Ground Reaction Force Acting Point on the Combined Knee Valgus and Tibial Internal Rotation Moments in the Early Phase of Cutting Maneuvers in Female Athletes. *JSHS*. (2023). doi: 10.1016/j.jshs.2023.11.007.
- 13) Alzouhayli K, **Schilaty ND**, Wei Y, Hooke AW, Sellon JL, Bates NA. Shear wave elastography demonstrates different material properties between the medial collateral ligament and anterolateral ligament. *Clin Biomech*. (2023). e106155.
- 14) McPherson AL, Kunzer CM, Bates NA, **Schilaty ND**. Feasibility of Three-Speed Isokinetic Knee Testing Protocol. *JIANM*. 2023;20(2):32-41.
- 15) Nagai T, **Schilaty ND**, Kunzer CM, Greer A, Bates NA, McPherson AL. Portable Hip Clamshell Strength Assessment: Reliability and Validity. *J Int Acad Neuromusculoskel Med*. (2023) 20(2):9-18.
- 16) Bates NA, Goodyear E, Huffman A, Nagai T, Rigamonti L, Breuer L, Holmes BD, **Schilaty ND**. Physical Clinical Care and Artificial-Intelligence-Guided Core Resistance Training Improve Endurance and Patient-Reported Outcomes in Subjects with Lower Back Pain. *Clin Biomech*. (2023) 103:105902.
- 17) **Schilaty ND**, McPherson AL, Nagai T, Bates NA. Psychological Readiness to Return to Sport after Anterior Cruciate Ligament Injury is Evident in Motor Unit Characteristics. *BMJ Open Sp Ex Med* (2023) 9(3):1–10. doi: bmjsem-2023-001609.
- 18) Nagai T, Bates NA, Rigamonti L, Hollman JH, Laskowski ER, **Schilaty ND**. Effects of Neuromuscular and Proprioceptive Training on Self-Reported Wellness and Health Scores and Knee Sensorimotor Characteristics in Active Seniors. *Journal of Bodywork & Movement Therapies*. (2023) 36:370-379.
- 19) **Schilaty ND**, Bates NA, Holmes BD, Nagai T. Group Differences and Association between Patient-Reported Outcomes and Physical Characteristics in Chronic Low Back Pain Patients and Healthy Controls. *Clin Biomech* (2023).
- 20) Mitchell CV, Nagai T, Bates NA, **Schilaty ND**. Neck Strength and Force in Multi-Directional Reaction Time Task of Adolescent Athletes with and without Concussion History: A Pilot Study. *Phys Ther Sport* (2023) 61:192-197.
- 21) Beyer-Wert EB, Bates NA, Krill MK, Krill ML, Chaney GK, Hewett TE, **Schilaty ND**. Game Schedules and Injury Occurrence in the National Football League – Are Injuries Affected by the Number of Days between Games? *J Int Acad Neuromusculoskel Med*. 2023;20(1):36-51.
- 22) Chaney GK, Krause DA, Hollman JH, Anderson VA, Heider SE, Thomez S, Vaughn SN, **Schilaty ND**. Recurrence Quantification Analysis of Isokinetic Strength Tests: A Comparison of the Anterior Cruciate Ligament Reconstructed and Uninjured Limb. *Clin Biomech* (2023) 104:105929.



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- 23) **Schilaty ND**, McPherson AL, Anderson S, Nagai T, Bates NA. Arthrogenic Muscle Inhibition After Anterior Cruciate Ligament Injury: Injured and Uninjured Limb Recovery Over Time. *Front Sports Act Living* (2023) 5:1143376. DOI: 10.3389/fspor.2023.1143376.
- 24) Bates NA, Goodyear E, Huffman A, Nagai T, Rigamonti L, Breuer L, Holmes BD, **Schilaty ND**. Physical Clinical Care and Artificial-Intelligence-Guided Core Resistance Training Improve Functional Performance, Power, and Lumbar Isokinetics in Lower Back Pain Patients. *Clin Biomech.* (2023) 103:105902.
- 25) Cummings P, **Schilaty ND**, Nagai T, Rigamonti L, Ueno R, Bates NA. Application of Shear-Wave Elastography in the Evaluation of Hamstring Stiffness in Young Basketball Athletes. *Int J Sport Phys Ther* (2022) 17(7):1236-1248. doi:10.26603/001c.55757.
- 26) Hollman JH, Buenger NG, DeSautel SG, Chen VC, Koehler LR, **Schilaty ND**. Altered neuromuscular control in the vastus medialis following anterior cruciate ligament injury: A recurrence quantification analysis of electromyogram recruitment. *Clin Biomech.* (2022) 100:105798.
- 27) Cooney NJ, Sowman P, **Schilaty ND**, Bates NA, Hewett TE, Doyle TLA. Head and Neck Characteristics as Risk and Protective Factors Against Mild Traumatic Brain Injury in Military and Sporting Populations: A Systematic Review. *Sports Med.* (2022) 52(9):2221-2245. DOI: 10.1007/s40279-022-01683-2.
- 28) **Schilaty ND**, McPherson AL, Nagai T, Bates NA. Arthrogenic Muscle Inhibition Manifests in Thigh Musculature Motor Unit Characteristics After Anterior Cruciate Ligament Injury. *Eur J Sport Sci* (2022) May 2:1-11.
- 29) **Schilaty ND**, Hedges DM. Redirect Indirects: A Phased Approach to Decentralized Research Funding. *Academia Letters* (2022). Article 4481. DOI: 10.20935/al4881
- 30) **Schilaty ND**, Savoldi F, Nasr Z, Weinshenker BG. Neuromotor Control Associates with Muscle Weakness Observed with McArdle Sign of Multiple Sclerosis. *Ann Clin Transl Neurol.* (2022) 9(4):515-528.
- 31) Nagai T, **Schilaty ND**, Chang RW, Keller V, Stiennon ST, Wong H, Stuart MJ, Krause DA. Reliability and Sex Differences of Choice Visual-Motor Reaction Time and Force Characteristics of Neck Muscles Using a Novel Test. *Journal of Sports Vision and Performance* (2022). 4(1):e1-e13.
- 32) Yorgason JY, Wadsworth HA, Anderson EJ, Brundage JN, Hedges DM, Stockard AL, Hansen DM, **Schilaty ND**, Murdock E, Jang EY, Williams BM, Lee AM, Wallner M, Steffensen SC. Modulation of dopamine release by ethanol is mediated by atypical GABA<sub>A</sub> receptors on cholinergic interneurons in the nucleus accumbens. *Addict Biol.* (2022) 27(1):e13108.
- 33) Hollman JH, Nagai T, Bates NA, McPherson AL, **Schilaty ND**. Diminished neuromuscular system adaptability following anterior cruciate ligament injury: Examination of knee muscle force variability and complexity. *Clin Biomech.* (2021) 90:105513.
- 34) Nagai T, Bates NA, McPherson AL, Hale R, Hewett TE, **Schilaty ND**. Effects of Sex and Age on Quadriceps and Hamstrings Strength and Flexibility in High School Basketball Athletes. *Int J of Sport Phys Ther.* (2021) 16(5):1302-1312.
- 35) Ueno R, Navacchia A, Bates NA, **Schilaty ND**, Myer G, Hewett TE. Hamstrings Contraction Regulates the Magnitude and Timing of the Peak Anterior Cruciate Ligament Loading during Drop Vertical Jump in Female Athletes. *Orthop J Sports Med.* (2021) 9(9):23259671211034487.
- 36) **Schilaty ND**, Martin RK, Ueno R, Bates NA. Mechanics of cadaveric anterior cruciate ligament reconstructions during simulated jump landing tasks: Lessons learned from a pilot investigation. *Clin Biomech* (2021) 86:105372.
- 37) **Schilaty ND**, Savoldi F, Nasr Z, Delgado AM, Berglund LJ, Weinshenker BG. Biomechanical muscle stiffness measures of extensor digitorum explain potential mechanism of McArdle sign. *Clin Biomech* (2021) 23(82):105277.
- 38) Nagai T, **Schilaty ND**, Bates NA, Bies NJ, McPherson AL, Hewett TE. High School Female Basketball Athletes Exhibit Decreased Knee-Specific Choice Visual-Motor Reaction Time. *Scand J Med Sci Sports* (2021). Epub ahead of print.
- 39) **Schilaty ND**, Bates NA, Ueno R, Hewett TE. Filtration Selection and Data Consilience: Distinguishing Signal from Artefact with Mechanical Impact Simulator Data. *Ann Biomed Eng* (2021) 49:334-344.
- 40) Hedges DM, Yorgason JT, Perez AW, **Schilaty ND**, Williams BM, Watt RK, Steffensen SC. Spontaneous formation of melanin from dopamine in the presence of iron. *Antioxidants* (2020) 9(12):1285.

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- 41) Nagai T, Ueno R, Rigamonti L, Bates NA, Krause DA, Crowley EM, Stuart MJ, **Schilaty ND**. Multidirectional Neck Strength Characteristics in High School Football Athletes with and without History of Sports-Related Concussion. *Ann Sports Med Res* (2020) 7(6):1167.
- 42) Nagai T, Crowley EM, Manuell ED, Bates NA, Stuart MJ, **Schilaty ND**. Sex Differences in Multidirectional Neck Strength Characteristics in High School Football Athletes with and without History of Sports-Related Concussion. *Arch Sports Med* (2020) 4(2):224-232.
- 43) McPherson AL, Bates NA, Haider CR, Nagai T, Hewett TE, **Schilaty ND**. Thigh Musculature Stiffness During Active Muscle Contraction After Anterior Cruciate Ligament Injury. *BMC Musculoskelet Disord* (2020) 21:320.
- 44) Ueno R, Navacchia A, Bates NA, **Schilaty ND**, Myer G, Hewett TE. Anterior Cruciate Ligament Loading Increases with Pivot Shift Mechanism during Asymmetrical Drop Vertical Jump in Female Athletes. *Orthop J Sport Med* (2020) 9(3):2325967121989095.
- 45) Ueno R, Nagai T, Bates NA, Hewett TE, **Schilaty ND**. Sex Differences in Passive and Active Stiffness of the Knee Flexor Muscles During Dynamic Perturbation Test: Principal Component Analysis. *Somatosensory & Motor Research* (2020) 37(4):293-299.
- 46) Bates NA, **Schilaty ND**, Krych AJ, Hewett TE. Letter to Editor: In Vivo Attachment Site to Attachment Site Length and Strain of the ACL and its Bundles During the Full Gait Cycle Measure by MRI and high-speed biplanar radiography. *J Biomech* (2020) 109:109922.
- 47) **Schilaty ND**, Bates NA, Kruisselbrink S, Krych AJ, Hewett TE. Linear Discriminant Analysis Successfully Predicts Knee Injury Outcome from Biomechanical Variables. *Am J Sports Med* (2020) 48(10):2447–2455.
- 48) Bates NA, Myer GD, Hale RF, **Schilaty ND**, Hewett TE. Prospective frontal plane angles used to predict ACL strain and identify those at high risk for sports-related ACL injury. *Orthop J Sport Med* (2020) 8(10):2325967120957646.
- 49) Mumbleau AL, **Schilaty ND**, Hewett TE. Gluteal Inhibition After Hip Arthroscopy. *Int J Sport Phys Ther* (2020) 15(6):1222-1228.
- 50) Bates NA, **Schilaty ND**, Ueno R, Hewett TE. Timing of Strain Response of the ACL and MCL Relative to Impulse Delivery During Simulated Landings Leading up to ACL Failure. *J Appl Biomech* (2020) 22:1-8.
- 51) Beyer EB, Hale RF, Hellem AR, Mumbleau AM, **Schilaty ND**, Hewett TE. Inter and Intra-rate Reliability of the Drop Vertical Jump Assessment. *Int J Sport Phys Ther* (2020) 15(5):770-775.
- 52) McMurray NS, Bates NA, Fischer S, **Schilaty ND**. Investigation of Primary and Second Anterior Cruciate Ligament Tears Using a Geographic Database. *Int J Sport Phys Ther* (2020) 15(4):579. DOI: 10.26603/ijsp20200579.
- 53) Nagai T, Crowley EM, Manuell ED, Bates NA, Stuart MJ, **Schilaty ND**. Sex Differences in Multidirectional Neck Muscle Strength Characteristics in High School Soccer Athletes. *Archives of Sports Medicine* (2020) 4(2):224-232.
- 54) Zhou J, **Schilaty ND**, Hewett TE, Bates NA. Analysis of Timing of Secondary ACL Injury in Professional Athletes does not Support Game Timing or Season Timing as a Contributor to Injury Risk. *Int J Sports Phys Ther* (2020) 15(2):254-262.
- 55) **Schilaty ND**, Bates NA, Smith AM, Stuart MJ. Potentially Biased Results on Mouthguard Use and Reduction of Concussion Risk. *Br J Sports Med* (2020). [<https://bjsm.bmj.com/content/early/2020/01/14/bjsports-2019-101011.responses>].
- 56) McPherson AL, Nagai T, **Schilaty ND**, Hale RF, Hewett TE, Bates NA. High school male basketball athletes exhibit greater hamstring muscle stiffness than females as assessed with shear wave elastography. *Skeletal Radiol* (2020) 49(8):1231-1237.
- 57) McPherson AL, Shirley MBD, **Schilaty ND**, Hewett TE. Effect of a Concussion on Anterior Cruciate Ligament Injury Risk in a General Population. *Sport Med* (2020) 50(6):1203-1210.
- 58) Ueno R, Navacchia A, Bates NA, **Schilaty ND**, Krych AJ, Hewett TE. Analysis of Internal Knee Forces Allows for the Prediction of Rupture Events in a Clinically Relevant Model of Anterior Cruciate Ligament Injuries. *Orthop J Sport Med* (2020) 8(1):1-13.
- 59) Nagai T, **Schilaty ND**, Laskowski ER, Hewett TE. Hop Tests Can Result in Higher Limb Symmetry Index Values than Isokinetic Strength and Leg-Press Tests in Patients Following ACLR. *Knee Surg Sports Traumatol Arthrosc* (2020) 28(3): 816-822.



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- 3) Connolly JA, Lai R, Walters KF, Nagai T, Holmes BD, Bates NA, **Schilaty ND**. Electroencephalography Objectively Classifies Chronic Low Back Pain in Correlation with Subjective Patient Reported Outcomes. *USF Research Day*. Tampa, FL, USA. Feb. 28, 2025.
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- 79) **Schilaty ND**, McPherson AL, Nagai T, Bates NA, Hewett TE. Analysis of Quadriceps Arthroscopic Muscle Inhibition of the ACL Injury with Decomposed Electromyography. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.

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- 81) Navacchia A, Bates NA, **Schilaty ND**, Krych AJ, Hewett TE. Customized finite element models of the knee to investigate ACL injury mechanisms during landing. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
- 82) McPherson AL, **Schilaty ND**, Bates NA, Hewett TE. 12-month post-ACL reconstruction quadriceps strength, neural activity, and muscle stiffness asymmetries. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
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- 84) Ueno R, Bates NA, **Schilaty ND**, Navacchia A, Hewett TE. Principal Component Regression for 6-axis Kinetics in The Cadaveric Model of Clinically Relevant Anterior Cruciate Ligament Injury. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
- 85) Nagai T, **Schilaty ND**, Laskowski ER, Hewett TE. A Novel Use of Unilateral Leg Press Power during a Bilateral Leg Press Task to Detect Quadriceps Weakness and Limb Symmetry Index in ACL-Reconstructed Individuals. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
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- 88) Nagai T, Bates NA, Hewett TE, **Schilaty ND**. Paradoxical Relationship in Sensorimotor System: Knee Joint Position Sense Absolute Error and Joint Stiffness Measures. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
- 89) Nagai T, McPherson AL, Bates NA, Hewett TE, **Schilaty ND**. Knee Flexion and Extension Muscular Force Steadiness in Young Adults: Sex Differences and Test-Retest Reliability. *International Society of Biomechanics*; Jul 31 – Aug 4, 2019; Calgary, Canada.
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- 92) McPherson AL, Bates NA, Haider C, Hewett TE, **Schilaty ND**. Quadriceps Muscle Motor Unit Activity after Anterior Cruciate Ligament Reconstruction. *2019 Summer Research Symposium*, Rochester, Minnesota, 2019.
- 93) **Schilaty ND**, Bates NA, Krych AJ, Hewett TE. Sex-Based Differences in Knee Ligament Strain Prior To and Following Initial Contact during Cadaveric Landing Simulations. *Annual BIRCWH Meeting*, Bethesda, Maryland, 2018.
- 94) Mumbleau A, **Schilaty ND**, Hale RF, Hewett TE. Lower Extremity Limb Asymmetry is Observed Twelve Weeks after Hip Arthroscopy. *APTA Combined Sections Meeting*, 2019.
- 95) Mumbleau A, **Schilaty ND**, Hale RF, Hewett TE. Sagittal Plane Hip Kinematics during the Star Excursion Balance Test in Females Twelve Weeks after Hip Arthroscopy. *APTA Combined Sections Meeting*, 2019.
- 96) Doyle TLA, **Schilaty ND**, Webster KE, Hewett TE. Meta-Analysis: Fatigue Does Not Increase Lower-limb Injury Risk. *International Society of Biomechanics in Sports*; Auckland, New Zealand, Sept 10-14, 2018.
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- 100) McPherson AL, **Schilaty ND**, Hewett TE. Custom Software for Calculation of Shear Wave Velocity. *American Society of Biomechanics*; Rochester, Minnesota, Aug 8-11, 2018.
- 101) McPherson AL, Nagai T, Bates NA, **Schilaty ND**, Hale RF, Hewett TE. Passive Hamstring Muscle Stiffness Assessed in High School Athletes using Shear Wave Elastography. *American Society of Biomechanics*; Rochester, Minnesota, Aug 8-11, 2018.
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- 112) Nagai T, Bates NA, Hewett TE, Lee H, Lockhart T, **Schilaty ND**. Sex Differences in Passive and Active Joint Stiffness during High-Velocity Threshold to Detect Passive Motion Test. *American Society of Biomechanics*; Rochester, Minnesota, Aug 8-11, 2018.
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- 115) Hale RF, Nagai T, McPherson AL, **Schilaty ND**, Bates NA, Navacchia A, Hewett TE. Countermovement Jump Height and Force – Time Variables in High School Basketball Players. *American Society of Biomechanics*; Rochester, Minnesota, Aug 8-11, 2018.
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- 119) **Schilaty ND**, Nagai T, Bates NA, Hewett TE. Effects of Localized Vibration on Knee Joint Position Sense in Individuals with ACL-Reconstruction. *American College of Sports Medicine* (2018).
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- 123) Weinshenker BG, Savoldi F, Nasr Z, Hu W, **Schilaty ND**, Delgado AM, Mandrekar J, Kaufman KR, Berglund LJ. McArdle Sign: A Specific Sign of Multiple Sclerosis. *American Academy of Neurology* (2018).
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- 126) **Schilaty ND**, Bates NA, Nagelli CV, Krych AJ, Hewett TE. Sex Differences in Knee Forces & Moments that Occur with ACL Rupture on Cadaveric Impact Simulations. *Mayo Clinic Celebration of Women's Health* (2017).
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- 129) **Schilaty ND**, Bates NA, Nagelli CV, Krych AJ, Hewett TE. Sex Differences of Medial Collateral and Anterior Cruciate Ligament Strains with Cadaveric Impact Simulations. *American Soc. Biomechanics* (2017).
- 130) Bates NA, **Schilaty ND**, Nagelli CV, Hewett TE. Failure Modalities Induced by a Novel Mechanical Impact Simulator Designed to Induce ACL Failure. *American Soc. Biomechanics* (2017).
- 131) Hale RF, **Schilaty ND**, Bates NA, Nagelli CV, Hewett TE. Effect of Impact Magnitude and Timing of In Vitro Anterior Cruciate Strain and Joint Kinematics. *American Soc. Biomechanics* (2017).
- 132) Mejia Jaramillo MC, Vargas Gonzalez M, McPherson AL, Bates NA, **Schilaty ND**, Nagelli CV, Krych AJ, Hewett TE. Correlation Between Tibial Slope and Ligament Strain During In Vivo Landing Simulation. *American Soc. Biomechanics* (2017).
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- 143) Willigenburg NW, McNally MP, **Schilaty ND**, Hewett TE, Page, SJ. Portable myoelectric brace use in chronic, post-stroke hemiparesis. *American Soc. Biomechanics* (2015).
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- 155) Mabey JK, Shin SI, White DN, Nielson CA, **Schilaty ND**, Ting-A-Kee R, Vargas-Perez H, van der Kooy D, Steffensen SC. Functional switch in GABA(A) receptors on VTA GABA neurons by chronic ethanol. *Alcoholism: Clin. Exp. Res.* (2013) 37(2): 238A(908).
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- 157) Jang EY, **Schilaty ND**, Hanson S, Folsom RJ, Steffensen SC. Rapid adaptation of D2 dopamine receptor following acute ethanol. *Alcoholism: Clin. Exp. Res.* (2013) 37(2): 239A(915).
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- 159) **Schilaty ND**, Folsom RJ, Hanson S, Jang EY, Lee JY, Yang CH, Steffensen SC. Baicalein reduces ethanol inhibition of mesolimbic dopamine transmission and ethanol self-administration. *Alcoholism: Clin. Exp. Res.* (2013) 37(2): 20A(038).
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- 161) Mabey JK, Shin SI, White DN, Nielson CA, **Schilaty ND**, Ting-a-Kee R, Vargas-Perez H, Van der Kooy D, Steffensen SC. Functional switch in GABA(A) receptors on VTA GABA neurons by chronic ethanol. *Soc. Neurosci Absts* 38 (2013) 349.12.
- 162) Hedges DM, **Schilaty ND**, Badal W, Morrison CE, Watt RK, Steffensen SC. Physiologically relevant oxy-radical formation of neuromelanin by photostimulation: Effects of iron and calcium. *Soc. Neurosci Absts* 38 (2013) 432.23.
- 163) Steffensen SC, **Schilaty ND**, Jones SR, Yorgason JT. Role for GABA(A) receptors in ethanol inhibition of evoked dopamine release in the nucleus accumbens. *Proceedings of the 10<sup>th</sup> International Catecholamine Symposium* 10 (2012) 92.

## Dissertation

- 1) **Schilaty ND** (2014, Dec). Alcohol Modulation of Dopamine Release. *Dissertation submitted to the Faculty of Brigham Young University, College of Life Sciences.* Provo, UT.

## Other Publications

- 1) **Schilaty ND**. Unlocking NIH Loan Repayment Opportunities for DCs interested in Research Careers. *ACA Blog*. May 14, 2024. <https://www.acatoday.org/news-publications/unlocking-nih-loan-repayment-opportunities-for-dcs-interested-in-research-careers>.
- 2) **Schilaty ND**. The DC-PhD Pathway: An Opportunity to Grow the Research Arm of the Chiropractic Profession. *Dynamic Chiropractic* (2023) Feb:43-45.

## SERVICE TO PROFESSION

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### Grant Review Panel

2025	ZAT1 SH(20)R – NCCIH NIH HEAL Initiative (UG3/UH3)
2025	ZAT1 MH(12) – NCCIH Special Emphasis Panel
2024	Maryland Industrial Partnerships (MIPS 7529) – University of Maryland
2024	ZAT1 AM(08) – NCCIH Training and Education Review Panel
2024	Junior Faculty Research Grant – American Society of Biomechanics
2023	DoD – Military Operational Medicine Research Program (MOMRP)
2021	University of Nebraska Collaboration Initiative
2020	FIN-RER – Health Research Programme of Emilia-Romagna Region
2019	DoD – Defense Medical Research and Development Program (DMRDP)
2017 – 2021	Mayo Clinic Women’s Health Grant Review Committee

### Conference

2019	Session Co-chair; Quadriceps Function After ACL Rupture. <i>2019 International Society of Biomechanics</i> , Calgary, AB, Canada
2019 – present	<i>American Society of Biomechanics</i> ; Mentor Match Program

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- 2018** Webinar Moderator; Leveraging the BIRCWH Experience in Advancing One's Academic Career. *BIRCWH Leadership Webinar Series*, Emory University
- 2017** Session Co-chair; Anterior Cruciate Ligament. *2017 American Soc. Biomechanics*, Boulder, CO

## Leadership

- 2023 – present** *Advisory Panel – Scientific Committee*; USF Hyperbaric Oxygen Therapy Grant
- 2023 – present** *Research Subworkgroup Chair*; Chiropractic Futures, Data Aggr. System for Healthcare (DASH)
- 2022 – present** *Research Workgroup Member*; Chiropractic Futures
- 2018 – 2021** *Tech Officer*; Associate Consultant Council, Mayo Clinic
- 2018 – present** *Ambassador*; NIH Loan Repayment Program
- 2018 – 2021** *Co-chair*; T32 Alumni Advisory Council, Mayo Clinic

## Committees

- 2024 – present** Appointment, Promotion, & Tenure Committee; Neurosurgery & Brain Repair, USF
- 2020** ASB 2020 Awards Committee
- 2019 – 2020** OSSD 2020 Scientific Program Committee
- 2019 – 2020** OSSD 2020 Awards Committee
- 2017 – 2021** Collaborative T32 Musculoskeletal Symposium Organizing Committee

## Conference Abstract Review / Judge

- 2025** World Federation of Chiropractic Biennial Congress (Copenhagen)
- 2024** Association of Chiropractic Colleges Research Agenda Conference (ACCRAC)
- 2024** USF Medical Engineering Capstone Judge
- 2023 – present** Abstracts for Clinical Excellence (ACE) Mentor
- 2022 – present** USF Graduate Student Research Symposium
- 2022 – present** USF Research Day
- 2018 – 2021** Mayo Clinic Women's Health Research Symposium
- 2017 – 2020** Design of Medical Devices Conference, Neuroengineering Track
- 2017 – present** American Society of Biomechanics

## Editor (# of articles managed)

- 2023 – present** Associate Editor: PLOS One – Frontiers in Sports and Active Living – *Women in Sport*
- 2023 – present** Associate Editor: Frontiers – *Pediatrics* (1)
- 2018 – present** Academic Editor: PLOS One – Sports Injury (11)
- 2018 – present** Academic Editor: Frontiers in Sports and Active Living – *Sports Science, Technology and Engineering*

## Ad Hoc Journal Review (# of articles reviewed)

- 1) Addiction Biology (1)
- 2) American Journal of Sports Medicine (18)
- 3) Annals of Medicine (2)
- 4) Archives of Rehabilitation Research and Clinical Translation (2)
- 5) Biomaterials Science (1)
- 6) Biomed Research International (1)
- 7) BMC Musculoskeletal Disorders (3)
- 8) BMC Sport Science, Medicine, & Rehabilitation (1)
- 9) BMJ Case Reports (6)
- 10) Clinical Anatomy (2)
- 11) Clinical Journal of Sports Medicine (1)
- 12) Computer Methods in Biomechanics and Biomedical Engineering (1)

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- 13) Current Sports Medicine Reports (1)
- 14) Electronics (1)
- 15) European Journal of Sports Science (4)
- 16) Frontiers in Neuroscience (1)
- 17) Frontiers in Integrative Neuroscience (1)
- 18) Frontiers in Sports and Active Living (14)
- 19) IEEE Transactions on Human-Machine Systems (1)
- 20) IEEE Transactions on Medical Imaging (1)
- 21) Injury Prevention (1)
- 22) International Journal of Developmental Neuroscience (2)
- 23) International Journal of Environmental Research and Public Health (1)
- 24) International Journal of Sports Medicine (1)
- 25) Journal of Medical Internet Research (2)
- 26) JMIR Rehabilitation & Assistive Technologies (1)
- 27) Journal of Athletic Training (2)
- 28) Journal of Applied Biomechanics (1)
- 29) Journal of Chiropractic Medicine (1)
- 30) Journal of Electromyography and Kinesiology (1)
- 31) Journal of Orthopaedic Research (4)
- 32) Journal of Orthopaedic Research – Spine (2)
- 33) Journal of Orthopaedic & Sports Physical Therapy (2)
- 34) Journal of Osteoporosis (1)
- 35) Journal of Pain Research (1)
- 36) Journal of Physical Therapy (1)
- 37) Journal of Physical Medicine & Rehabilitation (4)
- 38) Journal of Science and Medicine in Sport (5)
- 39) Journal of Sport and Health Science (3)
- 40) Journal of Sports Sciences: Science and Medicine in Football (1)
- 41) Knee (2)
- 42) Medicine & Science in Sports & Exercise (1)
- 43) NeuroImage (2)
- 44) Neuroscience (1)
- 45) Neuroscience Letters (1)
- 46) Open Access Journal of Sports Medicine (1)
- 47) Orthopaedic Journal of Sports Medicine (6)
- 48) Physical Medicine & Rehabilitation (2)
- 49) PLoS ONE (11)
- 50) SAGE Open Medicine (1)
- 51) Scandinavian Journal of Medicine and Science in Sports (1)
- 52) Scientific Reports (1)
- 53) Sports Biomechanics (1)
- 54) Sports Health (1)
- 55) Sports Medicine (7)
- 56) Sports Medicine – Open (1)
- 57) Transactions on Biomedical Engineering (1)

## PRESENTATIONS

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### Podiums

# Nathan Schilaty, DC, PhD – Curriculum Vitae

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- 1) **Schilaty ND** (2024, Dec). Spinal Manipulation in a Mouse Model of Discogenic Back Pain. *Chiropractic Educators Research Forum (CERF) Conference - "Collaboration: Education and Research Stronger Together."* Virtual.
- 2) **Schilaty ND** (2024, Oct). Research, History & Future of Spinal Decompression (Keynote) – *Decompression Mastermind* – Orlando, FL.
- 3) **Schilaty ND** (2024, Sept). Biomechanical Behavior of a New Vertebral Body Implant: Vertiwedge. *Society for Minimally Invasive Spine Surgery 2024*, Las Vegas, NV, USA; Sept. 5-7, 2024.
- 4) **Schilaty ND** (2024, June). Spine Manipulation in a Mouse Model of Discogenic Back Pain – *NIH Force-Based Manipulation Investigator Meeting* – Bethesda, MD.
- 5) **Schilaty ND** (2024, May). Concussion Effects Injury to the Lower Extremity – *Subconcussive Summit* – Tampa, FL.
- 6) **Schilaty ND** (2024, Feb). Research, History & Future of Spinal Decompression (Keynote) – *Decompression Mastermind* – Dallas, TX.
- 7) **Schilaty ND** (2023, Nov). Documenting Changes: Advancing Chiropractic and Evidence-Based Care with Research – *Southwest Regional Conference – Florida Chiropractic Association*, Naples, FL.
- 8) **Schilaty ND** (2023, Oct). Research, History & Future of Spinal Decompression (Keynote) – *Decompression Mastermind* – Orlando, FL.
- 9) **Schilaty ND** (2023, Aug). Great Posture, Great Health – Research on the Effects of Posture and Overall Health. – *Florida Chiropractic Association – The National*, Orlando, FL.
- 10) **Schilaty ND** (2023, Aug). Decreasing Trends in Medical Errors Advocating Non-Surgical Spinal Decompression – *Florida Chiropractic Association – The National*, Orlando, FL.
- 11) **Schilaty ND** (2023, Aug). Strategies of Care for the Chiropractic Patient – *Florida Chiropractic Association – The National*, Orlando, FL.
- 12) **Schilaty ND** (2023, Apr). Great Posture, Great Health (Keynote) – *ACA Faculty* – West Palm Beach, FL.
- 13) **Schilaty ND** (2023, Mar). Research, History & Future of Spinal Decompression (Keynote) – *Decompression Mastermind* – Dallas, TX.
- 14) **Schilaty ND** (2023, Feb). Looking Back While Looking Forward with Chiropractic Medicine – *Palmer College of Chiropractic Florida Homecoming* – Port Orange, FL.
- 15) **Schilaty ND** (2023, Jan). Non-Surgical Spinal Decompression Research at University of South Florida – *Excite Medical of Tampa Bay* – Tampa, FL.
- 16) **Schilaty ND** (2022, Nov). Great Posture, Great Health – Research on the Effects of Posture and Overall Health – *Southwest Regional Conference – Florida Chiropractic Association*, Naples, FL.
- 17) **Schilaty, ND** (2022, Nov). Headaches: To Treat or Not to Treat, that is the question? Medical Errors. *Southwest Regional Conference – Florida Chiropractic Association*, Naples, FL.
- 18) **Schilaty ND** (2022, Oct). Research, History & Future of Spinal Decompression (Keynote) – *Decompression Mastermind* – Orlando, FL.
- 19) **Schilaty ND**, Nagai T (2022, Aug). Great Posture, Great Health – Research on the Effects of Posture and Overall Health – *Florida Chiropractic Association – The National*, Orlando, FL.
- 20) **Schilaty ND** (2022, Aug). Headaches: To Treat or Not to Treat, that is the question? Medical Errors. *Florida Chiropractic Association – The National*, Orlando, FL.
- 21) **Schilaty ND**. (2022, July). Ethics of Research. *Southeast Regional Conference – Florida Chiropractic Association*, Boca Raton, FL.
- 22) **Schilaty, ND** (2022, May). Headaches: To Treat or Not to Treat, that is the question? Medical Errors. *Northeast Regional Conference – Florida Chiropractic Association*, St. Augustine, FL.
- 23) **Schilaty ND** (2021, Aug). Utilization of Neural and Mechanical Metrics to Identify and Predict Low Back Pain Outcomes. *Palmer College of Chiropractic – Clinical Research Seminar Series*, Davenport, IA.
- 24) **Schilaty ND**, Hewett TE (2019, Oct). Sex Differences of Motor Unit Characteristics Associated with Anterior Cruciate Ligament Injury and Arthrogenic Muscle Inhibition. *3<sup>rd</sup> Annual Celebration of Women's Health Research: SeXX as a Biological Variable*, Rochester, MN.
- 25) **Schilaty ND**, Hewett TE (2019, Aug). Analysis of Quadriceps Arthrogenic Muscle Inhibition of ACL Injury with Decomposed Electromyography. *International Society of Biomechanics*; Calgary, AB, Canada.

# Nathan Schilaty, DC, PhD – Curriculum Vitae

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- 26) **Schilaty ND**, Hewett TE (2019, May). Sex Differences in Anterior Cruciate Ligament Injury. *Organization for the Study of Sex Differences*; Washington, DC.
- 27) **Schilaty ND**, Hewett TE (2018, Sept). Sex Differences in Anterior Cruciate Ligament Injury. *2<sup>nd</sup> Annual Celebration of Women's Health Research – Individualizing Medicine Conference*; Rochester, MN.
- 28) **Schilaty ND**, Hewett TE (2018, June). Controversies in Anterior Cruciate Ligament Injury Prevention, Management and Rehabilitation. *American College of Sports Medicine*; Minneapolis, MN.
- 29) **Schilaty ND**, Bates NA, Hewett TE (2018, May). Timothy Hewett – BIG SIG Career Achievement Award. *American College of Sports Medicine – Biomechanics Interest Group*; Minneapolis, MN.
- 30) **Schilaty ND**, Bates NA, Hewett TE (2018, May). Simulation of Anterior Cruciate Ligament Injuries in the In Vitro Environment. *Mayo Clinic 16<sup>th</sup> Annual ACL Workshop*; Minneapolis, MN.
- 31) **Schilaty ND**, Bates NA, Nagelli CV, Krych AJ, Hewett TE (2018, Mar). Impact Factors: Simulations of Drop Jumps for Determination of Anterior Cruciate Ligament Injury Mechanisms. *Center for Clinical and Translational Science Grand Rounds*; Mayo Clinic, Rochester, MN.
- 32) **Schilaty ND**, Bates NA, Nagelli CV, Krych AJ, Hewett TE (2017, Aug). Sex Differences in Knee Forces & Moments that Occur with ACL Rupture on Cadaveric Impact Simulations. *American Soc. Biomechanics*, Boulder, CO.
- 33) **Schilaty ND**, Bates NA, Hewett TE (2017, May). Simulation of Anterior Cruciate Ligament Injuries in the In Vitro Environment. *Mayo Clinic 15<sup>th</sup> Annual ACL Workshop*, Minneapolis, MN.
- 34) **Schilaty ND**, Hewett TE (2016, Oct). Novel Mechanical Impact Simulator Designed to Generate Clinically Relevant Anterior Cruciate Ligament Ruptures. *Mayo Clinic Kelly Research Fellow Competition*, Rochester, MN.
- 35) **Schilaty ND**, Hewett TE (2016, Apr). Incidence of Second Anterior Cruciate Ligament Tears and Associated Factors: A Geographic Epidemiological Cohort Study. *Collaborative T32 Musculoskeletal Symposium*, University of Minnesota, Minneapolis, MN.
- 36) **Schilaty ND**, Steffensen SC (2014, Aug). Ethanol modulation of dopamine release in the striatum involves extrasynaptic GABA(A)Rs on dopamine terminals. *15<sup>th</sup> International Monitoring Molecules in Neuroscience*, Los Angeles, CA.
- 37) **Schilaty ND**, Steffensen SC (2013, July). Ethanol inhibits dopamine release at terminals in the nucleus accumbens via GABA receptors. *LDS Life Science Research Symposium*, Salt Lake City, UT.

## Guest Lecture

- 1) **Schilaty ND** (2024, Nov). Accessing Scientific Literature: Navigation & Convenient Tools. *National University of Health Sciences*, Pinellas Park, FL.
- 2) **Schilaty ND** (2024, Mar). Accessing Scientific Literature: Navigation & Convenient Tools. *National University of Health Sciences*, Pinellas Park, FL.
- 3) **Schilaty ND** (2023, Jan). Concussion Management in Sports Medicine. *National University of Health Sciences*, Pinellas Park, FL.
- 4) **Schilaty ND** (2021, Mar). Translation of Biomedical Sports Medicine Research into Clinical Practice. *Mayo Clinic Marquette Challenge*, Rochester, MN.
- 5) **Schilaty ND** (2019, Oct). How Studying Neuromechanics of Movement Opens Mayo Clinic's Door for Chiropractic Scientist. *Parker Seminars – Student P.I.E. Science Week*. Parker University, Dallas, TX.
- 6) **Schilaty ND** (2014, Nov). ExSc 501 – Sports Medicine Pathology & Pharmacology. *Addiction & Opioids*. Brigham Young University, Provo, UT.
- 7) **Schilaty ND** (2014, July). StAc 191 – Beginning Weight Training. *Spinal Care and Core Wellness*. Brigham Young University, Provo, UT.
- 8) **Schilaty ND** (2014, Apr). ExSc 501 – Sports Medicine Pathology & Pharmacology. *Addiction & Opioids*. Brigham Young University, Provo, UT.
- 9) **Schilaty ND** (2014, Feb). Biol 100 – Principles of Biology. *Principles of Addiction*. Brigham Young University, Provo, UT.

## Course Development

- 1) **ExSc 221** – Science of Wellness – 3 credit hours



# Nathan Schilaty, DC, PhD – Curriculum Vitae

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Elective in Department of Exercise Sciences, Brigham Young University  
Fulfills *General Education* and *Social Sciences* requirement

## Media Interviews

- 1) **Schilaty ND** (2022, June). Current Chiropractic Research at USF. *Pinellas County Chiropractic Society*, St. Petersburg, FL.

## Institutional Seminar Presentations

- 1) **Schilaty ND** (2024, July). Career as a Clinical Researcher. *Medi-Futures USF – Virtual Mentorship*, Tampa, FL.
- 2) **Schilaty ND** (2023, Nov). Development and Implementation of a Biomechanical Spine Simulator. Neuroscience Institute Seminar Series, Tampa, FL.
- 3) **Schilaty ND** (2023, Sept). Non-surgical Spinal Decompression. *Neurosurgery Grand Rounds*, Tampa, FL.
- 4) **Schilaty ND** (2022, June). Impact Factors: Simulations of Drop Jumps for Determination of Anterior Cruciate Ligament Injury Mechanisms. *Medical Engineering Department Meeting*; University of South Florida, Tampa, FL.
- 5) **Schilaty ND** (2022, Apr). Chiropractic & Biomechanics Research: Current Projects / Upcoming Opportunities. *Neurosurgery Grand Rounds*, Tampa, FL.
- 6) **Schilaty ND** (2021, May). 66-year female with a 1-year post-op Total Knee Arthroplasty Before and After a 12-Week Postural Intervention. *Mayo Clinic Sports Medicine Conference*, Rochester, MN.
- 7) **Schilaty ND** (2021, Mar). Adaptations of Thigh Muscle Motor Control with ACL Injury. *Mayo Clinic Musculoskeletal Research Conference*, Rochester, MN.
- 8) **Schilaty ND** (2020, Aug). Linear Discriminant Analysis Predicts Knee Injury Outcome from Biomechanical Variables. *Mayo Clinic Sports Medicine Seminar*, Rochester, MN.
- 9) **Schilaty ND** (2019, Oct). Neuromechanics of Anterior Cruciate Ligament Injury and Rehabilitation. *Mayo Clinic Biomedical Engineering & Physiology Seminar*, Rochester, MN.
- 10) **Schilaty ND** (2019, Oct). Sex Differences in Anterior Cruciate Ligament Injury. *Mayo Clinic 3<sup>rd</sup> Annual Women's Health Research Symposium*, Rochester, MN.
- 11) **Schilaty ND**, Hewett TE (2018, Dec). Factors that 'Impact' Knee Ligament Strain. *Mayo Clinic Musculoskeletal Research Conference*, Rochester, MN.
- 12) **Schilaty ND**, Weinshenker BG (2018, June). A Biomechanical Investigation of McArdle's Sign for Multiple Sclerosis. *Biomedical Engineering & Physiology Seminar*. Mayo Clinic, Rochester, MN.
- 13) **Schilaty ND**, Hewett TE (2017, May). Sex Differences of Anterior Cruciate Ligament Injury. *Office of Women's Health – 3-Minute Thesis Competition*. Mayo Clinic, Rochester, MN.
- 14) **Schilaty ND**, Hewett TE (2016, Sept). 2nd ACL Injury: Risk Factors Demonstrated by 20 Years of Rochester Epidemiology Data. *Mayo Clinic Musculoskeletal Research Conference*, Rochester, MN.
- 15) **Schilaty ND**, Hewett TE (2015, May). Motor inhibition via real-time vibration. *OSU Sports Medicine Research Day*, Columbus, OH.
- 16) **Schilaty ND** (2014, Oct). Ethanol modulation of dopamine release in the striatum involves atypical extrasynaptic GABA(A)Rs. Department of Physiology, Pharmacology, and Neurosciences. University of South Carolina School of Medicine, Columbia, SC.
- 17) **Schilaty ND** (2014, Oct). Ethanol modulation of dopamine release in the striatum involves atypical extrasynaptic GABA(A)Rs. *Post-doctoral Recruitment Event*. Ohio State University, Columbus, OH.
- 18) **Schilaty ND** (2014, Sept). Ethanol and Meth: Role of atypical extrasynaptic GABA(A)Rs and reactive oxygen species on dopamine release in the striatum. Department of Physiology & Pharmacology. Wake Forest University, Winston-Salem, NC.
- 19) **Schilaty ND** (2014, Feb). Addiction: Re-wired. *BYU Graduate Studies – 3-Minute Thesis Competition*. Brigham Young University, Provo, UT.
- 20) **Schilaty ND** (2013, Oct). Ethanol inhibits dopamine release at terminals in the nucleus accumbens via  $\alpha 6^*$ -nAChRs. *Physiology and Developmental Biology / Neuroscience Seminar Series*. Brigham Young University, Provo, UT.

# Nathan Schilaty, DC, PhD – Curriculum Vitae

- 21) **Schilaty ND** (2013, June). Addiction and the Brain. *Graduate Studies – Grad Talk Competition*. Brigham Young University, Provo, UT.
- 22) **Schilaty ND** (2012, Nov). Baicalein attenuates the inhibitory effect of ethanol on dopamine terminals. *Physiology and Developmental Biology / Neuroscience Seminar Series*. Brigham Young University, Provo, UT.

## COURSES TAUGHT

Years	Course Number	Course Description	Institute
2024	EML 4550/4551	Mechanical Engineering Design I/II	University of South Florida
2023 – 2024	IDH 4970	Honors Thesis I	University of South Florida
2023 – 2024	BME 4914	BME Research Experience	University of South Florida
2023 – present	BME 4882 / 4883C	Biomedical Engineering Design I / II	University of South Florida
2022 – present	IDS 4914	Undergraduate Research	University of South Florida
2020 – 2021	CORE 6050	Critical Thinking & Scientific Writing	Mayo Clinic
2020 – 2021	BMEP 6700	Physiology from Cells to Organism	Mayo Clinic
2016 – 2021	BMEP 5452	Biomechanics	Mayo Clinic
2013	NEURO 480	Advanced Neuroscience Laboratory	Brigham Young University
2013	NEURO 205	Neurobiology	Brigham Young University
2011	MEEN 595R	Special Topics in Mechanical Engineering	Brigham Young University
2011	BIOL 2103	Advanced Human Anatomy Dissection	Front Range Community College
2009 – 2011	MED 220	Human Pathology	Corinthian College
2009 – 2011	MED 105	Medical Terminology	Corinthian College
2009 – 2011	MED 255	Medical Law & Ethics	Corinthian College
2009	BIOL 1006	Basic Anatomy & Physiology	Front Range Community College
2007 – 2011	BIOL 2102	Anatomy & Physiology II	Front Range Community College
2007 – 2011	BIOL 2101	Anatomy & Physiology I	Front Range Community College
2006	Princeton Review	PSAT Preparation	Thomas Jefferson High School

## MENTORING

Years	Mentee	URM	Current Status
2024 – 2025	<i>Fhaheem Tadamarry</i> – Computer Science Engineering	N	Graduate
2023 – 2025	<i>Taofeek Braimoh</i> – Computer Science Engineering	Y	Graduate
2024	<i>Ava Bruick</i> – Biomedical Sciences (summer student, Indiana U.)	N	Undergraduate
2024	<i>Nicole Bogdanoff</i> – Neuroscience	N	Post-Baccalaureate
2024	<i>Roy Lai</i> – University of South Florida	N	SELECT Medical Student
2024	<i>Laticia ‘Sosiya’ Womack</i> – University of South Florida	Y	SELECT Medical Student
2024 – present	<i>Jacob Connolly</i> – Medical Sciences Graduate	N	PhD Graduate Student
2024 – present	<i>Lauren Luginsland</i> – Biomechanics	N	Postdoctoral Fellow
2024	<i>David Botero</i> – Mechanical Engineering, Capstone Project	Y	Undergraduate
2024	<i>Benjamin Keister</i> – Mechanical Engineering, Capstone Project	N	Undergraduate
2024	<i>Aidan Foy</i> – Mechanical Engineering, Capstone Project	N	Undergraduate
2024	<i>Jacob Loufek</i> – Mechanical Engineering, Capstone Project	N	Undergraduate
2023	<i>Aaiysha Odwani</i> – MPH Grad Student – Parker University - Texas	Y	ACE – Graduate Student
2023 – 2024	<i>Theresa Brown</i> – Psychology, Honors Thesis	Y	Post-baccalaureate
2023 – 2024	<i>Vamsi Julapally</i> – Biomedical Engineering, Capstone Project	N	Industry Engineer
2023 – 2024	<i>Justin Irvin</i> – Biomedical Engineering, Capstone Project	N	Industry Engineer
2023 – 2024	<i>Jacob Haefeli</i> – Biomedical Engineering, Capstone Project	N	Industry Engineer

# Nathan Schilaty, DC, PhD – Curriculum Vitae

2023 – present	<i>Ella Rivera</i> – Biomedical Sciences	N	Undergraduate
2023 – present	<i>Victor Maldonado</i> – Biomedical Engineering	Y	Undergraduate
2023 – 2024	<i>Lucia Iparraguirre Lopez</i> – Biomedical Engineering	Y	Undergraduate
2023 – present	<i>Gina Ariza Medina</i> – Biomedical Engineering	Y	Undergraduate
2023 – present	<i>Shannon Schueren</i> – University of South Florida	N	Postdoctoral Fellow
2023 – present	<i>Schuyler Van Den Nieuwenhuizen</i> – University of South Florida	N	SELECT Medical Student
2022 – present	<i>Katherine Feroben Walters</i> – Medical Sciences Graduate	N	PhD Graduate Student
2022 – present	<i>Luana Niewelt</i> – Biomedical Engineering	Y	Undergraduate
2022 – 2023	<i>Will Ridley</i> – Biomedical Sciences	N	Industry
2022 – present	<i>Alex Refowich</i> – University of South Florida; Medical Student	N	Medical Resident
2022 – 2024	<i>Isabel ‘Carter’ Ferguson</i> – Public Health; Undergraduate	N	MPH Graduate Student
2022 – 2023	<i>Luke Borders</i> – University of South Florida; Research Assistant	N	Medical Student
2022 – 2024	<i>Möet Bailey</i> – University of South Florida; Research Assistant	N	MPH Graduate Student
2021 – 2023	<i>Cecelia Mitchell</i> – Mayo Clinic; Medical Student	N	Medical Physician
2021	<i>Fernanda Campos</i> – Mayo Clinic Summer Undergraduate Research Fellow (SURF)	Y	Industry Engineer
2020 – 2022	<i>Sarah Anderson</i> – Mayo Clinic; PT Research Fellow	N	Physical Therapist
2020 – 2022	<i>Andrew J. Johnson</i> – Mayo Clinic; PT Research Fellow	N	Physical Therapist
2020 – 2023	<i>Grace Chaney</i> – Mayo Clinic; SURF	N	Medical Student
2019 – present	<i>American Society of Biomechanics</i> ; Student Mentorship Program	Y	Various
2019 – 2021	<i>Luca Rigamonti</i> – Mayo Clinic; Research Fellow	N	Physician Researcher
2018 – 2020	<i>Ryo Ueno</i> – Mayo Clinic; Research Fellow	Y	Research Associate
2019	<i>Bailey Onken</i> – Mayo Clinic; Undergraduate Research Employment Program (UREP)	N	Medical Student
2019	<i>Hannah Wendorff</i> – Mayo Clinic; UREP	N	PhD Graduate Candidate
2019	<i>Jack Ommen</i> – Mayo Clinic; SURF	N	Medical Student
2019	<i>Sydney Kruisselbrink</i> – Mayo Clinic; SURF	N	Physician Assistant
2018 – 2021	<i>Allison Mumbleau, PT, DPT</i> – Mayo Clinic; Clinical Outcome Research Coordinator (CORC)	N	Physical Therapist
2018 – 2021	<i>Emily Beyer, PT, DPT</i> – Mayo Clinic; CORC	N	Physical Therapist
2018 – 2021	<i>Aaron Hellem, PT, DPT</i> – Mayo Clinic; CORC	N	Assistant Professor
2018	<i>Jenna Port</i> – Mayo Clinic – Career Awareness High School Mentee	N	Undergraduate
2017	<i>Manuela Vargas Gonzalez</i> – Mayo Clinic; Special Research Student	Y	Biomedical Engineer (MS)
2017	<i>Maria Clara Mejia Jaramillo</i> – Mayo Clinic; Special Research Student	Y	Clinical Engineer (MS)
2017 – 2020	<i>April McPherson, BS</i> – Mayo Clinic; PhD Graduate Student Thesis: Neuromechanics of Arthroscopic Muscle Inhibition of ACL Injury	N	Research Scientist
2016 – 2018	<i>Jeffrey Strauss, PT, DPT</i> – Mayo Clinic; CORC	N	Physician Assistant
2016 – 2018	<i>Eric Crowley, MS, ATC</i> – Mayo Clinic; CORC	N	Lead Athletic Trainer

## PATENTS

- 2024                                    **63/724,121** – Leg Isoinertial Measurement Brace (LIMB)  
2024                                    **63/563,758** – Senior Gait and Balance Wearable Device  
2023                                    **18/394,762** – Cadaveric 6-axis Spine Simulator for Assessing Spinal Biomechanics

# Nathan Schilaty, DC, PhD – Curriculum Vitae

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## MEMBERSHIPS

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2025	American Spinal Decompression Society
2024	Society for Minimally Invasive Spine Surgery (SMISS)
2024 – Present	AMSUS – Society of Federal Health Professionals
2023 – Present	Chiropractic Educators Research Forum (CERF)
2022 – 2023	American College of Sports Medicine (ACSM)
2021 – Present	Florida Chiropractic Association (FCA)
2021	Int'l Soc. Arthroscopy, Knee Surgery, & Orthopedic Sport Medicine (ISAKOS)
2018 – 2020	Organization for the Study of Sex Differences (OSSD)
2018 – 2023	International Society of Electrophysiology and Kinesiology (ISEK)
2018 – Present	Society for the Neural Control of Movement (NCM)
2016 – 2018	Orthopedic Research Society (ORS)
2015 – Present	American Society of Biomechanics (ASB)
2015	New York Academy of Sciences
2013 – 2022	Society for Neuroscience (SfN)
2013 – 2014	Research Society on Alcoholism (RSOA)
2011 – 2014	American Association for the Advancement of Science (AAAS)
2007 – 2008	International College of Applied Kinesiology (ICAK)
2004 – Present	American Chiropractic Association (ACA)

## VOLUNTEER / OUTREACH

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2022	SuperStars Special Needs – Activity Mentor
2018	Champion Youth Basketball (Coach)
2016 – Present	National Biomechanics Day
2002 – 2019	Boy Scouts of America

## PROFESSIONAL DEVELOPMENT

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### NIH LRP Ambassador

Personalized connection between the Division of Loan Repayment and potential applicants to provide information and personalized assistance for the Loan Repayment Program. In this role, I have successfully mentored 3 applicants for successful LRP funding.

### Mendeley Advisor

Volunteer advisor participating in development of Elsevier academic outreach and software features.

### LabVIEW Programming – *Advanced*

Generate user-friendly software to interface research hardware for data collection, post-processing, automation, and analysis.

### JMP Pro – *Advanced*

Perform appropriate simple and complex statistical models for *in vitro*, *in vivo*, and *clinical trials* research.

## FOREIGN LANGUAGE

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Spanish	Fluent in written and verbal communication
Arabic	Read/write capability; limited conversation