**Harish Chander, Ph.D.**

Associate Professor of Biomechanics

Co-Director of the Neuromechanics Laboratory

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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, Athlete Engineering

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 | 112 | 5 | 5 |
| Conference Proceedings & Presentations | 151 | - | 3 |
| 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 | 22 |
| I-10 Index | 52 |

1. Conner, N. O., Haworth, J. L., Nolff, M. R., **Chander, H**., & Goble, D. J. (2023). Six Weeks of at Home BTrackS Target Tracking Training Induces Sustained Dynamic Balance Improvement in Healthy Young Adults. *Medical Devices: Evidence and Research*, 81-89.
2. **Chander, H.,** McCrory, A., Chandler, S. J., Freeny, S., Griffith, A., Burch, R., ... & Knight, A. C. (2023). Noise Interference Impacts Simple and Choice Response Times during a Lower Extremity Cognitive–Motor Task. *Clinical and Translational Neuroscience*, *7*(1), 4.
3. **†** Lowell, R., Conner, N. O., Derby, H., Hill, C. M., Gillen, Z., Burch, R. F., Knight, A., Reneker, J. & **Chander, H.** (2023). Quick on Your Feet: Modifying the Star Excursion Balance Test with a Response Time Task. *International Journal of Environmental Research and Public Health*, 20, 1204. <https://doi.org/10.3390/ijerph20021204>.
4. Davarzani, S., Saucier, D., Talegaonkar, P., Parker, E., Turner, A., Middleton, C., W., Ball, J. E., Gurbuz, A., **Chander, H.**, Burch, R. F., Smith, B. K., Knight, A., & Freeman, C. (2023). Closing the Wearable Gap—Part X: Foot-ankle Kinematic Modeling via Deep Learning Models Based on a Smart Sock Wearable. *Wearable Technologies, 4*, e4*.*
5. **†** Derby, H., **Chander, H**., Kodithuwakku Arachchige, S. N. K., Turner, A., Knight, A. C., Burch, R. F., Freeman, C., Wade, C., & Garner, J. C. (2022). Occupational Footwear Design Influences Biomechanics and Physiology of Human Postural Control and Fall Risk. *Applied Sciences, 13(1),* 116. <https://doi.org/10.3390/app13010116>.
6. Strawderman, L., Jose, B., Burch, R., Warren, S., Taylor, C., Ball, J., ... & **Chander, H.** (2022). The applicability of existing acceptance models for enterprise organizational technology acceptance of wearables. *International Journal of Industrial Ergonomics*, *92*, 103381. <https://doi.org/10.1016/j.ergon.2022.103381>.
7. Persons, A. K., Middleton, C., Parker, E., Carroll, W., Turner, A., Talegaonkar, P., Davarzani, S., Saucier, D., **Chander, H**., ... & Burch V, R. F. (2022). Comparison of the Capacitance of a Cyclically Fatigued Stretch Sensor to a Non-Fatigued Stretch Sensor When Performing Static and Dynamic Foot-Ankle Motions. *Sensors*, *22*(21), 8168. <https://doi.org/10.3390/s22218168>
8. Mamun, A. A., Bormon, K. K., Rasu, M. N. S., Talukder, A., Freeman, C., Burch, R., & **Chander, H.** (2022). An Assessment of Energy and Groundwater Consumption of Textile Dyeing Mills in Bangladesh and Minimization of Environmental Impacts via Long-Term Key Performance Indicators (KPI) Baseline. *Textiles*, *2*(4), 511-523. <https://doi.org/10.3390/textiles2040029>
9. **†** 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>
10. **†** 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>
11. **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>
12. **†** 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>
13. 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>
14. 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>
15. 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>
16. 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>
17. Lehra, C., Omalekb, O., Osborne, S., Warren, Z., Saucier, D., Ball, J., & Chander, H. (2022). Wearable Applications in Rugby for Performance Quantification and Player Health Assessment: A Brief Review. *International Journal of Kinesiology and Sports Science*, *10*(2), 1-10. <http://dx.doi.org/10.7575/aiac.ijkss.v.10n.2p.1>.
18. **†** Kodithuwakku Arachchige SNK, Burch RFV, **Chander H,** Turner AJ, and Knight AC. (2022). The Use of Wearable Devices in Cognitive Fatigue: Current Trends and Future Intentions. *Theoretical Issues in Ergonomics Science*, 23 (2), 374-386. <https://doi.org/10.1080/1463922X.2021.1965670>
19. 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 Special Issue on Ankle Sprains and Instability, 21*(4), 428-446*.* <https://doi.org/10.1080/14763141.2021.1908414>.
20. **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 (20), 199-204. [https://doi.org/10.1177%2F1059712320971372](https://doi.org/10.1177/1059712320971372)
21. Luczak, T., Burch, R.F.V, Smith, B., **Chander, H.**, Lamberth, J., & Carruth, D. (2022). 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*, 236 (1), 60-69. [https://doi.org/10.1177%2F1754337120965421](https://doi.org/10.1177/1754337120965421)
22. Wilson SJ,Gdovin JR, Williams CC, Donahue PT, Mouser JG, Mutchler JA, Simpson JD, **Chander H**, & Garner JC. (2022). 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*, 236 (1), 36-42. [https://doi.org/10.1177%2F1754337120938269](https://doi.org/10.1177/1754337120938269).
23. 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>
24. **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>.
25. **†** 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>.
26. **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. *Biomechanics*, 1(2), 202-213; <https://doi.org/10.3390/biomechanics1020017>
27. 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>
28. 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>
29. **†** 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>
30. 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>.
31. 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>.
32. **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>.
33. **†** 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>
34. 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>
35. **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>
36. **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](https://doi.org/10.1177/1059712320971372)
37. 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>.
38. 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>.
39. **†** 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>
40. 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>
41. 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>
42. 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>.
43. **†** 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>.
44. **†** 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>
45. 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>
46. **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](https://doi.org/10.1177/2165079920934000).
47. **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>
48. **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>
49. **†** 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>.
50. 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>.
51. 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>
52. 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.
53. 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>.
54. 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](https://doi.org/10.1177/1747954119885244).
55. 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>.
56. 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>
57. **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>.
58. 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>.
59. **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>.
60. 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>.
61. **†** 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>
62. 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>
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70. 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>
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73. 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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90. **†** Turner, A.J., Swain, J.C., McWhirter, K.L., Knight, A.C., Carruth, D.W. & **Chander, H.** (2018). Influence of occupational footwear and workload on muscular exertion. *International Journal of Exercise Science;* 11 (1), 331-341. <https://digitalcommons.wku.edu/ijes/vol11/iss1/4>
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106. **Chander, H.,** Wade, C., & Garner, J. C. (2015). Impact of Occupational Footwear on Dynamic Balance Perturbations. *Footwear Science, 7(2),* 115-126. <https://doi.org/10.1080/19424280.2015.1031193>
107. **Chander, H.,** Garner, J. C., & Wade, C. (2015). Ground Reaction Forces in Alternative Footwear during Slip Events. *International Journal of Kinesiology and Sports Science, 3(2)*, 1-8. <http://dx.doi.org/10.7575/aiac.ijkss.v.3n.2p.1>
108. **Chander, H.,** MacDonald, C. J., Dabbs, N. C., Allen, C. R., Lamont, H. S., & Garner, J. C. (2014). Balance Performance in Female Collegiate Athletes. *Journal of Sports Science*, *2*, 13-20.
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110. Dabbs, N. C., MacDonald, C. J., **Chander, H.,** Lamont, H. S., Garner, J. C. (2014). The Effects of Whole-body Vibration on Balance in Elderly Women. *Medicina Sportiva. 18(1):* 10-15. <https://DOI:10.5604/17342260.1094780>
111. 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>
112. 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:**

1. Garner, J.C., Allen, C.R., **Chander, H.** & Knight, A.C. (2022). Applied Biomechanics Laboratory Manual. *Human Kinetics (with HKPropel)*. ISBN: 9781718207417.
2. 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 | $10,682,308.00  | $2,001,281.00  | $4,522,301.00 |
| Internal Funding | $135,250.00  | $135,250.00  | $0 |
| Total | $9,696,905.00  | $2,136,531.00  | $4,522,301.00 |
|  |  |  |  |

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| --- | --- | --- |
| **Funded** |   | **In-Review** |
| **Grant** | **Year** | **Role** | **Amount** |   | **Grant** | **Year** | **Role** | **Amount** |
| MCCTR/NIGMS | 2023 | PI | $53,935.00 |  |  |  |  |  |
| NSF - MRI | 2022 | Co-PI | $770,000.00 |   | NIOSH/CDC - U01 | 2023 | PI | $973,612.00 |
| NIOSH | 2022 | PI | $10,000.00 |   | NIH/NIA - R03 | 2023 | PI | $141,041.00 |
| MCCTR/NIH | 2021 | Co-PI | $39,988.00 |   | NSF - NRT  | 2022 | Co-PI | $2,999,986.00 |
| MSU ORED UG | 2022 | PI | $2,000 |  | NSF - REU | 2022 | Co-PI | $404,997.00 |
| NSF - iCorps (Site) | 2020 | PI | $3,000.00 |   | MCCTR/NIH  | 2022/23 | PI | $58,600.00 |
| 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) | 4.7 / 5-point scale |
| Median Score (New Format) (max score of 4) | 3.9 / 4-point scale |

**Mississippi State University:**

KI 8543-Postural and Locomotor Rehabilitation; EP 8503-Occupational Physiology; EP 8443-Neural Mechanisms in Human Movement and Exercise; EP 4503-Mechanical Analysis of Movement; EP 3643-Applied Anatomy & Pathophysiology; EP 3233-Anatomical Kinesiology; KI 3633-Rehabilitation Techniques in Sports Medicine; KI 3273-Athletic Training; PE 4283-Sports Biomechanics; PE 4853-Motor Learning and Skills Analyses; KI 2603-Medical Terminology.

**University of Mississippi:**

ES 338-Motor Control and Learning; ES 346-Kinesiology; HP 303-Prevention and Care of Athletic Injuries; ES 447-Biomechanics Laboratory; ES 349-Exercise Physiology Laboratory; HP 191-Personal and Community Health; EL 151-Resistance Training and Weightlifting.

**DIRECTORSHIP, LEADERSHIP AND MENTORSHIP**

2014 – Present Co-Director of the Neuromechanics Laboratory

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

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

2023 – Present Faculty Representative for the Undergraduate Research and Creative Discovery Committee

2023 – Present Faculty Mentor, MS Base Pair Program, Starkville High School and Mississippi State University

2021 – Present Faculty Affiliate, Center for Teaching and Learning (CTL), Mississippi State University (*Preparing Future Faculty & Intentional Course Design & Assessment*)

2018 – Present Faculty Advisor, Shackouls Honors College, Mississippi State University *(Honors thesis and Directed Individual Study)*

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

**LEADERSHIP AND MENTORSHIP TRAINING**

2023 – Present Mississippi State University, Office of Research and Economic Development (ORED) Faculty Leadership Intern (competitive paid leadership training)

2023 – Present Mississippi State University, Faculty Leadership Development Program

2022 Mississippi Center of Clinical and Translational Research (MCCTR) Mentoring Academy Fellow, Class of 2022.

2022 – 2023 College of Education Mid-Career Mentoring Program

2023 National Institute of Health (NIH) Center for Scientific Review (CSR), Training in Review Integrity and Mitigating Bias in Peer Review

**COMMITTEE LEADERSHIP AND SERVICE**

**Committee Service:**

2022 – Present Undergraduate Research and Creative Discovery Committee (URCDC), Shackouls Honors College, Mississippi State University *Dean Appointed Committee Member for College of Education.*

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

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

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

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

2019 – Present Vice Chair Faculty Council, College of Education, Mississippi State University, *Elected Vice Chair*

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

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

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

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

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

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

2019 – 2020 ISWD Faculty Search Committee, *Appointed Committee Member*

**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:**

2023 – Present Guest Editor, Special Issue: Wearable Sensors for Movement, Posture and Gait Analysis, *Sensors*

2023 – Present Associate Editor

 *Frontiers in Neuroscience*

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:**

* Invited NIH 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 FacultyChair: 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 Kodi - 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 Kodi – Graduate School GTA of the year award – 2020 – **Primary Advisor**
* Sachini Kodi-Kinesiology Exercise Science Master’s Student of the year award – 2019 – **Primary Advisor**
* Alana Turner – Kinesiology Exercise Science Master’s Student of the year award – 2018 – **Primary Advisor**
* Sachini Kodi – 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 Cindy Rose Teaching Award, College of Education, Mississippi State University, 2023
* Winner of the Graduate Advisor of the Year, Graduate Student Association, MSU Graduate School, 2021
* Winner of the Herb Handley Research Award, College of Education, Mississippi State University, 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, Biomechanics Interest Group (BIG), SEACSM, February 17-19, 2022, Greenville, SC.
* Invited Speaker, MSU / MCCTR Wearable Technology Collaboration, UMMC, July 6th 2022
* Invited Panelist, Smart Fabrics Summit, March 28-29, 2022, Raleigh, NC.
* 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 North Alabama
* University of West Florida
* Georgia Southern University
* Northern Illinois University
* California State University-San Bernardino
* Coastal Carolina University
* Weber State University

**Reference:**

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**Reuben Burch, Ph.D.**

Associate Vice President for Research | ORED

Jack Hatcher Endowed Chair for Engineering Entrepreneurship

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