**Harish Chander, Ph.D.**

Associate Professor of Biomechanics

Co-Director of the Neuromechanics Laboratory

Department of Kinesiology, Mississippi State University

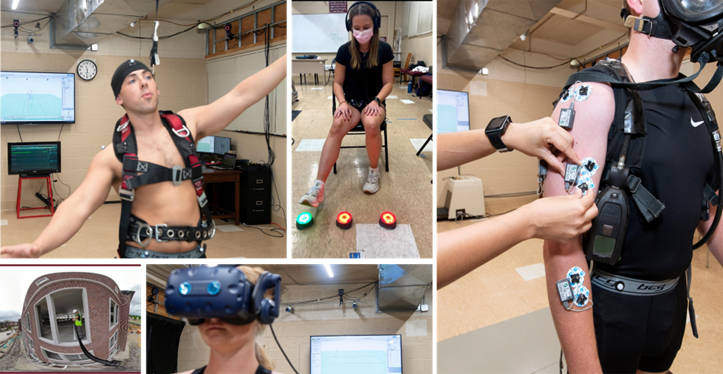
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*My research centers on the application of principles of neuromechanics & ergonomics to human performance, injury prevention and safety promotion. My research efforts are focused in areas of human factors in ergonomics, athletics, clinical, geriatric, pediatric and daily living populations, with special emphasis in postural stability, gait, slips, trips, falls and fall prevention, attempting to minimize injuries while promoting safety and enhancing efficient human performance.*

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**Education:**

Doctor of Philosophy (PhD) Health & Kinesiology, Biomechanics, University of Mississippi, 2014

Master of Science (MS) Health & Kinesiology, Biomechanics, University of Mississippi, 2012

Bachelor of Physical Therapy (BPT) Physical Therapy, The T.N. MGR Medical University, 2008

**Employment:**

2020 – Present Associate Professor of Biomechanics (Tenured) & Level I Graduate Faculty

Co-Director of the Neuromechanics Laboratory

Department of Kinesiology, Mississippi State University

2018 – Present Affiliated Faculty Researcher, Human Factors & Athlete Engineering, Center for Advanced Vehicular Systems (CAVS)

2014 – 2020 Assistant Professor of Biomechanics (Tenure-Track) & Level I Graduate Faculty

Co-Director of the Neuromechanics Laboratory

Department of Kinesiology, Mississippi State University

2016 – 2019 Adjunct Research Assistant Professor, Department of Health, Exercise Science, and Recreation, The University of Mississippi

2010 – 2014 Graduate Teaching Assistant, Department of Health, Exercise Science, and Recreation, The University of Mississippi

2008 – 2009 Physical Therapist, Talwalkars Better Value Fitness Pvt. Ltd, Chennai, India

2007 – 2009 Home Care Physical Therapist, Chennai, India

2007 – 2008 Pediatric Physical Therapist, Vinayaga Physio Point, Chennai, India

**RESEARCH**

**Research Publications - Peer-Reviewed:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Published** | **In-Review** | **In-Preparation** |
| Journal Articles | *101* | *5* | *5* |
| Conference Proceedings & Presentations | *149* | *-* | *6* |
| Textbook Chapters | *1* | *-* | *1* |
| Textbook | *1* | *-* | *-* |

*For full list of publications:* [*https://scholar.google.com/citations?user=zgC6K2wAAAAJ&hl=en&oi=ao*](https://scholar.google.com/citations?user=zgC6K2wAAAAJ&hl=en&oi=ao)

**Research Metrics:**

|  |  |
| --- | --- |
| H-Index | 19 |
| I-10 Index | 40 |

**Published/In-Press:** († Indicates primary student mentored project)

1. **†** 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*, 1271. <https://doi.org/10.3390/healthcare10071271>
2. **Chander, H.**, Freeman, H. R., Hill, C. M., Hudson, C. R., Kodithuwakku Arachchige, S. N., Turner, A. J., ... & Knight, A. C. (2022). The Walls Are Closing in: Postural Responses to a Virtual Reality Claustrophobic Simulation. *Clinical and Translational Neuroscience*, *6*(2), 15. <https://doi.org/10.3390/ctn6020015>
3. **†** Talukder, A., Derby, H., Freeman, C., Burch, R., Knight, A., & **Chander, H.** (2022). Sensory and Tactile Comfort Assessment of Sub-Clinical and Clinical Compression Socks on Individuals with Ankle Instability. *Textiles*, *2*(2), 307-317. <https://doi.org/10.3390/textiles2020017>
4. Gaddis, E. S., Burch, R.F.V., Strawderman, L., **Chander, H**., Smith, B. K., Freeman, C., & Taylor, C. (2022). The impact of using wearable devices on the operator during manual material handling tasks. *International Journal of Industrial Ergonomics*, *89*, 103294. <https://doi.org/10.1016/j.ergon.2022.103294>
5. Arlotti, J.S., Carroll, W.O., Afifi, Y., Talegaonkar, P., Albuquerque, L., Ball, J.E., **Chander, H**. and Petway, A., (2022). Benefits of IMU-based Wearables in Sports Medicine: Narrative Review. *International Journal of Kinesiology and Sports Science*, *10*(1), 36-43. <https://doi.org/10.7575/aiac.ijkss.v.10n.1p.36>
6. Booker, R., **Chander H**., Norris, K.C., Thorpe Jr, R.J, Vickers, B., Holmes, M.E. (2022). Comparison of Leisure Time Physical Activities by Metabolic Syndrome Status among Adolescents. *International Journal of Environmental Research and Public Health, 19(3),* 1415. <https://doi.org/10.3390/ijerph19031415>
7. McDevitt, S., Hernandez, H., Hicks, J., Lowell, R., Bentahaikt, H., Burch, R., Ball., J., **Chander, H.**, Freeman, C., Taylor, C. & Anderson, B. (2022). Wearables for Biomechanical Performance Optimization and Risk Assessment in Industrial and Sports Applications. *Bioengineering*, *9*(1), 33. <https://doi.org/10.3390/bioengineering9010033>
8. Carroll, W., Fuller, S., Lawrence, J. M., Osborn, S., Stallcu, R., Burch, R., Freeman, C., **Chander, H.**, ... & Piroli, A. (2021). Stroboscopic Visual Training for Coaching Practitioners: A Comprehensive Literature Review. *International Journal of Kinesiology and Sports Science*, *9*(4), 49-59. <http://dx.doi.org/10.7575/aiac.ijkss.v.9n.4p.49>
9. **Chander H,** Kodithuwakku Arachchige SNK, Turner AJ, Burch RFV, Reneker JC, Knight AC, Wade C & Garner JC. Sensory Organization Test Conditions Influence Postural Strategy Rather than Footwear or Workload. *International Journal of Environmental Research and Public Health, 2021, 18(*19), 10511; <https://doi.org/10.3390/ijerph181910511>.
10. **†** Kodithuwakku Arachchige SNK, **Chander H**, Knight AC, Burch RFV, and Chen C. Dual Tasking During Trip Recovery and Obstacle Clearance among Young, Healthy Adults in Human Factors Research. *International Journal of Environmental Research and Public Health, 2021, 18(*19), 10144; <https://doi.org/10.3390/ijerph181910144>.
11. **Chander H,** Kodithuwakku Arachchige SNK, Turner AJ, Burch RFB, Knight AC, Wade C & Garner JC. (2021). Role of occupational footwear and workload on lower extremity muscle activation during maximal exertions and postural stability tasks. (2020). *Biomechanics*, 1(2), 202-213; <https://doi.org/10.3390/biomechanics1020017>
12. **†** Kodithuwakku Arachchige SNK, Burch RFV, **Chander H,** Turner AJ, and Knight AC. (2021). The Use of Wearable Devices in Cognitive Fatigue: Current Trends and Future Intentions. *Theoretical Issues in Ergonomics Science*. <https://doi.org/10.1080/1463922X.2021.1965670>
13. Saucier, D.N.; Davarzani, S.; Burch V, R.F.; **Chander, H**.; Strawderman, L.; Freeman, C.; Ogden, L.; Petway, A.; Duvall, A.; Crane, C.; Piroli, A. (2021). External Load and Muscle Activation Monitoring of NCAA Division I Basketball Team Using Smart Compression Shorts. Sensors, 21, 5348. <https://doi.org/10.3390/s21165348>
14. 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>
15. **†** Turner, A.J., Carroll, W., Kodithuwakku Arachchige, S.N.K., Saucier, D., Burch, R.F., Ball, J.E., Smith, B.K., Freeman, C., Knight, A.C. & **Chander, H**. (2021). Closing the Wearable Gap: A Validation Study for a Smart Knee Brace to Capture Knee Joint Kinematics. Biomechanics, 1(1), 152-162; <https://doi.org/10.3390/biomechanics1010012>
16. Stewart, E., Stewart, M., Arachchige, S. N. K., Turner, A., Knight, A., Johnson, J., ... & **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>.
17. Simpson J., Koldenhoven R., Wilson S., Stewart E., Turner A., **Chander H.,** & Knight A. (2021). Lower extremity joint kinematics of a simulated lateral ankle sprain after drop landings in subjects with chronic ankle instability. *Sports Biomechanics Special Issue on Ankle Sprains and Instability.* <https://doi.org/10.1080/14763141.2021.1908414>.
18. Smith E, Burch RFB, Smith B, Strawderman L & **Chander H**. (2021). A Comfort Analysis of Using Smart Glasses During the "Picking" and "Putting" Task. *International Journal of Industrial Ergonomics*. 83, <https://doi.org/10.1016/j.ergon.2021.103133>.
19. **Chander H,** Garner JC, Wade C, Wilson SJ, Turner AJ, Kodithuwakku Arachchige SNK, Hill CM, DeBusk H, Simpson JD, Miller BL, Morris CE & Knight AC. (2021). An Analysis of Postural Control Strategies in Various Types of Footwear with Varying Workloads. *Footwear Science*. <https://doi.org/10.1080/19424280.2021.1899297>.
20. **†** Kodithuwakku Arachchige SNK, **Chander H,** Turner AJ, Knight AC. (2021). Impact of Prolonged Exposure to a Slippery Surface on Postural Stability. *International Journal of Environmental Research and Public Health*, *18(5)*, 2214; <https://doi.org/10.3390/ijerph18052214>
21. Bailey C., Cagle G., Grozier C., Lehtola K., Weaver J., Wilson S., **Chander H**., Rendos N., & Simpson J. (2021). Gathering your ‘sea legs’: Extended durations in an offshore environment increases postural sway. *Gait & Posture*, *86*, 45-50. <https://doi.org/10.1016/j.gaitpost.2021.02.014>
22. **Chander H**, Garner JC, Wade C & Knight AC. (2021). Lower Extremity Muscle Activation in Alternative Footwear during Slip Events. *International Journal of Environmental Research and Public Health*, 18(4), 1533, <https://doi.org/10.3390/ijerph18041533>
23. **Chander H**, Kodithuwakku Arachchige SNK, Turner AJ & Knight AC. (2020). Is it me or the room moving? Recreating the classical “moving room” experiment with virtual reality for postural control adaptation. *Adaptive Behavior*. <https://doi.org/10.1177%2F1059712320971372>
24. Davarzani, S., Helzer, D., Rivera, J., Saucier, D., Jo, E., **Chander, H**., ... & Petway, A. (2020). Validity and Reliability of StriveTM Sense3 for Muscle Activity Monitoring During the Squat Exercise. *International Journal of Kinesiology and Sports Science*, *8*(4), 1-18. <http://dx.doi.org/10.7575/aiac.ijkss.v.8n.4p.1>.
25. Phan P, Vo A, Bakhtiarydavijani A, Burch RFB, Smith B, Ball J, **Chander H**, Knight AC, Prabhu RK. (2020). In Silico Finite Element Analysis of the Foot Ankle Complex Biomechanics: A Literature Review. *Journal of Biomechanical Engineering*. <https://doi.org/10.1115/1.4050667>.
26. **†** Kodithuwakku Arachchige, S.N.K., **Chander, H.,** Burch, R.F.V., Knight, A.C. & 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>
27. Price, F. G., Smith, J. W., 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 and Sports Science*, *8*(3), 28-35. <http://dx.doi.org/10.7575/aiac.ijkss.v.8n.3p.28>
28. Luczak, T., Burch, R.F.V, Smith, B., **Chander, H.**, Lamberth, J., & Carruth, D. (2020). Using Human Factors Engineering and Garvin’s Product Quality to Develop a Basketball Shoe Taxonomy. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*. <https://doi.org/10.1177%2F1754337120965421>
29. 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.C, Luczak, T., Smith, B. & Prabhu, R.K. (2020). Closing the Wearable Gap—Part VII: A Retrospective of Stretch Sensor Tool Kit Development for Benchmark Testing. Electronics, 9 (9), 1457. <https://doi.org/10.3390/electronics9091457>
30. 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, 102454. <https://doi.org/10.1016/j.jelekin.2020.102454>.
31. **†** Kodithuwakku Arachchige, S.N.K., **Chander, H.,** Knight, A.C. Chen, C.C., Pan, Z. & Turner, A.J. (2020). Impact of foot type, quadriceps angle, and minimalist footwear on static postural stability. *Footwear Science,* *12*(3), 173-183. <https://doi.org/10.1080/19424280.2020.1791976>.
32. **†** Kodithuwakku Arachchige, S.N.K., **Chander, H.,** Turner, A.J., Wilson, S.J., Simpson, J.D., Knight, A.C., Burch, R.F.V., Wade, C., Garner, J.C. & Carruth, D.W. (2020). Muscle activity during postural stability tasks: Role of military footwear and load carriage. *Safety, 6(3),* 35.<https://doi.org/10.3390/safety6030035>
33. Pace, M., O’ Neal, E., Killen, L., Green, J.C., Simpson, J.D., **Chander, H.** & J., Swain. (2020). Minimalist Style Boot Improves Running but not Walking Economy in Trained Men. *Ergonomics, 63*(10), 1329-1335. <https://doi.org/10.1080/00140139.2020.1778096>
34. **Chander, H.**, Deb, S., Shojaei, A., Kodithuwakku Arachchige, S.N.K., Hudson, C., Knight, A.C. & Carruth, D.W. (2020). Impact of Virtual Reality (VR) Generated Construction Environments at Different Heights on Postural Stability and Fall Risk. *Workplace Health and Safety, 69, (1),* 32-40. <https://doi.org/10.1177%2F2165079920934000>.
35. **Chander, H.**, Kodithuwakku Arachchige, S.N.K., Wilson, S.J., Knight, A.C., Burch, R.F.V., Carruth, D.W., Wade, C. & Garner, J.C. (2020). Impact of Military Footwear Type and Load Carriage on Slip Initiation Biomechanics. *International Journal of Human Factors and Ergonomics, 7 (2),* 125-143. <https://doi.org/10.1504/IJHFE.2020.109560>
36. **Chander, H.**, Burch, R. F., Talegaonkar, P., Saucier, D., Luczak, T., Ball, J. E., ... & Knight, A. (2020). Wearable Stretch Sensors for Human Movement Monitoring and Fall Detection in Ergonomics. *International Journal of Environmental Research and Public Health*, *17*(10). <https://doi.org/10.3390/ijerph17103554>
37. **†** Hill, C., DeBusk, H., Knight, A., & **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*(5), 58. <https://doi.org/10.3390/sports8050058>.
38. Davarzani, S., Saucier, D., Peranich, P., Carroll, W., Turner, A., Parker, E., Burch, R.F., **Chander, H.,** Knight, A.C, Prabhu, R.K., & Ball, J. (2020). Closing the Wearable Gap—Part VI: Human Gait Recognition Using Deep Learning Methodologies. *Electronics*, *9*(5), 796. <https://doi.org/10.3390/electronics9050796>.
39. Liu, Y., Stranburg, T., **Chander, H.,** Knight, A.C. & Bell. J. (2020). Additively Manufactured Metal Foot Orthotics: Lessons Learned From NSF I-Corps. *The International Journal of Technology Transfer and Commercialization*, 14 (4), <https://doi.org/10.1504/IJTTC.2020.113209>
40. Wilson SJ,Gdovin JR, Williams CC, Donahue PT, Mouser JG, Mutchler JA, Simpson JD, **Chander H**, & Garner JC. (2020). More than a Footwedge – Golf Specific Footwear Alters Muscle Activation Patterns During Standing Balance. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*, <https://doi.org/10.1177%2F1754337120938269>.
41. Stewart, E.M., Smidebush, 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*, 6 (3), 199-204.
42. Luczak, T., Burch, R.F.V., Smith, B.K., Carruth, D.W., Lamberth, J., **Chander, H.** Knight, A.C., Ball, J.E., Prabhu, R.K. (2020). Closing the Wearable Gap – Part V: Development of Pressure-Sensitive Sock Utilizing Soft Sensors. *Sensors*, 20, 208. <https://doi.org/10.3390/s20010208>.
43. Luczak, T., Burch, R., Lewis, E., **Chander, H.,** & Ball, J. (2020). State-of-the-art review of athletic wearable technology: What 113 strength and conditioning coaches and athletic trainers from the USA said about technology in sports. *International Journal of Sports Science & Coaching*, 15(1), 26-40. <https://doi.org/10.1177%2F1747954119885244>.
44. Simpson, J.D., Stewart, E.M., Turner, A.J., Macias, D., **Chander, H.** & Knight, A.C. (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>.
45. Simpson, J.D., Cosio-Lima, L., Scudamore, E., O’Neal, E., Stewart, E.M., Miller, B.L., **Chander, H.** & Knight, A.C. (2020). Effects of Weighted Vest Loading during Daily Living Activities on Countermovement Jump and Sprint Performance. *International Journal of Sports Physiology and Performance*. *15*(3), 309-318. <https://doi.org/10.1123/ijspp.2019-0318>
46. **Chander, H.,** Arachchige, K., Sachini, N. K., Hill, C. M., Turner, A. J., Deb, S., ... & Carruth, D. W. (2019). Virtual-Reality-Induced Visual Perturbations Impact Postural Control System Behavior. *Behavioral Sciences*, *9*(11), 113. <https://doi.org/10.3390/bs9110113>.
47. Saucier, D., Davarzani, S., Turner, A., Luczak, T., Nguyen, P., Carroll, W., F Burch V, R., Ball, J.E., Smith, B.K., **Chander, H.** and Knight, A. (2019). Closing the Wearable Gap—Part IV: 3D Motion Capture Cameras Versus Soft Robotic Sensors Comparison of Gait Movement Assessment. *Electronics*, 8 (12), 1382. <https://doi.org/10.3390/electronics8121382>.
48. **Chander, H.,** Stewart, E.M., Saucier, D., Nguyen, P., Luczak, T., Ball, J.E., Knight, A.C., Smith, B.K., Burch, R.F.V. & Prabhu, R.K. (2019). Closing the Wearable Gap – Part III: Use of Stretch Sensors in Detecting Ankle Joint Kinematics during Unexpected & Expected, Slip & Trip Perturbations. *Electronics*, 8 (10), 1083. <https://doi.org/10.3390/electronics8101083>.
49. Shelly, Z., Stewart, E., Fonville, T., **Chander, H.,** Strawderman, L., May, D., ... & Bichey, C. (2019). Helmet Prototype Response Time Assessment using NCAA Division 1 Collegiate Football Athletes. *International Journal of Kinesiology and Sports Science*, *7*(4), 53-65. <http://dx.doi.org/10.7575/aiac.ijkss.v.7n.4p.53>.
50. **†** Hill, C.M., DeBusk, H., Simpson, J.D., Miller, B.L., Knight, A.C., Wade, C., Garner, J.C. & **Chander, H**. (2019). The interaction of cognitive interferences, standing surface, and fatigue on lower extremity muscle activity. *Safety and Health at Work*, *10 (3),* 321-326. <https://doi.org/10.1016/j.shaw.2019.06.002>
51. Wilson, S.J,, Donahue, P.T., Williams, C.C., Hill, C.M., Simpson, J.D., Waddell, D.E., Loenneke, J.P., **Chander, H.**, Wade, C. & Garner, J.C. (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.<http://dx.doi.org/10.7575/aiac.ijkss.v.7n.3p.34>
52. Saucier, D., Luczak, T., Nguyen, P., Davarzani, S., Peranich, P., Ball, J.E., Burch, R.F. V., Smith, B.K., **Chander, H.**, Knight, A.C. & Prabhu, R.K. (2019). Closing the Wearable Gap—Part II: Sensor Orientation and Placement for Foot and Ankle Joint Kinematic Measurements. *Sensors*, 19(6), 3509. <https://doi.org/10.3390/s19163509>
53. **Chander, H,**, Knight, A,C. & Carruth, D.W. (2019). Does Minimalist Footwear Design Aid Postural Stability and Fall Prevention in Ergonomics? *Ergonomics in Design*. 27(4), 22-25. <https://doi.org/10.1177%2F1064804619843384>
54. Simpson, J.D., Stewart, E.M., Turner, A.J., Macias, D., **Chander, H**. & Knight, A.C. (2019). Bilateral Spatiotemporal Postural Control Impairments are Present in Participants with Chronic Ankle Instability. *Physical Therapy in Sport, 39,* 1-7. <https://doi.org/10.1016/j.ptsp.2019.06.002>
55. Smidebush, M., Stewart, E.M., Shapiro, R., **Chander, H.** & Knight, A.C. (2019). Mean muscle activation comparison between fastballs and curveballs with respect to the upper and lower extremity. *Journal of Biomechanics.* <https://doi.org/10.1016/j.jbiomech.2019.07.036>
56. **Chander, H.**, Turner, A.J., Swain, J.C., Sutton, P.E., McWhirter, K.L., Morris, C.E., Knight, A.C. & Carruth, D.W. (2019). Impact of Occupational Footwear and Workload on Postural Stability in Work Safety. *Work*, 64(4), 817-824. doi: 10.3233/WOR-193043.
57. Simpson, J.D., Knight, A.C., Macias, D., Stewart, E.M. & **Chander, H.** (2019). Individuals with chronic ankle instability exhibit dynamic postural stability deficits and altered unilateral landing biomechanics: A systematic review. *Physical Therapy in Sport**, 37,* 210-219 <https://doi.org/10.1016/j.ptsp.2018.06.003>
58. Simpson, J.D., Stewart, E.M., Rendos, N., Cosio-Lima, L., Wilson, S.J., Macias, D., **Chander, H**. & Knight, A.C. (2019). Anticipating ankle inversion perturbations during a single-leg drop landing alters ankle joint and impact kinetics. *Human Movement Science*, 66, 22-30. <https://doi.org/10.1016/j.humov.2019.03.015>
59. McAllister, M.J., Holland, A.M., **Chander, H.**, Waldman, H.S., Smith, J.W. & Basham, S.A. (2019). Impact of ketone salt containing supplement on cardiorespiratory and oxidative stress response in firefighters exercising in personal protective equipment. *Asian Journal of Sports Medicine*. Vol. 10, No. 1, pp. 1–8 <https://doi.org/10.5812/asjsm.82404>
60. **Chander, H.**, McAllister, M.J., Holland, A.M., Waldman, H.S., Krings, B.M., Swain, J.C., Turner, A.J., Basham, S.A., Smith, J.W. & Knight, A.C. (2019). Effects of Ketone Ingestion on Single and Dual-Task Postural Stability and Muscular Exertion in Firefighters. *Safety, 5(1),* 15; <https://doi.org/10.3390/safety5010015>
61. **†** Kodithuwakku Arachchige, S.N.K., **Chander, H.** & Knight, A.C. (2019). Flat feet: Biomechanical implications, assessment and management. *The Foot*, 38, 81-85. <https://doi.org/10.1016/j.foot.2019.02.004>
62. Simpson, J.D., Stewart, E.M., Turner, A.J., Macias, D., Wilson, S.J., **Chander, H.** & Knight, A.C. (2019). Neuromuscular control in individuals with chronic ankle instability: A comparison of unexpected and expected ankle inversion perturbations during a single leg drop-landing. *Human Movement Science*, 64, 133-141. <https://doi.org/10.1016/j.humov.2019.01.013>
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100. Garner, J. C., Wade, C., Garten, R., **Chander, H.,** & Acevedo, E. (2013). The influence of firefighter boot type on balance. *International Journal of Industrial Ergonomics, 43(1)*, 77-81. <https://doi.org/10.1016/j.ergon.2012.11.002>
101. MacDonald, C. J., Israetel, M., Dabbs, N. C., **Chander, H.,** Allen, C. R., Lamont, H., & Garner, J. C. (2013) Influence of Body Composition on Selected Jump Performance Measures in Collegiate Female Athletes. *Journal of Trainology, 2:* 33-37. <https://doi.org/10.17338/trainology.2.2_33>

**Textbook/ Textbook Chapters:**

Garner, J.C., Allen, C.R., **Chander, H.** & Knight, A.C. (2022). Applied Biomechanics Laboratory Manual. *Human Kinetics (with HKPropel)*. ISBN: 9781718207417.

Garrison, T & **Chander, H.** (2018). Chapter 08 - *The Safety Crew and Event Staff* in *The science of motorsport*. Ferguson, D. P. (Ed.). Routledge.

**Research Funding:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Applied** | **Acquired** | **In-Review** |
| External Funding | $9,561,655.00 | $1,947,346.00 | $3,463,583.00 |
| Internal Funding | $135,250.00 | $133,250.00 | $2,000.00 |
| Total | $9,696,905.00 | $2,080,596.00 | $3,465,583.00 |
|  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Funded** | | | |  | **In-Review** | | | | |
| **Grant** | **Year** | **Role** | **Amount** |  | | **Grant** | **Year** | **Role** | **Amount** |
| NSF - MRI | 2022 | Co-PI | $770,000.00 |  | | NSF - NRT | 2022 | Co-PI | $2,999,986.00 |
| NIOSH | 2022 | PI | $10,000.00 |  | | NSF - REU | 2022 | Co-PI | $404,997.00 |
| MCCTR/NIH | 2021 | Co-PI | $39,988.00 |  | | MCCTR/NIH | 2022 | PI | $58,600.00 |
| NSF - iCorps (Site) | 2020 | PI | $3,000.00 |  | | MSU ORED UG | 2022 | PI | $2,000.00 |
| NSF - PFI (Suppl) | 2020 | Co-PI | $34,930.00 |  | |  |  |  |  |
| NSF - PFI (Suppl) | 2020 | Co-PI | $16,000.00 |  | |  |  |  |  |
| NSF - PFI (Suppl) | 2020 | Co-PI | $134,628.00 |  | | **Not Funded** | | | |
| DOL - OSHA | 2020 | Co-PI | $74,993.00 |  | | **Grant** | **Year** | **Role** | **Amount** |
| NIOSH - PPRT | 2019 | PI | $12,000.00 |  | | NSF-TT | 2021 | Co-PI | $249,722.00 |
| NSF - PFI | 2018 | Co-PI | $749,932.00 |  | | FEMA | 2021 | PI | $51,238.00 |
| NSF - iCorps (National) | 2018 | Co-PI | $50,000.00 |  | | NSF-ERC | 2021 | Co-PI | $98,464.00 |
| NIOSH - PPRT | 2018 | PI | $12,000.00 |  | | MCCTR/NIH | 2021 | PI | $39,988.00 |
| NSF - iCorps (Site) | 2017 | Co-PI | $3,000.00 |  | | MCCTR/NIH | 2021 | PI | $39,997.00 |
| NIOSH - PPRT | 2015 | PI | $20,000.00 |  | | NIOSH - R03 | 2021 | PI | $142,802.00 |
| PACCAR | 2018 | Co-PI | $16,875.00 |  | | CPWR | 2021 | PI | $29,993.00 |
| ORED-COE | 2018 | PI | $4,665.00 |  | | HRSA | 2021 | PI | $748,456.00 |
| ORED-UG RG | 2018 | Co-PI | $2,000.00 |  | | DOL - OSHA | 2020 | Co-PI | $75,000.00 |
| SEC Travel Grant | 2018 | PI | $1,000.00 |  | | NIOSH - R03 | 2020 | Co-PI | $149,508.00 |
| ORED-UG RG | 2018 | PI | $1,995.00 |  | | NIOSH - R21 | 2020 | PI | $351,634.00 |
| ORED-UG RG | 2018 | Co-PI | $2,000.00 |  | | DOT | 2019 | Co-PI | $427,659.00 |
| ORED-CC | 2017 | PI | $2,000.00 |  | | NSF - TT | 2019 | Co-PI | $249,948.00 |
| ORED-UG RG | 2017 | Co-PI | $2,000.00 |  | | DOD | 2016 | PI | $497,956.00 |
| ORED-F RG | 2016 | PI | $1,700.00 |  | | NSF -PFI: BIC | 2014 | Co-PI | $998,361.00 |
| ORED-CC | 2016 | PI | $2,000.00 |  | |  |  |  |  |
| ORED-F RG | 2015 | PI | $3,000.00 |  | |  |  |  |  |
| BCOE-WG | 2016 | PI | $2,000.00 |  | |  |  |  |  |
| CAVS-KINE COLAB | 2015 | PI | $100,000.00 |  | |  |  |  |  |
| BCOE-WG | 2015 | Co-PI | $1,425.00 |  | |  |  |  |  |
| ORED-F RG | 2015 | PI | $965.00 |  | |  |  |  |  |
| ORED-CC | 2015 | PI | $2,000.00 |  | |  |  |  |  |
| ORED-CC | 2014 | PI | $2,000.00 |  | |  |  |  |  |
| BCOE-WG | 2014 | PI | $500.00 |  | |  |  |  |  |
| BCOE-WG | 2014 | Co-PI | $2,000.00 |  | |  |  |  |  |

**TEACHING**

Graduate and undergraduate level classes in six concentrations in the Department of Kinesiology

|  |  |
| --- | --- |
| **Teaching Evaluations** | **Overall Average** |
| Global Index (Old Format) (max score of 5) | 4.83 / 5 point scale |
| Median Score (New Format) (max score of 4) | 3.76 / 4 point scale |

**Mississippi State University:**

* MSU - KI 8543 – Postural and Locomotor Rehabilitation (Spring 2019, Fall 2020)
* MSU - EP 8503 – Occupational Physiology (Fall 2016, Spring 2017, 2018)
* MSU - EP 8443 – Neural Mechanisms in Human Movement and Exercise (Fall 2015, 2017, 2019)
* MSU - EP 4503 – Mechanical Analysis of Movement (Summer 2016, 2017, 2018, 2019)
* MSU - EP 3643 – Applied Anatomy & Pathophysiology (Spring 2015, 2016, 2017, 2018, 2019; Summer 2016, 2017, 2018, 2019; Fall 2020, 2021, 2022)
* MSU - EP 3233 – Anatomical Kinesiology (Fall 2014, 2015, 2016, 2017; 2022; Summer 2015, 2016, 2018; Spring 2017)
* MSU - KI 3633 – Rehabilitation Techniques in Sports Medicine (Fall 2014, Summer 2015)
* MSU - KI 3273 – Athletic Training (Summer 2015, Fall 2015)
* MSU - PE 4283 – Sports Biomechanics (Spring 2015, 2016, 2017; Summer 2015, 2016, 2017, 2018, 2019)
* MSU - KI 2603 – Medical Terminology (Summer 2015, 2016)

**University of Mississippi:**

* UM - ES 338 – Motor Control and Learning (Fall 2013; Spring 2014)
* UM - ES 346 – Kinesiology (Spring 2012, Spring 2014)
* UM - HP 303 – Prevention and Care of Athletic Injuries (Fall 2012; Spring 2013)
* UM - ES 447 – Biomechanics Laboratory (Fall 2009, 2010; Spring 2010, 2011; Summer 2011, 2012)
* UM - ES 349 – Exercise Physiology Laboratory (Summer 2013)
* UM - HP 191 – Personal and Community Health (Summer 2012, 2012, 2013; Winter 2014)
* UM - EL 151 – Resistance Training and Weightlifting (Fall 2009, Spring 2010)

**DIRECTORSHIP AND LEADERSHIP**

2014 – Present Co-Director of the Neuromechanics Laboratory

2021 – Present Chair**,** Academic Culture Committee, Department of Kinesiology, Mississippi State University

2022 – Present Mentor, University of Mississippi Medical Center (UMMC), Graduate Training and Education Center (GTEC) through NIH/NHLBI

2016 – Present Faculty Advisor, Neuromechanics Research Group (NRG), Undergraduate Student Club, Mississippi State University

2016 – 2017 Co-Director of the Human Factors Working Group, Mississippi State University

2018 – Present Faculty Advisor, Agriculture and Biomedical Engineering Senior Design Teams, Mississippi State University

2018 – Present Faculty Advisor, Shackouls Honors College, Mississippi State University

**SERVICE**

**Committee Service:**

2021 – Present Committee Member, Institutional Review Board (IRB), Mississippi State University

2022 – Present Committee Member, Promotion and Tenure Committee, College of Education, Mississippi State University

2021 – 2022 Committee Member, Graduate Studies Working Group, Strategic Enrollment Planning Exercise, Mississippi State University

2020 – Present Committee Member, Public Relations, Department of Kinesiology, Mississippi State University

2019 – Present Committee Member, Faculty Council, College of Education, Mississippi State University

2014 – 2016 Committee Member, Diversity Committee, College of Education, Mississippi State University

2014 – Present Committee Member, Laboratory Committee, Department of Kinesiology, Mississippi State University

2014 – Present Committee Member, Academic Culture Committee, Department of Kinesiology, Mississippi State University

2014 – Present Committee Member, Exercise Science Curriculum Committee, Department of Kinesiology, Mississippi State University

2014 – Present Committee Member, Sports Studies Curriculum Committee, Department of Kinesiology, Mississippi State University

2019 – 2020 Committee Member, ISWD Faculty Search Committee

**Other University Service:**

2016 – Present Recurring Graduate Teaching Assistant (GTA) Evaluator, Graduate School, Mississippi State University

2020 – Present Recurring Guest Mentor, Preparing Future Faculty (PFF), Center for Teaching and Learning (CTL)

2020 – Present Recurring Guest Speaker, Research Involvement, Shackouls Honors College.

2015 – Present Recurring Judge at Graduate and Undergraduate Research Symposium

**Research Service:**

**Journal Editorial and Reviewer Board:**

2020 – Present Topic Editor

*International Journal of Environmental Research and Public Health*

2020 – Present Reviewer Board Member

*Healthcare*

2021 – Present Guest Editor, Special Issue: Advances in Fall Prevention, *International Journal of Environmental Research and Public Health*

2020 – 2021 Guest Editor, Special Issue: Physical and Cognitive Ergonomics, *International Journal of Environmental Research and Public Health*

**Invited Grant Proposal Reviewer:**

* Center for Disease Control (CDC) / National Institute of Occupational Safety and Health (NIOSH)
* Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) (Canada)
* Canada Foundation for Innovation (CFI) (Canada)

**Invited Peer-Reviewer for Journals, Conferences, and Textbooks:**

|  |  |
| --- | --- |
| International Journals | 36 Journals |
| Invited Peer-Reviews Performed | *132 Peer-Reviews* |
| Invited Book Peer-Reviews Performed | *1 Book Peer-Review* |
| Invited Book Chapter Peer-Review Performed | *2 Book Chapter Peer-Review* |
| Invited PhD Dissertation/Thesis External Reviewer | *1 International (Australia)* |

**Faculty Advisor and Research Committee Service:**

|  |  |
| --- | --- |
| Graduate - Doctoral (PhD) | Graduate Level 1 Faculty  Chair: 8 Students; Committee Member: 8 Students |
| Graduate - Masters (MS) | *Chair: 6 Students*  *Committee Member: 2 Students*  *Non-Thesis Committee Member: 12 Students* |
| Undergraduate - Bachelors (BS) | *Chair for Directed Individual Study: 18 Students*  *Chair for Internship: 5 Students*  *Advisor: 74 Students* |

**MSU Research Working Groups:**

2018 – Present Working Group Member - Athlete Engineering Working Group

2017 – 2020 Working Group Member - Body Sensor Network and Wearable Technology

2014 – 2017 Working Group Member - Human Factors Working Group

2014 – 2015 Working Group Member - RADAR Working Group

**Mentored Student Research Awards:**

* Sachini Kodithuwakku Arachchige - ORED/COE Graduate Student Researcher of the year award – 2021 – **Primary Advisor**
* Luke Ramsey -ORED/COE Undergraduate Student Researcher of the year award – 2020 – **Primary Advisor**
* Alana Turner - ORED/COE Graduate Student Researcher of the year award – 2020 – **Primary Advisor**
* Hannah Freeman - ORED/COE Undergraduate Student Researcher of the year award – 2020 – **Primary Advisor**
* Sachini Kodithuwakku Arachchige – Graduate School GTA of the year award – 2020 – **Primary Advisor**
* Alana Turner – Kinesiology Exercise Science Mater’s Student of the year award – 2018 – **Primary Advisor**
* Sachini Kodithuwakku Arachchige – Research Poster Presentation Winner GSA – 2018 – **Primary Advisor**
* Alana Turner – ORED/COE Undergraduate Student Researcher of the year award – 2017 – **Primary Advisor**
* Jeffrey Simpson - ORED/COE Graduate Student Researcher of the year award – 2016 – **Committee Member**
* Christopher Hill – ORED/COE Graduate Student Researcher of the year award – 2015 – **Primary Advisor**

**Awards and Recognitions:**

* Winner of the Herb Handley Research Award, College of Education, Mississippi State University, 2020
* Winner of the Graduate Advisor of the Year, Graduate Student Association, MSU Graduate School, 2020
* Third place winner of Rapid Research Race for Assistant Professors at SEACSM 2020
* Finalist, Graduate advisor of the year, Graduate Student Association, MSU Graduate School, 2019
* J. Robert Blackburn Graduate Award in Exercise Science, University of Mississippi Honors Convocation, 2014
* Graduate Achievement Award in Health, Exercise Science and Recreation Management, University of Mississippi Honors Convocation, 2014
* Grand Prize Winner, University of Mississippi 3 Minute Thesis Competition - Represented University of Mississippi at the South Council of Graduate Schools at San Antonio in February 2014.
* Winner of the Student of the Month, School of the Applied Sciences - October 2013
* Winner of University of Mississippi - Annual Research Day and Symposium - 2nd Place; 2012

**Memberships:**

* 2014 – Present **Professional Member**, American Society of Biomechanics
* 2011 – Present **Professional Member**, Southeast Regional Chapters: American College of Sports Medicine
* 2015 – 2017 **Professional Member**, International Council of Motor Sports
* 2015 – 2016 **Professional Member**, Gait and Clinical Movement Analysis Society
* 2008 – Present **Life Member**, Indian Association of Physiotherapists

**Certifications:**

* Licensed Physical Therapist – Indian Association of Physiotherapists
* Certified Manual Therapist – Orthopedic Manipulative Rehabilitation
* Certified Instructor for CPR/AED; Adult, Children & Infant, American Red Cross

**Invited Presentation / Talks / Lectures:**

* Invited Speaker, MSU / MCCTR Wearable Technology Collaboration, UMMC, July 6th 2022
* Invited Panelist, Smart Fabrics Summit, March 28-29, 2022, Raleigh, NC.
* Invited Speaker, Biomechanics Interest Group (BIG), SEACSM, February 17-19, 2022, Greenville, SC.
* Invited Panel Speaker in Athlete Engineering Panel at the Vibration Institute Conference, July 2021, Arlington, TX.
* Invited Panel Speaker in Athlete Engineering Panel at the Tactical Athlete Summit, October 2021, Auburn, AL.
* Deep South NIOSH ERC Research Symposium 2020, Birmingham, AL.
* Invited Guest Speaker – UTHSC Department of Physical Therapy – Sept 2019
* Invited Conference Moderator (Clinical Biomechanics) – Mid-South Biomechanics Conference – Feb 2018.
* Deep South NIOSH ERC Research Symposium 2017, Auburn, AL.
* Ergonomics Assessment of Engine Assembly Tasks 2017 – PACCAR, Inc.
* The University of Memphis 2017 – Why do we Fall?
* Center for American Veterans, Mississippi State University 2016 – Military Research
* Ergonomics Assessment of Workplace Setting, Ole Miss Theatre, University of Mississippi, USA, 2013
* Ergonomics Awareness and Workplace Safety, Schwing Stetter India Pvt. Ltd, Chennai, India, 2013

**On Campus Collaborations:**

* Athlete Engineering and Human Factors (CAVS)
* Industrial Systems and Engineering
* Electrical and Computer Engineering
* Computer Science and Engineering
* Mechanical Engineering
* Agriculture and Biomedical Engineering
* Fashion Design and Merchandising
* Building Construction Science

**Off-Campus Collaborations:**

* University of Mississippi
* University of Mississippi Medical Center
* University of Alabama-Birmingham
* Troy University
* Texas State University
* University of Texas-Arlington
* University of North Alabama
* University of West Florida
* Georgia Southern University
* Northern Illinois University
* California State University-San Bernardino
* Coastal Carolina University
* Weber State University

**References:**

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Mississippi State University

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**John C. Garner III**, **Ph.D., CSCS\*D**

Dean and Professor College of Health & Human Services

Department of Kinesiology & Health Promotion

Troy University

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Email: [jcgarner@troy.edu](mailto:jcgarner@troy.edu); Phone: (334) 670 344