Reuben F. Burch V, PhD

Research and Innovation Executive Administrator | Program Builder | Prolific Inventor | Professor and Chair
● Website Profile ● Google Scholar ● Patents ● LinkedIn.com

Executive Summary

Dynamic and entrepreneurial-minded executive research administrator with extensive leadership experience in both higher education and industry. Proven track record in inventing innovative products and programs by fostering collaborative interdisciplinary teams and cultivating cultures of excellence. Adept at delivering world-class solutions and enriching experiences across diverse sectors including academia, industry, military, politics, workforce, and sports.

Unique Research Administration Skills

Deep understanding of the research landscape with proven ability to foster multi-sector collaborations, secure large amounts of competitive funding, and effectively manage research priorities and infrastructure. Top skills include:

- **Program Building & Leadership:** Extensive career history of building successful programs from the ground up, emphasizing team building and fostering a culture of innovation and execution; applying principles from Lean thinking, Agile development, and Macroergonomics.
- **Innovation & Invention:** Ability to identify opportunities and develop innovative solutions consistently across a 20+ year career, particularly in areas such as wearable technology, logistics, autonomous vehicles, ruggedized handheld devices, weapon and satellite systems, and human health and performance.
- **Interdisciplinary Collaboration:** Work frequently involves crossing disciplinary boundaries, bringing together expertise from engineering, kinesiology, human factors, data science, textiles, workforce, sociology, communications, and other fields to address complex problems and develop comprehensively applied solutions.
- **Communication & Relationship Building:** Ability to effectively communicate and build relationships with diverse groups emphasizing the importance of requirements gathering and "speaking the same language" with partners in industry, military, academia, politics, and entrepreneurship, leading to network building and secured funding.
- **Strategic Vision & Process Optimization:** Adept in developing and implementing strategies aligned with university goals, focusing on research priorities and investments; skilled in creating research development roadmaps, technology management plans, and building comprehensive academic performance pipelines.

Academic Key Performance Indicators (KPIs)

KPIs From August 2016 to Present	*Totals Achieved*
Funded Awards	$40,751,291
Individual Contribution of Awards	$11,334,019
National Science Foundation (NSF) Awards Total as PI	$2,886,797
Published, In Press, & Accepted Refereed Journal Articles	93
Published, In Press, & Accepted Refereed Conference Papers	18
Patents Awarded / Patents Published / Trademarks Awarded	47 / 34 / 2
PhD / Masters Students Graduated	10 / 5
Total Courses Taught / Different Courses Taught / New Courses Created	23 / 9 / 10
Average Teaching Reviews (prior to Fall 2021; Fall 2021 and after)	4.59/5.0; 3.72/4.0
Academic Awards Received: Teaching / Research / Service / Leadership	4 / 11 / 5 / 2

Education

Mississippi State University — Mississippi State, MS
Ph.D. in Industrial & Systems Engineering — **2011 – 2014**

Kansas State University — Manhattan, KS
M.E.M. in Industrial & Manufacturing Systems Engineering — **2008 – 2010**

Mississippi State University — Mississippi State, MS
B.S. in Computer Engineering — **1997 – 2002**

Administrative Leadership Experience in Higher Education

Mississippi State University ***Mississippi State, MS***

Professor | Industrial & Systems Engineering Department **2025 – Present**

- Promoted two years early to full; recognized by peer and peer+ institutions as national leader in human factors, human performance, and athlete engineering.
- Top Secret clearance for work with Air Force human performance and the defense industrial base.

Associate Vice President for Research | Office of Research and Economic Development **2023 – Present**

- Provide strategic oversight and management to the Office of Research Development and the Office of Technology Management, enhancing faculty support and technology invention disclosure processes. This increased focus on innovation resulted in the highest numbers of disclosures, patent awards, and SBIR proposal wins in MSU history.
- Founded a new research institute and statewide training program within the first eight months of transitioning into the Associate VP role; aid in oversite and mentorship to all MSU center and institute directors based on real world experience of building and leading new programs across many sectors and disciplines.
- Led the effort to add the NSF PTIE (Promotion and Tenure Innovation and Entrepreneurship) guidelines into the university P&T faculty handbook so that all faculty can receive recognition for any innovative activity within research, teaching, and service; created the repeatable process for utilizing the ADR Council and Faculty Senate for establishing a campus-wide communication campaign requesting feedback for changes to any policy.
- Direct the Associate Deans of Research Council leading to numerous process improvement implementations across all colleges, including: Incorporating Innovation and Entrepreneurship elements in Promotion and Tenure (PTIE), Standardizing limited submission proposal competitions, Improving communication about funding opportunities, Supporting department-level research strategies, Promoting cross-college research collaboration, and more.
- Established international partnership with Deakin University in Australia aiding their development in a sister degree program to the Athlete Engineering Institute.
- Established and now oversee the relationships between MSU, community colleges across Mississippi, and AccelerateMS—the state of Mississippi's leading workforce oversight organization—providing workforce-related direction and recommendations to MSU staff and faculty.
- Established and now manage the relationship between the Columbus Air Force Base leadership and MSU, serving as the primary Civic Leader of the Air Force and Space Force for the state of Mississippi; coordinate events and processes between MSU and the Air Force.
- Built relationships that led to the physical expansion of MSU's presence at East Mississippi Community College, Mississippi Gulf Coast Community College, Northeast Mississippi Community College, Hinds Community College, Northwest Mississippi Community College, and the Columbus Air Force Base.
- Serve as the Principal Investigator for NSF I-Corps Southwestern Hub at MSU.
- Provide guidance and mentorship for program building and interdisciplinary relationship management across centers and departments, empowering faculty to build their own research programs and pursue funding.
- Established numerous research funded relationships with global industry and DoD leaders such as Toyota, Ingalls Shipbuilder, Booz Allen Hamilton, ABB, FANUC, T3i, Southwest Research Institute, etc.
- Engage in state economic development by annually supporting national agency authorization, appropriation, and plus up funding requests with state congressional personnel and staff.
- Completed EAB Leadership training program.

Executive Director & Founder | Athlete Engineering Institute **2024 – Present**

- Founded and expanded the Athlete Engineering research program within the Industrial and System Engineering department in 2017 to a nationally recognized institute in 2024; growing from twelve researchers in athletics and academics with $2,500 in funding to over 50 personnel and partnerships earning approximately $41M in awards.
- Funded the creation of Athlete Engineering using NSF award dollars for wearable device development.
- Aided in launching, recruiting, and funding the first Sports Science program within MSU Athletics; established a permanent relationship between athletics, academics, and the research centers. This partnership is the first of its kind for MSU and across the country.
- Created the second every NIL (Name, Image, and Likeness) mandatory course for credit required by all incoming student-athletes to ensure both compliance with and understanding of the changing landscape as students are now treated as professional athletics; the University of Tennessee was the first program to require NIL coursework.

- Receive ongoing funding from the NFL/BioCorp, creating the first research partnership between the NFL and MSU.
- Defined human-based research focused on the four athlete personas: sports athlete, industrial athlete, tactical athlete, and at-risk athlete; the only human factors research program focused on all athlete sectors.
- Created new curriculum that's accessible to coaches and military professionals as well as health and safety personnel through the only Athlete Engineering Certificate Program: https://www.online.msstate.edu/athlete
- Established a new conference event that showcases the state of Mississippi through the Athlete Engineering Summit; collectively bringing in over $600K in sponsorships: https://athleteengineeringsummit.com/
- Built a new laboratory and first of its kind at MSU with world class human performance, clinical-level equipment for data collection as well as wearable development and validation.
- Developed and protected a strong Athlete Engineering brand and social media presence in research and academics that is highly regarded across the entire human performance community.
- Co-founded Humo, LLC, a wearable startup spun out of Athlete Engineering, based on NSF-funded intellectual property, leading to venture capital funding and product sales, a first for MSU.
- Developed the pipeline system replicating industry-like performance for enhanced academic KPI productivity, spanning the 8 P's: projects, proposals, papers, patents, personnel, principles, promotion, and profit.
- Established a culture of grit that has led to many collaborative firsts across MSU, the community, and the state all within the first 5-years of the research program.

State Program Director & Founder | AiM UP (Advancements in Manufacturing Upskilling Program) 2023 – Present

- Founded and developed a unified approach to delivering mechatronics and other advanced manufacturing vocational and certified coursework across higher education created and integrated through MSU.
- Opened numerous AiM UP training lab locations across Mississippi housed in the state's leading community colleges.
- Awarded the state's top workforce program in 2024 along with over $28M in competitive funding.
- Created a multi-phased approach for technology training additions defined by an advisory panel of manufacturing practitioners who select the technology and topics based on economic growth needs.
- Built a statewide partnership across numerous higher education institutions and state government where all are fighting to keep the main thing the main thing: bringing in more jobs and creating better quality of life opportunities for our primary customer, Mississippians.

Jack Hatcher Endowed Chair in Engineering Entrepreneurship 2021 – Present

- Hold the most patents awarded to faculty in the history of MSU.
- Co-lead Engineering Entrepreneurship certificate program with the Director of the Entrepreneurship Center.

Interim Director | Office of Technology Management 2023 – 2024

- Focused the department's efforts on supporting SBIR/STTR proposals, growing intellectual property disclosures across the university and increasing SBIR awards.

Associate Professor | Industrial & Systems Engineering Department 2021 – 2025

- Promoted one year early to associate; most published researcher in ruggedized handheld device technology.

Associate Director | CAVS (Center for Advanced Vehicular Systems) 2020 – 2024

- Established and managed the Human Factors and Athlete Engineering department within CAVS; this was the first iteration of Athlete Engineering as associated within the centers at MSU.

Assistant Professor | Industrial & Systems Engineering Department 2016 – 2021

Service Leadership Experience in Higher Education

U.S. Air Force ***Columbus, MS***

Honorary Commander Mentor | Columbus Air Force Base 2024 – Present

- Provide guidance to all honorary commanders for the Columbus Air Force base so that community relationships with the base are maximized, emphasizing the primary pilot training mission.

Air Force and Space Force Air Education and Training Command (AETC) Civic Leader 2023 – Present

- Serve as the primary advisor between the state of Mississippi and big Air Force, providing human performance and economic development recommendations for the general of AETC.

Honorary Commander | Columbus Air Force Base **2022 – 2024**

- Created the relationship between Columbus Air Force Base and MSU including all legal agreements, teaching and educational support, pilot performance research, and athletics support.

The Communiversity at East Mississippi Community College ***Columbus, MS***
Technical Research Fellow **2020 – 2023**

- Created the industrial athlete research partnership, establishing the first research lucrative 4-year, 2-year relationship within Mississippi.

Mississippi State University ***Mississippi State, MS***
Faculty Research Fellow | NSPARC (National Strategic Planning & Analysis Research Center) **2019 – 2023**

- Developed a cross-center relationship for a human factors grant proposal pipeline.

Industry, Consulting, Entrepreneurship, & Elected Official Leadership Experience

Humo, LLC ***Starkville, MS***
Co-founder & Co-owner **2018 – Present**

- Co-founded the startup company and co-invented the awarded patents that led to creation of the "smart-sock" wearable design from which both Humo, LLC and the Athlete Engineering Institute would be built upon.

Deerfield ***New York, NY***
Consultant **2023 – 2025**

- Served as a wearable technologies and industrial athlete persona subject matter expert.

Strive Tech ***Bothell, WA***
Advisory Board Member **2021 – 2025**

- Served as industrial athlete persona and wearable validation research subject matter expert.

Giving Burch, LLC ***Rossville, TN***
Co-founder & Co-owner **2013 – 2018**

- Provided intellectual property creation mentorship and consultation to local Memphis companies that resulted in new patent awards and products.

Town of Rossville ***Rossville, TN***
Alderman & Vice-mayor (elected official) **2012 – 2016**

- Hosted Vice President Joe Biden for receipt of Norfolk Southern Railroad government grant.
- Via Tire & Battery Company, built the largest building in North America in 2016 recognized by President Obama administration.
- Hosted U.S. Department of Commerce visit from the SABIT Group Program including 20 delegates from 20 "Euro-Asian" countries.
- Oversaw the redesign of the historic district requirements and standards supporting growth downtown.
- Managed all emergency responder personnel, budgets, infrastructure, and state and county regulations for insurance and community support.
- Administered over 2-dozen employees and represented thousands of citizens.
- Designed, built, and implemented a new Police Reporting System for the courthouse.
- Via donations, brought in access point wireless network for the town creating a backbone for free community wi-fi.
- Implemented recycling for the first time in the county.

NexTech Solutions ***Germantown, TN***
Hiring Consultant for Enterprise Architects & IT Professionals **2010 – 2016**

- Interviewed, vetted, and recommended all consultant hires for job positions across the Memphis area in IT and technology-based engineering.

FedEx Express ***Memphis, TN***
Engineering Principal & R&D Lead **2011 – 2016**

- Established and led the first research and development department within FedEx Express.

- Directed corporate invention for numerous technologies spanning wearables, ruggedized handheld devices, smart containers, drone inspection, autonomous vehicle development and integration, smart dollies, and more.
- Created the first robotics and autonomous vehicle research program of ground-based vehicles for FedEx Express by establishing a multi-phase project scope and series of autonomy related goals; delivered the world's first non-human driver, refit cargo tractor because of this project and provided all deliverables on time and on budget; this work would become the foundation for the MSU autonomous vehicle program at CAVS.
- Researched, defined, and guided the selection process of the next generation Courier PowerPad device used in package pickup and delivery, an effort encompassing 45K units in the United States (30K units internationally), and created $30M in savings due to design changes identified in handheld research.
- Led a migration of industry through research that proved combining consumer device characteristics with industrial tools is a necessary paradigm shift in the evolution of human/tool interaction in industrially rugged environments; aided in the invention of the next generation of ruggedized handheld device style and formfactor that is currently used across FedEx, Walmart, The Home Depot, and more.
- Guided multiple vendors (Motorola/Zebra, Honeywell, Panasonic, and Samsung) to spend over $10M on future design research and implementation; resulting rugged device products have sold over 100,000 units to global leaders in retail, transportation, product distribution, and product manufacturing.
- Created a research partnership between FedEx Express and MSU by becoming primary investigator for FedEx Express in industrial robotics and autonomous vehicles; negotiated all legal contracts between FedEx and MSU to ensure FedEx retained ownership or all intellectual property and MSU would be given the right to publish.
- Developed and grew the academic network for FedEx Express by onboarding universities with required skillsets and expertise; negotiated all legal contracts and expectations between MSU, Kansas State University, Virginia Commonwealth University, University of Alabama, Arizona State University, and Worcester Polytechnic Institute.
- Worked directly with engineering departments in universities to setup real world research opportunities to advance student and faculty curriculum, sponsor classroom and senior project design, and sit on student advisory committees to guide graduate students in their research selection and focus areas.
- Created organization-wide process for how to handle all future patents, new potential intellectual properties, academic partnerships, and research and design using a three-pronged technology approach that integrates FedEx (needs the tool), Vendors (build the tool), and Universities (revolutionize the tool).
- Researched and analyzed tools and capabilities from vendors such as Motorola/Zebra, Honeywell/Intermec, Samsung, Dell, Toshiba, Panasonic, and Intel to determine human and computer/tool interaction opportunities. Provided feedback and guidance on how to improve vendor tools in the industrial space to Executive and Senior Management at multiple vendor companies.
- Acted as Voice of the Customer, drove requirements, and provided design support for future ruggedized handhelds (Honeywell, Motorola, & Panasonic) and tablets (Samsung) that are presentlty used within the industrial space.
- Completed numerous studies on the current global workforce to understand their skillsets and how they interact with their tools and equipment; studied methodologies including field research, time and error analysis, statistical analysis, Lean Six Sigma studies, and surveys.
- Served as lead engineer on one of Express' largest initiatives in the Full ASTRA CONs series of projects that, upon its completion, will see the elimination of paper closeouts for containers, paper load sheets for aircraft, and new reporting and success measurement paradigms for all global scanning processes.
- Identified and implemented a $500K portable printer solution for container closeout labels that reduced print time by as much as 20%.
- Managed the business prioritization and lifecycle expectations of multiple scanning systems and their associated hardware; introduced prioritization and scorecard processes to ensure operational effectiveness.

FedEx Services ***Collierville, TN***
Enterprise Architect Consultant **2010 – 2011**

- Cemented enterprise-level architectural design process for how to implement the process more quickly and efficiently speeding up design process approvals by over 25%.

Sedgwick ***Memphis, TN***
Software Configuration Manager & Enterprise Architect **2007 – 2010**

- Founded and managed the first Software Configuration Management department for Sedgewick.

- Invented, designed, and implemented a fully auditable software configuration management system for the world's largest claims handling software system, Sedgwick's JURIS, that features over 20 million lines of code across 14 production systems and regularly hosts over $12 billion in claims transactions, part of a $1 billion-dollar project initiative.
- Managed and optimized technology solution prioritization processes; designed methods for managing requirements for technology solutions presently still in use by the organization.
- Defined and implemented software configuration management processes; managed the software configuration department and all production systems.
- Introduced and deployed key controls such as SAS70 Type II, Sarbanes Oxley, and Internal Audit.

VRCO / Mechdyne (Subcontractor to Lockheed Martin for NASA, Navy, Army, DoD, & DoE) ***Virginia Beach, VA***
Software Engineer & Product Owner **2003 – 2007**

- Led the BFTT weapon system design for NAVSEA and invented a testing protocol that was used to identify and correct life-saving software bugs and is still used by Lockheed Martin; managed a $3M rewrite of the BFTT communicative hub of the naval tactical training simulator for US and Germany.
- Led software configuration management and tested protocols for the NASA Langley satellite data imagery project, ANGe, that converted data swathes into a subscription service for scientists; reverse-engineered NASA's satellite imaging subscription system as part of $5M ANGe project.
- Inventing, distributing, and implementing the first single-person portable virtual reality solution that was deployed across most universities and NASA locations along the east coast.
- Defined requirements for and performed all levels of systems analysis and quality assurance on multiple virtual reality (VR) products.
- Created documentation standards and authored all product documentation for government clients.
- Enabled better product delivery during client handoff as well as client training by acting as the VR engineering expert on numerous projects with a diverse client-base such as the DoE and DoD.

Ideal Software Systems, Inc. ***Meridian, MS***
Software Engineer & Technical Writer Consultant **2002 – 2006**

- Supported large client implementations and resolved high-dollar support issues which resulted in higher client retention.
- Enabled more efficient support ticket analysis and decreased expense costs by reducing the number of client-entered issues as well as the overall time it took to respond to support issues.
- Developed process and means to effectively regression test entertainment products after large sections of new functionality were introduced.

Teaching Experience

Average teaching review rating through 10 semesters, 27 sections, and 14 classes (2016-2021): 4.59/5.0

Average teaching review rating through 4 semesters, 26 sections, and 9 classes (2021-2023): 3.72/4.0

New Courses Created

- IE 1313 Lean Methods (replacement for IE 1911 Introduction to Industrial Engineering course)
- IE 4990/6990 Special Topics: Occupational Physiology (co-taught with former NBA Minnesota Timberwolves Strength Coach Dr. Bill Burgos)
- IE 4990/6990 Special Topics: Occupational Biomechanics (taught by former NBA Minnesota Timberwolves Strength Coach Dr. Bill Burgos)
- IE 4990 Special Topics: Name, Image, and Likeness (NIL; taught by former NBA Minnesota Timberwolves Strength Coach Dr. Bill Burgos)
- ECE/IE 8990 Special Topics: Design and Implementation of Wearable Technologies (co-taught with Dr. John Ball from Electrical & Computer Engineering)
- IE 4990/6990 Special Topics: Data Science in the Sports Ecosystem Part 1 (co-taught with former NBA Washington wizards Strength Coach Dr. Adam Petway)
- IE 4990/6990 Special Topics: Data Science in the Sports Ecosystem Part 2 (taught by former NBA Washington wizards Strength Coach Dr. Adam Petway)

- IE 8990 Special Topics: Fight, Flight, or Freeze in Human Performance (co-taught with Dr. Adam McLean of Booz Allen Hamilton)
- IE 8990 Special Topics: Human Performance Engineering (co-taught with Dr. Mark Derriso of Air Force Research Labs)
- IE/GA 4990/6990 Special Topics: Intellectual Property, Patent Design, and Company Startups (co-taught with Dr. Charles Freeman from Fashion Design and Marketing).

Publications, Intellectual Property, Peer Reviewed Articles, & Press

Published, In Press, & Accepted Refereed Journal Articles (*denotes student authors; ~denotes previous students; ^denotes practitioner collaboration authors)

1. ~Middleton, C., ~Saucier, D, *Davarzani, S., *Parker, E., *Sellers, T., *Chalmers, J., **Burch, R. F.**, Ball, J. E., Freeman, C., Smith, B., & Chander, H. (accepted). Closing the Wearable Gap: Validation of Pressure-Based Wearable Smart Sock During Gait. *Sensors*.
2. ^Petway, A. **Burch, R. F.**, ~Saucier, D., Gillen, Z., Epsley, S., Forbes, R., *Hurwitz, J., & King, J. (2025). Examining Prior Injury Relative to Achilles Tendon Ruptures in National Basketball Association Players. *Research in Sports Medicine*. https://doi.org/10.1080/15438627.2025.2481894.
3. Gillan, Z., **Burch, R. F.**, ~Saucier, D., Strawderman, L., ~Luczak, T., ^Piroli, A., ^Petway, A., & ^Rath, T. (2025). Changes in drop and repeated jump ground reaction forces after a 10-week offseason strength and conditioning program in Division 1 American football players. *International Journal of Strength and Conditioning*, 5(1). https://orcid.org/0000-0001-7976-6161.
4. *Talukder, A., Freeman, C., Kobia, C., & **Burch, R. F.** (2025). Assessing Corrosion Effects on the Electrical Performance of Wearable Photovoltaic Cells: A Comparative Analysis of Current Consistency and Resistance. *Materials*, 18(2), 267. https://doi.org/10.3390/ma18020267.
5. Strawderman, L., *Jose, B., **Burch, R. F.**, ~Saucier, D., *Poudel, A., & Smith, B. (2025). Wearable technology hesitancy in industrial applications. *IISE Transactions on Occupational Ergonomics and Human Factors*, 1-10. https://doi.org/10.1080/24725838.2024.2448686.
6. *Boothe, C. S., Strawderman, L., **Burch, R. F.**, Smith, B., & Bethel, C. L. (2024). Generalized User Experience Questionnaire (UEQ-G): A Holistic Tool for Measuring Multimodal User Experiences. *Journal of User Experience*, 19(2), 75-103.
7. *Talukder, A., Freeman, C., Kobia, C., & **Burch, R. F.** (2024). Evaluating the Impact of Laundering on Electrical Performance of Wearable Photovoltaic Cells: A Comparative Study of Current Consistency and Resistance. *Textiles*, 4(4), 493-506. https://doi.org/10.3390/textiles4040028.
8. *Lowell, R., ~Saucier, D., Chander, H., **Burch, R. F.**, & Gillen, Z. (2024). Effects of an Auditory Versus Visual Stimulus on Reaction and Response Time During Countermovement Jumps. *Perceptual and Motor Skills*, 00315125241256688.
9. *Jose, B., Strawderman, L., **Burch, R. F.** ~Saucier, D., &*Kikuta, R. (2024). Passive vs. active wearable technology monitoring trunk flexion in elementary teachers. *International Journal of Human Factors & Ergonomics*. https://doi.org/10.1504/IJHFE.2024.10064665.
10. Gillen, Z., **Burch, R. F.**, ~Saucier, D., Strawderman, L., ~Luczak, T., ^Piroli, A., ^Petway, A., & ^Rath, T. (2024). Effects of a strength and conditioning offseason program on countermovement jump ground reaction forces in Division I American football players. *Journal of Strength and Conditioning Research*, 38(3), 435-443. https://doi.org/https://doi.org/10.1519/JSC.0000000000004660.
11. *Kodithuwakku Arachchige, S. N. K., Chander, H., *Brown, C., *Freeman, H. R., *Shojaei A., Knight, A., **Burch, R. F.**, and Chen, C. C. (2024). Effects of Virtual Heights, Dual-Tasking, and Training on Static Postural Stability. *Applied Ergonomics*, 114, 104145. https://doi.org/https://doi.org/10.1016/j.apergo.2023.104145.
12. *Kodithuwakku Arachchige, 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. *Safety and Health at Work*, 14(3), 303–308. https://doi.org/https://doi.org/10.1016/j.shaw.2023.07.005.
13. *Persons, A. K., *Middleton, C., *Parker, E., Ball, J. E., **Burch, R. F.**, ^Macias, D., Simpson, L., & Elder, S. (2023). Electromechanical Fatigue Properties of Dielectric Elastomer Sensors Based on Plantarflexion of the Human Ankle Joint. *ECS Sensors Plus*, 2(1), 017001. https://www.doi.org/10.1149/2754-2726/acb21e.
14. *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: Foot-ankle

Kinematic Modeling via Deep Learning Models Based on a Smart Sock Wearable. *Wearable Technologies*, 4, E4. https://www.doi.org/10.1017/wtc.2023.3.

15. Chander, H., *McCrory, A., *Chandler, S. J., *Freeny, S., *Griffith, A., **Burch, R. F.**, Strawderman, L., & 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. https://doi.org/10.3390/ctn7010004.
16. *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.
17. Stannard, C., Freeman, C., Strawderman, L., Moore, M., Newhauser, W., **Burch, R. F.**, Black, C., & ~Saucier, D. (2022). Development of the Mask Fit Instrument (MFI) and comparison of commercially available masks on 3D-printed NIOSH headforms. *Textile Research Journal*, 92(19-20), 3619-3628. https://doi.org/10.1177/00405175221089287.
18. *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.
19. Strawderman, L., *Jose, B., **Burch, R. F.**, Warren, S., ^Taylor, C., Ball, J., Freeman, C., & 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.
20. *Persons, A. K., *Middleton, C., *Parker, E., *Carroll, W., *Turner, A., *Talegaonkar, P., *Davarzani, S., ~Saucier, D., Chander, H., Ball, J. E., Elder, S. H., & **Burch, 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.
21. *Mamun, A. A., *Bormon, K. K., *Rasu, M. N. S., *Talukder, A., Freeman, C., **Burch, R. F.**, & Chander, H. (2022). An Assessment of Energy and Groundwater Consumption of Textile Dyeing Mills in Bangladesh and Minimize Environmental Impacts via Long-term KPI Baseline. *Textiles*, 2(4), 511-523. http://dx.doi.org/10.3390/textiles2040029.
22. *Derby, H., *Conner, N., *Talukder, A., *Griffith, A., Freeman, C., **Burch, R., F.**, Simpson, J., Goble, D., Knight, A., & Chander, H. (2022). Impact of sub-clinical and clinical compression socks on postural stability tasks among individuals with ankle instability. *Healthcare*, 10(7), 1271. http://dx.doi.org/10.3390/healthcare10071271.
23. *Lehr, C., *Omalek, O., *Osborne, S., *Warren, Z., ~Saucier, D., **Burch R. F.**, Ball, J., & Chander, C. (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.
24. **Burch, R. F.**, Strawderman, L., *Ross, T., Bian, L., ^King, K., Babski-Reeves, K., & *Nur, F. (2022). Handheld Device Formfactor Effects on Worker Productivity During Loading Tasks: A Case Study. *International Journal of Services Technology and Management*, 28(1/2), 46-67. http://dx.doi.org/10.1504/IJSTM.2022.123504.
25. *Talukder, A., *Derby, H., Freeman, C., **Burch, R. F.**, 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.
26. Freeman, C., **Burch, R. F.**, Strawderman, L., Black, C., ~Saucier, D., Rickert, J., Wilson, J., Seitz, H., & ^Stull, J. (2022). Do they really work? Quantifying Fabric Mask Effectiveness to Improve Public Health Messaging Corresponding. *International Journal of Environmental Research and Public Health*. 19(11), 6372. https://doi.org/10.3390/ijerph19116372.
27. *Fava, S., *Nichols, A., *Ratledge, M., Black., C., Freeman, C., **Burch, R. F.**, Wilson J., & Rickert, J. (2022). Prototype development: The Speakeasy© mask. *International Journal of Fashion Design, Technology and Education*, 15(3), 342-350. https://doi.org/10.1080/17543266.2022.2065537.
28. ^Petway, A. J., ^Rimer, E., ^Gabbett, T., **Burch, R. F.**, ^Espley, S., ^Wright, J., & ^Wright, T. (2022). Examining Training Load and Match-Play Performance in Collegiate Division I Basketball. *International Journal of Sport Physiology and Performance*, 2(1). https://doi.org/10.47206/ijsc.v2i1.114.
29. *Gaddis, E., **Burch, R. F.**, Strawderman, L., Chander, H., Smith, B., Freeman, C., & ^Taylor, C. (2022). The Impact of using Wearable Devices on the Operator During Material Handling Tasks. *International Journal of Industrial Ergonomics*. 89, 103294. https://doi.org/10.1016/j.ergon.2022.103294.
30. *Arlotti, J., *Carroll, W., *Afifi, Y., *Albuquerque, L., *Talegaonkar, P., **Burch, R. F.**, Ball, J. E., Chander, H., & ~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.

31. *McDevitt, S., *Hernandez, H., *Hicks, J., *Lowell, R., *Bentahaikt, H., **Burch, R. F.**, Ball, J., Chander, H., Freeman, C., ^Taylor, C., ^Anderson, B. (2022). Wearables for Biomechanical Performance Optimization and Risk Assessment. *Bioengineering*. 9(32). https://doi.org/10.3390/bioengineering9010033.
32. *Johnson, J., Strawderman, L., **Burch, R. F.**, Mohammadi-Aragh, J., & Easley, J. (2022). Specificity of Discipline as an Influence on Entry-Level Engineering Occupational Alignment. *International Journal of Engineering Education*. 38(1), 211-223.
33. *Johnson, J., Strawderman, L., **Burch, R. F.**, Mohammadi-Aragh, J., & Easley, J. (2022). Depth of Discipline as an Influencing Factor of Engineering Identity. *International Journal of Engineering Education*. 38(1), 145-157.
34. Freeman, C., **Burch, R. F.**, Black, C., Strawderman, L., Rickert, J., Wilson, J., ~Saucier, D., *Ratledge, M., *Fava, S., Smith, B., Waggoner, C., ^Taylor, C., ^Skaggs, G., & ^Callans, T. (2021). Filtration Efficiency and Differential Pressure of Fabrics used in Non-medical Masks Based on SARS-COVID-19 Particle Size. *Textiles Research Journal*, 00405175211046056. https://doi.org/10.1177/00405175211046056.
35. *Carroll, W., *Fuller, S., *Lawrence, J. M., *Osborne, S., *Stallcup, R., **Burch, R. F.**, Freeman, C., Chander, H., Strawderman, L., ^Crane, C., ^Younger, T., ^Duvall, A., ^Mock, S., ^Petway, A., ^Burgos, B., & ^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.
36. Chander, H., *Kodithuwakku Arachchige, S. N. K., *Turner, A., **Burch, R. F.**, Reneker, J. Knight, A., 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(19), 10511. https://doi.org/10.3390/ijerph181910511.
37. *Kodithuwakku Arachchige, S. N. K., Chander, H., Knight, A., **Burch, R. F.**, Chen, C. C., & Reneker, J. (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(19), 10144. https://doi.org/10.3390/ijerph181910144.
38. **Burch, R. F.**, Strawderman, L., Collins, G. Y., Mohammadi-Aragh, J., ^Martin, J., & ^Taylor, C. (2021). Development of a Collaborative Research Partnership Between Academia and Industry: A case study. *International Journal of Engineering Education*, 37(6), 1619-1629.
39. *Kodithuwakku Arachchige, S. N. K., **Burch, R. F.**, Chander, H., *Turner, A., & Knight, A. (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.
40. *Carroll, W., *Turner, A., *Talegaonkar, P., *Peranich, P., *Parker, E., *Middleton, C., ~Saucier, D., **Burch, R. F.**, Ball, J. E., Smith, B. K., Chander, H., Knight, A., & Freeman, C. (2021). Closing the Wearable Gap – Part IX: Validation of an Improved Ankle Motion Capture Wearable. *IEEE Access*, 9, 114022-114036. https://doi.org/10.1109/ACCESS.2021.3102880.
41. ~Saucier, D., *Davarzani, D., **Burch, R. F.**, Chander, H., Strawderman, Freeman, C., L., ^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.
42. Chander, H., *Kodithuwakku Arachchige, S. N. K., *Turner, A., **Burch, R., F.**, Knight, A., Wade, C., & Garner, J. (2021). Role of occupational footwear and workload on lower extremity muscle activation during maximal exertions and postural stability tasks. *Biomechanics*, 2(17), 202-213. https://doi.org/10.3390/biomechanics1020017.
43. *Persons, K., Ball, J. E., Freeman, C., ^Macias, D., Simpson, C. L., Smith, B., **Burch, R. F.** (2021). Fatigue Testing of Wearable Sensing Technologies: Issues and Opportunities. *Materials*, 14(14), 4070. https://doi.org/10.3390/ma14154070.
44. *Turner, A., *Carroll, W., *Kodithuwakku Arachchige, S. N. K., ~Saucier, D., **Burch, R. F.**, Ball, J. E., Smith, B. K., Freeman, C., Knight, A., & Chander, H. (2021). Closing the Wearable Gap – Part VIII: A Validation Study for a Smart Knee Brace to Capture Knee Joint Kinematics. *Biomechanics*, 1(1), 152-162. https://doi.org/10.3390/biomechanics1010012.
45. *Stewart, E., *Smidebush, M., *Kodithuwakku Arachchige, S. N. K., *Turner, A., **Burch, R. F.**, 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.
46. *Nur, F., *Harrison, D., *Deb, S., **Burch, R. F.**, & Strawderman, L. (2021). Identification of Interventions to Improve Employee Morale in Physically Demanding, Repetitive Motion Work Tasks: A pilot case study. *Cogent Engineering*, 8(1), 1914287 (1-17). https://doi.org/10.1080/23311916.2021.1914287.

47. Freeman, C., **Burch, R. F.**, Strawderman, Black, C., ~Saucier, D., L., Wilson, J., Rickert, J., *Bealor, S., ^Taylor, C., *Ratledge, M., *Fava, S., Smith, B., Waggoner, C., Nichols, A., ^Skaggs, G., & ^Callans, T. (2021). Preliminary Evaluation of Filtration Efficiency and Differential Pressure ASTM F3502 Testing Methods of Non-medical Masks using a Face Filtration Mount. *International Journal of Environmental Research and Public Health*, 18, 4124. https://doi.org/10.3390/ijerph18084124.
48. *Smith, E., **Burch, R. F.**, Strawderman, L., Chander, H., & Smith, B. (2021). A Comfort Analysis of Using Smart Glasses During the "Picking" and "Putting" Task. *International Journal of Industrial Ergonomics*, 83, 103133. https://doi.org/10.1016/j.ergon.2021.103133.
49. *Phan, P., *Vo, A. T. N., *Bakhtiarydavijani, A., **Burch, R. F.**, Smith, B., Ball, J., Chander, H., Knight, A., & Prabhu, R. K. (2021). In Silico Finite Element Analysis of the Foot Ankle Complex Biomechanics: A Review. *Journal of Biomechanical Engineering*, 143(9), 090802. https://doi.org/10.1115/1.4050667.
50. *Brown, C., *Hicks, J., *Rinaudo, C., & **Burch, R. F.** (2021). The Use of Augmented and Virtual Reality in Ergonomic Applications for Education, Aviation, and Maintenance, *Ergonomics in Design: The Quarterly of Human Factors Applications*, 31(4), 1-9. http://dx.doi.org/10.1177/10648046211003469.
51. *King, M., *Miller, S. **Burch, R. F.**, ^Reimann, W., ^Shalala, J., ^Piroli, A., ^Bichey, C., & ^Rath, T. (2021). Quantification of Information Transmission in Signal Play-calling for NCAA Division 1 College Football: A comprehensive literature review. *International Journal of Kinesiology and Sports Science*, 9(1), 24-35. http://dx.doi.org/10.7575/aiac.ijkss.v.9n.1p.24.
52. *Nur, F., **Burch, R. F.**, Marufuzzaman, M., & Smith, B. (2020). Handheld Technology Selection, Evaluation, and Risk Reduction using Stochastic Analytical Hierarchical Process: A Standardization of the Request for Proposal Process. *Engineering Management Journal*, 1-14. https://doi.org/10.1080/10429247.2020.1847561.
53. *Sebastian, K. **Burch, R. F.**, & ^Rogers, P. (2020). American Football: Understanding the Injury, Difficulty in Helmet Optimization and Expert Perspectives. *International Journal of Kinesiology and Sports Science*, 8(4), 34-41. http://dx.doi.org/10.7575/aiac.ijkss.v.8n.4p.34.
54. *Davarzani, S., *Helzer, D., *Rivera, J., ~Saucier, D., Jo, E., **Burch, R. F.**, Chander, H., Strawderman, L., Ball., J. E., Smith, B. K., ~Luczak, T., ^Ogden, L., ^Crane, C., ^Bollwinkel, D., ^Burgos, B., & ^Petway, A. (2020). Validity and reliability of Strive™ 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.
55. *Kodithuwakku Arachchige, S. N. K., Chander, H., **Burch, R. F.**, Knight, A. C., & Carruth, D. W. (2020). Occupational falls: Interventions for fall detection, prevention and safety promotion. *Theoretical Issues in Ergonomics Science*, 22(5), 603-618. https://doi.org/10.1080/1463922X.2020.1836528.
56. *Luczak, T., **Burch, R. F.**, Smith, B., Chander., H., Lamberth, J., Carruth, D., ^Crane, C., ^Bollwinkel, D., & ^Burgos, B. (2020). Using Human Factors Engineering and Garvin's Product Quality to Develop a Basketball Shoe Taxonomy. *Proceedings of the Institution of Mechanical Engineering, Part P: Journal of Sports Engineering and Technology*, 236(1), 60-69. https://doi.org/10.1177/1754337120965421.
57. *Talegaonkar, P., ~Saucier, D., *Carroll, W., *Peranich, P., *Parker, E., *Middleton, C., *Davarzani, S., *Turner, A., *Persons, K., *Casey, L., *Fletcher, J., **Burch, R. F.**, Ball., J. E., Chander, H., Knight, A., Luczak, T., Smith, B. K., & 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(1-26). https://doi.org/10.3390/electronics9091457.
58. Chander, H., *Kodithuwakku Arachchige, S. N. K., Wilson, S. J., Knight, A. C., **Burch, R. F.**, 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.2020.10031690.
59. *Doyle, P., *Rinaudo, C., **Burch, R. F.**, & Babski-Reeves, K. (2020). Using Cognitive Task Similarities to Compare UAS Control Station Designs to Air Traffic Control Workstations: A pilot study. *International Journal of Human Factors and Ergonomics*, 7(2), 174-190. https://doi.org/10.1504/IJHFE.2020.10031692.
60. *Luczak, T., **Burch, R. F.**, Smith, B., Carruth, D., Lamberth, J., ^Crane, C., ^Hoppa, M., & ^Burgos, B. (2020). Effect of Basketball Shoe Design on Perception of Comfort and Fit and Jumping Performance of Elite NCAA Division 1 Student-Athletes: Part II. *International Journal of Kinesiology and Sports Science*, 8(3), 45-57. http://dx.doi.org/10.7575/aiac.ijkss.v.8n.3p.45.
61. *Brown, C., *Holland, A., *Delarosa, J., *Doude, **Burch, R. F.**, ^Reimann, W., ^Rath, T. & ^Piroli, A. (2020). Comprehension and Selective Visual Attention in Play-calling Signage in NCAA Division 1 Football: A comprehensive literature review. *International Journal of Kinesiology and Sports Science*, 8(3), 1-13. http://dx.doi.org/10.7575/aiac.ijkss.v.2n.1p.1.

62. *Kodithuwakku Arachchige, S. N. K., Chander, H., *Turner, A. T., 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(3), 35. https://doi.org/10.3390/safety6030035.
63. *Shelly, Z., **Burch, R. F.**, Strawderman, L., Tian, W., ^Piroli, A., & ^Bichey, C. (2020). Using K-means Clustering to Create Training Groups for Elite American Football Student-Athletes Based on Game Demands. *International Journal of Kinesiology and Sports Science*, *8*(2), 47-63. http://dx.doi.org/10.7575/aiac.ijkss.v.8n.2p.47.
64. *Luczak, T., **Burch, R. F.**, Smith, B., Carruth, D., & Lamberth, J. (2020). Effect of Basketball Shoe Design on Jumping Performance of Elite NCAA Division 1 Student-Athletes: Part I. *International Journal of Kinesiology and Sports Science*, *8*(2), 17-25. http://dx.doi.org/10.7575/aiac.ijkss.v.8n.2p.17.
65. Chander, H., **Burch, R. F.**, *Talegaonkar, P., *Saucier, D., *Luczak, T., Ball, J. E., *Turner, A. J., *Kodithuwakku Arachchige, S. N. K., *Carroll, W., Smith, B. K, Knight, A. C., & Prabhu, R. K. (2020). Wearable Stretch Sensors for Human Movement Monitoring and Fall Detection in Ergonomics. *International Journal of Environmental Research and Public Health*, *17*(10), 3554(1-19). https://doi.org/10.3390/ijerph17103554.
66. *Davarzani, S., *Saucier, D., *Peranich, P., *Carroll, W., *Turner, A., *Parker, E., *Middleton, C., *Nguyen, P., *Robertson, P., Smith, B., Ball, J., **Burch, R. F.**, Chander, C., Knight, A., Prabhu, R., & *Luczak, T. (2020). Closing the Wearable Gap—Part VI: Human gait recognition using deep learning methodologies. *Electronics*, *9*(5), 796(1-17). https://doi.org/10.3390/electronics9050796.
67. *Nur, F., *Alrahahleh, A., **Burch, R. F.**, Babski-Reeves, K., & Marufuzzaman, M. (2020). Last Mile Delivery Drone Selection and Evaluation using the Interval Valued Inferential Fuzzy TOPSIS. *Journal of Computational Design and Engineering*. https://doi.org/10.1093/jcde/qwaa033.
68. *Nur, F., Marufuzzaman, M., Puryear, S. M., Wall, E., & **Burch, R. F.** (2020). Inland Waterway Ports Selection and Evaluation using Stochastic Analytical Hierarchy Process. *International Journal of Systems Science: Operations & Logistics*, 1-21. https://doi.org/10.1080/23302674.2020.1734881.
69. *Reid, B., *Schreiber, K., *Shawhan, J., *Stewart, E., **Burch, R. F.**, & ^Reimann, W. (2020). Reaction Time Assessment for Coaching Defensive Players in NCAA Division 1 American Football: A Comprehensive Literature Review. *International Journal of Industrial Ergonomics*, *77*, 102942 (1-10). https://doi.org/10.1016/j.ergon.2020.102942.
70. *Beckham, E. C., **Burch, R. F.**, Strawderman, L., Babski-Reeves, K., Bian, L., & ^King, K. (2020). Feedback mode preference and performance improvement with a handheld scanning device. *International Journal of Services and Operations Management*, *35*(3), 321-338. https://doi.org/10.1504/IJSOM.2020.10027016.
71. *Luczak, T., **Burch, R. F.**, Smith, B., Carruth, C., Lamberth, J., Chander, H., Knight, A., Ball, J., & Prabhu, R. (2020). Closing the Wearable Gap – Part V: Development of Pressure-Sensitive Sock Utilizing Soft Sensors. *Sensors*, *20*(1), 208. https://doi.org/10.3390/s20010208.
72. Rahman, M. M., Deb, S., Strawderman, L., Smith, B., **Burch, R. F.** (2020). Evaluation of transportation alternatives for aging population in the era of self-driving vehicles. *International Association of Traffic and Safety Sciences Research*, *44*(1), 30-35. https://doi.org/10.1016/j.iatssr.2019.05.004.
73. *Luczak, T., **Burch, R. F.**, Lewis, E., Chander, H., & Ball, J. (2020). Athletics Wearable Technology State of the Art Review: What 113 strength and conditioning coaches and athletic trainers from the USA said about technology in sports. *International Journal of Sports Science and Coaching*, *15*(1), 26-40. https://doi.org/10.1177/1747954119885244.
74. *Hicks, J., *Wall, E., *Shelly, Z., *Jones, P. **Burch, R. F.**, & ^Reimann, W. (2019). Signal Detection in American Football Play Calling: A Comprehensive Literature Review. *Cogent Psychology*, *6*(1), 1703471. https://doi.org/10.1080/23311908.2019.1703471.
75. *Saucier, D., *Davarzani, S., *Turner, A., *Luczak, T., *Nguyen, P., *Carroll, W., **Burch, R. F.**, Ball, J. Smith, B., Chander, H., Knight, A., & Prabhu, R. (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.
76. *Shelly, Z., *Stewart, E., *Fonville, T., **Burch, R. F.**, Chander, H., Strawderman, L., May, D., Smith, J., Carruth, D., & ^Bichey, C. (2019). Helmet Prototype Response Time Assessment Using NCAA Division 1 Collegiate Football Athletes. *International Journal of Kinesiology & Sports Science*, *7*(4), 53-65. https://dx.doi.org/10.7575/aiac.ijkss.v.7n.4p.53.
77. Jaradat, R., *Stirgus, E., Goerger, S. R., Buchanan, R. K., *Hossain, N. U. I., Ma, J. & **Burch, R. F.** (2019) Assessment of Workforce Systems Preferences/ Skills Based on Employment Domain. *Engineering Management Journal*, *32*(1), 61-73. https://doi.org/10.1080/10429247.2019.1672407.

78. Chander, H., *Stewart, E., *Saucier, D., *Nguyen, P., *Luczak, T., Ball, J., Knight, A., Smith, B., **Burch, R. F.**, & Prabhu, R. (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.
79. *Chen, C., *Zhang, L., *Luczak, T., *Smith, E., & **Burch R. F.** (2019). Using Microsoft HoloLens to improve memory recall in anatomy and physiology: A pilot study to examine the efficacy of using augmented reality in education. *Journal of Educational Technology Development and Exchange*, *12*(1), 17-31.
80. Deb, S., Rahman, M. M., Strawderman, L., **Burch, R. F.**, & Smith, B. (2019). How the older population perceives self-driving vehicles. *Transportation Research Part F: Psychology and Behaviour*, *65*, 242-257. https://doi:10.1016/j.trf.2019.08.002.
81. *Saucier, D., *Luczak, T., *Nguyen, P., *Davarzani, S., *Peranich. P., Ball, J., **Burch, R. F.**, Smith, B., Chander, H., Knight, A., & Prabhu, R. (2019). Closing the Wearable Gap – Part II: Sensor orientation and placement for foot and ankle joint kinematic measurements. *Sensors*, *19*(16), 3509 (1-19). https://doi:10.3390/s19163509.
82. *Ruholla, J. M., Smith, B. K., **Burch, R. F.**, & *Vick, S. C. (2019). Engineering Soft Skills vs. Engineering Entrepreneurial Skills. *International Journal of Engineering Education*, *35*(4), 988-998.
83. **Burch, R.**, Strawderman, L., *Cannon, A., & *Vander Linde, R. (2019). Prospective intervention opportunities regarding device ownership and the reduction of damage to handheld ruggedized devices with shift workers. *Human Factors and Ergonomics in Manufacturing & Service Industries*, *29*(2), 187-198. https://doi.org/10.1002/hfm.20774.
84. *Poudel, S. R., *Quddus, M. A., Marufuzzaman, M., Bian, L., & **Burch, R. F.** (2019). Managing Congestion in a Multi-modal Transportation Network Under Biomass Supply Uncertainty. *Annals of Operations Research*, *273*(1), 739-781. http://dx.doi.org/10.1007/s10479-017-2499-y.
85. Liu, Y., *LeClair, A., Doude, M., & **Burch, R. F.** (2018). Development of a Data Acquisition System for Autonomous Vehicle Systems. *International Journal of Vehicle Structures & Systems, 10*(4), 251-256. https://doi.org/10.4273/ijvss.10.4.04.
86. *Davenport, C., Gafford, J., Sherif, S., Mazzola, M., Ball, J., Doude, M., & **Burch, R. F.** (2018). A Kinetic Modeling Framework for Prediction of Instantaneous Status of Towing Vehicle Systems. *SAE International Journal of Passenger Cars: Mechanical Systems*, *11*(2), 177-190. https://doi.org/10.4271/06-11-02-0015.
87. *Luczak, T., *Saucier, D., **Burch R. F.**, Ball, J. E., Chander, H., Knight, A., *Wei, P., & *Iftekhar, T. (2018). Closing the Wearable Gap: Mobile systems for kinematic signal monitoring of the foot and ankle. *Electronics*, *7*(7), 117(1-24). https://doi.org/10.3390/electronics7070117.
88. **Burch, R. F.**, *Deb, S., Strawderman, L., & ^King, K. (2017). Global Differences in Industrial Handheld Device Preference. *Journal of Design Research, 15*(2), 128-149. http://dx.doi.org/10.1504/JDR.2017.10007129.
89. **Burch, R. F.** & Smith, B. (2017). Using Simulation to Teach Lean Methodologies and the Benefits for Millennials. *Total Quality Management & Business Excellence*, *30*(3-4), 320-334. http://dx.doi.org/10.1080/14783363.2017.1303330.
90. **Burch, R. F.**, Strawderman, L., & Carruth, D. (2016). Ruggedized Handheld Device Input Effectiveness by Generation: A Time and Error Study. *International Journal of Industrial Ergonomics*, *54*, 146-153. http://dx.doi.org/10.1016/j.ergon.2016.06.001.
91. **Burch, R. F.**, Strawderman, L., & Bullington, S. (2016). Global Corporation Rollout of Ruggedized Handheld Devices: A Lean Six Sigma Case Study. *Total Quality Management & Business Excellence*, *27*(1-2), 1-16. http://dx.doi.org/10.1080/14783363.2014.934521.
92. *Cannon, A. B., Strawderman, L., & **Burch, R. F.** (2015). Evaluating Change in User Error When Using Ruggedized Handheld Devices. *Applied Ergonomics*, *51*, 273-280. http://dx.doi.org/10.1016/j.apergo.2015.05.001.
93. **Burch, R. F.**, & Strawderman, L. (2014). Leveraging Generational Differences to Reduce Knowledge Transfer and Retention Issues in Public Administration. *Public Administration Research*, *3*(2), 61-75. http://dx.doi.org/10.5539/par.v3n2p61.

Published Refereed Conference Articles (*denotes student authors; ~denotes previous students; ^denotes practitioner collaboration authors)

1. *Gourley, K., *Hagan, F., *Talukder, A., *Jose, B., Strawderman, L., Freemen, C., **Burch, R. F.**, Knight, A., & Chander, H. (2024). Impact of Different Personal Flotation Devices During a Simulated Workload on Physiological Responses. *International Journal of Exercise Science: Conference Proceedings*, 16(3), 271.

2. *Kikuta, R., Carruth, D., Ball, J., **Burch, R. F.**, Kageyama, I. (2023). Risk assessment and observation of driver with pedestrian using instantaneous heart rate and HRV. Human Factors in Transportation. *AHFE (2024) International Conference*, 95, 1-9. http://doi.org/10.54941/ahfe1003827.
3. ~Luczak, T., Freeman, C., *Middleton, C., *Parker, E., **Burch, R. F.**, ~Saucier, D., Lamberth, J., Chen, C. C., Gillen, Z., Knight, A., Chander, H., Ball., J. E., ^Jackson, K., ^Neff, M., Tian, L., Tang, Y., Grice, S., Taquino, M., & Duclose, M. (2023). The Opportunity to Collect Kinetic Forces during a Round of Golf using Wearable Devices: Single-Subject Case Study – The Full Swings. *2023 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*.
4. *Lowell, R., ~Saucier, D., Chander, H., **Burch, R. F.**, & Gillen, Z. (2023). Effects of Auditory and Visual Stimuli on Reaction and Response Time During Countermovement Jumps. *International Journal of Exercise Science: Conference Proceedings*, 16(2), 210.
5. ~Luczak, T., Freeman, F., **Burch, R. F.**, ~Saucier, D., Chander, H., Barlow, J., Ball, J., Nelsen, P., *Parker, E., *Middleton, C., Strawderman, L., Mohammadi-Aragh, J., Gillen, Z., Smith, B., Jones, J. A., Duclos, M., Taquino, M., & Grice, S. (2022). Athlete Engineering Baseline Ecosystem: innovative technologies to enhance human performance. *Proceedings of the TechConnect 2022 Conference*, Washington D.C., 95-98.
6. ~Luczak, T., Nelson, P., **Burch, R.**, Ball, J., Barlow, J., Duclos, M., & Taquino, M. (May 2022). A survey of technical challenges in computer vision via machine and deep learning for human pose estimation. *Proceedings of the 2022 IISE Annual Conference*, Seattle, WA.
7. Strawderman, L., Saucier, D., **Burch, R.**, *Jose, B., Taylor, C., Ball, J., & Warren, S. (May 2022). Wearable Device Acceptance in Manufacturing: An Industrial Case Study. *Proceedings of the 2022 IISE Annual Conference*, Seattle, WA.
8. Luczak, T., Jones, A., **Burch, R. F.**, Barlow, J., Nelson, P., Grice, S., Taquino, M., Duclos, M., & Morgan, C. (2022). Advancing tangible augmented game objects for use in a golf swing, elf-service training environment: Report of Work-in-Progress with a Multidisciplinary Emphasis. *IEEE VR 2022*, Virtual conference.
9. Strawderman, L., Warren, S., **Burch, R. F.**, ^Taylor, C., Ball, J., & *Jose, B. (Nov. 2021). Bridging the Work-Technology Gap: Overcoming Barriers through Education and Understanding. *Mid-South Educational Research Association (MSERA) Annual Meeting*, New Orleans, LA.
10. *Parker, E., Freeman, C., *Persons, K., **Burch, R. F.**, Ball, J., ~Saucier, D., *Middleton, C., *Peranich, P., Chander, H., Knight, A., Smith, B., *Davarzani, D., *Prabhakar, S., *Talegaonkar, P., & *Turner, A. (2021). Deterioration of textile vs. electronic components over time in athletic wearable devices. In *Smart Biomedical and Physiological Sensor Technology XVIII* (Vol. 11757, p. 1175702). International Society for Optics and Photonics. https://doi.org/10.1117/12.2587975.
11. *Peranich, P., *Carrol, W., *Middleton, C., *Parker, E., *Prabhakar, S., *Talegaonkar, P., *Davarzani, S., ~Saucier, D., *Persons, K., Ball., J., **Burch, R. F.**, Chander, H., Knight, A., & Smith, B. (2021). Low-voltage capacitive measurement methodology for dielectric elastomers. In *Smart Biomedical and Physiological Sensor Technology XVIII* (Vol. 11757, p. 1175707). International Society for Optics and Photonics. https://doi.org/10.1117/12.2587797.
12. **Burch, R. F.**, Strawderman, L., ^Piroli, A., Chander, H., Tian, W., & ^Murphy, F. (Jul. 2019). The Importance of Baselining Division 1 Football Athlete Jumping Movements for Performance, Injury Mitigation, and Return to Play. In *Proceedings of International Conference on Applied Human Factors and Ergonomics* (pp. 332-344). Springer, Cham. https://doi.org/10.1007/978-3-030-20145-6_33.
13. *Quintero-Restrepo, W., Smith, B. K., Reeves, K. L., & **Burch, R. F.** (2018). Metrics and process description for CAD-Platform automation of ETO products - Literature Review. In *Proceedings of IISE Annual Conference and Expo 2018*, Orlando, Florida, USA, 1067-1072.
14. *Nur, F., Marufuzzaman, M., **Burch, R. F.**, Puryear, S. & ~Wall, E. (2018). Analyzing the Competitiveness of Inland Waterway Ports: An Application of Stochastic Analytical Hierarchy Process. In *Proceedings of IISE 2018 Annual Conference and Expo,* Orlando, Florida, USA, 47-52.
15. Liu, Y., *LeClair, A., ~Doude, M., Liu, Y., & **Burch, R. F.** (2018). Design, Installation, and Validation of a Data Acquisition System. In *Proceedings of ASME 2018 International Mechanical Engineering Congress and Exposition*, Pittsburgh, PA, USA. https://doi.org/10.1115/IMECE2018-87071.
16. Liu, Y., Davenport, C., Gafford, J., Mazzola, M., Ball, J., Abdelwahed, S., ~Doude, M., & **Burch R. F.** (2017). Development of a Dynamic Modeling Framework to Predict Instantaneous Status of Towing Vehicle Systems. *WCX 17: SAE World Congress Experience*. https://doi.org/10.4271/2017-01-1588.

17. Heier Stamm, J. L., **Burch, R. F.**, & Medal, H. R. (2015, June). Students' Experiences with an Open-ended Client Project in a Graduate Course. *2015 ASEE Annual Conference and Exposition*, Seattle, Washington. http://dx.doi.org/10.18260/p.24770.
18. **Burch, R. F.**, & Strawderman, L. (2014). Touchscreen Versus Keypad: Ruggedized Handheld Device Input Effectiveness by Generation. *2014 Industrial and Systems Engineering Research Conference*, Montreal: Institute of Industrial Engineers.

Awarded Patents (*denotes student inventors; ~denotes previous students; ^denotes practitioner collaboration inventors)

1. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patents No. 12026013. Awarded July 2, 2024.
2. ~Parker, E., ~Middleton, ~C., Carroll, W., **Burch, R. F.**, & Ball, J. E. Plug and Play Mount. U.S. Patent No. D1031678. Awarded June 18, 2024.
3. **Burch, R. F.**, ^King, K., ^McKinney, H., ^Prather, A., ^Frommelt, K., & ^Khan, S. Systems and methods for improved automatic chocking of a cargo dolly. U.S. Patents No. 11912325. Awarded February 27, 2024.
4. ~Middleton, ~C., Carroll, W., ~Parker, E., **Burch, R. F.**, & Ball, J. E. Electrical Enclosure with Magnetic Cable Spooling Management. U.S. Patent No. D1016017. Awarded February 27, 2024.
5. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Aerial drone-based systems and methods for adaptively providing an aerial relocatable communication hub within a delivery vehicle. U.S. Patent No. 11861549. Awarded January 2, 2024.
6. ~C., Carroll, W., ~Parker, E., ~Middleton, **Burch, R. F.**, & Ball, J. E. Wire tie down. U.S. Patent No. D1007280S. Awarded December 12, 2023.
7. **Burch, R. F.**, ^King, K., ^McKinney, H., ^Prather, A., ^Frommelt, K., & ^Khan, S. Systems and methods for improved cargo dolly for remote cargo holding pins for a cargo dolly. U.S. Patents No. 11827264. Awarded November 28, 2023.
8. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Aerial drone-based systems and methods for adaptively providing an aerial relocatable communication hub within a delivery vehicle. U.S. Patent No. 11775919. Awarded October 3, 2023.
9. **Burch, R. F.**, Abelwahed, S., Ball, J. E., ~Doude, M., Gafford, J., Hannis, T., Liu, Y., Mazzola, M., ^McKinney, H. Enhanced systems, apparatus, and method for improved automated and autonomous operation of logistics ground support equipment. U.S. Patent No. 11747820. Awarded September 5, 2023.
10. Freeman, C. & **Burch, R. F.**, & Casey, L. Face filtration mount for automated for automated filter tester. U.S. Patent No. D991057S. Awarded July 4, 2023.
11. **Burch, R. F.**, ~Luczak, T., ~Saucier, D., Ball, J., & Chander, H. Wearable flexible sensor motion capture system. Patents No. 11672480. Awarded June 13, 2023.
12. **Burch, R. F.**, ^King, K., ^McKinney, H., ^Prather, A., ^Frommelt, K., & ^Khan, S. Systems and methods for improved cargo dolly for remote cargo holding pins for a cargo dolly. U.S. Patents No. 11608101. Awarded March 21, 2023.
13. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patents No. 11567534. Awarded January 31, 2023.
14. **Burch, R. F.**, & ^Scott, M. C. Methods, apparatus, and systems for managing logistics information related to a container having a scale. U.S. Patents No. 11526833. Awarded December 13, 2022.
15. **Burch, R. F.**, ^King, K., ^McKinney, H., ^Prather, A., ^Frommelt, K., & ^Khan, S. Systems and methods for improved cargo dolly for remote cargo holding pins for a cargo dolly. U.S. Patents No. 11433935. Awarded September 6, 2022.
16. **Burch, R. F.**, ^King, K., ^McKinney, H., ^Prather, A., ^Frommelt, K., & ^Khan, S. Systems and methods for improved automatic chocking of a cargo dolly. U.S. Patents No. 11414120. Awarded August 16, 2022.
17. **Burch, R. F.**, ^Hawk, C., ^King, K., ^McKinney, H., ^Prather, A., & ^Thomas, R. Unit load device and panel enhancements for a unit load device. U.S. Patents No. 11404891. Awarded August 2, 2022.
18. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patents No. 11320858. Awarded May 3, 2022.
19. **Burch, R. F.**, Abelwahed, S., Ball, J. E., Doude, M., Gafford, J. *Hannis, T., Liu, Y., Mazzola, M., & ^McKinney, H., Enhanced systems, apparatus, and methods for improved automated and autonomous operation of logistics ground support equipment. U.S. Patent No. 11157011. Awarded October 26, 2021.
20. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Enhanced systems, apparatus, and methods for positioning of an airborne relocatable communication hub supporting a plurality of wireless devices. U.S. Patent No. 11107030. Awarded August 31, 2021.

21. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Systems and methods for monitoring the internal storage contents of a shipment storage using one or more internal monitor drones. U.S. Patent No. 11068836. Awarded July 20, 2021.
22. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Paired drone-based systems and methods for conducting a modified inspection of a delivery vehicle. U.S. Patent No. 11042831. Awarded June 22, 2021.
23. **Burch, R. F.**, ^Scott, M. Methods, apparatus, and systems for generating a content-related notification using a container interface display apparatus. U.S. Patent No. 11017346. Awarded May 25, 2021.
24. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Aerial drone-based systems and methods for adaptively providing an aerial relocatable communication hub within a delivery vehicle. U.S. Patent No. 10878365. Awarded December 29, 2020.
25. **Burch, R. F.**, ^Scott, M. Managing logistics information related to a logistics container using a container interface display apparatus. U.S. Patent No. 10878364. Awarded December 29, 2020.
26. Ball, J. E., **Burch, R. F.**, *Cagle, L., *Davenport, C., Gafford, J. *Hannis, T., *Hegman, A., *LeClair, A., Liu, Y., Mazzola, M., ^McKinney, H., *Reza, T., *Shi, J., *Wei, P., & *Iacomini, D. Systems and methods for enhanced collision avoidance on logistics ground support equipment using multi-sensor detection fusion. U.S. Patent No. 10761538. Awarded September 1, 2020.
27. **Burch, R. F.**, ^Cawein, W. Systems, apparatus, non-transient computer readable media, and methods for automatically managing and monitoring a load operation related to a logistics container using a scanning sensor node. U.S. Patent No. 10740576. Awarded August 11, 2020.
28. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Paired drone-based systems and methods for conducting a verified inspection of delivery vehicle. U.S. Patent No. 10679172. Awarded June 9, 2020.
29. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Systems and methods for monitoring the internal storage contents of a shipment storage using one or more internal monitor drones. U.S. Patent No. 10664791. Awarded May 26, 2020.
30. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Paired drone-based systems and methods for conducting a modified inspection of a delivery vehicle. U.S. Patent No. 10657485. Awarded May 19, 2020.
31. **Burch, R. F.** & ^Cawein, B. Systems, apparatus, and methods for dynamically transforming dimensional data representing a shipping item being loaded within a container using a scanning sensor node. U.S. Patent No. 10586084. Awarded March 10, 2020.
32. **Burch, R. F.** & ^Cawein, B. Systems, apparatus, non-transient computer readable media, and methods for detecting an operational safety condition within a logistics container using a scanning sensor node. U.S. Patent No. 10546163. Awarded January 28, 2020.
33. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Meadows, W. & *Bilson, M. Mounting Plate. U.S. Patent No. D870524. Awarded December 24, 2019.
34. **Burch, R. F.**, ^Doyle, D., & ^Popp, B. Systems and Methods for Inspecting a Delivery Vehicle Using a Paired Inspection Drone. U.S. Patents No. 10482418. Awarded November 19, 2019.
35. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patents No. 10198030. Awarded February 5, 2019.
36. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Camera Mount Housing (Version A). U.S. Patent No. D836701. Awarded December 25, 2018.
37. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Camera Mount Housing (Version B). U.S. Patent No. D831097. Awarded October 16, 2018.
38. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Cover Plate for Data Logger. U.S. Patent No. D831031. Awarded October 16, 2018.
39. **Burch, R. F.** & ^Cawein, B. Systems, apparatus, and methods for dynamically transforming scan data using a scanning sensor node. U.S. Patents No. 10089503. Awarded October 2, 2018.
40. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D., Lever Arm Gear Selector. U.S. Patent No. D822562. Awarded July 10, 2018.
41. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D., RPM Sensor Bracket. U.S. Patent No. D816611. Awarded May 1, 2018.
42. ^Scott, M. & **Burch, R. F.** Managing Logistics Information Related to a Logistics Container Using a Container Interface Display Apparatus. European Patent No. 3259209. Awarded January 18, 2018.
43. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Wheel Angle Sensor Adapter Housing. U.S. Patent No. D806621. Awarded January 2, 2018.
44. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Wheel Angle Sensor Adapter Puck. U.S. Patent No. D806620. Awarded January 2, 2018.

45. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Bilson, M., *Morris, G., & *Hesler, D. Lever Arm Gear Selector. U.S. Patent No. D806619. Awarded January 2, 2018.
46. **Burch, R. F.**, ^McKinney, H., ~Doude, M., *LeClair, A., *Meadows, W., *Price, M., *Bilson, M., *Morris, G., & *Hesler, D., Diagnostic Connector Adaptor. U.S. Patent No. D798823. Awarded October 3, 2017.
47. **Burch, R. F.** & ^Cawein, B. Apparatus, Non-transient Computer Readable Media, and Methods for Automatically Quantifying Space Within a Logistics Container Using a Scanning Sensor Node Disposed Within the Container. U.S. Patents No. 9576166. Awarded February 21, 2017.

Registered Trademarks

1. **Burch, R. F.** Athlete Engineering. Trademark Registration No. 6,961,580. Awarded January 24, 2023.
2. **Burch, R. F.** & Middleton, C. AiM UP (Advancements in Manufacturing Upskilling Program). Trademark Registration No. 7,739,193. Awarded March 25, 2025.

Published Patents

1. **Burch, R. F.**, Saucier, D., Middleton, J. C., Chander, H., Teer, T. C., Ouhabi, M. E. M., & White, C. Mobile Markerless Motion Capture for Movement Data Collection in All Environments. Patent Publication No. 20250046077, published February 6, 2025. Patent Pending.
2. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patent Publication No. 20230367366, published November 16, 2023. Patent Awarded.
3. **Burch, R. F.**, King, K., McKinney, H., Prather, A., Frommelt, K., & Khan, S. Systems and methods for improved cargo dolly for remote cargo holding pins for a cargo dolly. U.S. Patent Publication No. 20230227090, published July 20, 2022. Patent Awarded.
4. **Burch, R. F.**, King, K., McKinney, H., Prather, A., Frommelt, K., & Khan, S. Systems and methods for improved cargo dolly for remote cargo holding pins for a cargo dolly. U.S. Patent Publication No. 20220348244, published November 3, 2022. Patent Awarded.
5. **Burch, R. F.**, King, K., McKinney, H., Prather, A., Frommelt, K., & Khan, S. Systems and methods for improved automatic chocking of a cargo dolly. U.S. Patent Publication No. 20220324500, published October 13, 2022. Patent Awarded.
6. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patent Publication No. 20220221900, published July 14, 2022. Patent Awarded.
7. **Burch, R. F.**, Doyle, D., & Popp, B. ENHANCED SYSTEMS, APPARATUS, AND METHODS FOR POSITIONING OF AN AIRBORNE RELOCATABLE COMMUNICATION HUB SUPPORTING A PLURALITY OF WIRELESS DEVICES. U.S. Patent Publication No. 20220004980, published January 6, 2022. Patent Pending.
8. **Burch, R. F.**, Abelwahed, S., Ball, J. E., Doude, M., Gafford, J., Hannis, T., Liu, Y., Mazzola, M., McKinney, H. ENHANCED SYSTEMS, APPARATUS, AND METHOD FOR IMPROVED AUTOMATED AND AUTONOMOUS OPERATION OF LOGISTICS GROUND SUPPORT EQUIPMENT. U.S. Patent Publication No. 20210397196, published December 23, 2021. Patent Awarded.
9. **Burch, R. F.**, Doyle, D., & Popp, B. AERIAL DRONE-BASED SYSTEMS AND METHODS FOR ADAPTIVELY PROVIDING AN AERIAL RELOCATABLE COMMUNICATION HUB WITHIN A DELIVERY VEHICLE. U.S. Patent Publication No. 20210142271, published May 13, 2021. Patent Awarded.
10. **Burch, R. F.**, Doyle, D., & Popp, B. AERIAL DRONE-BASED SYSTEMS AND METHODS FOR ADAPTIVELY PROVIDING AN AERIAL RELOCATABLE COMMUNICATION HUB WITHIN A DELIVERY VEHICLE. U.S. Patent Publication No. 20210073727, published March 11, 2021. Patent Awarded.
11. **Burch, R. F.**, Doyle, D., & Popp, B. SYSTEMS AND METHODS FOR MONITORING THE INTERNAL STORAGE CONTENTS OF A SHIPMENT STORAGE USING ONE OR MORE INTERNAL MONITOR DRONES. U.S. Patent Publication No. 20200258039, published August 13, 2020. Patent Awarded.
12. **Burch, R. F.**, Doyle, D., & Popp, B. PAIRED DRONE-BASED SYSTEMS AND METHODS FOR CONDUCTING A MODIFIED INSPECTION OF A DELIVERY VEHICLE. U.S. Patent Publication No. 20200258038, published August 13, 2020. Patent Awarded.
13. **Burch, R. F.**, King, K., McKinney, H., Prather, A., Frommelt, K., & Khan, S. SYSTEMS AND METHODS FOR IMPROVED AUTOMATIC CHOCKING OF A CARGO DOLLY. U.S. Patent Publication No. 20200039556, published February 6, 2020. Patent Awarded.
14. **Burch, R. F.**, King, K., McKinney, H., Prather, A., Frommelt, K., & Khan, S. SYSTEMS AND METHODS FOR IMPROVED CARGO DOLLY FOR REMOTE CARGO HOLDING PINS FOR A CARGO DOLLY. U.S. Patent Publication No. 20200039557, published February 6, 2020. Patent Awarded.

15. **Burch, R. F.**, Hawk, C., King, K., McKinney, H., Prather, A., & Thomas, R. UNIT LOAD DEVICE AND PANEL ENHANCEMENTS FOR A UNIT LOAD DEVICE. U.S. Patent Publication No. 20200036201, published January 30, 2020. Patent Awarded.
16. **Burch, R. F.**, Abelwahed, S., Ball, J. E., Doude, M., Gafford, J., Hannis, T. J., Liu, Y., Mazzola, M., & McKinney, H. ENHANCED SYSTEMS, APPARATUS, AND METHODS FOR IMPROVED AUTOMATED AND AUTONOMOUS OPERATION OF LOGISTICS GROUND SUPPORT EQUIPMENT. U.S. Patent Publication No. 20200033872, published January 30, 2020. Patent Awarded.
17. **Burch, R. F.**, Luczak, T., Saucier, D., Ball., J., & Chander, H. Wearable Flexible Sensor Motion Capture System. U.S. Patent Publication No. 20200008745, published January 9, 2020. Patent Pending.
18. Ball, J. E., **Burch, R. F.**, Cagle, L., Davenport, C., Gafford, J. Hannis, T., Hegman, A., LeClair, A., Liu, Y., Mazzola, M., McKinney, H., Reza, T., Shi, J., Wei, P., & Iacomini, D. Systems and Methods for Enhanced Collision Avoidance on Logistics Ground Support Equipment Using Multi-sensor Detection Fusion. U.S. Patent Publication No. 20190265714, published August 29, 2019. Patent Awarded.
19. **Burch, R. F.** Wearable Devices for Courier Processing and Methods of Use Thereof. U.S. Patent Publication No. 20190171250, published June 6, 2018. Patent Awarded.
20. **Burch, R. F.**, Doyle, D., & Popp, B. Systems and Methods for Monitoring the Internal Storage Contents of a Shipment Storage Using One or More Internal Monitor Drones. U.S. Patent Publication No. 20180089622, published March 29, 2018. Patent Awarded.
21. **Burch, R. F.**, Doyle, D., & Popp, B. Enhanced Systems, Apparatus, and Methods for Positioning of an Airborne Relocatable Communication Hub Supporting a Plurality of Wireless Devices. U.S. Patent Publication No. 20180086457, published March 29, 2018. Patent Awarded.
22. **Burch, R. F.**, Doyle, D., & Popp, B. Systems and Methods for Inspecting a Delivery Vehicle Using a Paired Inspection Drone. U.S. Patent Publication No. 20180086455, published March 29, 2018. Patent Awarded.
23. **Burch, R. F.**, Doyle, D., & Popp, B. Paired Drone-Based Systems and Methods for Conducting a Modified Inspection of a Delivery Vehicle. U.S. Patent Publication No. 20180088578, published March 29, 2018. Patent Awarded.
24. **Burch, R. F.**, Doyle, D., & Popp, B. Aerial Drone-Based Systems and Methods for Adaptively Providing an Aerial Relocatable Communication Hub Within a Delivery Vehicle. U.S. Patent Publication No. 20180086456, published March 29, 2018. Patent Awarded.
25. **Burch, R. F.**, Doyle, D., & Popp, B. Paired Drone-Based Systems and Methods for Conducting a Verified Inspection of a Delivery Vehicle. U.S. Patent Publication No. 20180089611, published March 29, 2018. Patent Awarded.
26. **Burch, R. F.** & Cawein, B. Systems, apparatus, and methods for dynamically transforming scan data using a scanning sensor node. U.S. Patent Publication No. 20160238425, published August 18, 2016. Patent Awarded.
27. **Burch, R. F.** & Cawein, B. SYSTEMS, APPARATUS, NON-TRANSIENT COMPUTER READABLE MEDIA, AND METHODS FOR DETECTING AN OPERATIONAL SAFETY CONDITION WITHIN A LOGISTICS CONTAINER USING A SCANNING SENSOR NODE. U.S. Patent Publication No. 20160239791, published August 18, 2016. Patent Awarded.
28. Scott, M. & **Burch, R. F.**, METHODS, APPARATUS, AND SYSTEMS FOR MANAGING LOGISTICS INFORMATION RELATED TO A CONTAINER HAVING A SCALE. U.S. Patent Publication No. 20160239802, published August 18, 2016. Patent Pending.
29. **Burch, R. F.** & Cawein, B. SYSTEMS, APPARATUS, AND METHODS FOR QUANTIFYING SPACE WITHIN A CONTAINER USING A REMOVABLE SCANNING SENSOR NODE. U.S. Patent Publication No. 20160238347, published August 18, 2016. Patent Pending.
30. **Burch, R. F.** & Cawein, B. SYSTEMS, APPARATUS, NON-TRANSIENT COMPUTER READABLE MEDIA, AND METHODS FOR AUTOMATICALLY MANAGING AND MONITORING A LOAD OPERATION RELATED TO A LOGISTICS CONTAINER USING A SCANNING SENSOR NODE. U.S. Patent Publication No. 20160239790, published August 18, 2016. Patent Awarded.
31. Scott, M. & **Burch, R. F.**, M. MANAGING LOGISTICS INFORMATION RELATED TO A LOGISTICS CONTAINER USING A CONTAINER INTERFACE DISPLAY APPARATUS. U.S. Patent Publication No. 20160239801, published August 18, 2016. Patent Awarded (separately in U.S. and Europe).
32. Scott, M. & **Burch, R. F.**, M. METHODS, APPARATUS, AND SYSTEMS FOR GENERATING A CONTENT-RELATED NOTIFICATION USING A CONTAINER INTERFACE DISPLAY APPARATUS. U.S. Patent Publication No. 20160239799, published August 18, 2016. Patent Pending.
33. **Burch, R. F.** & Cawein, B. APPARATUS, NON-TRANSIENT COMPUTER READABLE MEDIA, AND METHODS FOR AUTOMATICALLY QUANTIFYING SPACE WITHIN A LOGISTICS CONTAINER USING A SCANNING SENSOR NODE

DISPOSED WITHIN THE CONTAINER. U.S. Patent Publication No. 20160239795, published August 18, 2016. Patent Awarded.

34. **Burch, R. F.** & Cawein, B. SYSTEMS, APPARATUS, AND METHODS FOR DYNAMICALLY TRANSFORMING DIMENSIONAL DATA REPRESENTING A SHIPPING ITEM BEING LOADED WITHIN A CONTAINER USING A SCANNING SENSOR NODE. U.S. Patent Publication No. 20160239792, published August 18, 2016. Patent Awarded.

Published Magazine Articles (*denotes student authors)

1. *Stevens, M. (via **Burch, R. F.**, & *Luczak, T.) (2020). Athlete Engineering Student Pipeline: Bridging the Gap Between Human Factors and Performance Technology, *NEXUS: A Magazine by NSPARC at Mississippi State University*, Spring, 32-38. Accessed via: https://www.nsparc.msstate.edu/wp-content/uploads/2020/05/NEXUSspringActiveLinks1.pdf.
2. **Burch, R. F.** (2019). Technology Arms Race: A Story About Wearables, Athletics, and Trust. *NEXUS: A Magazine by NSPARC at Mississippi State University*, Spring, 2-7. Accessed via: https://www.nsparc.msstate.edu/wp-content/uploads/2019/04/NEXUS-SPRING-SCREEN-SPREAD.pdf.

Published Press Releases, Videos, and Podcasts About Research

1. Mitchell, J. T. (2025). Former NFL star Ndamukong Suh to speak at Mississippi State. Super Talk: Mississippi Media https://www.supertalk.fm/former-nfl-star-ndamukong-suh-to-speak-at-mississippi-state/.
2. Pollitz, M. (2025). Former Super Bowl Champion visits MSU for Athlete Engineering Summit. Msstate.edu. https://www.msstate.edu/newsroom/article/2025/02/former-super-bowl-champion-visits-msu-athlete-engineering-summit.
3. Rodenmeyer, K. (2025). MSU, EMCC formalize Communiversity partnership to upskill workforce for advanced manufacturing. Msstate.edu. https://www.msstate.edu/newsroom/article/2025/01/msu-emcc-formalize-communiversity-partnership-upskill-workforce-advanced.
4. Garraway, M. (2025). Community engagement projects recognized at MSU with annual awards. Msstate.edu. https://www.msstate.edu/newsroom/article/2025/01/community-engagement-projects-recognized-msu-annual-awards.
5. Flanagan, C. (2024). Aligning Industry and Education for a Skilled Workforce. OEM Magazine. https://www.oemmagazine.org/business/workforce/article/22916021/aligning-industry-and-education-for-a-skilled-workforce.
6. Carskadon, J. (2024). MSU partners with HII's Ingalls Shipbuilding on innovative heat safety technologies. Msstate.edu. https://www.msstate.edu/newsroom/article/2024/06/msu-partners-hiis-ingalls-shipbuilding-innovative-heat-safety-technologies.
7. Carskadon, J. (2024). MSU launches new Athlete Engineering Institute to drive innovations in human factors, human performance, technology. Msstate.edu. https://www.msstate.edu/newsroom/article/2024/04/msu-launches-new-athlete-engineering-institute-drive-innovations-human.
8. Harris, A. (2024). MSU Athlete Engineering Summit returns April 16-17 with focus on building a human performance culture. Msstate.edu. https://www.msstate.edu/newsroom/article/2024/02/msu-athlete-engineering-summit-returns-april-16-17-focus-building-human.
9. Carskadon, J. (2023). Communiversity event highlights alignment with industry and education, MSU-led initiatives. Msstate.edu. https://www.msstate.edu/newsroom/article/2023/12/communiversity-event-highlights-alignment-industry-and-education-msu-led.
10. Taylor, C. (2023). Episode 4 - Special Guest Dr. Reuben Burch. Scratchin' The Surface of Workforce Development. https://podcasts.apple.com/us/podcast/episode-4-special-guest-dr-reuben-burch/id1704481946?i=1000638132283.
11. Verbenkov, M. (2023). Episode #121: How Wearables are Transforming Sports. Future Tech and Foresight. https://futuretechandforesight.com/podcast/how-wearables-are-transforming-sports/.
12. Carskadon, J. (2023). MSU's Burch moves to ORED as associate vice president. Msstate.edu. https://www.msstate.edu/newsroom/article/2023/08/msus-burch-moves-ored-associate-vice-president.
13. Barrett, T. (2023). You Wear It Well: Creating New Wearables Technologies for a Brighter Future. MAFES Discovery. 18 (Summer), 7-9.
14. Duvall, A. (2023). Talkin' Pitt #17: Athlete Engineering at Mississippi State University – Reuben Burch. Talkin' Pitt Sports Performance. https://open.spotify.com/episode/5rz0A877q7iwHWJjUgHOpD.

15. Industrial Media Staff (2023). MSU, Toyota Mississippi, Liquid Wire Inc. Partner to Improve Industrial Safety Through Wearables. Manufacturing.NET. https://www.manufacturing.net/safety/news/22861815/msu-toyota-mississippi-liquid-wire-inc-partner-to-improve-industrial-safety-through-wearables.
16. Carskadon, J. (2023). MSU, Toyota Mississippi and Liquid Wire Inc. partner on effort to improve industrial safety through wearable technology. Msstate.edu. https://www.msstate.edu/newsroom/article/2023/05/msu-toyota-mississippi-and-liquid-wire-inc-partner-effort-improve.
17. Shields, K. (2023). MSU hosts 2nd Athlete Engineering Summit at EMCC Communiversity. WCBI. https://www.wcbi.com/msu-hosts-2nd-athlete-engineering-summit-at-emcc-communiversity/.
18. Waldron, R. (2023). Using AI to enhance warfighter performance. Federal News Network. https://federalnewsnetwork.com/off-the-shelf/2023/05/using-ai-to-enhance-warfighter-performance/.
19. Blin, J. (2023). Upside Chat: Dr Reuben Burch, Director of Athlete Engineering, and Associate Professor of Industrial and System Engineering at Mississippi State University, On the Future of Wearables. The Upside Newsletter. https://www.theupside.us/p/upside-chat-dr-reuben-burch-director?utm_source=substack&utm_medium=email#details.
20. Carskadon, J. (2022). University to receive a $30,000 investment to fund scholarship programs for students seeking degrees in STEM. Msstate.edu. https://www5.msstate.edu/newsroom/article/2022/10/sen-roger-wicker-boeing-visit-msu-updates-impactful-research-student.
21. Fuller, S. (2022). Human Factors and Athlete Engineering: CAVS Annual Report 2021. Center for Advanced Vehicular Systems at Mississippi State University, 24-27. https://www.cavs.msstate.edu/annual_reports/2021CAVS_annualreport.pdf.
22. Ogden, B. (2022). Suiting Up to Find Solutions. Hailstate.com. https://hailstate.com/news/2022/10/21/softball-suiting-up-to-find-solutions.aspx.
23. Cambre, E. (2022). MSU introduces new Athlete Engineering certificate, James Worth Bagley College of Engineering Newsroom, Mississippi State University. https://www.bagley.msstate.edu/news/athlete-engineering-certificate.
24. University of Mississippi Medical Center (2022). MSU Athlete Engineering Wearable Technology Translates into Clinical Advances in Monitoring Patient Health. Mississippi Center for Clinical and Translational Research (MCCTR) News, *1*(6), 3-4.
25. MSU (2022). Mississippi State University 2022 National Commercial. Msstate.edu. https://www.youtube.com/watch?v=viYUHnxGGWQ.
26. Carskadon, J. (2022). Researchers receive three global TechConnect Innovation Awards. Msstate.edu. https://www.memo.msstate.edu/story.php?id=6678.
27. Pimpo, S. (2022). Mississippi State Athlete Engineering Summit brings latest in sports science to pros on and off the field. WCBI. https://www.wcbi.com/msu-athlete-engineering/.
28. Carskadon, J. (2022). MSU Athlete Engineering Summit highlights future of human performance. Msstate.edu. https://www.msstate.edu/newsroom/article/2022/05/msu-athlete-engineering-summit-highlights-future-human-performance.
29. Carskadon, J. (2022). MSU Athlete Engineering Summit to highlight how collaboration improves human performance. Msstate.edu. https://www.msstate.edu/newsroom/article/2022/04/msu-athlete-engineering-summit-highlight-how-collaboration-improves-human.
30. Brito-Babapulle, Z. & Barnett, S. (2022). Office of Technology Management Feature: Athlete Engineering and the Smart Sock. *Office of Technology Management Mississippi State University*. https://youtu.be/iVlles256FE.
31. Herrington, C. (2021). Mississippi State University True Leadership – Episode 10. *Office of Research and Economic Development Mississippi State University*. https://www.youtube.com/watch?v=a_JPO4opGXs.
32. Mississippi Institutions of Higher Learning. (2021). Mississippi Public Universities Support Data Science Field Through Academic Programs, Research. *Mississippi Public Universities*. http://www.mississippi.edu/pr/newsstory.asp?ID=1730.
33. Coleman, J. (2021). Building a Better Bulldog. *Athletics Mississippi State University*. https://hailstate.com/news/2021/11/16/softball-building-a-better-bulldog-coleman.aspx.
34. Allison, P. (2021). Burch earns top research award for new faculty. *Bagley College of Engineering Mississippi State University*. https://www.bagley.msstate.edu/news/burch-earns-top-research-award-for-new-faculty/.
35. Carskadon, J. (2021). MSU's Athlete Engineering Research Brings Sharp Focus on Performance, Wearable Technologies. *Mississippi State University Alumnus*, Fall, 38-43. https://issuu.com/msstate/docs/alumnus_fall2021.

36. Ball, J. (2021). Learn More About: Electrical & Computer Engineering's Radar and Sail Labs. *Bagley College of Engineering Mississippi State University*. https://www.youtube.com/watch?v=oymtb8JCAVQ.
37. Ivey, P., Gillett, J., & Lambrinides, T. (2021). Episode 14: Dr. Reuben Burch. Research 2 Reps Roundtable (Podcast). https://pativey.com/episode-14-dr-reuben-burch/.
38. Brasher, K. (2021). Fashioning Face Mask. *MSU MAFES Discoveries*, Summer. https://www.mafes.msstate.edu/discovers/article.asp?id=220.
39. Altman, I. (2021). MSU's Athlete Engineering Team uses wearable tech to study performance, prevent injury. *The Dispatch*. https://cdispatch.com/news/2021-05-26/msus-athlete-engineering-team-uses-wearable-tech-to-study-performance-prevent-injury/.
40. Mississippi State University (2021). We Ring True: MSU's Athlete Engineering Team Powers Advancements in Wearable Technology. Msstate.edu. https://www.weringtrue.msstate.edu/athleteengineering/index.html.
41. Luczak, T. (2021). Moving Forward with Cutting-edge Human Motion Capture Technology. *NEXUS: A Magazine by NSPARC at Mississippi State University*, 4(1), 6-10. Accessed via: https://www.nsparc.msstate.edu/wp-content/uploads/2021/01/NEXUS-Vol.4Iss.1.pdf#page=5
42. Carskadon, J. (2020). MSU, EMCC's Communiversity partner to study wearable technology in industry settings. Msstate.edu. https://www.msstate.edu/newsroom/article/2020/11/msu-emccs-communiversity-partner-study-wearable-technology-industry.
43. Allison, P. (2020). Mississippi State University – Our People: Reuben Burch. Msstate.edu. https://www.msstate.edu/our-people/2020/09/reuben-burch
44. Jones, P. (2020). Mississippi State basketball: Offseason updates. Gene's Page (247sports.com). https://247sports.com/college/mississippi-state/Article/Mississippi-State-basketball-Offseason-updates-150837800
45. St. Jean, M. (2020). EMCC and MSU athletics team up to help with contact tracing. WTVA. https://www.wtva.com/content/sports/EMCC-and-MSU-athletics-team-up-to-help-with-contact-tracing-572009181.html
46. Stewart, M. L. (2020). EMCC, MSU Tout Use of Sports Wearables Technology Against COVID-19. The Meridian Star. https://www.meridianstar.com/news/business/emcc-msu-tout-use-of-sports-wearable-technology-to-combat-covid-19/article_96c2309e-c869-59f8-bae3-b0b61c74d588.html

Externally Funded Research Projects, Equipment, Donations, & Sponsorships

Project Funds: Total - $40,400,230; Individual Contribution - $10,988,298; PI x 34 times

1. Project Title: Framework for Autonomous Navigation
   Sponsor: FedEx Express
   Role: Co-PI (Investigators: L. Strawderman, D. Carruth)
   Amount: $81,591; Responsibility: 10%; Dates: 9/1/15 – 11/30/16

2. Project Title: ASSURE (Alliance for System Safety of UAS through Research Excellence) Projects CS-6, CS-7 & CS-8
   Sponsor: FAA
   Role: Co-PI (Investigator: K. Babski-Reeves)
   Amount: $217,400; Responsibility: 40%; Dates: 9/1/16 – 12/31/17

3. Project Title: Comfort Analysis of Using Smart Glasses during "Picking" and "Putting" Tasks
   Sponsor: Deep South Center for Occupational Health and Safety (NIOSH)
   Role: PI
   Amount: $18,531; Responsibility: 100%; Dates: 7/1/17 – 6/30/18

4. Project Title: Human-robot Interaction and Transportation Safety
   Sponsor: FedEx Express
   Role: Co-PI (Investigators: L. Strawderman, C. Bethel, D. Carruth, J. Mohammadi-Aragh)
   Amount: $169,334; Responsibility: 7%; Dates: 5/1/17 – 4/30/18

5. Project Title: Tractor Collision Avoidance Prototype and GPS-Augmented Brassboard
   Sponsor: FedEx Express
   Role: Co-PI (Investigators: J. Gafford, J. Ball, Y. Liu)
   Amount: $709,826; Responsibility: 10%; Dates: 4/1/17 – 5/31/18

6. Project Title: Physical Assessment of All Jobs and Positions
   Sponsor: Cooperative Energy
   Role: PI (Investigators: L. Strawderman)
   Amount: $37,354; Responsibility: 50%; Dates: 4/1/17 – 8/15/17

7. Project Title: Research Elevated Performance Systems (REPS) Lower Body Wearables
   Sponsor: NSF Innovation Corps (I-Corps)
   Role: PI
   Amount: $3,000; Responsibility: 100%; 6/15/17 – 7/30/17

8. Project Title: Systems Thinking Capacity (ST-Cap) Method: Coping with Increasing Complexity
   Sponsor: US Army ERDC
   Role: Co-PI (Investigators: R. Jaradat, L. Strawderman)
   Amount: $433,677; Responsibility: 14%; Dates: 7/1/17 – 6/30/20

9. Donation: Ruggedized Handhelds and Wearable Equipment
   Sponsor: Zebra Technologies
   Role: PI
   Amount: $25,000; Responsibility: 100%; Date: 5/31/17

10. Donation: Ruggedized Handhelds and Wearable Equipment
    Sponsor: Zebra Technologies
    Role: PI
    Amount: $38,000; Responsibility: 100%; Date: 4/30/18

11. Project Title: Data Analysis for K-12 Student Success
    Sponsor: Educational Leadership Solutions (ELS)
    Role: PI (Investigators: L. Strawderman)
    Amount: $6,086; Responsibility: 50%; Dates: 5/15/18 – 6/30/18

12. Project Title: National I-Corps Training Program Proposal for Team Humo
    Sponsor: NSF I-Corps
    Role: PI
    Amount: $50,000; Responsibility: 100%; Dates: 9/15/18 – 3/15/19

13. Project Title: 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
    Sponsor: NSF PFI (Partnerships for Innovation) RP (Research Partnerships)
    Role: PI (Investigators: J. Ball, H. Chander, A. Knight, B. Smith, R. Prabhu, J. Gafford, M. Roney [LiquidWire])
    Amount: $749,930; Responsibility: 30%; Dates: 9/15/18 – 9/15/22

14. Project Title: NSF INCLUDES DCL: Traineeship Supplement Request for Karen Persons
    Sponsor: NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science)
    Role: PI
    Amount: $134,628; Responsibility: 100%; Dates: 11/1/19 – 10/31/21

15. Project Title: NSF REU: Supplemental Support for Undergraduate Student Researchers
    Sponsor: NSF REU (Research Experience for Undergraduates)
    Role: PI (Investigator: J. Ball)
    Amount: $16,000; Responsibility: 50%; Dates: 9/15/19 – 5/15/21

16. Project Title: OSHA Warehouse Training
    Sponsor: OSHA: 2019 Susan Harwood Training Program
    Role: Co-PI (Investigators: L. Strawderman, H. Chander)
    Amount: $74,993; Responsibility: 33%; Dates: 9/30/19 – 9/30/20

17. Project Title: NSF INTERN DCL 18-102: Non-Academic Research Internship for Graduate Students Supplemental Funding Opportunity for Foot-Ankle Complex Modeling for Rehabilitation Application
    Sponsor: NSF INTERN (Non-Academic Research Internships for Graduate Students)
    Role: PI (Investigators: R. Prabhu, A. Knight)
    Amount: $34,930; Responsibility: 34%; Dates: 3/15/20 – 9/15/20
18. Project Title: Wearable technology and the Industrial Athlete: Determining future acceptance through present modeling
    Sponsor: NSF Future of Work - Human Technology Frontier (FW-HTF)
    Role: PI (Investigators: Strawderman, Ball, Warren, Grice, Taylor)
    Amount: $128,049; Responsibility: 25%; Dates 11/1/20 – 10/31/22
19. Project Title: The Touch, the Feel of Cotton: The Fabric That Saves Our Lives
    Sponsor: Cotton, Inc.
    Role: Co-PI (Investigators: Freeman, Kobia, Black, Lee, Woodward)
    Amount: $46,181; Responsibility: 20%; Dates 1/1/21 – 12/31/21
20. Project Title: NSF REU: Supplemental Support for Undergraduate Student Researchers
    Sponsor: NSF REU (Research Experience for Undergraduates)
    Role: PI (Investigator: J. Ball)
    Amount: $16,000; Responsibility: 50%; Dates: 9/15/20 – 5/15/22
21. Project Title: NSF INTERN DCL 18-102: Non-Academic Research Internship for Graduate Students Supplemental Funding Opportunity for Foot-Ankle Complex Modeling for Rehabilitation Application
    Sponsor: NSF INTERN (Non-Academic Research Internships for Graduate Students)
    Role: PI (Investigators: H. Chander, A. Knight)
    Amount: $44,302; Responsibility: 34%; Dates: 2/1/21 – 7/31/21
22. Project Title: Testing, Validation, and Analysis of Strive Activity Monitoring System for Lab- and Field-Based Applications
    Sponsor: Strive Tech, Inc.
    Role: PI (Investigator: D. Saucier)
    Amount: $14,422; Responsibility: 50%; Dates: 3/1/21 – 2/28/22
23. Project Title: Advancing Agricultural Research through High Performance Computing (Sub-award)
    Sponsor: USDA
    Role: Co-PI (Investigators: Smith, Strawderman)
    Amount: $133,891; Responsibility: 33%; Dates: 9/1/21 – 8/31/22
24. Project Title: Concussed Participant Recruitment (Sub-award)
    Sponsor: NSF SBIR
    Role: PI (MSU; Investigators: Reneker [UMMC])
    Amount: $11,819; Responsibility: 100%; Dates: 5/1/21 – 12/31/22
25. Project Title: Incorporation of a smart sock with the virtual immersive test for postural stability
    Sponsor: NIH MCCTR PPP
    Role: PI (Investigator: Chander, Ball, Saucier)
    Amount: $39,988; Responsibility: 30%; Dates: 2/1/22 – 1/31/23
26. Project Title: OURA Ring MSU Athlete Study (Equipment Donation)
    Sponsor: OURA
    Role: PI (Investigators: Elmore-Staton)
    Amount: $50,000; Responsibility: 50%; Dates: 9/1/21 – 5/31/22
27. Project Title: Ergonomic Assessment of Bending and Reaching into Boxes and Pallets
    Sponsor: ABB Motors
    Role: Co-PI (Investigators: Strawderman, Saucier)

Amount: $40,000; Responsibility: 33%; Dates: 3/1/22 – 5/31/22 9915

28. Project Title: Collaborative Robot Training and Skills Accelerator Program
    Sponsor: ETA Community Sponsored Projects: Department of Labor (DOL) – Employment and Training Administration
    Role: PI (Investigators: McCall, Taylor)
    Amount: $1,000,000; Responsibility: 100%; Dates: 2/1/23 – 1/31/25

29. Donation: Cool Mitts product validation
    Sponsor: Cool Mitts
    Role: PI
    Amount: $21,000; Responsibility: 100%; Dates: 1/1/22

30. Conference Sponsorship: Athlete Engineering Summit 2022 sponsorship and registration
    Sponsor: Booz Allen Hamilton, LiquidWire, MediTouchUSA, University of Mississippi Medical Center, Strive, Qualisys, Columbus Orthopaedic, The Motion Monitor
    Role: PI
    Amount: $35,000; Responsibility: 100%; Dates: 5/12/22

31. Project Title: SPRINT: 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
    Sponsor: NSF SPRINT
    Role: PI (Investigators: Ball, Chander, Freeman)
    Amount: $149,836; Responsibility: 25%; Dates: 7/1/22 – 7/30/23

32. Donation: QuickBoard product validation
    Sponsor: QuickBoard
    Role: PI
    Amount: $12,000; Responsibility: 100%; Dates: 6/24/22

33. Project Title: MRI: Acquisition of Biomechanical Movement and Body Volumetric Baselining Technology Suite for Motion Capture Improvement and Sensor-based Validation of Lower Body Characteristics
    Sponsor: NSF MRI
    Role: PI (Investigators: Ball, Chander, Gurbuz, Strawderman, Knight, Smith, Wang, Mohammadi-Aragh, Seitz, Panse-Barone, Gillen, Freeman, McCubbins)
    Amount: $770,000; Responsibility: 20%; Dates: 8/1/22 – 7/31/23

34. Project Title: Wearable Implementation for military and other large facilities workshop
    Sponsor: ORAU Events
    Role: PI (Investigators: Chander)
    Amount: $4,000; Responsibility: 50%; Dates: 10/1/22 – 5/31/23

35. Project Title: MS-SHIPS – Mississippi – Shipbuilding Industry Preparedness for National Security
    Sponsor: Defense Manufacturing Community Support Program (DMCSP)
    Role: Co-PI (Investigators: Miller & Taylor [AccelerateMS], McCall [MSU CAVS-E], and many more across Mississippi industry and higher education communities)
    Amount: $4,999,634; Responsibility: 12%; Dates: 1/1/23 – 12/31/28

36. Project Title: Industry 4.0 Skills Accelerator
    Sponsor: America Rescue Plan Act (ARPA) Funds (CFDA # 21.027)
    Role: Co-PI (Investigators: McCall, Peacock, Johnson, Puryear)
    Amount: $1,294,341; Responsibility: 20%; Dates: 10/1/22 – 6/30/23

37. Project Title: The Smart Health Sock App: Improving Fall Detection to Reduce Injuries
    Sponsor: Smart Business Act
    Role: Co-PI (Investigators: Grice, Chander, Luczak, Ball, Freeman, Saucier)
    Amount: $86,000; Responsibility: 10%; Dates: 11/1/22 – 10/31/23

38. Project Title: Automotive Ground Vehicles and Virtual Conveyor Systems Training and Skills Accelerator Program
    Sponsor: DOL ETA Community Sponsored Projects: Department of Labor (DOL) – Employment and Training Administration
    Role: PI (Investigator, McCall, Taylor)
    Amount: $780,000; Responsibility: 100%; Dates: 6/1/23 – 5/31/25

39. Conference Sponsorship: Athlete Engineering Summit 2023 sponsorship and registration
    Sponsor: Booz Allen Hamilton, Toyota, ABB, Ledsreact, Senaptec, Vald, Motek, LiquidWire, MediTouchUSA, Qualisys, Columbus Orthopaedic, The Motion Monitor, The Competitive Edge, Auburn University, Southwest Research Institute, Total Strength and Speed, SAIC, Ergo-ology, Hawkin Dynamics, and KBR
    Role: PI
    Amount: $70,000; Responsibility: 100%; Dates: 5/10/23

40. Project Title: Movement Disorders and Cognitive Impairments from SARS-CoV-2 Infection in Older Adults
    Sponsor: NIH MCCTR PPP
    Role: Co-PI (Investigators: Chander, Van Den Heever, Jones, Ball, Saucier)
    Amount: $53,928; Responsibility: 10%; Dates: 8/1/23 – 7/31/24

41. Project Title: Cover-2TM Wearable Bioimpedance Measurements Hydration Study
    Sponsor: NSF SBIR Phase 2
    Role: Co-PI (Investigators: Gillen, Saucier, Smith)
    Amount: $99,983; Responsibility: 15%; Dates: 9/1/23 – 8/31/24

42. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP)
    Sponsor: Army Contracting Command DoD Industrial Base Analysis and Sustainment (IBAS)
    Role: Co-PI (Investigators: Smith, Bounds, McCall, Tian)
    Amount: $10,500,000; Responsibility: 10%; Dates: 9/1/23 – 8/31/25

43. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP at MGCCC Phases 1-3)
    Sponsor: AccelerateMS
    Role: Co-PI (Investigators: Woodward, Campbell)
    Amount: $1,992,300; Responsibility: 12.5%; Dates: 10/15/23 – 10/15/24

44. Project Title: MSU iCorps Hub
    Sponsor: NSF iCorps
    Role: PI (Investigators: Freeman, Hill)
    Amount: $140,000; Responsibility: 20%; Dates: 1/1/24 – 6/30/25

45. Project Title: Toyota Paint-Liquid Wire Wearable Integration & Reporting Study
    Sponsor: Toyota
    Role: PI (Investigators: Saucier, Chander, Gillen, Strawderman)
    Amount: $144,683; Responsibility: 20%; Dates: 11/1/23 – 10/31/24

46. Project Title: ABB Motors Human Performance Assessment and Wearable Implementation
    Sponsor: ABB Motors
    Role: PI (Investigators: Saucier, Chander, Gillen, Strawderman, Smith)
    Amount: $132,687; Responsibility: 30%; Dates: 11/1/24 – 10/31/24

47. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP at NEMCC Phases 1 – 4.5)
    Sponsor: AccelerateMS
    Role: Co-PI (Investigators: Woodward, Busby, Middleton, Smith)
    Amount: $2,312,240; Responsibility: 10%; Dates: 3/15/24 – 3/15/25

48. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP at EMCC and MGCCC Phase 4.5)
    Sponsor: AccelerateMS
    Role: Co-PI (Investigators: James, Woodward, Busby, Middleton, Smith)
    Amount: $1,065,030; Responsibility: 12.5%; Dates: 3/15/24 – 3/15/25

49. Conference Sponsorship: Athlete Engineering Summit 2024 sponsorship
    Sponsor: Booz Allen Hamilton, T3i, MOTEK, Toyota, Ingalls and 20 more sponsors + attendance fees
    Role: PI
    Amount: $175,000; Responsibility: 100%; Dates: 10/1/23 – 4/30/24

50. Project Title: Mississippi Highway Patrol Cadet Kinesiology Study & Physical Pilot
    Sponsor: Mississippi Highway Patrol
    Role: Co-PI (Investigator: Saucier, Chander, Strawderman, Gillen)
    Amount: $25,000; Responsibility: 20%; Dates: 12/1/23 – 5/31/24

51. Conference Sponsorship: FANUC: Aligning Skills for Industry & Education
    Sponsor: FANUC
    Role: PI (Investigator: Middleton, Hollis)
    Amount: $10,000; Responsibility: 100%; Dates: 10/15/23 – 12/15/23

52. Project Title: Noxubee County Career and Technical Education Mini-AiM UP (Advancements in Manufacturing Upskilling Program) Pilot Location
    Sponsor: AccelerateMS EquipMS Grant program
    Role: Co-PI (Investigator: Wells, Middleton)
    Amount: $150,000; Responsibility: 10%; Dates: 1/31/24 – 12/31/24

53. Donation: SICK Vision System Equipment Donation to AiM UP labs
    Sponsor: SICK
    Role: Co-PI (Investigator: Middleton)
    Amount: $90,000; Responsibility: 50%; Dates: 6/31/24 – 12/31/24

54. Project Title: Biomechanics of Head Impacts in NCAA Football: Instrumented Mouthpiece Program (IMP) and Head Impact Research Consortium Study
    Sponsor: NFL - BioCorp
    Role: Co-PI (Investigator: Wall, Gillen, Beasley)
    Amount: $166,920; Responsibility: 30%; Dates: 6/1/24 – 5/31/25

55. Project Title: Technology validation for telehealth medical management of neurological impairments
    Sponsor: NIH Team Science MCCTR
    Role: Co-PI (Investigator: Chander, Reneker, Garner)
    Amount: $862,707; Responsibility: 30%; Dates: 11/1/24 – 10/31/25

56. Donation: FANUC Educational Software Donation for Three AiM UP Locations (MSU/EMCC, MGCCC, and NEMCC)
    Sponsor: FANUC
    Role: PI (Investigator: Middleton)
    Amount: $3,000,000; Responsibility: 50%; Dates: 1/1/24 – 12/31/26

57. Project Title: AiM UP Workforce Upskilling and Preservation
    Sponsor: AccelerateMS
    Role: PI
    Amount: $1,051,891; Responsibility: 100%; Dates: 4/1/25 – 3/31/27

58. Project Title: MSU iCorps Hub
    Sponsor: NSF iCorps
    Role: PI
    Amount: $638,303; Responsibility: 100%; Dates: 7/1/25 – 12/31/27

59. Project Title: A Novel Design and Manufacturing Method of a Weight Collar for the Tsunami Bar
    Sponsor: Mississippi SmartAct
    Role: Co-PI (Middleton)
    Amount: $43,557; Responsibility: 50%; Dates: 3/1/25 – 2/27/26

60. Project Title: Mississippi Highway Patrol Cadet Kinesiology Study & Physical Pilot Phase 2

Sponsor: Mississippi Highway Patrol
Role: Co-PI (Investigator: Saucier, Chander, Strawderman, Gillen)
Amount: $49,997; Responsibility: 20%; Dates: 1/1/25– 12/31/25

61. Donation: FANUC Educational Software Donation for Three AiM UP Locations (MSU/EMCC, MGCCC, and NEMCC)
Sponsor: FANUC
Role: PI (Investigator: Middleton)
Amount: $1,387,700; Responsibility: 50%; Dates: 4/1/25 – 3/31/27

62. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP at HindsCC Phases 1 – 4.5)
Sponsor: AccelerateMS
Role: Co-PI (Investigators: Creel, Robbins)
Amount: $1,880,789; Responsibility: 20%; Dates: 4/1/25 – 3/31/27

63. Project Title: Advancements in Manufacturing Upskilling Program (AiM UP at NWMCC Phases 1 – 4.5)
Sponsor: AccelerateMS
Role: Co-PI (Investigators: Morgan, Casey)
Amount: $1,880,789; Responsibility: 20%; Dates: 4/1/25 – 3/31/27

Additional Internally Funded MSU Awarded Amounts: Total – $351,061; Individual – $345,721

1. Working Group: Body Sensor Networks and Wearable Technology
Sponsor: ORED MSU
Role: PI
Amount: $2,500; 7/1/17 – 7/1/18

2. Project Title: Research Elevated Performance Systems (REPS) Ankle Wearables
Sponsor: Entrepreneurship Center Advisory Board (ECAB)
Role: PI
Amount: $2,000; Responsibility: 100%; 10/1/17 – 12/31/17

3. Project Title: Assessment of Law Enforcement Officer Response to Threat and non-Threat Stimuli
Sponsor: ORED (Cross College Research Program) MSU
Role: Co-PI (Investigators: J. Smith, D. May)
Amount: $2,000; Responsibility: 33%; 10/1/17 – 9/30/18

4. Project Title: Ankle Angle and Force Measurement Investigation
Sponsor: ORED (Undergraduate Research Program) MSU
Role: Co-PI (Investigator: J. Ball)
Amount: $2,000; Responsibility: 50%; 10/1/17 – 9/30/18

5. Project Title: Human Performance Lab “Athlete Engineering” Equipment and Program Sponsorship
Sponsor: MSU CAVS (Center for Advanced Vehicular Systems)
Role: PI
Amount: $30,000; Responsibility: 100%; Dates: 8/15/18 – 12/15/18

6. Project Title: Wearable Internship: Student Pipeline and Research Collaboration with Athletics
Sponsor: MSU nSPARC (National Strategic Planning and Analysis Research Center)
Role: PI
Amount: $212,000; Responsibility: 100%; Dates: 8/15/18 – 8/15/22

7. Working Group: Body Sensor Networks and Wearable Technology
Sponsor: ORED MSU
Role: PI
Amount: $2,500; 8/1/18 – 8/1/19

8. Project Title: Wearable hardware development with liquid metal sensors
Sponsor: ORED (Undergraduate Research Program) MSU
Role: Co-PI (Investigator: J. Ball)

Amount: $3,000; Responsibility: 50%; 10/1/18 – 9/30/19

9. Project Title: SEC Travel Grant (Auburn hosting)
   Sponsor: SEC (Southeastern Conference)
   Role: PI
   Amount: $1,000; Dates: 9/15/18 – 5/15/19

10. Working Group: Athlete Engineering
    Sponsor: ORED MSU
    Role: PI
    Amount: $2,500; 8/1/19 – 8/1/20

11. Project Title: Bagley College Travel Grant (Special invitation to attend NFL Helmet Challenge)
    Sponsor: MSU
    Role: PI
    Amount: $1,000; Dates: 11/1/19 – 11/15/19

12. Working Group: Athlete Engineering
    Sponsor: ORED MSU
    Role: PI
    Amount: $2,500; 8/1/20 – 8/1/21

13. Project Title: ORED Undergraduate Research Funding: Validation of New Sports Performance Technology (Tsunami Bar) for Use in Collegiate and Professional Sports Training
    Sponsor: ORED MSU
    Role: PI (Investigators: Strawderman, Chander, J.E. Smith)
    Amount: $2,000; Responsibility: 25%; 10/1/20 – 9/1/21

14. Project Title: Textile Design for Smart Sock Sensor Placement
    Sponsor: MSU Hearin Foundation Fellowship Award
    Role: PI
    Amount: $3,000; 1/1/21 – 6/30/21

15. Project Title: MSU Excellence in Community Awards (Toyota Paint Liquid Wire Wearable Integration Project)
    Sponsor: MSU Provost Office
    Role: PI
    Amount: $3,000; 12/1/24 – 1/31/25

16. Project Title: Artificial Intelligence Collaborative Partnership Project between AEI and NSPARC
    Sponsor: NSPARC
    Role: PI
    Amount: $80,061; 1/1/25 – 6/30/25

Honors & Awards	
Marquis Who's Who of America	2024
MSU Excellence in Community Awards (Toyota Paint Liquid Wire Wearable Integration Project)	2024
MSU Office of Research Economic Development Patent Recognition Award X 3	2024
Mississippi Center for Clinical and Translational Research Pilot Project Investigator Alumnus Awardee	2024
AccelerateMS 2024 Workforce Program of the Year (for AiM UP)	2024
Honorary Commander Mentor of Columbus Air Force Base	2024
National Security Forum (NSF) Awardee at Maxwell Air Force Base's Air University	2024
EAB's Rising Higher Education Leaders Fellowship	2024
Air Force and Space Force Air Education and Training Command (AETC) Civic Leader	2023
MSU Office of Research Economic Development Patent Recognition Award	2023
Bagley College of Engineering Faculty Research Award	2023
MSU Innovation and Entrepreneurship Award	2022
Honorary Commander of Columbus Air Force Base	2022

TechConnect 2022 Innovation Award	2022
Bagley College of Engineering Academy of Distinguished Teachers	2021
ASEE-SE (Southeastern Section) New Faculty Researcher 1st Place Award	2021
MSU Hearin Foundation Fellowship Award	2021
MSU Alumni Association Graduate Teaching Award	2020
Bagley College of Engineering Teaching Award for Distance Learning	2020
Creativeness in Ergonomics (CE) Student of the Year Award – Applied Ergonomics Conference (AEC)	2019
FedEx Express: USAF Recognition for Integrity, Service, and Excellence – General Johnson presentation of handheld research and generational cohorts	2016
FedEx Express: Bravo Zulu Challenge Coin Award – FedEx/Army presentation of handheld research and generational cohorts	2016
FedEx Express: FY15 Strategic Contributor of the Year	2015
J. Ron Walsh Outstanding Industrial Engineering Ph.D. Student Award	2014
NSF CMMI: Student Travel Award	2014
FedEx Express: FY13 Global Planning & Engineering Performance Award	2013
FedEx Express: Bravo Zulu Award – Touch VERSUS Keypad Research	2013
FedEx Express: Bravo Zulu Award – PScan Software Release	2012
Sedgwick CMS: Recognition Award – SMART Project	2010
Sedgwick CMS: Recognition Award – SSN Project	2009
VRCO: NAVSEA Award of Recognition – BFTT Project	2007
VRCO: NASA Award of Recognition – ANGe Project	2005

Service

University Service

- Chair, Associate Deans of Research Council, 2023 – Current
- Quality Enhancement Plan Steering Committee, 2023 – Current
- Athletics Council, 2020 – 2023
- Institutional Review Board (IRB), 2018 – 2023
- ISE Graduate Committee Member, 2019 – 2023
- ISE Human Factors & Ergonomics Committee, 2016 – 2023
- EcoCar Associate Advisor, 2019 – 2021
- Online Community of Practice Committee Member: Center for Distance Education, 2019 – 2022
- Data Science Academic Working Group (at the appointment of the Provost), 2021 – 2022

National- & Global-level Service

- Honorary Commander Mentor, Columbus Air Force Base, 2024 – Present
- Air Force and Space Force Air Education and Training Command (AETC) Civic Leader, 2023 – Present
- Honorary Commander, Columbus Air Force Base, 2022 – 2024
- Member, Tactical Athlete Leadership Board, 2022 – Present
- Member, IPC E-Textiles Initiative, 2021 – Present
- Member, International Commercial Fishing PFD Working Group, 2021 – Present
- Guest Editor (co-editor with Tony Luczak & Zach Gillen), Bioengineering: Special Issue: Sport Biomechanics and Wearable Technology, 2023
- Co-track Chair, Institute of Industrial & Systems Engineering (IISE) Conference: Human Factors & Ergonomics (HFE) Track), 2023
- Lead Track Chair, Institute of Industrial & Systems Engineering (IISE) Conference: Human Factors & Ergonomics (HFE) Track), 2022
- Lead Track Chair, Institute of Industrial & Systems Engineering (IISE) Conference: Human Factors & Ergonomics (HFE) Track), 2021
- Guest Editor (co-editor with Harish Chander), International Journal of Environmental Research and Public Health (IJERPH): Special Issue: Injury Prevention and Safety Promotion: A Physical and Cognitive Ergonomic Approach, 2021

- Invited by MIT Press to review Gary Klein's new book "Snapshots of the Mind" based on national reputation in the Human Factors field via teaching IE 8153: Cognitive Engineering course, 2021
- Member, IMSE (Industrial and Manufacturing Systems Engineering) Advisory Council for Kansas State University, 2014 – 2017
- Member, ECE (Electrical and Computer Engineering) Advisory Board for Virginia Commonwealth University, 2015 – Present
- Member, West Tennessee STEM (Science Technology Engineering and Math) Hub Steering Committee for University of Memphis, 2014 – 2016
- Member, IMSE Undergraduate and Graduate Student Mentorship program for Kansas State University, 2014 – 2017
- Member, FCHEC (Fayette County Higher Education Center) Advisory Board for University of Tennessee Martin, 2014 – 2016
- Member, ISE (Industrial & Systems Engineering) Participant Committee for Mississippi State University, 2014 – 2016
- Review numerous NSF grant proposal submissions (since 2019)
- Review multiple European agencies grant proposal submissions (since 2020)
- Review numerous promotion packets (since 2022)
- Journal Peer Reviewer for (average 10+ reviewed journal submissions per year since 2017):
  - American Society for Engineering Education
  - Applied Ergonomics
  - Engineering Management Journal
  - Total Quality Management & Business Excellence
  - Advances in Transportation Studies
  - Human Factors and Ergonomics in Manufacturing & Service Industries
  - Journal of Sport Behavior
  - Electronics
  - Journal of Sports Science
  - IEEE Transactions of Biomedical Engineering
  - Sensors
  - Ergonomics
  - International Journal of Kinesiology and Sports Science
  - Journal of Applied Biomechanics

Professional Memberships

- Member, Institute of Industrial and Systems Engineers (IISE), 2014 – Present
- Member, American Society of Engineering Education (ASEE), 2016 – Present
- Member, Tau Beta Pi, 2012 – Present
- Member, Alpha Pi Mu, 2012 – Present
- Member, Phi Kappa Phi (Kansas State), 2008 – Present
- Member, Phi Kappa Phi (Mississippi State), 2014 – Present
- Member, Golden Key International Honor Society, 2012 – Present

Professional Service

- Member, Samsung Product Innovation Advisory Group, 2013 – 2015
- Member, FedEx Operations Technology Council, 2014 – 2016
- Member, FedEx Mobile Computing and Scanning Technology Focus Area, 2013 – 2016
- Member, FedEx Robotics Technology Focus Area, 2015 – 2016
- Member, Dell Product Advisory Board, 2015 – 2016

Graduate Student Advising

Dissertations Directed (10 completed; 6 in progress)

- **Smith, E., Ph.D. in Industrial & Systems Engineering, graduated December 2019**
  - **Awarded Dr. Harold Grier Scholarship; Fall 2018**
  - **Awarded Creativeness in Ergonomics (CE) Student of the Year Award, Applied Ergonomics Conference (AEC); Spring 2019**

- **Luczak, T., Ph.D. in Industrial & Systems Engineering, graduated May 2020**
- **Doude, M., Ph.D. in Industrial & Systems Engineering, graduated December 2020**
- **Wall, E., Ph.D. in Industrial & Systems Engineering, graduated May 2021**
- **Persons, K., Ph.D. in Agricultural & Biological Engineering (minor in Industrial & Systems Engineering), graduated Spring 2022 (Co-advisor with Dr. Steve Elder from ABE)**
- **Talegaonkar, P., Ph.D. in Industrial & Systems Engineering, graduated Summer 2022**
- **Hicks, J., Ph.D. in Industrial & Systems Engineering, graduated Spring 2023**
- **Phan, P., Ph.D. in Agricultural & Biological Engineering (minor in Industrial & Systems Engineering), graduated Fall 2023 (Co-advisor with Dr. David Van Den Heever from ABE)**
- **Reese, M., Ph.D. in Industrial & Systems Engineering, graduated Spring 2024 (Co-advisor with Dr. Lesley Strawderman from ISE)**
- **Reid, B., Ph.D. in Industrial & Systems Engineering, graduated Spring 2025 (Co-advisor with Dr. Lesley Strawderman from ISE)**
- Rinaudo, C., Ph.D. in Industrial & Systems Engineering, expected graduation Summer 2025; proposal completed
- Arlotti, J., Ph.D. in Industrial & Systems Engineering, expected graduation Spring 2026; preliminary exam passed
- Cruz-Agosto, C., Ph.D. in Industrial & Systems Engineering, expected graduation Fall 2026; preliminary exam passed
- Brown, C., Ph.D. in Industrial & Systems Engineering, expected graduation Fall 2026
- Mydlo, M., Ph.D. in Industrial & Systems Engineering, expected graduation Spring 2027
- Hurwitz, J., Ph.D. in Kinesiology, expected graduation Spring 2026 (Co-advisor with Dr. Zack Gillen from Kinesiology)

Theses Directed (5 completed; 1 in progress)

- **Shelly, Z., M.S. (thesis) in Industrial & Systems Engineering, May 2020**
- **King, M., M.S, (thesis) in Engineering Management, Fall 2022**
- **Parker, E., M.S. (thesis) in Industrial & Systems Engineering, Summer 2023 (Co-advisor with Dr. Brian Smith from ISE)**
- **Middleton, J. C., (thesis) in Industrial & Systems Engineering, Summer 2023**
- **Wunrow, T., (thesis) in Industrial & Systems Engineering, Spring 2024**
- McDonald, K., (thesis) in Industrial & Systems Engineering, expected graduation Fall 2025

Completed Committee Memberships (30)

- Cannon, A. B., M.S. (thesis) in Industrial & Systems Engineering, December 2014
- Ross, T., M.S. (thesis) in Industrial & Systems Engineering, May 2016
- Harrison, D., M.S. (thesis) in Industrial & Systems Engineering, May 2017
- Poudel, S., Ph.D. in Industrial & Systems Engineering, May 2017
- Quintero, W., M.S. (thesis) in Industrial & Systems Engineering, May 2017
- Aboutaleb, A., Ph.D. in Industrial & Systems Engineering, December 2017
- Ivy, N., Ph.D. in Industrial & Systems Engineering, December 2017
- Asuncion, B., Ph.D. in Industrial & Systems Engineering, May 2018
- Simpson, J., Ph.D. in Kinesiology, May 2018
- Debusk, H., Ph.D. in Industrial & Systems Engineering, May 2018
- Creely, R., M.S. (thesis) in Industrial & Systems Engineering, May 2018
- Marzullo, T., M.S. (thesis) in Industrial & Systems Engineering, May 2018
- Nutt, M., M.S. (thesis) in Industrial & Systems Engineering, May 2019
- Huggins, J., Ph.D. in Industrial & Systems Engineering, December 2019
- Saucier, D., M.S. (thesis) in Electrical & Computer Engineering, May 2020
- Booth, C., Ph.D. in Industrial & Systems Engineering, December 2020
- Preston, P., M.S. (thesis) in Electrical & Computer Engineering, May 2021
- Carroll, W., M.S. (thesis) in Electrical & Computer Engineering, May 2021
- Johnson, J., Ph.D. in Industrial & Systems Engineering, August 2021
- Quintero, W., Ph.D. in Industrial & Systems Engineering, December 2021
- Cardisco, J., Ph.D. in Industrial & Systems Engineering, Spring 2022
- Kodi, S., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering), Summer 2022

- Davarzani, S., Ph.D. in Industrial & Systems Engineering, Fall 2022
- McNeal, K., M.S. (thesis) in Agricultural & Biological Engineering, Spring 2023
- Brown, E., M.S. (thesis) in Electrical & Computer Engineering, Spring 2023
- Schaefer, C., Ph.D. in Industrial & Systems Engineering, Spring 2024
- Lowell, R., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering), Summer 2024
- Derby, H., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering), Summer 2024
- Johnson, J., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering), Spring 2025

Committee Member of Students in Progress (4)

- Griffith, A., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering)
- Stewart, E., Ph.D. in Kinesiology (minor in Industrial & Systems Engineering)
- Harmon, C., Ph.D. in Industrial & Systems Engineering
- Tabor, S., Ph.D. in Industrial & Systems Engineering