

Christopher Mark Hill Ph.D.

Assistant Professor of Biomechanics and Neuromotor Control
Director of the Motor Behavior Laboratory
Department of Kinesiology and Physical Education
Northern Illinois University

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 [Google Scholar](#)  [ResearchGate](#)  [Twitter](#)

ACADEMIC RECORD

Ph.D. Kinesiology Research Emphasis: Motor Behavior Academic Minor: Applied Statistics	University of Mississippi	2019
M.S. Kinesiology Research Emphasis: Neuromechanics	Mississippi State University	2016
B.S. Exercise Science Academic Minor: Psychology	University of Mississippi	2014

PROFESSIONAL EXPERIENCE

Assistant Professor Department of Kinesiology and Physical Education	Northern Illinois University	2019-Present
Doctoral Graduate Assistant Department of Health, Exercise Science, and Recreation Management	University of Mississippi	2016-2019
Masters Graduate Assistant Department of Kinesiology	Mississippi State University	2014-2016

RESEARCH INTERESTS

Motor learning • Reinforcement learning • Motivation • Augmented feedback • Visuomotor Adaptation • Human gait • Movement disorders • Aging • Rehabilitation • Biosignal processing

TEACHING INTERESTS

Motor behavior • Neurophysiology • Biomechanics of human movement • Research methods • Statistical methods • Biosignal processing

LABORATORY COMPETENCIES

Experimental Competencies	Data Analysis Competencies
Surface Electroencephalography	Computer Programing (R, Matlab)
Surface Electromyography	Frequentist Statistical Analysis (R, SPSS, JASP)
Motion Capture Testing	Bayesian Statistical Analysis (R, JASP)
Clinical Balance Testing	Systematic Literature Review
Force Plate Testing	Meta-Analysis (Comprehensive Meta-Analysis, JASP)

RESEARCH SUPPORT

Extramural FundingIn Review

National Science Foundation, NSF 23-562 Division of Information & Intelligent Systems 2023

Role: Co-I

Project Title: *A Systematic Requirements Engineering Approach for Semantic- and Context-related Risk Management in Perception of AI-enabled Software Systems*

Amount Request: \$704,853.00 USD

National Institutes of Health, R15 NCMRR (Resubmission) 2023

Role: Co-I

Project Title: *Step it up! A Pilot Randomized Controlled Trial of a Home-based Square-Stepping Exercise Program in Older Adults with Multiple Sclerosis*

Amount Requested: \$278,420.00 USD

National Institutes of Health, R15 NCMRR 2023

Role: PI

Project Title: *Neurochemical Correlates of Performance Monitoring During Locomotor Adaptation*

Amount Requested: \$300,000 USD

Not Funded

National Institutes of Health, R03 NCMRR 2022

Role: PI

Project Title: *Neurophysiological and Pharmacological Markers of Performance Monitoring During Locomotor Learning*

Amount Requested: \$270,671 USD

National Institutes of Health, R15 NCMRR (Impact Score: 34) 2022

Role: Co-I

Project Title: *Step it up! A Pilot Randomized Controlled Trial of a Home-based Square-Stepping Exercise Program in Older Adults with Multiple Sclerosis*

Amount Requested: \$225,853.00 USD

The Whitehall Foundation, Grand In Aid 2021

Role: PI

Project Title: *Neural Correlates of Prediction Errors in Aged Locomotor Learning*

Amount Requested: \$30,000.00 USD

Intramural FundingFunded

Northern Illinois University, Student Engagement Fund 2022

Role: PI

Project Title: *Neural Correlates of Reinforcement Feedback in Aged Locomotor Learning*

Amount Awarded: \$1,500.00 USD

Northern Illinois University, College of Education Dean's Research Grant 2022

Role: Co-I

Project Title: *Kinematics and Neuromuscular Activation During the Wheeled Motorized Sled-Push (XPO Sled Trainer) Exercise: An Investigation in Older Adults*

Amount Awarded: \$2,500.00 USD

Northern Illinois University, Research and Artistry Opportunity Grant 2022

Role: Co-PI

Project Title: *The Effects of COVID-19 on Electrophysiological Measures of Auditory Working Memory*

Amount Awarded: \$14,998.00 USD

Northern Illinois University, Research and Artistry Opportunity Grant Role: PI Project Title: <i>Neural Correlates of Prediction Errors in Locomotor Learning</i> Amount Awarded: \$15,000.00 USD	2021
Northern Illinois University, Research and Artistry Opportunity Grant (Re-submission) Role: Co-PI Project Title: <i>Examining the Underlying Long-Term Neuromotor Mechanisms Following Concussion</i> Amount Awarded: \$14,948.00 USD	2020
Northern Illinois University, College of Education Dean's Research Grant Role: PI Project Title: <i>The Neural Correlates of Reinforcement Feedback During Motor Learning in Healthy Elderly</i> Amount Awarded: \$2,500.00 USD	2019
Northern Illinois University, College of Education Dean's Instructional Innovation Grant Role: Co-I Project Title: <i>Implementing Creative Medical Investigations as a Tool to Enhance Critical Thinking in Athletic Training Students</i> Amount Awarded: \$2,500.00 USD	2019
<u>Not Funded</u>	
Northern Illinois University, College of Education Dean's Research Practice Partnership Grant Role: PI Project Title: <i>The Effects of COVID-19 on Cognitive Processing and Auditory Electrophysiological Measures</i> Amount Requested: \$4,290.00 USD	2021
Northern Illinois University, Research and Artistry Opportunity Grant Role: Co-PI Project Title: <i>Examining the Underlying Long-Term Neuromotor Mechanisms Following Concussion</i> Amount Requested: \$15,000.00 USD	2019

RESEARCH MENTORSHIP

Major Professor

- Pam Durr, Co-Chair w/ Michael Kushnick, PhD Health Sciences 2023- Present
- Leo Barzi, MS Kinesiology 2023- Present
- Jack Littner, MS Kinesiology 2020-2022

External Dissertation Committee

- Benjamin Miller-Mills, PhD, University of Queensland 2023

Graduate Committee

- Michael Baumann, MS Kinesiology 2020-2022
- Benjamin Connors, MS Kinesiology 2020-2022

Graduate Independent Study Mentor

- Nathan Ross Spring 2023
- Holly Flentge Spring 2022
- Juan Navarro Summer 2021
- Benjamin Connors Summer 2021
- Ken Riley Fall 2020
- Dong Jae Park 2020- 2022

Undergraduate Honors Student Mentor

- Leea Perry 2021-2022
 - 2022 Outstanding Honors Capstone Winner

Undergraduate Research Mentor

- Leo Barzi 2022-2023
- Cameron Gericke 2022-2023
- Joshua Bolander 2020

School of Engineering Senior Design Mentor

- Nick Diaz, Brandon Silva, Carlos Cano 2021-2022
- Nathan Tom, Nathan Moser, Haley Hoppe 2020-2021

TEACHING CURRICULUM

Certification: Association of College and University Educators Distinguished Teaching Scholars
Graduate and undergraduate level classes in the NIU Department of Kinesiology and Physical Education

TEACHING EVALUATIONS**OVERALL AVERAGE**

GLOBAL INDEX (MAX SCORE OF 5)

4.50 / 5 point scale

Northern Illinois University

KNPE 645- Application of Statistics to Research in Kinesiology and Physical Education

KNPE 635- Biomechanics

KNPE 486- Principals of Motor Learning and Performance

KNPE 314- Applied Biomechanics

University of Mississippi

ES 446- Biomechanics of Human Movement

ES 447- Biomechanics of Human Movement Laboratory

ES 394- Therapeutic Exercise and Fitness

ES 338- Motor Learning and Control

PROFESSIONAL SERVICE**Ad-Hoc Grant Reviewer**

National Institutes of Health

2023

- Motor Function, Speech, and Rehabilitation Study Section

Ad-Hoc Manuscript Reviewer

Adaptive Behavior	International Journal of Human Factors and Ergonomics
Applied Sciences	Neural Plasticity
BMC Military Medical Research	Neuroscience Letters
BMC Sports Science, Medicine, and Rehabilitation	PeerJ
Electronics	PloS One
Experimental Gerontology	Physiotherapy Theory and Practice.
Footwear Science	Technologies
Frontiers of Behavioral Neuroscience	Visions
Gait and Posture	

Editorial Responsibilities*Frontiers of Behavioral Neuroscience*

- **Guest Editor** - Reinforcement-based Motor Learning section 2023-Present
- **Review Editor** - Motivation and Reward section 2022-Present

Professional Organizations

Chicago Society for Neuroscience

2021-Present

- Leadership Council
- Organize annual conference
- Coordinated undergraduate poster competition

North American Congress of Biomechanics

2022

- Abstract Reviewer

American Society of Biomechanics Annual Conference	2019-Present
• Abstract Reviewer	
Midwest ACSM Conference	2019-Present
• Session Moderator	
• Abstract Reviewer	
Mid-South Biomechanics Conference	2018
• Session Moderator	
Northern Illinois University	
Department of Kinesiology and Physical Education	
• Director of the Motor Behavior Laboratory	2019-Present
• KNPE Doctoral Academic Program Committee	2019-Present
• KNPE Graduate Faculty	2019-Present
• Graduate Student Advisor	2019-Present
College of Education	
• College Appeals Committee	2019-Present
• Graduate Council	2023-Present
• Research Committee	2023-Present
University	
• Presidential Interfaith Commission Member	2020-2021
• University Graduate Colloquium Committee	2019-2022
• Campus Parking Committee	2022-Present
• Parking Appeals Committee	2022-Present
• Research Methodological Service Expert Consultant	2020-Present

CURRENT PROFESSIONAL AFFILIATIONS

National / International	Regional
Neural Control for Movement Society	Midwest American College of Sports Medicine
Society for Neuroscience	Chicago Society for Neuroscience
American Society of Biomechanics	Midwest Society of Biomechanics
American Psychological Association	Midwest American Psychological Association

ACTIVE COLLABORATIONS

On Campus Collaborations:

- | | |
|--------------------------|------------------------------------|
| • Psychology | • Audiology |
| • Mechanical Engineering | • Statistics and Actuarial Science |
| • Computer Science | • Physical Therapy |

Off Campus Collaborations:

- | | |
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| • University of Mississippi | • Georgia Southern University |
| • University of Mississippi Medical Center | • University of Illinois Urbana-Champaign |
| • Mississippi State University | • University of Illinois Chicago |

INVITED PRESENTATIONS

- October 2022 *Reward and Punishment: Neural and Behavioral Correlates of Reinforcement Feedback during Motor Learning.* Brain Plasticity Laboratory, Department of Physical Therapy, University of Illinois Chicago
- October 2019 *By the Carrot or Stick?: Reinforcement Feedback During Visuomotor Adaptation* Neuroscience Brown Bag, Department of Psychology, Northern Illinois University

PEER-REVIEWED JOURNAL PUBLICATIONS

Published/In-Press: † Indicates student mentored project

- † Lowell R, Conner NO, Derby H, **Hill CM**, Gillen ZM, Burch R, Knight AC, Reneker JC, Chander H (2023), Quick on Your Feet: Modifying the Star Excursion Balance Test with a Cognitive Motor Response Time Task *International Journal of Environmental Research and Public Health* (In Press).
- Wood TA, Grahovec NE, Sanfilippo C, **Hill CM**, Gockel-Blessing EA (2022). A Creative Medical Investigation: Bridging the Soft Skill Gap. *International Journal of Kinesiology in Higher Education*, 1-12.
- Chander H, Freeman HR, **Hill CM**, Hudson C, Kodithuwakku SNK, Turner AJ, Jones JA, Knight AC (2022). The walls are closing in: Postural responses to a virtual reality claustrophobic simulation. *Clinical and Translational Neuroscience*, 6,1-10.
- † Stefan RR, Camic CL, Miles GF, Kovacs AJ, Jagim, AR, **Hill CM** (2022). Relative Contributions of Handgrip and Individual Finger Strength on Climbing Performance in a Bouldering Competition. *International Journal of Sports Physiology and Performance*, 1(aop), 1-6.
- Donahue PT, **Hill CM**, Wilson SJ, Williams CC, Garner JC (2021). Squat Jump Movement Onset Thresholds Influence on Kinetics and Kinematics. *International Journal of Kinesiology and Sports Science*, 9(3), 1-7.
- Hill CM**, Waddell DE, Del Arco A (2021) Movement Readiness Potential Amplitude and Visuomotor Retention is Diminished By Punishment Feedback. (2021) *Experimental Brain Research*, 239(11), 3243-3254
- Williams CC, Donahue PT, Wilson SJ, Mouser JG, **Hill CM**, Luginsland LA, Gdovin JG, Wade C, Garner JC (2021) Examining Changes in Electromyography during Swing Performance in Various Strike Zone Locations of Collegiate Baseball Players. *Advances in Orthopedics and Sports Medicine* 2, 1-8.
- Chander H, Garner JC, Wade C, Wilson SJ, Turner AJ, Kodithuwakku SNK, **Hill CM**, DeBusk H, Simpson JD, Miller BM, Morris CM, Knight AC (2021) An Analysis of Postural Control Strategies in Various Types of Footwear with Varying Workloads. *Footwear Science*. 13(2),181-189.
- Donahue PT, Wilson SJ, Williams CC, **Hill CM**, Garner JC (2021) Comparison of Squat and Countermovement Jumps in Recreationally Trained Males. *International Journal of Exercise Science*. 14(1), 462-472.
- Hill CM**, Stringer M, Waddell DE, Del Arco A (2020) Punishment Feedback Impairs Memory And Changes Cortical Feedback-Related Potentials During Motor Learning. *Frontiers in Human Neuroscience*, 14(294), 1-14.
- Williams CC, Donahue PT, Wilson SJ, Mouser JG, **Hill CM**, Luginsland LA, Gdovin JG, Wade C, Garner JC (2020) Examining Changes in Bat Swing Kinematics in Different Areas of the Strike Zone in Collegiate Baseball Players. *International Journal of Kinesiology and Sport Science* 8(2),1-6.

- Donahue PT, Wilson SJ, Williams CC, **Hill CM**, Valiant MW, & Garner JC (2020) Impact of Hydration Status on Jump Performance in Recreationally Trained Males. *International Journal of Exercise Science*, 13(4), 826-836.
- Hill, CM**, DeBusk H, Knight AC, Chander H (2020) Military-Type Workload and Footwear Alter Lower Extremity Muscle Activity During Unilateral Static Balance: Implications for Tactical Athletic Footwear Design. *Sports* 8(58),1-10.
- Hill CM**, Van Gemmert A, Fang Q, Hou L, Pan Z (2019) Asymmetry in the Aging Brain: A Review of Cortical Activation Patterns and the Implications for Motor Function. *Laterality: Asymmetries of Body, Brain, and Cognition*. 4(25),1-17.
- Chander H., Arachchige S., **Hill CM**, Turner AJ., Deb S., Shojaei A., Hudson C, Knight AC, Carruth D (2019) Virtual Reality [VR] Induced Visual Perturbations Impacts Postural Control System Behavior. *Behavioral Sciences*. 9 (113), 1-12.
- Wilson SJ, Donahue PT, Williams CC, **Hill CM**, Simpson JD, Waddell DE, Loenneke JP, Chander H, Wade C, & Garner JC (2019) Differences in Falls and Recovery from a Slip Based on an Individual's Lower Extremity Corrective Response. *International Journal of Kinesiology and Sport Science* 7(3) 34-40.
- Hill CM**, DeBusk H, Simpson JD, Garner, JC, Knight AC, Wade C, Chander H (2019) The Interaction of Cognitive Interference, Standing Surface, and Fatigue on Lower Extremity Muscle Activity. *Safety and Health at Work*. 10 (3), 321-326.
- Sullivan N, Schaffer H, **Hill CM**, Del Arco A (2019). Time-Dependent Changes In Cognitive Flexibility Performance During Intermittent Social Stress: Relevance For Motivation And Reward-Seeking Behavior. *Brain and Behavioral Research*. 370 (16), 1-9.
- Donahue PT, Beiser E, Wilson SJ, **Hill CM**, Garner JC (2018) The relationship between measures of lower body power and baseball pitching velocity in professional baseball pitchers. *Journal of Trainology*. 7(10) 24-27.
- Hill CM**, Wilson SJ, Mouser JG, Donahue PT, Chander H (2018). Motor Adaptation during Repeated Motor Control Testing: Attenuated Muscle Activation Without Changes in Response Latencies. *Journal of Electromyography and Kinesiology*. 41, 96-102.
- DeBusk H, Chander H, **Hill CM**, Knight AC (2018) Impact of High-Top Military Type Boots on Static and Dynamic Balance. *International Journal of Ergonomics*. 64, 51-58.
- Chander H, Knight AC, Garner JC, Wade C, Carruth D, DeBusk H, **Hill CM** (2018) Impact Of Military Type Footwear And Workload On Heel Contact Dynamics During Slip Events. *International Journal of Ergonomics*, 66, 18-25.
- Hill CM**, Chander H, DeBusk H, Knight AC (2017) Influence of Military Type Workload and Footwear on Muscle Exertion During Static Standing. *Footwear Science*. 9(3), 169-180.
- Simpson JD, DeBusk H, **Hill CM**, Knight AC, Chander H (2017) The Role of Military Footwear and Workload on Ground Reaction Forces during a Simulated Lateral Ankle Sprain Mechanism. *The Foot*. 34, 53-57.
- Wilson SJ, Williams CC, Gdovin JR, Eason JD, **Hill CM**, Luginsland LL, Chander H, Wade C, Garner JC (2017) The Influence of an Acute Bout of Whole-Body Vibration on Human Postural Control Responses. *Journal of Motor Behavior*. 1-8.

Kumarihamy M, León F, Pettaway S, Wilson L, Lambert JA, Wang M, **Hill CM**, McCurdy CR, ElSohly MA, Cutler SJ, Muhammad I (2015) In Vitro Opioid Receptor Affinity And In Vivo Behavioral Studies Of *Nelumbo Nucifera* Flower. *Journal of Ethnopharmacology*, 174, 57-65

In-Review/Revision:

Hill CM, Sebastiao E, Bazi L, Wilson M, Wood T., Reinforcement Feedback Impairs Locomotor Adaptation and Retention, *PLoS One*. (In-Review).

Hill CM, Park DJ, Wood T, Wilson SJ, Chander H., Modulation of Spinal Stretch Reflexes and Co-Contraction in the Lower Extremity with Repeated Postural Perturbations. *Human Movement Sciences* (In-Review)

Henert S, Navarro J, Connors B, **Hill CM**., The Comparative Effects of Exercise and Neurostimulation on College Students' Emotional Well-Being. *Journal of American College Health*. (In-Review)

Sebastiao E, Baumann M, Siqueira V, Chomentowski P, Camic CL, **Hill CM**, Petruzzello SJ., An Investigation of the Sled-Push Exercise in Apparently Healthy Older Adults: A Mixed-Repeated Measures Study. *Journal of Aging and Physical Activity*. (In-Revision)

BOOK CHAPTERS

Sebastiao E, **Hill CM**, Santinelli FB, Barbieri FA. (2022) AVALIAÇÃO DA MOBILIDADE EM PESSOAS COM ESCLEROSE MÚLTIPLA. *Experiencias Em Testes E Medidas Do Exercio Fisico No Context Da Asude*. (pp27-39). Bookerfield Editora

PEER-REVIEWED CONFERENCE PROCEEDINGS

† Barzi L., Atkins S., Wood T., Sebastião E., Wilson M., **Hill CM**. Reinforcement and Sensory Feedback Differently Change Locomotor Learning and Memory. 94th Annual Meeting of the Midwestern Psychological Association, April 22-24, 2022.

Sebastião E, Baumann M, Herring M, Hurd M, Estrada B, Salinas R, Craven E, **Hill CM**, Camic C, Chomentowski P. Physiological and Psychological Responses To A Progressive Acute Session Of Sled-Push Exercise Among Older Adults: Preliminary Findings. European College of Sport Science Congress 2022.

Wilson M, **Hill CM**. A Longitudinal Study of the Effects of Subconcussive Impacts on Electrophysiological Measures Of Auditory Working Memory In Contact And Collison Sports Athletes. Society for Psychophysiological Research, Vancouver, BC, Canada, 2022.

Hill CM, Chandler SJ, McCrory A, Freeny S, Trigg SK, Burch RF, Knight AC, Chander H. Quick On Your Feet: Revamping The Star Excursion Balance Test With A Response Time Task. North American Congress of Biomechanics Meeting, Ottawa, ON, Canada, 2022.

Henert S, **Hill CM**, Connors B, Navarro J. The Comparative Effects of Exercise and Transdermal Trigeminal Nerve Stimulation On Psychological Feeling States. 2022 North American Society for the Psychology of Sport & Physical Activity Annual Conference, Waikoloa, HI 2022.

† Kowal R, Chomentowski P, **Hill CM**. Physical Activity History and Severity of Vasomotor Symptoms in Menopausal Females. ACSM 69th Annual Meeting, San Diego, CA, May 31st-June 4th, 2022.

- Camic CL, Moxley EA, **Hill CM**. Influence of Concentric Fatigue On Muscle Action Specific Peak Torque Production. ACSM 69th Annual Meeting, San Diego, CA, May 31st-June 4th, 2022.
- Hill CM**, Stringer M, Waddell DE, Del Arco A, Reinforcement Feedback Changes Beta And Gamma Neural Oscillations During Visuomotor Learning. Society for Neuroscience 2021, Chicago, IL, November 13-16.
- Sebastiao E, Siqueira VAA, **Hill CM**., The Association Between Walking Speed To Various Physical Functional And Cognitive Parameters In Older Adults. 26th Virtual Congress of the European College of Sport Science, 8 - 10 September 2021.
- † Park DJ, Wood T, Wilson SJ, Chander H, **Hill CM**. Modulation of Spinal Stretch Reflexes in the Lower Extremity with Repeated Postural Perturbations. American Society Biomechanics: ASB 2021 Virtual 45th Meeting
- Valladao S, Nelson H, **Hill CM**, Andre T. Impact of tDCS on Esports Performance. ACSM 68th Annual Meeting, Vitural, June 1-5, 2021.
- Emroy K, Camic CL, Sebastiao E, **Hill CM**, Chomentowski P. Effects of In-Season Training Changes on Body Composition in Division I Collegiate Football Players. ACSM 68th Annual Meeting, Vitural, June 1-5, 2021.
- † Stefan RR, Lutsch DJ, Jagim AR, **Hill CM**, Camic CL. Influence of A Multi-Ingredient Pre-Workout Supplement On Energy Expenditure, Oxygen Uptake, and Subjective Feelings of Fatigue During Low-Intensity Aerobic Exercise. ACSM 68th Annual Meeting, Vitural, June 1-5, 2021.
- Hill CM**, Waddell DE, Del Arco A. Punishment Feedback Diminishes Movement Readiness Potentials and Visuomotor Retention. Neural Control of Movement Society, April 22-24, 2021.
- Hill CM**, Waddell DE, Del Arco A. Punishment Feedback Diminishes Movement Readiness Potentials and Visuomotor Retention. 93rd Annual Meeting of the Midwestern Psychological Association, April 22-24, 2021.
- Camic CL, Cox B, **Hill CM**. Contributions Of Strength, Anthropometric, And Demographic Characteristics To Rock Climbing Performance. ACSM 67th Annual Meeting, San Francisco, CA, May 26-30, 2020.
- Chander H, Kodithuwakku Arachchige SNK, Turner AJ, **Hill CM**, Deb S, Shojaei A, Hudson C, Knight AC, Carruth DW. Is It Me or The Room Moving? Recreating The Classical "Moving Room" Experiment With Virtual Reality. Virtual 44th Annual Meeting of the American Society of Biomechanics, August 4-7, 2020
- Wood TA, **Hill CM**, Park DJ, Hernandez ME, Sosnoff JJ. The Potential Implications of Co-Contraction Index of Neck Muscles on Traumatic Brain. Virtual 44th Annual Meeting American Society of Biomechanics Annual Meeting, August 4-7 2020.
- Hill CM**, Stringer M, Waddell DE, Del Arco A. Punishment, But Not Reward, Impairs Retention And Decreases Cortical Feedback Related Potentials During Motor Learning. Society for Neuroscience 2019, Chicago, IL, October 19-23.
- Wilson SJ, **Hill CM**, DeBusk H, Simpson JD, Miller BL, Knight AC, Garner JC, Wade C, Chander H. The Interaction of Cognitive Interference, Standing Surface, and Fatigue on Lower Extremity Muscle

Activity. 43rd American Society of Biomechanics (ASB) Annual Meeting / 27th Congress of the International Society of Biomechanics (ISB), Calgary, Canada. July 31 – August 4, 2019.

Wilson SJ, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Chander H, Wade C, Wilhoite SV, Neitz K, Haynes, A, Pascal J, Lewis K, Crawford A, Munkasy B, Li L, Garner JC, Waddell DE. Novel Evidence of Cortical Control in Severe Slip Responses. American College of Sports Medicine (ACSM) Annual Meeting, Orlando, FL. May 28 – June 1, 2019.

Crawford A, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Chander H, Wade C, Wilhoite SV, Neitz K, Pascal J, Haynes A, Lewis K, Johnson A, Munkasy B, Li L, Garner JC, Waddell DE, Wilson SJ. Examination of the Influence of Lead Leg Recovery Mechanics on Slip Induced Outcomes. American College of Sports Medicine (ACSM) Annual Meeting, Orlando, FL. May 28 – June 1, 2019.

Haynes A, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Chander H, Wade C, Johnson A, Wilsoite SV, Neitz K, Lewis K, Pascal J, Crawford, Munkasy B, Li L, Garner JC, Waddell DE, Wilson SJ. The Effects of Postural Control Measures on Induced Slip Outcomes. American College of Sports Medicine (ACSM) Annual Meeting, Orlando, FL. May 28 – June 1, 2019.

Pascal J Donahue PT, **Hill CM**, Williams CC, Simpson JD, Chander H, Wade C, Lewis K, Wilhoite SV, Neitz K, Haynes A, Johnson A, Crawford A, Munkasy B, Li L, Garner JC, Waddell DE, Wilson SJ. Lead Leg Corrective Responses to Varying Slip Severity. American College of Sports Medicine (ACSM) Annual Meeting, Orlando, FL. May 28 – June 1, 2019.

Donahue PT, **Hill CM**, Walker K, Wilson SJ, Wade C., Variations in Kinematics During Lumbar Flexion/Extension Bending: A Comparison of Bending Techniques. Congress of Neurological Surgeons 2018 Annual Meeting, Houston, TX, USA. October 6-10, 2018.

Hill CM, Wilson SJ, Mouser JG, Donahue PT, Williams CC, Chander H. Repeated Motor Control Testing Decreases Co-Contraction Index in Healthy Young Adults. 42nd American Society of Biomechanics (ASB) Annual Meeting, Rochester, MN, USA. August 8-11 2018.

Wilson SJ, Garner JC, Donahue PT, Williams CC, **Hill CM**, Waddell DE. The Possible Role of Corticospinal Pathway Demand in Slip Recovery Responses. 50th Biomedical Engineering Society (BMES), Atlanta, GA, USA. October 17-20, 2018.

Wilson SJ, Donahue PT, Williams CC, **Hill CM**, Luginsland LA, Waddell DE, Chander H, Garner JC. Lead Leg Recovery Responses Between Individuals Who Fall and Recover After an Unexpected Slip. 42nd American Society of Biomechanics (ASB) Annual Meeting, Rochester, MN, USA. August 8-11 2018.

Garner JC, Donahue PT, Williams CC, **Hill CM**, Luginsland LA, Waddell DE, Chander H, Wilson SJ. Postural Control Measures Between Individuals Who Fall and Recover After an Unexpected Slip. 42nd American Society of Biomechanics (ASB) Annual Meeting, Rochester, MN, USA. August 8-11 2018.

Hill CM, DeBusk H, Wilson SJ, Gdovin JR, Williams CC, Luginsland LA, Knight AC, Chander H. Influence of Military Type Footwear and Workload on Co-Contraction Index in Unilateral Static Balance. Abstracted: American Society of Biomechanics (ASB) Annual Meeting, Boulder, CO. August 8-11 2017.

- Wilson SJ, Chander H, Knight AC, Garner JC, Wade C, Luginsland L, **Hill CM**, Gdovin J, DeBusk H, Carruth D. Lower extremity kinematics in military footwear during slip events. *Proceedings of the American Society of Biomechanics Annual Conference*, Boulder CO, August 8-11, 2017.
- Chander H, Knight AC, Garner JC, Wade C, DeBusk H, Wilson SJ, Gdovin JR, **Hill CM**, Carruth D. Muscle Activity During Postural Stability Tasks: Role Of Military Footwear And Workload. Abstracted: American Society of Biomechanics (ASB) Annual Meeting, Boulder, CO. August 8-11 2017.
- Simpson JD, DeBusk H, **Hill CM**, Miller B, Knight AC, Chander H. Effect of Military Footwear Type on Ankle Stability Following a Simulate Military Workload. Abstracted: American Society of Biomechanics (ASB) Annual Meeting, Boulder, CO. August 8-11 2017.
- Luginsland LA, Chander H, Wade C, Garner JC, Eason JD, Wilson SJ, Gdovin JR, **Hill CM**, Knight AC, Carruth D. Influence of Occupational Footwear on Muscle Activity during a Simulated Extended Time-Duration. American Society of Biomechanics (ASB) Annual Meeting, Boulder, CO. August 8-11 2017.
- Hill CM**, DeBusk H, Stewart T, Miller B, Simpson JD, Knight AC, Chander H. Impact of Military Type Footwear and Workload on Co-Contraction Index in Static Balance. Abstracted: *Proceedings of the American Society of Biomechanics Annual Meeting*, Raleigh, NC, Aug 2-5,2016
- DeBusk H, Chander H, **Hill CM**, Simpson JD, Miller BL. Impact of Cognitive Interference, Standing Surface and Fatigue on Balance. *Proceedings of the American Society of Biomechanics*, Raleigh, NC Aug 2-5 2016
- Hill CM**, Chander H, Morris CE, Wilson SJ, Knight AC, Holmes ME, DeBusk H, Wade C, Garner JC. Impact of Low Intensity Workload on Muscle Exertion in Alternative Footwear. ACSM 62nd Annual Meeting, San Diego, CA, May 26-30, 2015.
- DeBusk H, Chander H, Morris CE, Wilson SJ, Knight AC, Holmes ME, **Hill CM**, Wade C, Garner JC. The Effect of Commonly Used Alternative Footwear on Balance. ACSM 62nd Annual Meeting, San Diego, CA, May 26-30, 2015.

PEER-REVIEWED CONFERENCE PRESENTATIONS

- † Atkins S, Barzi L, Wood T, Sebastião E, Wilson M, **Hill CM**. Reinforcement and sensory feedback similarly maintain a new walking pattern during retention testing: a preliminary analysis. Midwest Chapter of the American College of Sports Medicine (MWACSM) Annual Meeting, Indianapolis, IN October 20-22, 2022.
- † Barzi L, Atkins S, Wood T, Sebastião E, Wilson M, **Hill CM**. Reinforcement and sensory feedback similarly enhance locomotor learning: a preliminary analysis Midwest Chapter of the American College of Sports Medicine (MWACSM) Annual Meeting, Indianapolis, IN October 20-22, 2022.
- Kodithuwakku Arachchige SNK, Chander H, Freeman H, **Hill CM**, Hudson C, Turner A, Jones A, Knight A. The Walls Are Closing In: Postural Responses To A Virtual Claustrophobic Simulation. Southeast American College of Sports Medicine Annual Meeting, Greenville SC. February 17-19, 2022.
- Williams CC, Donahue PT, Wilson SJ, Mouser JG, **Hill CM**, Luginsland LA, Wade C, Garner JC. Examining Percent Activation Changes in Different Phases of the Swing in Collegiate Softball Players. 50th Southeast American College of Sports Medicine Annual Conference, Greenville, SC. February 17-19, 2022.

- Donahue PT, Wilson SJ, Williams CC, **Hill CM**, Garner JC. Comparison of Squat and Countermovement Jump Mean Muscle Activity. Southeast American College of Sports Medicine (SEACSM) Annual Conference, February 2021.
- Hill CM**, Stringer M, Waddell DE, Del Arco A. Punishment, But Not Reward, Impairs Retention And Decreases Cortical Feedback Related Potentials During Motor Learning. Midwest Chapter of the American College of Sports Medicine (MWACSM) Annual Meeting, Chicago, IL November 15-17.
- † Cox B., **Hill CM.**, Camic CL. Contributions Of Strength, Anthropometric, And Demographic Characteristics To Rock Climbing Performance. Midwest Chapter of the American College of Sports Medicine (MWACSM) Annual Meeting, Chicago, IL November 15-17.
- † Lutsch DJ., **Hill CM.**, Camic CL. Effects Of An Eccentric-Induced Fatigue Protocol On Muscle Action Specific Peak Torque. Midwest Chapter of the American College of Sports Medicine (MWACSM) Annual Meeting, Chicago, IL November 15-17.
- Crawford A, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Siekirk NJ, Mutchler J, Johnson AC, McLain S, Munkasy BA, Waddell DE, Garner JC, Wilson SJ. Hip and knee muscle activity during standing balance are not associated with slip severity. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Jacksonville Florida. February 13-15 2020.
- Johnson AC, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Siekirk NJ, Mutchler J, McLain S, Crawford A, Munkasy BA, Waddell DE, Garner JC, Wilson SJ. Neuromuscular Control at the hip and knee during balance is not associated with slip detection. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Jacksonville Florida. February 13-15 2020.
- McLain S, Donahue PT, **Hill CM**, Williams CC, Simpson JD, Siekirk NJ, Mutchler J, Johnson AC, Crawford A, Munkasy BA, Waddell DE, Garner JC, Wilson SJ. Standing Balance Muscle Activation at the ankle joint is not associated with slip severity. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Jacksonville Florida, February 13-15 2020.
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- Hill CM**, Wilson SJ, Mouser JG, Williams CC, Luginsland LA, Donahue PT, Chander H. Impact Of Repeated Balance Perturbations On Lower Extremity Mean Muscle Activity. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018. (ORAL)
- Wilson SJ, **Hill CM**, Mouser JG, Williams CC, Luginsland LA, Donahue PT, Garner JC, Chander H. Can Postural Responses Be Learned? Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018.
- Garner JC, **Hill CM**, Wilson SJ, Mouser JG, Williams CC, Luginsland LA, Donahue PT, Chander H. Influence of Repeated Motor Control Tests on Proximal Lower Extremity Musculature Activation. Southeast

Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018.

Donahue PT, Wilson SJ, Williams CC, **Hill CM**, Luginsland LA, and Garner JC. Positional Differences In Peak Power During Countermovement Vertical Jump In Professional Baseball Pitchers. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018.

Luginsland LA, Williams CC, Gdovin JR, Wilson SJ, Donahue PT, **Hill CM**, Eason JD, Yarbrough AL, Wade C, Garner JC. Changes in Bat Angle at Maximal Velocity in Collegiate Softball Players. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018.

Turner AJ, **Hill CM**, DeBusk H, Chander H, Knight AC, Wilson SJ, Williams CC, Luginsland LL. Impact of military type footwear and workload on percent muscle activation in unilateral static balance. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17 2018.

Williams CC, Gdovin JR, Wilson SJ, **Hill CM**, Donahue PT, Luginsland LA, Eason JD, Yarbrough AL, Wade C, Garner JC. Examining changes in bat angle at ball contact in collegiate softball players over a fall softball season. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Chattanooga, TN, February 15-17th 2018.

Hill CM, DeBusk H, Stewart T, Simpson JD, Miller BL, Knight AC, Chander H. Influence of Military type footwear and workload on percent muscle activation in static balance. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Greenville, SC. February 16-18, 2017.

Luginsland LA, Wilson SJ, Gdovin JR, Williams CC, Eason JD, Hoke E, **Hill CM**, Donahue PT, Chander H, Wade C, Garner JC. The acute influence of golf specific footwear on balance equilibrium scores. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Greenville, SC. February 16-18, 2017.

Hoke EL, Wilson SJ, Gdovin JR, Williams CC, Eason JD, Luginsland LA, **Hill CM**, Donahue PT, Chander H, Wade C, Garner JC. Acute effects of golf specific footwear on bilateral balance. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Greenville, SC. February 16-18, 2017.

Eason JD, Wilson SJ, Gdovin JR, Williams CC, Hoke EL, Luginsland LA, **Hill CM**, Donahue PT, Chander H, Wade C, Garner JC. The effects of golf shoe type on balance equilibrium scores. Southeast Chapter of the American College of Sports Medicine (SEACSM) Annual Meeting, Greenville, SC. February 16-18, 2017.

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Hill CM, DeBusk H, Stewart T, Simpson JD, Miller BL, Knight AC, Chander H. Impact Of Military Type Footwear And Workload On Muscle Activity In Static Balance. SEASCAM Annual Meeting, Greenville, SC February 18-20, 2016.

Simpson JD, **Hill CM**, DeBusk H, Stewart T, Miller BL, Knight AC, Chander H. Influence Of Military Boot Types And Physiological Workload On Lower Extremity Muscle Activation. SEASCAM Annual Meeting, Greenville, SC February 18-20, 2016.

DeBusk H, **Hill CM**, Stewart T, Miller BL, Simpson JD, Knight AC, Chander H. Effects Of Military Type Footwear And Workload On Static Balance, SEASCAM Annual Meeting, Greenville, SC February 18-20, 2016.

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Hill CM, Chander H, Morris CE, Wilson SJ, Knight AC, Holmes ME, DeBusk H, Wade C, Garner JC. Impact of Low Intensity Workload on Muscle Exertion in Alternative Footwear. SEACSM Annual Meeting, Jacksonville, FL, February 12-14, 2015.

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