

# Curriculum Vitae

## Dr. Adam Charles Knight

Contact Information  
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### Present Rank and Title

Mississippi State University  
Professor of Biomechanics in the Department of Kinesiology  
Graduate Coordinator for the Department of Kinesiology  
Director of the Biomechanics Research Laboratory housed in the Department of Kinesiology

### Educational Training:

**Auburn University**, Auburn, AL 2006-2009

**Doctor of Philosophy**, Kinesiology, Biomechanics Concentration  
College of Education, Department of Kinesiology

Dissertation Title: Effects of Inversion Perturbation After Drop Landing on the Latency of the Ankle Musculature

**Auburn University**, Auburn, AL 2004-2006

**Master of Education**, Exercise Science, Biomechanics Concentration  
College of Education, Department of Health and Human Performance

**University of Southern Mississippi**, Hattiesburg, MS 2000-2004

**Bachelor of Science**, Athletic Training  
College of Health, Department of Health and Human Performance

## **Employment History:**

2021-Present	<b>Mississippi State University</b> , Department of Kinesiology: Full Professor (Tenured), Biomechanics Director of the Biomechanics Research Laboratory (August 2025 – present) Director of the Neuromechanics Teaching Laboratory (August 2025 - present) Director of the Neuromechanics Laboratory (January 2025 – July 2025) Co-Director of the Neuromechanics Laboratory (August 2015 through December 2024) Graduate Coordinator, Department of Kinesiology Graduate Faculty Member
2015-2021	<b>Mississippi State University</b> , Department of Kinesiology: Associate Professor (Tenured), Biomechanics Co-Director of the Neuromechanics Laboratory Graduate Coordinator, Department of Kinesiology (Beginning Summer 2016) Level One Graduate Faculty Member
2009-2015	<b>Mississippi State University</b> , Department of Kinesiology: Assistant Professor, Biomechanics Level Two Graduate Faculty Member
2007-2008	<b>Auburn University</b> , Department of Kinesiology: Graduate Teaching Assistant, Graduate Student Director of the Sport Biomechanics Laboratory
2004-2007	<b>Auburn University</b> , Auburn University Sports Medicine, Graduate Assistant Athletic Trainer (Football, Equestrian, and Cheerleading Teams)
2003-2004	Physical Therapy Technician, <b>Hattiesburg Clinic</b> , Hattiesburg, MS
2001-2003	Student Athletic Trainer, <b>University of Southern Mississippi</b> , Hattiesburg, MS

## **Curriculum Experience:**

### **Mississippi State University Department of Kinesiology**

#### EP 3233: Anatomical Kinesiology, MSU, 3 credits

Fall 2017, 48 students  
Summer 2017, 2 students  
Summer 2016, 15 students  
Spring 2016, 68 students  
Fall 2015, 70 students  
Summer 2015, 10 students  
Spring 2015, 72 students  
Spring 2014, 100 students  
Fall 2013, 101 students  
Spring 2013, 96 students  
Fall 2012, 99 students  
Spring 2012, 100 students  
Fall 2011, 89 students  
Spring 2011, 95 students  
Fall 2010, 88 students  
Summer 2010, 8 students  
Spring 2010, 83 students  
Fall 2009, 49 students  
Spring 2009 (PE 4233), 34 students

Course description: A functional account of body structure, analysis of human movement and related injury mechanisms.

#### EP 4703: Neural Control of Human Movement, MSU, 3 credits

Fall 2025, 88 students  
Fall 2024, 70 students  
Fall 2023, 72 students  
Summer 2023, 12 students  
Fall 2022, 81 students  
Summer 2022, 6 students  
Fall 2021, 90 students  
Summer 2021, 9 students  
Fall 2020, 51 students  
Summer 2020, 11 students  
Fall 2019, 66 students  
Summer 2019, 9 students  
Fall 2018, 65 students  
Summer 2018, 21 students  
Fall 2017, 55 students  
Summer 2017 (Term II), 13 students

Summer 2017 (Intersession), 18 students  
Fall 2016, 65 students  
Summer 2016 (Term II), 19 students  
Summer 2016 (Intersession), 26 students  
Fall 2015, 100 students  
Summer 2015 (Term II), 17 students  
Summer 2015 (Intersession), 37 students  
Fall 2014, 162 students  
Summer 2014 (Term II), 20 students  
Summer 2014 (Intersession), 22 students  
Fall 2013, 160 students  
Summer 2013 (Intersession), 35 students  
Fall 2012, 114 students

Course Description: Overview of the neural processes associated with human movement with the major focus being the mechanistic control of coordinated movement.

EP 4504: Mechanical Analysis of Human Movement, MSU, 4 credits

Fall 2025, sections 1-5, 4 students  
Spring 2025, sections 1-4, 52 students  
Spring 2025, sections 6-10, 40 students  
Spring 2024, Sections 1-4, 52 students  
Spring 2024, Sections 6-10, 36 students  
Spring 2023, Sections 1-5, 69 students  
Spring 2023, Sections 6-10, 61 students  
Spring 2022, Sections 1-5, 77 students  
Spring 2022, Sections 6-10, 69 students  
Fall 2021, Sections 1-4, 64 students  
Spring 2021, Sections 1-5, 72 students  
Spring 2021, Sections 6-10, 72 students  
Spring 2020, Sections 1-4, 54 students  
Spring 2020, Sections 6-10, 65 students  
Fall 2019, Sections 1-4, 64 students  
Summer 2019, 11 students  
Spring 2019, Sections 1-4, 64 students  
Spring 2019, Sections 5-8, 64 students

Course Description: Overview of biomechanical principles and applications to the musculoskeletal system with an emphasis on the clinical setting for the treatment and rehabilitation of orthopedic injuries. Includes both a lecture and lab component.

- Developed the syllabus, curriculum, and assessments for both the laboratory and lecture portion of the class, this course was initiated in the spring of 2019.

EP 4503: Mechanical Analysis of Human Movement, MSU, 3 credits

Summer 2018, 10 students  
Spring 2018, Section One, 82 students  
Spring 2018, Section Two, 81 students  
Summer 2017, 14 students  
Spring 2017, Section One, 66 students  
Spring 2017, Section Two, 66 students  
Summer 2016, 20 students  
Spring 2016, 86 students  
Summer 2015, 21 students  
Spring 2015, 85 students  
Summer 2014, 17 students  
Summer 2013, 18 students  
Summer 2012, 16 students  
Summer 2011, 15 students

Course Description: Overview of biomechanical principles and applications to the musculoskeletal system with an emphasis on the clinical setting for the treatment and rehabilitation of orthopedic injuries.

- Developed the syllabus, curriculum, assessments, and initiated this course in the summer of 2011.

EP 3643: Applied Anatomy and Pathophysiology, MSU, 3 credits

Spring 2010, 46 students  
Summer 2009, 9 students

Course Description: Anatomical foundation of the human body with related pathophysiology of the cardiovascular, peripheral and central nervous system, and musculoskeletal disease states.

KI 8990: Special Topics in Kinesiology, Injury Biomechanics of the Musculoskeletal System, MSU, 3 credits

Fall 2023, 10 students

Course Description: Overview of the biomechanics of the musculoskeletal system with an emphasis on injury biomechanics

- Developed the course content, syllabus, assessments, and initiated this course in the fall 2023 semester

EP 8453: Biomechanics of Human Movement, MSU, 3 credits

Fall 2024: 12 students  
Fall 2022: 10 students  
Fall 2020: 16 students  
Fall 2018: 15 students  
Fall 2016, 20 students  
Fall 2014, 20 students

Summer 2012, 3 students

Course Description: Overview of biomechanical principles/laws and their application to human movements (sport techniques and daily activities).

- Developed the syllabus, curriculum, assessments, and initiated this course in the summer of 2012.

KI 8313: Interpretation of Data in Kinesiology, MSU, 3 credits

Winter session 2025, 7 students  
Summer 2024, 5 students  
Winter session 2023, 12 students  
Summer 2023, 5 students  
Winter session 2022, 10 students  
Summer 2022, 15 students  
Summer 2021, 11 students  
Winter session 2021, 9 students  
Summer 2020, 15 students  
Summer 2019, 11 students  
Summer 2018, 10 students  
Spring 2018, 27 students  
Summer 2018, 10 students

Course Description: Statistical interpretation of qualitative and quantitative data in the various disciplines of Kinesiology

PE 3223: Motor Development and Movement, MSU, 3 credits

Fall 2011, 31 students  
Fall 2010, 31 students  
Fall 2009, 26 students

Course Description: A study of motor development, movement and the child-centered approach to teaching movement in grades K-6.

PE 4283: Sport Biomechanics, MSU, 3 credits

Spring 2020, 84 students  
Summer 2014, 15 students  
Spring 2014, 60 students  
Summer 2013, 11 students  
Spring 2013, 49 students  
Summer 2012, 15 students  
Spring 2012, 50 students  
Summer 2011, 18 students  
Spring 2011, 52 students

Course Description: Systematic qualitative and quantitative analyses of selected athletic performances and other human movements utilizing observation and other measurement techniques to detect and correct faults that limit performance during sport activity.

- Developed the syllabus, curriculum, assessments, and initiated this course in the spring semester of 2011.

PE 4853: Motor Learning and Skill Analysis, MSU, 3 credits

Summer 2015, 3 students  
Spring 2015, 11 students  
Summer 2014, 7 students  
Spring 2014, 21 students  
Summer 2013, 18 students  
Spring 2013, 33 students  
Summer 2012, 11 students  
Spring 2012, 26 students  
Summer 2011, 32 students  
Spring 2011, 39 students  
Summer 2010, 20 students  
Spring 2010, 28 students  
Summer 2009, 25 students  
Spring 2009, 22 students

Course Description: Designed to provide students with an understanding of how movement is produced and controlled and the principles that underlie the learning of motor skills.

KI 1001: Extreme Medicine: Understanding Unusual Cases on House, M.D.

Fall 2023: 23 students (HON 1091)  
Fall 2022: 19 students (Name of course changed to Honors Forum II, Hon 1091)  
Fall 2021: 13 students  
Fall 2020: 31 students  
Fall 2019: 40 students  
Fall 2018: 40 students  
Fall 2017, 40 students  
Fall 2016, 40 students  
Fall 2015, 40 students  
Fall 2014, 40 students  
Fall 2013, 25 students  
Fall 2012, 23 students

Course Description: House, M.D. is a popular television show in which many strange and bizarre medical cases are presented. Questions often arise about the validity and probability of the illnesses and diseases presented on the show. This class examines some

of the medical cases presented on the show, discuss the probability and validity of each case, and examine how the doctors were able to reach the correct diagnosis.

This is a first year experience class. I developed the syllabus, curriculum, assessments, and initiated this course in the fall semester of 2012.

KI 3273: Athletic Training, MSU, 3 credits

Summer 2010, 18 students

Summer 2009, 16 students

Course Description: Prevention and treatment of injuries prevalent in athletics, physical education and adult fitness programs.

**Auburn University  
Department of Kinesiology**

- Instructor, Applied Anatomy for the Health Professional, Fall 2007, Spring 2008, Summer 2008, Fall 2008
- Instructor, Wellness, Fall 2007
- Instructor, Scientific Foundations of Health and Human Performance, Biomechanics Section, Summer 2007
- Instructor, Physical Education Program: Team Sports Basketball, Team Sports Softball, Spring 2008, Individual Sports, Bowling, Fall 2008
- Assisted with other classes: Undergraduate Biomechanics, Graduate Biomechanics, Graduate Biomechanics of Sport Injury, Dartfish (Biomechanics of Sport Technique), Graduate Biomechanics Laboratory Techniques, 2006-2008

**Scholarship:**

*Published And Accepted (In Press) Peer Reviewed Manuscripts:*

Gourley, K., Chander, H., Beam, A.S., & **Knight, A.C.** (2025). Impact of different occupational noises on static and dynamic postural stability in healthy adults. *International Journal of Environmental Research and Public Health*, 22(5), DOI: 10.3390/ijerph22050679.

Kodithuwakku Archachige, S.N.K., Chander, H., Ramsey, L.S., **Knight, A.C.**, Wade, C., & Garner, J.C. (2025). The effects of multiple occupational footwear on static postural stability. *Footwear Science*, 17(2), 99-106. DOI: 10.1080/19424280.2025.2469180.

Chander, H., Derby, H., Brown, M., Conley, E., Doherty, J., Riley, L., & **Knight, A.C.** (2025). Nike<sup>TM</sup> Hypervenom-X footwear with and without localized ankle compression impact static and dynamic postural stability differently. *Sport Sciences for Health*, DOI: 10.1007/s11332-025-01523-6.



Simpson, J.D., Lima, L.C., Lee, Y., Chander, H., & **Knight, A.C.** (2024). Closed-loop reflex responses of the lateral ankle musculature from various thresholds during lateral ankle sprain rehabilitation. *Journal of Sport Rehabilitation*, 33(3), 215-219. DOI: 10.1123/jsr.2023-0336.

Turner, A.J., Chander, H., Kodithuwakku Archachige, S.N.K, Griffith, A., Chen, P.L., Chen, C.C., **Knight, A.C.**, Bates-Brantley, K., Stratton-Gadke, K., & Smith, J.C. (2024). The effects of an inclusive badminton program on static postural control for individuals with intellectual and developmental disabilities. *International Journal of Environmental Research and Public Health*, 21(2), DOI: 10.3390/ijerph21020210.

Kodithuwakku Archachige, S.N.K., Chander, H., Shojaei, A., **Knight, A.C.**, Brown, C., Freeman, H.R., Burch, R.F., & Chen, C.C. (2024). Effects of virtual heights, dual-tasking, and training on static postural stability. *Applied Ergonomics*, 114, 1-8, DOI: [10.1016/j.apergo.2023.104145](https://doi.org/10.1016/j.apergo.2023.104145).

Freeman, H.R., Chander, H., Kodithuwakku Archachige, S.N.K., Turner, A.J. Jones, J.A., Pan, Z., Hudson, C., & **Knight, A.C.** (2023). Postural control behavior in a virtual moving room paradigm. *Biomechanics*, 3(4), 539-551. DOI: 10.3390/biomechanics3040043.

Kodithuwakku Archachige, S.N.K., Chander, H., Turner, A.J., Shojaei, A., **Knight, A.C.**, Griffith, A., Burch, R.F., & Chen, C.C. (2023). Physiological and subjective measures of anxiety with repeated exposure to virtual construction sites at different heights. (2023). *Safety and Health at Work*, 14(3), 303-308. DOI: 10.1016/j.shaw.2023.07.005.

Davarzani, S., Saucier, D., Talegaonkar, P., Parker, E., Turner, A., Middleton, C., Carroll, W., Ball, J.E., Gurbuz, A., Chander, H., Burch, R.F., Smith, B.K., **Knight, A.**, & Freeman, C. (2023). Closing the wearable gap: Foot-ankle kinematic modeling via deep learning models based on a smart sock wearable. *Wearable Technologies*, 4, e4. DOI: 10.1017/wtc.2023.3.

Lowell, R.K., Conner, N.O., Derby, H., Hill, C.M., Gillen, Z.M., Burch, R., **Knight, A.C.**, Reneker, J.C., & 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*, 20(2), <https://doi.org/10.3390/ijerph20021204>.

Derby, H., Chander, H., Kodithuwakku Arachchige, SNK, Turner, A., **Knight, A.C.**, Burch, R., Freeman, C., Wade, C., & Garner, J.C. (2023). Occupational footwear design influences biomechanics and physiology of human postural control and fall risk. *Applied Sciences* 13 (1), DOI: 10.3390/app13010116.

- Conner, N.O., Freeman, H.R., Jones, J.A., Luczak, T., Carruth, D., **Knight, A.C.**, & Chander, H. (2022). Virtual reality induced symptoms and effects: concerns, causes, assessment, & mitigation. *Virtual Worlds*, 1(2), 130-146, <https://doi.org/10.3390/virtualworlds1020008>.
- Derby, H., Conner, N.O., Talukder, A., Griffith, A., Freeman, C., Burch, R., Simpson, J.D., Goble, D.J., **Knight, A.C.**, & Chander, H. (2022). Impact of sub-clinical and clinical compression socks on postural stability tasks among individuals with ankle instability. *Healthcare*, 10(7), DOI: 10.3390/app13010116.
- Simpson J., Koldenhoven R., Wilson S., Stewart E., Turner A., Chander H., & **Knight A.** (2022). Lower extremity joint kinematics of a simulated lateral ankle sprain after drop landings in subjects with chronic ankle instability. *Sports Biomechanics*, 21(4), 428-446. DOI: [10.1080/14763141.2021.1908414](https://doi.org/10.1080/14763141.2021.1908414)
- Kodithuwakku Arachchige SNK, Burch V R.F., Chander, H., Turner, A.J., & **Knight, A.C.** (2022). The use of wearable devices in cognitive fatigue: current trends and future intentions. *Theoretical Issues in Ergonomics Science*, 23(3), 374-386. DOI: 10.1080/1463922X.2021.1965670.
- Chander H, Kodithuwakku Arachchige SNK, Turner AJ & **Knight AC.** (2022). Is it me or the room moving? Recreating the classical “moving room” experiment with virtual reality for postural control adaptation. *Adaptive Behavior*, 30(2), 199-204. DOI: 10.1177/1059712320971372.
- Pham, P.K., Vo, A.T.N., Bakhiarydavijani, A., Burch, R., Smith, B., Ball, J.E., Chander, H., **Knight, A.**, & Prabhu, R.K. (2021). In Silico Finite Element Analysis of the Foot Ankle Complex Biomechanics: A Literature Review. *Journal of Biomedical Engineering*, 143(9), DOI: 10.1115/1.4050667.
- Chander H., Kodithuwakku Arachchige S.N.K., Turner A.J., Burch V R.F., Reneker J.C., **Knight A.C.**, Wade C., & Garner, J.C. (2021). Sensory Organization Test Conditions Influence Postural Strategy Rather Than Footwear or Workload. *International Journal of Environmental Research and Public Health*, 18; 10511. <https://doi.org/10.3390/ijerph181910511>
- Kodithuwakku Arachchige S.N.K., Chander H., **Knight A.C.**, Burch R.F.V., Chen C.-C., & Reneker J.C. (2021). Dual Tasking during Trip Recovery and Obstacle Clearance Among Young, Healthy Adults in Human Factors Research. *International Journal of Environmental Research and Public Health*, 18; 10144. <https://doi.org/10.3390/ijerph181910144>
- Kodithuwakku Arachchige S.N.K, Turner, A., Chander, H. & **Knight, A.C.** (2021). Impact of prolonged slippery surface on postural stability. *International Journal of Environmental Research and Public Health*, 18 (5). <https://doi.org/10.3390/ijerph18052214>.

- Kodithuwakku Arachchige S.N.K., Burch R.F.V., Chander H., Turner A.J., & **Knight AC.** (2021). The Use of Wearable Devices in Cognitive Fatigue: Current Trends and Future Intentions. *Theoretical Issues in Ergonomics Science*, 1–13.  
<https://doi.org/10.1080/1463922X.2021.1965670>
- Turner AJ, Carroll W, Kodithuwakku Arachchige SNK, Saucier D, Burch, RFV, Ball JE, Smith BK, Freeman CE, **Knight AC**, & Chander, H (2021). Closing the Wearable Gap — Part VIII: A Validation Study for a Smart Knee Brace to Capture Knee Joint Kinematics. 152–162.
- Carroll, W., Turner, A.J., Talegaonkar, P., Parker, E., Middleton, C., Peranich, P., Saucier, D.N., Burch, R.F.B.V., Ball, J.E., Smith, B.K., Chander, H., **Knight, A.C.**, & Freeman, C.E. (2021) "Closing the Wearable Gap: Part IX — Validation of an Improved Ankle Motion Capture Wearable," in IEEE Access,  
<https://ieeexplore.ieee.org/abstract/document/9508398>
- Chander H, Kodithuwakku Arachchige SNK, Turner AJ, Burch RFV, **Knight AC**, Wade C, & Garner JC (2021). Role of Occupational Footwear and Prolonged Walking on Lower Extremity Muscle Activation during Maximal Exertions and Postural Stability Tasks. *Biomechanics*, 1(2), 202–213.
- Stewart E, Stewart M, Kodithuwakku Arachchige SNK, Turner A, Burch VRF, **Knight A**, Johnson J, Younger T, & Chander H. (2021). Validation of a Bat Handle Sensor for Measuring Bat Velocity, Attack Angle, and Vertical Angle. *International Journal of Kinesiology and Sports Science*, 9(2), 28-32.  
<http://dx.doi.org/10.7575/aiac.ijkss.v.9n.2p.28>
- Chander H, Garner JC, Wade C, Wilson SJ, Turner AJ, Kodithuwakku Arachchige 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*, 1–9.  
<https://doi.org/10.1080/19424280.2021.1899297>
- Kodithuwakku Arachchige SNK, Chander H, **Knight AC**, Chen C, Pan Z, & Turner AJ (2020) Impact of Foot Arch type and Minimalist Footwear on Static Postural Stability, *Footwear Science*, 12 (3), 173-183.
- Kodithuwakku Arachchige SNK, Chander H, Turner AJ, Wilson SJ, Simpson JD, **Knight AC**, Burch, V RF, Wade C, Garner JC, & Carruth D (2020). Muscle Activity during Postural Stability Tasks: Role of Military Footwear and Load Carriage. *Safety*, 6 (3): 35. <https://doi.org/10.3390/safety6030035> (Displayed on the title story on the front page of Safety Volume 6).
- Chander, H., Kodithuwakku Arachchige S.N.K, Turner, A., & Knight, A.C. (2020). Is it me, or is the wall moving? Recreating “classical” moving room experiment with virtual reality for postural control adaptation. *Adaptive Behavior*,

<https://doi.org/10.1177/1059712320971372>.

- Chander H, Shojaei A, Deb S, Kodithuwakku Arachchige SNK, Hudson C, **Knight AC**, & Carruth D W (2020). Impact of Virtual Reality–Generated Construction Environments at Different Heights on Postural Stability and Fall Risk. *Workplace Health & Safety*. 69 (1):32-40 DOI: 10.1177/2165079920934000.
- Kodithuwakku Arachchige S.N.K, Chander, H., **Knight, A.C.**, Burch, R.F., Carruth, D.W. (2020). Occupational falls: Interventions for fall detection, prevention and safety promotion. *Theoretical Issues in Ergonomics Science*, <https://doi.org/10.1080/1463922X.2020.1836528>.
- Price, F.G., Smith, JE, Turner, A.J., Krings, B.M., Waldman, H.S., Chander, H., **Knight, A.C.**, & McAllister, M.J. (2020). High-Intensity interval training in middle-distance NCAA division I 800/1500m collegiate athletes. *International Journal of Kinesiology & Sports Science*, 8, (3), 28-35.
- Chander, H., Kodithuwakku Arachchige S.N.K., Wilson, S.J., **Knight, A.C.**, Burch, R.E., Carruth, D.W., Wade, C., & Garner, J. (2020). Impact of military footwear type and load carriage workload on slip initiation biomechanics. *International Journal of Human Factors Ergonomics*, 7(2), 125-143.
- Talegaonkar, P., Saucier, D., Carroll, W., Peranich, P., Parker, E., Middleton, C., Davarzani, S., Turner, A., Persons, K., Casey, L., Burch, R.F., Ball, J.E., Chander, H., **Knight, A.**, Luczak, T., Smith, B.K., & Prabu, R. (2020). Closing the wearable gap – Part VII: A retrospective of stretch sensor tool kit development for benchmark testing. *Electronics*, 9, doi:10.3390/electronics9091457.
- Simpson J., Koldenhoven R., Wilson S., Stewart E., Turner A., Chander H., & **Knight A.** (2020). Ankle kinematics, center of pressure progression, and lower extremity muscle activity during a side-cutting task in participants with and without chronic ankle instability. *Journal of Electromyography and Kinesiology*, 54, <https://doi.org/10.1016/j.jelekin.2020.102454>
- Kodithuwakku Arachchige, S. N. K., Chander, H., Knight, A. C., Chen, C.-C., Pan, Z., & Turner, A. J. (2020). Impact of foot arch type and minimalist footwear on static postural stability. *Footwear Science*, 1–11. <https://doi.org/10.1080/19424280.2020.1791976>.
- Kodithuwakku Arachchige S.N.K, Chander, H., Turner, A.J., Wilson, S.J., Simpson, J.D, **Knight, A.C.**, Burch, R.F., Wade, C., Garner, J.C., & Carruth, D. (2020). Muscle activity during postural stability tasks: Role of military footwear and load carriage. *Safety*, (6), 35, doi:10.3390/safety6030035.
- Hill, C. M., DeBusk, H., **Knight, A.C.**, & 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; doi:10.3390/sports8050058.
- Chander, H., Burch, R.F., Talegaonkar, P., Saucier, D., Luczak, T., Ball, J., Turner, A., Kodithuwakku Arachchige, S.N.K., Carroll, W., Smith, B.K., **Knight, A.**, Prabhu, R.K. (2020). Wearable stretch sensors for human movement monitoring and motion detection in ergonomics. *International Journal of Environmental Research and Health* (17)10. 3354, DOI: 10.3390/ijerph17103554.
- Davarzani, S., Saucier, D., Peranich, P., Carroll, W., Turner, A., Parker, E., Middleton, C., Nguyen, P., Robertson, P., Smith, B., Ball, J., Burch, R., Chander, H., **Knight, A.**, Prabhu, R., & Luczak, T. (2020). Closing the wearable gap – Part VI: Human gait recognition using deep learning modalities. *Electronics*, 20(9), 796, doi:10.3390/electronics9050796.
- Simpson J., Stewart E., Turner A., Macias D., Chander H., & **Knight A.** (2020). Lower limb joint kinetics during a side-cutting movement in participants with and without chronic ankle instability. *Journal of Athletic Training*, 55(2), 169-175, <https://doi.org/10.4085/1062-6050-334-18>.
- Luczak, T., Burch, R.F., Smith, B.K., Carruth, D.W., Lamberth, J., Chander, H., **Knight, A.**, Ball, J.E., & Prabhu, R.K. (2020). Closing the wearable gap – Part V: Development of a pressure-sensitive sock utilizing soft sensors. *Sensors*, 20(208), doi:10.3390/s20010208.
- Stewart, E.M., Stewart, M., Simpson, J.D., **Knight, A.C.**, Chander, H. & Shapiro, R. (2020). Differences in the Start Times of Swing Phases for Baseball Hitters of Varying Skill. *Journal of Sport Analytics*. DOI: 10.3233/JSA-200394, *In Press*.
- Chander, H., Tuner, A.J., Swain, J.C., Sutton, P.E., McWhirter, K.L., Morris, C.E., **Knight, A.C.**, & Carruth, D. (2019). Impact of Occupational Footwear and Workload on Postural Stability in Work Safety. *Work* (64), 817-824.
- Saucier, D., Davarzani, S., Turner, A., Luczak, T., Nguyen, P., Carroll, W., Burch, R.F., Ball, J.E., Smith, B.K., Chander, H., **Knight, A.**, & Prabhu, R.K. (2019). Closing the wearable gap – Part IV: 3D motion capture cameras versus soft robotic sensors comparison of gait movement assessment. *Electronics*, 8, 1382; doi:10.3390/electronics8121382.
- Chander, H., Kodithuwakku Arachchige, S.N.K., Hill, C.M., Turner, A.J., Deb, S., Shojaei, A., Hudson, C., **Knight, A.C.**, & Carruth, D.W. (2019). Virtual-reality-induced visual perturbations impact postural control system behavior. *Behavioral Sciences*, 9, 113-124, doi:10.3390/bs9110113.
- Chander H, Stewart E, Saucier D, Nguyen P., Luczak T, Ball JE, **Knight AC**, Smith, BK, Burch, RF, & Prabhu PK. (2019). Closing the Wearable Gap—Part III: Use of

- Stretch Sensors in Detecting Ankle Joint Kinematics During Unexpected and Expected Slip and Trip Perturbations. *Electronics*, 8(10):1083.
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- Sutton, P., Forge, S., Mosby, A., McDaniel, J., Miller, B.L., Simpson, J.D., Chander, H., & **Knight, A.C.** Three-Week External Load Training Does Not Improve Vertical Jump and Sprint Performance in Well-Trained Women. *Poster presentation at the Southeast ACSM Annual Meeting, Greenville, S.C., February 16-18, 2017.*
- Swain, J.C., Miller, B.L., Pace, M.T., Lowell, R.K., Simpson, J.D., **Knight, A.C.**, & Chander, H. Impact of minimalist footwear type and fatigue on balance. *Poster presentation at the Southeast ACSM Annual Meeting, Greenville, S.C., February 16-18, 2017.*
- Turner, A.J., DeBusk, H., Lowell, R.K., Hill, C.M., Miller, J.D., Simpson, J.D., **Knight, A.C.**, & Chander, H. Effects of military footwear and workload on unilateral static balance. *Poster presentation at the Southeast ACSM Annual Meeting, Greenville, S.C., February 16-18, 2017.*
- Chander, H., Garner, J.C., Wade, C. & **Knight, A.C.** Impact of Alternative Footwear on Lower Extremity Muscle Activity during Normal and Slippery Gait. Annual Proceedings of the Gait and Clinical Movement Analysis Society. Memphis, TN, May 17-20, 2016.
- Chander H, Wade C, Garner J.C., **Knight A.C.**, Wilson S.J. & Fu Y.C. Human Balance in Occupational Footwear with an Extended Duration Workload. *Proceedings of the American Society of Biomechanics Annual Conference*, Raleigh, NC, August 2016.
- DeBusk, H., Hill, C., Stewart, T., Miller, B., Simpson, J., **Knight, A.**, & Chander, H. Impact of high top military type boots on balance. *Proceedings of the American Society of Biomechanics Annual Conference*, Raleigh, NC, August 2016.
- Hill, C., DeBusk, H., Stewart, T., Miller, B., Simpson, J., **Knight, A.**, & Chander, H. Impact of military type footwear and workload on co-contraction index in static balance. *Proceedings of the American Society of Biomechanics Annual Conference*, Raleigh, NC, August 2016.
- Chander, H., Garner, J.C., Wade, C., **Knight, A.C.**, DeBusk, H. & Hill, C.M. (2016). Lower Extremity Muscle Activity in Alternative Footwear During Slip Events: A Preliminary Analysis. Poster presentation at the Southeast Chapter of the

American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

DeBusk, H., Hill, C.M, Stewart,T., Miller, B.M., Simpson, J.D., **Knight AC.**, & Chander, H. (2016). Effects of Military Type Footwear and Workload on Static Balance. Thematic poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

Hill CM., DeBusk H., Stewart T., Simpson JD., Miller BL., **Knight AC.**, & Chander H. (2016). Impact Of Military Type Footwear and Workload on Muscle Activity in Static Balance. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

Miller, BL., DeBusk, H., Hill, CM., Stewart, T., Simpson, JD., **Knight, AC.** & Chander, H. (2016). Impact of Military Boot Type and Physical Work Load on Dynamic Balance. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

Simpson, JD., Hill, CM., DeBusk, H., Stewart, T., Miller, BL., **Knight, AC.** & Chander, H. (2016). Influence of Military Boot Types and Physiological Workload on Lower Extremity Muscle Activation. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

Stewart, T., Kimble, A., Brown, J., Holmes, M.E., Chander, H & **Knight, A.C.** (2016). Effects of event specialty, Gender and leg dominance on running kinetics of high school track and field athletes. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Greenville, SC, February, 2016.

DeBusk, H., Chander, H., Morris, C., Wilson, S., **Knight, A.**, Holmes, M., Hill, C., Wade, C. & Garner, J. (2015). The effect of commonly used alternative footwear on balance. *Medicine and Science in Sports and Exercise*, 47(5), S235.

- Presented at the 2015 American College of Sports Medicine Annual Meeting, May 2015, San Diego, CA.

Hill, C., Chander, H., Morris, C., Wilson, S., **Knight, A.**, Holmes, M., DeBusk, H., Wade, C. & Garner, J. (2015). Impact of low intensity workload on muscle exertion in alternative footwear. *Medicine and Science in Sports and Exercise*, 47(5), S202.

- Presented at the 2015 American College of Sports Medicine Annual Meeting, May 2015, San Diego, CA.

- Chander, H., Wade, C., **Knight, A.**, & Garner, J. (2015). Lower extremity joint kinematics in alternative footwear during slip events. *Proceedings of the American Society of Biomechanics Annual Conference*, August 2015, Columbus, OH.
- Chander, H., Morris C.E., Wilson, S.J., **Knight, A.C.**, Holmes, M.E., Wade, C., & Garner, J.C. (2015). Impact of alternative footwear on balance perturbations. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Jacksonville, FL, February 2015.
- DeBusk, H., Chander, H., Morris, C.E., Wilson, S.J., **Knight, A.C.**, Holmes, M.E., Hill, C.M., Wade, C., & Garner, J.C. (2015). The effect of commonly used alternative footwear on balance. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Jacksonville, FL, February 2015.
- Hill, C.M., Chander, H., Morris, C.E., Wilson, S.J., **Knight, A.C.**, Holmes, M.E., DeBusk, H., Wade, C., & Garner, J.C. (2015). Impact of low intensity workload on muscle exertion in alternative footwear. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Jacksonville, FL, February 2015.
- Kimble, A., Brown, J., Stewart, T., Chander, H., Holmes, M., & **Knight, A.** (2015). Influence of event, gender, and leg dominance on balance among high school track and field athletes. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Jacksonville, FL, February 2015.
- Stewart, T., Brown, J., Kimble, A., Chander, H., Holmes, M., & **Knight, A.** (2015). Balance performance with the eyes closed in high school track and field athletes. Poster presentation at the Southeast Chapter of the American College of Sports Medicine annual meeting, Jacksonville, FL, February 2015.
- Luczak, T., Lamberth, J., **Knight, A.**, & Smith, J. (2014). Activation of the right pec major and left deltoid muscles during the golf swing as an instructional technique. *International Journal of Golf Science*, 3, S55.
- Presented at the 7<sup>th</sup> World Scientific Congress of Golf, Queensland, Australia, September 2014.
- Brocato, K., **Knight, A.** & Holmes, M. (2014). Developing a mentoring program: college of education faculty mentors and mentees embrace a studio based learning model.

- Presented and published in the conference proceedings at the 7<sup>th</sup> annual faculty mentoring conference at the University of New Mexico, October 2014.

**Knight, A., Adams, M., Abernathy, A., & Comer, A. (2014).** Effects of ankle instability on ground reaction force during a stop-jump task. *Journal of Athletic Training*, 49(3), S219.

- Presented at the 2014 National Athletic Trainers Association Annual Meeting and Symposium, June 2014, Indianapolis, IN.

Watson, B., Kimble, A., Ray, W., Jones, K. & **Knight, A. (2014).** Effects of ankle instability on ground reaction force during a stop jump task. Abstract was accepted and poster was made for presentation at the Southeast American College of Sports Medicine Annual Meeting on February 15, 2014. Conference was cancelled due to inclement weather.

Comer, A., Adams, M., Abernathy, A., & **Knight, A. (2013).** Effects of previous lateral ankle sprain on balance. Poster presentation at the Southeast Chapter of the American College of Sports Medicine Annual meeting, Greenville, SC, Feb 15, 2013.

Adams, M., Abernathy, A., Comer, A., & **Knight, A. (2013).** Effects of previous lateral ankle sprain on ankle joint laxity. Poster presentation at the Southeast American College of Sports Medicine Annual meeting, Greenville, SC, Feb 15, 2013.

Abernathy, A., Comer, A., Adams, M., & **Knight, A. (2013).** Effects of previous lateral ankle sprain on landing kinetics and dynamic balance. Poster presentation at the Southeast American College of Sports Medicine Annual meeting, Greenville, SC, Feb 15, 2013.

**Knight, A., Hoseney, K., McGinley, S., & Hale, B. (2012).** Difference in landing kinetics during simulated lateral ankle sprain mechanism between chronic ankle instability and healthy participants. *Journal of Athletic Training*, 47(3), S51.

- Presented at the 2012 National Athletic Trainers Association Annual Meeting and Symposium, June 2012, St. Louis, MO.

**Knight, A. & Weimar, W. (2011).** Effects of injury and tape on dynamic ankle inversion using a fulcrum methodology. *Journal of Athletic Training*, 46(3), S183.

- Presented at the 2011 National Athletic Trainers Association Annual Meeting and Symposium, June 2011, New Orleans, LA.

Gilliland, K. & **Knight, A. (2012).** Effect of equine assisted therapy on gait for an individual after spinal cord injury. Poster presentation at the North American Federation of Adapted Physical Activity Annual meeting, Birmingham, AL, 2012.

- Bernheim, R., Washington, B., Harrison, A., Graben, K., **Knight, A.**, & Hale, B. The Influence of Vision and Surface Type on Balance Using a Double Leg Stance in Active Youths. Poster presentation at the Southeast American College of Sports Medicine 2012 Annual meeting, Jacksonville, FL Feb. 10, 2012.
- Graben, K., Harrison, A., Washington, B., Bernheim, R., **Knight, A.**, & Hale, B. The Influence of Leg Dominance, Vision and Surface Type on Balance Using a Single Leg Stance in Active Youths. Poster presentation at the Southeast American College of Sports Medicine 2012 Annual meeting, Jacksonville, FL Feb. 10, 2012.
- McGinley, S., Hoseney, K., Carruth, D., Hale, B., & **Knight, A.** Difference in Landing Kinetics During Vertical Drop Down Movement Across Different Football Positions. Poster presentation at the Southeast American College of Sports Medicine 2012 Annual meeting, Jacksonville, FL Feb. 10, 2012.
- Hoseney, K., McGinley, S., Hale, B., & **Knight, A.** Difference in Landing Kinetics During Simulated Ankle Sprain Motion Among Chronic Ankle Instability and Healthy Participants. Poster presentation at the Southeast American College of Sports Medicine 2012 Annual meeting, Jacksonville, FL Feb. 10, 2012.
- Gilliland, K., & **Knight, A.** (2011). Influence of Therapeutic horseback riding on gait for a participant with Friedreich's Ataxia. *Medicine and Science in Sports and Exercise*, 43(5), 289-290.
- Presented at the 2011 American College of Sports Medicine Annual Meeting, May 2011, Denver, CO.
- Triplett, L., Roby, L.B., Morton, J., Gilliland, K., & **Knight, A.C.** Influence of therapeutic horseback riding on gait in a Down syndrome participant. Poster Presentation given at the 2011 Southeast Regional Chapter meeting of the American College of Sports Medicine, Greenville, SC, February 4, 2011.
- Collins, N., McGinley, S., Carruth, D., Hale, B., & **Knight, A.** Assessment of football player ankle joint motion during vertical step down movement. Poster Presentation given at the 2011 Southeast Regional Chapter meeting of the American College of Sports Medicine, Greenville, SC, February 4, 2011.
- Neal, E., McGinley, S., Carruth, D., Hale, B., & **Knight, A.** Assessment of football player knee joint motion during vertical step down movement. Poster Presentation given at the 2011 Southeast Regional Chapter meeting of the American College of Sports Medicine, Greenville, SC, February 4, 2011.
- Harkins, K., McGinley, S., Carruth, D., Hale, B., & **Knight, A.** Assessment of football player hip joint motion during vertical step down movement. Poster Presentation given at the 2011 Southeast Regional Chapter meeting of the American College of Sports Medicine, Greenville, SC, February 4, 2011.

**Knight, A., & Weimar, W.H. (2010).** Startle response to inversion perturbation. Podium Presentation given at the 2010 Southeast Regional Chapter meeting of the American College of Sports Medicine, Greenville, SC, February 5, 2010.

**Knight, A. & Weimar, W.H. (2010).** Startle response of the ankle musculature to repeated inversion perturbations. *Journal of Athletic Training*, 45(3), S109.

- Presented at the 2010 National Athletic Trainers Association Annual Meeting and Symposium, June 2010, Philadelphia, PA.

**Knight, A., & Weimar, W.H. (2009).** Difference in latency of the peroneus longus between the dominant and non-dominant leg. *Journal of Athletic Training*, 44(3), S-71, S119.

- Presented at the 2009 National Athletic Trainers Association Annual Meeting and Symposium, June 2009, San Antonio, TX.

**Knight, A., Shroyer, J.F., Sumner, A.M., Booker, J.E., & Weimar, W.H. (2009)** Influence of ankle taping on the kinetics of a lateral jump. *Medicine & Science in Sports & Exercise*, 41(5), S391.

- Presented at the 2009 American College of Sports Medicine Annual Meeting and Symposium, May 2009, Seattle, WA.

Guidry, T., Campbell B., Shroyer, J., **Knight, A.** & Weimar W. (2009). Neurological insufficiency: The biceps brachii potential in pronated elbow flexion. *Medicine & Science in Sports & Exercise*, 41(5), S293.

- Presented at the 2009 American College of Sports Medicine Annual Meeting and Symposium, May 2009, Seattle, WA.

**Knight, A., Weimar, W., Shroyer, J., Sumner, A., & Booker, J. (2008).** The influence of four different types of athletic tape used for ankle taping on attack angle. Podium presentation given at the 2008 Southeaster chapter of the American Society of Biomechanics Annual Meeting.

Garner, J., **Knight, A.,** Weimar, W., & MacDonald, C. (2008). Glenohumeral range of motion in throwing athletes versus non-overhead athletes. *Journal of Strength and Conditioning Research*

- Presented at the 2008 National Strength and Conditioning Association Annual Meeting and Symposium, July 2008, Seattle, WA.

Shroyer, J., Weimar, W., Garner, J., **Knight, A.,** & Sumner, A. (2008). Influence of sneakers versus flip-flops on attack angle and peak vertical force at heel contact. *Medicine and Science in Sport and Exercise*, 40(5), S333.

- Presented at the 2008 American College of Sports Medicine Annual Meeting and Symposium, May 2008, Indianapolis, IN.

Weimar, W., Overfelt, R., Shroyer, J., **Knight, A.**, Sumner, A., & Garner, J. (2008). The influence of mechanical nerve stimulation on center of gravity. *Medicine and Science in Sport and Exercise*, 40(5), S345.

- Presented at the 2008 American College of Sports Medicine Annual Meeting and Symposium, May 2008, Indianapolis, IN.

**Knight, A.**, Garner, J., Shroyer, J., Campbell, B., & Weimar, W. (2007) Comparison of glenohumeral range of motion in throwing athletes versus non-throwing athletes. *Medicine and Science in Sport and Exercise*, 39(5), S2535.

- Presented at the 2007 American College of Sports Medicine Annual Meeting and Symposium, May 2007, New Orleans, LA.

Campbell, B., Weimar, W., Garner, J., & **Knight, A.** (2007). Unilateral patella tendon strap effects on weight bearing squat in healthy males. *Journal of Athletic Training*, 42(2), S136.

- Presented at the 2007 National Athletic Trainers Association Annual Meeting and Symposium, June 2007, Anaheim, CA.

### **Grants:**

**Knight, A., Chander, H.,** and Gillen, Z. (2024-2026): Portable Technology to Assess Ankle Instability (PT-AID), 8/16/2024 – 06/30/2026: **\$400,000** Charles River Analytics, Sponsor Award Number: SC2301301.

**Knight, A.,** Chander, H., and Gillen, Z. (2023-2024). Portable Technology to Assess Ankle Instability (PT-AID), 6/30/2023 – 01/15/2024: **Funded**, \$4,370, Charles River Analytics, Sponsor Award Number: SC2301301.

Burch, R., Seitz, H., **Knight, A.**, Ball, J., McCubbins, O.P., Smith, B., Panse, C., Chander, H., Gurbuz, A., Wang, J., Gillen, Z., Mohamaddi-Aragh, J.M., Strawdermen, L., & Freeman, C (2022). MRI: Acquisition of Biomechanical Movement Baseline Technology Suite for Wearable Technology and Stretch Sensor Based Validation of Lower Body Characteristics. National Science Foundation: Major Research Instrumentation, **Funded, Award #2215766** : \$539,000.

Ball, J., Bethel, C., Cagle, L., Gurbuz, A., Gurbuz, S., **Knight, A.**, & Strawdermen, L. (2020). Collaborative Research: CPS: Medium: Multimodal Recognition of Human Traffic Directions and Anomalous Environments to Facilitate Interactive Automotive Autonomy. National Science Foundation: Cyber Physical Systems, **Not Funded**, \$ 909,939.

Burch, R., Ball, J., Chander, H., Prabhu, R., Wang, J., Strawdermen, L., Smith, B., & **Knight, A.** (2020). MRI: Acquisition of Biomechanical Movement and Body Volumetric Baseline Technology Suite for Soft Robotic Sensor-based Validation of Joint and Limb Segment Characteristics. National Science Foundation: Major Research Instrumentation, **Not Funded**: \$896,805.

Burch, R., Prabhu, R., **Knight, A.**, Ball, J., Chander, H., Smith, B., Warren, S., & Grice, S. (2019). Smart and connected health; connecting data, health, and systems. National Science Foundation: **Not Funded**: \$1,199,996.00

Burch, R., Prabhu, R., & **Knight, A.** (2019). Request for INTERN Supplement: Non-Academic Research Internship for Foot-Ankle Complex Modeling for Rehabilitation Application. National Science Foundation PFI-RP: From the ground up: using soft robotic sensors to create a foot and ankle wearable that accurately captures real-time, kinematic and kinetic data during athletic training, \$34,930.00, **Funded**.

Lu, Y., Chander, H., **Knight, A.**, Prabhu, R., Doude, H., & Yadollahi, A. (2019). Using additive manufacturing techniques to fabricate foot orthotics with enhanced performance and reduced costs. National Science Foundation: PFI-TT: \$249,980, **Not Funded**.

Burch, R., Ronay, M., Ball, J., Chander, H., Prabhu, R., **Knight, A.**, Smith, B., & Gafford, J. (2018). From the ground up: using soft robotic sensors to create a foot and ankle wearable that accurately captures real-time, kinematic and kinetic data during athletic training. NSF Partners for Innovation: Building Innovation – Research Partnerships: **Funded**: \$749,932, September 15<sup>th</sup>, 2018 through August 31<sup>st</sup>, 2021. Proposal Approval Number: 1827652

**Knight, A.**, & Chander, H. (2017-2018). Ankle stability during an inversion perturbation: influence of a compressive ankle bracing strategy. Mississippi State University ORED Undergraduate Research Program, \$4,000, **Funded**.

Chander, H., & **Knight, A.** (2017). How do we prevent fall in ergonomics? External perturbation or virtual reality (VR) induced balance training-a novel approach to balance training. Mississippi State University College of Education undergraduate research program, \$2,000, **Funded**.

Pan, Z., Chen, C.C., Chander, H., **Knight, A.**, & Lamberth, J. (2017). The effect of vision on variety of balance measures in elderly adults with and without Parkinson's disease. Mississippi State University College of Education undergraduate research program, \$2,000, **Funded**.

Liu, Y., Chander, H., & **Knight, A.** (2017). Design and prototyping of the additive manufactured foot orthoses, \$3,000, **Funded**.

Chander, H., **Knight, A.**, Liu, Y. (2016-2017). Innovative Foot Orthotics in the Military – Impact of Material and Human Factors. Mississippi State University Cross College Grant, \$2,000, **Funded**.

Chander, H., Thompson, S., Shamsaei, N., Garrison, T., & **Knight, A.** (2016). \$500,000 Impact of Novel Foot Orthotics in the Military. Department of Defense Orthotics Outcome Research Award Program, **Not Funded**.

**Knight, A.**, Strawderman, L., Garrison, T., Luczak, T., & Chander, H. (2015). \$ 998,361.00. Making Better Choices (of Equipment) – Inclusion of Biomechanical and Cognitive Style



Considerations in Customizable Equipment. National Science Foundation Partnerships for Innovation: Building Innovation Capacity Grant. **Not Funded**.

Chander, H., **Knight, A.**, Babski-Reeves, K., Strawderman, L. (2014-2015, 2015-2016). Slip Initiation in Military Footwear. Mississippi State University Cross College Grant, \$4,000, **Funded**.

**Knight, A.** 2013-2014 Southeastern Conference Faculty Travel Grant, \$2500: Effects of textured insoles and different athletic shoes on the kinematics and muscle activation patterns during a simulated lateral ankle sprain mechanism, **Not Funded**

**Knight, A.**, Holmes, M., Kimble, A., Ray, W., & Watson, B. Mississippi State University Honors College undergraduate research program: received \$4000 funding for purchase of new force platform from Honors College, also received \$2500 from College of Education and \$4500 from Department of Kinesiology, **Funded**, May 2013.

**Knight, A.** Mississippi State University ORED Faculty Travel Program, Funding to make research presentation at the 2011 American College of Sports Medicine Southeast Chapter Annual Meeting in Greenville, SC, \$1500, **Funded**, February 2013.

**Knight, A.** & Comer, A. Mississippi State University Honors College undergraduate research program: received \$1,024 in funding for purchase of equipment and to pay participants to investigate the influence of ankle instability on joint laxity, balance, and jumping kinetics, **Funded**, May 2012.

**Knight, A.** Mississippi State University ORED Faculty Travel Program, Funding to make research presentation at the 2012 American College of Sports Medicine Southeast Chapter Annual Meeting in Jacksonville, FL, \$1500, **Funded**, February 2012.

**Knight, A.** Mississippi State University ORED Faculty Travel Program, Funding to make research presentation at the 2011 American College of Sports Medicine Southeast Chapter Annual Meeting in Greenville, SC, \$1500, **Funded**, February 2011.

Agiovlasitis, S., **Knight, A.**, Hale, B., & Carruth, D. Contributing factors to lower body stability during standing and walking in individuals with Down syndrome. Cross-Disciplinary Research Collaboration Grant, \$2,000, November 2010, **Funded**.

**Knight, A.**, Agiovlasitis, S., Hale, B., Lamberth, J., Cooper, R., Linford, R., & Nabors, B. Acquisition of an integrative motion analysis system for the systematic evaluation of human and animal movement behavior. National Science Foundation Major Research Instrumentation Grant Pre-Proposal, \$511,150, February 2010, **Not Funded**

**Knight, A.** Influence of Chronic Ankle Instability and shoe type on the kinetics and kinematics of walking and running gait. Mississippi State University Research Initiation Program, \$10,000, **Not Funded**, October 2009.

**Knight, A.** Mississippi State University ORED Faculty Travel Program, Funding to make research presentation at the 2010 National Athletic Trainer's Annual Meeting and Symposium in Philadelphia, PA, \$750, **Funded**, July 2009.

**Knight, A & Hale, B.** Effects of plantar flexion perturbation after drop landing on the latency of the ankle musculature. *Southeastern Athletic Trainers Association*, 2009, \$1,800, **Not Funded**

**Knight, A.** The Effects of Dynamic Training on the Latency of the Ankle Musculature. *National Athletic Trainers Association Research Foundation*, 2009 Pre-Proposal, \$50,000 **Not Funded**

**Knight, A. & Sumner, A.** The influence of balance training on balance at height. *Bertec Research Competition*, 2008. \$9,000 **Funded**

## **Academic Advising**

### **Doctoral Students**

- **Committee chair**, 2025 – present, Sally Barfield
  - Dissertation title: TBA
- **Committee chair**, 2022 – present, Kristy Gourley
  - Dissertation title: TBA
- **Committee chair**, 2021 – present, Aaron Griffith
  - Dissertation title: TBA
- **Committee chair**, 2020 – 2025, Joshua Johnson
  - Dissertation title: Biomechanics of softball pitching and the relationship between functional field test and pitching performance
  - Successfully defended dissertation in February 2025.
  - Currently an assistant softball coach at Virginia Tech University
- **Co-committee chair**, 2019 - 2022, Sachini Kodithuwakku Arachchige
  - Dissertation title: A biomechanical approach to prevent falls in ergonomic settings.
  - Successfully defended dissertation in June 2022.
  - Currently an assistant professor at Weber State University
- **Committee Chair**, 2015-2018. Jeffrey Simpson, Department of Kinesiology.
  - Dissertation Title: Biomechanics of functional and dynamic tasks in individuals with chronic ankle instability
  - Successfully defended dissertation in June 2018
  - Currently an associate professor at the University of West Florida
- **Committee Member**, 2024 - present, McKenzie Hargrove, Department of Kinesiology

- Assessment of energy and hydration demands of migrant farmworkers in Mississippi
  - Currently collecting and analyzing data
- **Committee Member**, 2022 - 2024, Hunter Derby, Department of Kinesiology
  - Dissertation title: Physiological and biomechanical effects of prolonged awkward working postures
  - Successfully defended dissertation in June 2024.
  - Currently an assistant professor at Belmont University
- **Committee Member**, 2023 - 2024, Russell Lowell, Department of Kinesiology
  - Dissertation title: Effects of an auditory versus visual stimulus on reaction and response time during countermovement jumps
  - Successfully defended dissertation in June 2024.
  - Currently an assistant professor at the University of Alabama
- **Committee Member**, 2019 - 2022, Alana Turner, Department of Kinesiology
  - Dissertation title: Assessment of Postural Control and Locomotor Status in Individuals with Intellectual and Developmental Disabilities
  - Successfully defended dissertation in June 2022.
  - Currently an assistant professor at the University of Southern Mississippi
- **Committee Member**, 2018-2020. Qun Fang, Department of Kinesiology.
  - Dissertation Title: Age related effects on hemispheric lateralization and motor asymmetry: An EEG study.
  - Successfully defended dissertation in May 2020
- **Committee Member**, 2011-2013. Shaheen Ahmed, Department of Industrial and Systems Engineering. Dissertation Title: Physiological responses during static and dynamic tasks.
  - Successfully defended dissertation and graduated December 2013
  - Currently an assistant professor in the department of computer information systems and technology at the University of West Alabama

### Master's Students

- **Committee chair**, 2023-2025, Sally Barfield, Department of Kinesiology
  - Topic – Ankle stability and performance while wearing a new ankle brace
  - Successfully defended thesis in July 2025
- **Committee chair**, 2020 – 2021, Hunter Derby, Department of Kinesiology
  - Topic – Footwear and ankle stability
  - Successfully completed Directed Individual Study Project
- **Committee member**, 2020 – present, Hannah Freeman, Department of Kinesiology
  - Thesis topic: Virtual reality and postural control: The virtual moving room paradigm
  - Successfully defended thesis in November 2021
- **Co-committee chair**, 2017- 2019, Alana Turner, Department of Kinesiology
  - Thesis Topic: The effects of hydrotherapy versus land-based exercise on dual task postural control in a geriatric population
  - Successfully defended thesis in summer 2019
- **Co-committee chair**, 2017 – 2019, Philip Sutton, Department of Kinesiology

- Research topic (DIS): Impact of military footwear on expected and unexpected slip and trip perturbations
  - Graduated in Spring 2019
- **Co-committee chair**, 2017 – 2019, Sachini Kodithuwakku Arachchige
  - Thesis Topic: Relationship between foot type, quadriceps angle, and postural stability: a comparison of minimalist footwear
  - Successfully defended thesis in summer 2019
- **Committee Member, 2015-2017**, Ffion Price, Department of Kinesiology
  - Thesis Title: The effects of high-intensity interval training on division I college 800/1500m runner's performance
  - Successfully defended thesis August 2017, currently a doctoral candidate in our Department
- **Committee Chair**, 2014-2016, Ty Stewart, Department of Kinesiology
  - Directed Individual Study Title: Effects of military footwear on ankle instability
  - Graduated Spring 2016
- **Committee member**, 2014-2015, Brooke Rhodes, Department of Aerospace Engineering
  - Thesis title: Exercise equipment usability equipment for a deep space concept vehicle
  - Successfully defended thesis, graduated Spring 2016
- **Committee member**, 2014-2016, Hunter DeBusk, Department of Kinesiology
  - Thesis Title: Impact of high top military boots on balance
  - Successfully defended thesis, graduated Summer 2016
- **Committee member**, 2014-2016, Chris Hill, Department of Kinesiology
  - Thesis Title: Influence of military workload on muscle exertion in two types of military footwear
  - Successfully defended thesis, graduated Summer 2016
- **Committee member**, 2014-2016, Jaden Rountree, Department of Kinesiology
  - Thesis Title: Efficacy of carbohydrate ingestion during CrossFit performance
  - Successfully defended thesis, graduated Summer 2016
- **Committee chair**, 2012-2015, Jennifer Estes, Department of Kinesiology
  - Thesis Title: Influence of therapeutic horseback riding on participants with autism
  - Successfully defended thesis in May 2015.
  - Graduated August 2015
- **Committee Member**, 2013 – present, David Chew, Department of Industrial and Systems Engineering
  - Thesis Title: The effects of a sit-stand workstation on back muscle activity and postural sway
- **Committee Member**, 2012-213, Robert Jackson, Department of Landscape Architecture.
  - Thesis Title: Runner friendly built environments.
  - Successfully defended thesis December 2013.
- **Committee Member**, 2012, Riley Galloway, Department of Kinesiology.

- Thesis Title: Performance measures of three different golf drivers.
- Successfully defended thesis December 2012.
- **Major Advisor**, 2010-2011. Kathryn Hoseny, Department of Kinesiology.
  - Research Topic: Kinetics of Simulated Lateral Ankle Sprain
  - Successfully completed directed individual study and graduated December 2011, presented research at the 2012 SEACSM conference in Jacksonville, FL.
  - Received the 2012 College of Education 2<sup>nd</sup> place award in the graduate research poster category at the 2012 college of education research symposium

### **Undergraduate Research Supervision**

- Reilly Reeves (2018-2019)
  - Undergraduate Thesis Committee Chair
  - Undergraduate Honors Thesis: The BCL11A Gene and the 3D Printing of an Adjustable Hyperextension Orthotic Knee Brace for Patients with Hypotonia
  - Presented research at the 2019 Honors College Research Forum (3<sup>rd</sup> place)
- Meredith Bass (2018-2019)
  - Presented research at the 2019 SEACSM conference and the 2019 College of Education Research Forum (2<sup>nd</sup> place)
- Anastasia Mosby (2015-2017)
  - Presented research at the 2017 SEACSM conference and the 2017 College of Education Research Forum
- Amari Kimble (2013-2014)
  - Presented research on balance among adolescent track and field athletes at the 2015 SEACSM conference
  - Co-author of a published manuscript
- Jodi Brown and Wesley Gordon (2013-2014)
  - Presented research on landing kinetics between the dominant and non-dominant legs at the 2014 honors college spring research symposium and the 2014 college of education research symposium
  - Jodi received the 2014 College of Education best undergraduate research poster award
- Ben Watson, Whitney Ray, Amari Kimble, and Keri Jones (2013-2014)
  - Abstract accepted to present research on the kinetics of a stop-jump task at the 2014 SEACSM conference (cancelled due to weather), presented research at the 2014 honors college spring research symposium and the 2014 college of education research symposium
  - Whitney was the recipient of the 2013-2014 College of Education Undergraduate Research Award
- Anna Comer, Murry Adams, and Alisan Abernathy (2012-2013)
  - Presented research individually on the effects of ankle instability on joint laxity, balance, and landing kinetics at the 2013 SEACSM conference, the 2013 honors college spring research symposium, and the 2013 college of education research symposium

- Rebecca Bernheim (2011-2012)
  - Presented research individually on the influence of vision and surface type on balance using a double leg stance in active youths at the 2012 SEACSM conference, the 2012 honors college spring research symposium, and the 2012 college of education research symposium
  - Rebecca was the recipient of the 2011-2012 College of Education Undergraduate Research Award
- Sara McGinley (2011-2012)
  - Presented landing kinetics of football players at the 2012 SEACSM conference and the 2012 college of education research symposium
- Jennifer Motion, Laura Beth Roby, and Lindsey Triplett (2010-2011)
  - Presented therapeutic horseback riding and gait research at the 2011 SEACSM conference, the 2011 spring honors college research symposium, and the 2011 college of education research symposium
  - Recipient of the 2011 College of Education best undergraduate research poster award
- Kelly Harkins (2010-2011)
  - Presented motion analysis of football player motion at the 2011 SEACSM conference, the 2011 honors college spring research symposium, and the 2011 college of education research symposium
  - Recipient of the 2010-2011 College of Education Undergraduate Research Award
- Eddie Neal (2010-2011)
  - Presented motion analysis of football player motion at the 2011 SEACSM conference and the 2011 honors college spring research symposium
- Nigel Collins (2010-2011)
  - Presented motion analysis of football player motion at the 2011 SEACSM conference
- Jack Thompson (2010)
  - Presented motion analysis of the football player squat technique at the 2010 honors college summer undergraduate research symposium
- Derek Crenshaw (2010)
  - Presented therapeutic riding and gait research at the 2010 College of Education research symposium and the 2010 honors college spring undergraduate research symposium
  - Recipient of the 2010 College of Education best undergraduate research poster award

### **Professional Service and Memberships:**

2002-present National Athletic Trainers Association (NATA)

2008-present American Society of Biomechanics (ASB)

2009-present Mississippi Athletic Trainers Association (MATA)

2019-present International Society of Biomechanics in Sports (ISBS)

2005-2009 National Strength and Conditioning Association (NSCA)

2010-present American College of Sports Medicine Southeast Regional Chapter (SEACSM)

2004-2008 Alabama Athletic Trainers Association (ALATA)

**Certifications:**

2004-present Certified Athletic Trainer (ATC) by the National Athletic Trainers Association Board of Certification (NATABOC), Certification No. 050402291

2009-present Licensed Athletic Trainer by the Mississippi State Board of Health, License No: AT0492

2004-2008 Licensed Athletic Trainer by the Alabama Board of Athletic Trainer's, License No: 798

2005-present Certified Strength and Conditioning Specialist (CSCS) by the National Strength and Conditioning Association Certification Commission, Certification No. 20052681

**Selected Honors and Awards:**

2022	College of Education Cindy Rose Teaching Award, Mississippi State University
2021	Excellence in Service Award, The Graduate School, Mississippi State University
2018-2019	Mississippi State University Faculty Leadership Program
2011	Mississippi State University State Pride Award for outstanding faculty performance
2009	Dissertation Research Award Finalist at National Athletic Trainers Annual Meeting and Symposium
2008	Dennis G. Wilson Graduate Student Scholarship, Department of Kinesiology

2005-2006 American Sports Medicine Institute Outstanding Athletic Trainer Scholarship

2003-2004 Outstanding Undergraduate Scholar Award, School of Health and Human Performance, University of Southern Mississippi

**Service:**

*University Committees*

- Quality Enhancement Plan Committee Member (2023-2024)
- Institutional Review Board Full Member (August 2016-July 2022)
- Provost's Academic Review Board (August 2019- July 2022)
- Gerontology Committee (September 2017 – Present)
- Provost's Five Year Review Committee for the Department of Industrial and Systems Engineering (2017)
- Institutional Review Board Alternate Member (August 2015-July 2016)
- Office of the Graduate School Research Assistant of the Year Selection Committee (Spring 2015, Spring 2016)
- Evaluator for the Graduate School Microteaching Evaluation of Graduate Teaching Assistants (2016-2019)
  - Perform teaching evaluations on new graduate teaching assistants

*College Committees*

- College of Education Recruitment Committee
- College of Education Graduate Coordinator Committee (August 2016- present)
- College of Education Mentoring Committee (August 2016 – May 2018)
- Chair, College of Education Faculty Council (August 2014-May 2016)
- College of Education Faculty Council (August 2012-May 2013)
- College of Education Research Committee (August 2009 – May 2012; April 2022 - present)

*Departmental Committees*

- Chair, Department of Kinesiology Graduate Committee (August 2016 – present)
- Chair, Department of Kinesiology Academic Culture Committee (August 2015 – May 2016)
- Department of Kinesiology Executive Council Member (Elected by departmental faculty in August 2015, became an appointed member in August 2016 as graduate coordinator)
- Department of Kinesiology Graduate Committee (April 2015 – July 2016)



- Department of Kinesiology Academic Culture Committee (August 2010 – May 2015, August 2016 – May 2022)
- Department of Kinesiology Biomechanics/Neuromechanics Search Committee (Chair) (2025)
- Department of Kinesiology Department Head Search Committee (2023)
- Department of Kinesiology Motor Behavior Search Committee (Summer 2014)
- Department of Kinesiology Biomechanics Search Committee (Spring 2014)
- Department of Kinesiology Exercise Physiologist Search Committee (Spring-Summer 2011)
- Department of Kinesiology Library Committee (January 2009 – August 2010)
- Department of Kinesiology NCATE Committee (January 2009 – August 2010)
- Department of Kinesiology Technology Committee (January 2009 – August 2010)

#### *Sessions Chaired at Regional and National Conferences*

- Invited Session Chair, Clinical Implications of Bi-articular muscle actions
  - 2014 American College of Sports Medicine Southeast Regional Chapter Meeting, Greenville, S.C.
  - Conference was canceled due to inclement weather
- Session Chair, Endurance Athletes
  - 2011 American College of Sports Medicine Southeast Regional Chapter Annual Meeting, Greenville, S.C.
- Session Chair, Mechanics of Real-time Motion Capture using the Vicon System
  - 2010 American College of Sports Medicine Southeast Regional Chapter Annual Meeting, Greenville, S.C.

#### *Guest Lectures*

- Guest Lecturer in EP 2013 (Fundamentals of Kinesiology)
  - Biomechanics Lecture: Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2017, Spring 2018, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024, Spring 2025
  - Applied Anatomy Lecture: Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022
  - Athletic Training Lecture: Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012

#### *Research Manuscript Reviewer:*

- Medicine and Science in Sport & Exercise
- Journal of Sport Rehabilitation

- Journal of Electromyography and Kinesiology
- Journal of Motor Behavior
- International Journal of Golf Science
- Journal of Sport Sciences
- Archives of Physical Medicine and Rehabilitation
- Research in Sports Medicine
- Journal of Athletic Training
- Sports Biomechanics
- Physical Therapy in Sport

#### *Conference Proposal Reviewer*

- 2012 National Athletic Trainers Association Annual Meeting
  - Pre-proposal reviewer

#### *Invited Presentations*

- Auburn University Sports Medicine Staff (December 2008)
  - Invited speaker on ankle sprain research
- Drum Corp International Conference, January 2008, Orlando, FL
  - Invited speaker on pre-season conditioning and potential injuries associated with Marching Bands & Drum Corps

#### *Other Service*

- Deacon at First Baptist Church Starkville, 2020 - 2023
- Member of the Health Council at Henderson Ward Stewart Elementary School, 2019-2020
- Small group leader for First Baptist Church Starkville University ministry, 2009-2014, 2016 - 2021
- Starkville Upward Basketball Coach, 2011-2014
- Volunteer with the Mississippi State TEAM therapeutic horseback riding program, September 2009 – 2012
- Auburn University Swimming Team (9-time National Champions)
  - Assisted with Video Motion Analysis using Dartfish software stroke comparison, 2006 – 2008.
- Auburn University School of Veterinary Medicine
  - Assisted with research involving the kinematics of starts of greyhound dogs on grass and soil surfaces.