

CURRICULUM VITAE
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SRI•Ergonomics, The Ohio State University
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Education

- PhD Industrial & Systems Engineering (March, 2000)
The Ohio State University, Columbus, OH, Major: Ergonomics and Biomechanics
- MS Industrial & Systems Engineering (March, 1993)
The Ohio State University, Columbus, OH, Major: Ergonomics and Biomechanics
- BSE Systems Engineering/Human Factors Engineering (June, 1986)
Wright State University, Dayton, Ohio

Employment

- 2000 - present PROGRAM DIRECTOR, *The Ohio State University, SRI•Ergonomics, Columbus, OH*
Develops and guides activities for SRI•Ergonomics within and external to the University; manages collaborative research projects between industrial sponsors and University faculty, research staff, and students; seeks funding opportunities from government and industry sources; provides ergonomics technical assistance to companies; manages the gathering of technical, quantitative biomechanical and ergonomics data across various occupational settings; develops and conducts ergonomics training courses and seminars on a variety of ergonomics topics; serves as public relations representative for the organization.
- 1990 – 2000 GRADUATE RESEARCH ASSOCIATE, *The Ohio State University, Columbus, Ohio Dept. of Industrial, Welding, & Systems Engineering, Biodynamics Laboratory*
Conducted ergonomics research (established experimental design criteria, collected data, statistically analyzed results, generated technical reports); assisted in writing grant proposals and developing marketing ; interacted with clients from private industry to coordinate joint research efforts; gathered laboratory and field data using a variety of quantitative techniques; managed undergraduate student employees.
- 1994 - present ERGONOMICS CONSULTANT, *BioDynamic Solutions, Inc., Columbus, Ohio*
Establishes corporate ergonomics programs in a variety of industrial environments; conducts courses to teach participants ergonomics principles, including anthropometry and workplace biomechanics; evaluates work practices and manufacturing processes for their injury risk potential.
- 1986 - 1990 HUMAN FACTORS ENGINEER, *UES, Inc., Dayton, Ohio*
Evaluated ergonomics and safety aspects of a wide range of consumer products; marketed services to governmental and business clients; conducted ergonomics training programs.

Professional Society Affiliations

Member, Human Factors and Ergonomics Society, 1986 - present
Associate Ergonomics Professional (Board of Certification in Professional Ergonomics), 1993-2005
Certified Professional Ergonomist (Board of Certification in Professional Ergonomics), 2005-present
Member, Institute of Industrial and Systems Engineers, 2018 - present
Member, Applied Ergonomics Society, 2018 – present

Publications

BOOK CHAPTERS

1. Marras WS, Leurgans SE, Lavender SA, **Allread WG**, Fathallah FA, Ferguson SA, & Rajulu SL, 1993, Three-dimensional Dynamic Trunk Motions, Workplace Factors, and Occupational Low Back Disorder, in WS Marras, W Karwowski, LJ Smith, & L. Pacholski eds., *The Ergonomics of Manual Work*. Taylor & Francis: London, 155 - 158.
2. Marras WS, **Allread WG**, & Ried RG, 1999, Occupational Low Back Disorder Risk Assessment Using the Lumbar Motion Monitor, in W Karwowski & WS Marras eds., *The Occupational Ergonomics Handbook*. CRC Press: Boca Raton, FL, 1075 - 1100.
3. Marras WS & **Allread WG**, 2005, Lumbar Motion Monitor, in N Stanton, A Hedge, K Brookhuis, E Salas, & H Hendrick, eds., *Handbook of Human Factors and Ergonomics Methods*. CRC Press: Boca Raton, FL, 14-1 - 14-7.
4. **Allread WG**, 2006, The Role of Personality in Ergonomics, in WS Marras & W Karwowski, eds., *The Occupational Ergonomics Handbook: Fundamentals and Assessment Tools for Occupational Ergonomics*. CRC Press, Taylor & Francis Group: Boca Raton, FL, 25-1 - 25-14.
5. Jorgensen MJ, Marras WS, **Allread WG**, & Stuart-Buttle C, 2006, Grocery Distribution Centers, in WS Marras & W Karwowski, eds., *The Occupational Ergonomics Handbook: Fundamentals and Assessment Tools for Occupational Ergonomics*. CRC Press, Taylor & Francis Group: Boca Raton, FL, 45-1 - 45-22.
6. Marras WS & **Allread WG**, 2006, Industrial Lumbar Motion Monitor, in WS Marras & W Karwowski, eds., *The Occupational Ergonomics Handbook: Fundamentals & Assessment Tools for Occupational Ergonomics*. CRC Press, Taylor & Francis Group: Boca Raton, FL, 49-1-49-25.
7. **Allread WG** & Marras WS, 2010, The Economic Impact of Integrating Ergonomics within an Automotive Production Facility, in WB Rouse, ed., *The Economics of Human Systems Integration: Valuation of Investments in People's Training and Education, Safety and Health, and Work Productivity*. John Wiley & Sons, Inc: New York, NY, 267-285.
8. **Allread WG** & Israelski EW, 2011, Anthropometry and Biomechanics, in MB Weinger, ME Wiklund, & DJ Gardner-Bonneau, eds., *Handbook of Human Factors in Medical Device Design*. CRC Press, Taylor & Francis Group: Boca Raton, FL, 97-151.
9. Punnett L, **Allread WG**, Vossen P, & Sheikh NN, 2017, Work Design and Health for Hospitality Workers, in A Hedge, ed., *Ergonomic Workplace Design for Health, Wellness, and Productivity*. CRC Press, Taylor & Francis Group: Boca Raton, FL, 273-296.

BOOK

Marras WS, **Allread WG**, Jorgensen MJ, & Stuart-Buttle C, 2005, *A Best Practices Guide for the Reduction of Musculoskeletal Disorders in Food Distribution Centers*. Institute for Ergonomics, The Ohio State University: Columbus, OH.

REFEREED JOURNALS

1. Marras WS, Lavender SA, Leurgans S, Rajulu S, **Allread WG**, Fathallah F, & Ferguson SA, 1993, The role of dynamic three dimensional trunk motion in occupationally-related low back disorders: the effects of workplace factors, trunk position and trunk motion characteristics on injury, *Spine*, 18(5):617-628.
2. Marras WS, Lavender SA, Leurgans S, Fathallah F, **Allread WG**, Ferguson SA, & Rajulu S, 1995, Biomechanical risk factors for occupationally related low back disorder risk, *Ergonomics*, 38(2):377-410
3. **Allread WG**, Marras WS, & Parnianpour M, 1996, Trunk kinematics of one-handed lifting and effects of asymmetry and load weight, *Ergonomics*, 39(2):322-334.
4. Marras WS, Granata KP, Davis KG, **Allread WG**, & Jorgensen MJ, 1997, Spine loading and probability of low back disorder risk as a function of box location on a pallet, *International Journal of Human Factors in Manufacturing*, 7(4):323-336.
5. Marras WS, Granata KP, Davis KG, **Allread WG**, & Jorgensen MJ, 1999, Effects of box features on spine loading during warehouse order selecting, *Ergonomics*, 42(7):980-996.
6. **Allread WG**, Marras WS, & Burr DL, 2000, Measuring trunk motions in industry: variability due to task factors, individual differences, and the amount of data collected, *Ergonomics*, 43(6):691-701.
7. Marras WS, **Allread WG**, Burr DL, & Fathallah FA, 2000, Prospective validation of a low-back disorder risk model and assessment of ergonomic interventions associated with manual materials handling tasks, *Ergonomics*, 43(11):1866-1886.
8. Marras WS, Davis KG, Heaney CA, Maronitis AB, & **Allread WG**, 2000, The influence of psychosocial stress, gender, and personality on mechanical loading of the lumbar spine, *Spine*, 25(23):3045-3054.
9. **Allread WG**, 2004, Measuring adjustability's benefits, *Occupational Health and Safety*, 73(4):54-61, 84.
10. **Allread WG**, Wilkins III JR, Waters TR & Marras WS, 2004, Physical demands and low-back injury risk among children and adolescents working on farms, *Journal of Agricultural Safety and Health*, 10(4):257-274.
11. **Allread WG** & Marras WS, 2006, Does personality affect the risk of developing musculoskeletal discomfort? *Theoretical Issues in Ergonomics Science*, 7(2):149-167.
12. **Allread WG** & Waters TR, 2007, Interventions to reduce low-back injury risk among youth who perform feed handling and scooping tasks on farms, *Journal of Agricultural Safety and Health*, 13(4):375-393.
13. Youngquist ST, Niemann JT, & **Allread WG**, Heyming T, Rosborough JP, 2010, Neurologically intact survival in a porcine model of cardiac arrest: Manual Cardiopulmonary Resuscitation vs. LifeBelt® Cardiopulmonary Resuscitation, *Prehospital Emergency Care*, 14(3):324-328.
14. Ferguson SA, Marras WS, **Allread WG**, Knapik GG, Vandlen KA, Splittstoesser RE, & Gang Y, 2011, Musculoskeletal disorder risk as a function of vehicle rotation angle during assembly tasks, *Applied Ergonomics*, 42:699-709.
15. Ferguson SA, **Allread WG**, Burr DL, Heaney C, & Marras WS, 2012, Biomechanical, psychosocial and individual risk factors predicting low back functional impairment among furniture distribution employees, *Clinical Biomechanics*, 27:117-123.
16. Lavender SA, Mehta J, & **Allread WG**, 2013, Comparisons of tibial accelerations when walking on a wood composite vs. a concrete mezzanine surface, *Applied Ergonomics*, 44:824-827.
17. Ferguson SA, **Allread WG**, Le P, Rose J, & Marras WS, 2013, Shoulder muscle fatigue during repetitive tasks as measured by electromyography and near-infrared spectroscopy, *Human Factors*, 55(6):1077-1087.
18. Lavender SA, Nagavarapu S, & **Allread WG**, 2017, An electromyographic and kinematic comparison between an extendable conveyor system and an articulating belt conveyor used for truck loading and unloading tasks, *Applied Ergonomics*, 58:398-404.

19. Wang X, Bigelow S, Seagren KE, Preddie A, Wang Z, Ardiyanto A, **Allread WG**, & Lavender SA, 2018, Re-thinking floor mat design from an ergonomics perspective: Can a two-part mat system reduce biomechanical loads during normal mat handling tasks? *Applied Ergonomics*, 72:17-24.
20. Lavender SA, Wang Z, **Allread WG**, & Sommerich CM, 2019, Quantifying the effectiveness of static and dynamic insoles in reducing the tibial shock experienced during walking, *Applied Ergonomics*, 74:118-123.
21. **Allread WG**, & Vossen P, 2022, Comparisons of trunk motions and low back injury risk between alternative hotel room cleaning methods, *International Journal of Environmental Research and Public Health*, 19:1-15, 14907.
22. **Allread WG**, 2023, Ergo solutions for a global issue, *ISE Magazine*, March, 2023, 24.

REFEREED PROCEEDINGS

1. Marras WS, Lavender SA, Leurgans S, Rajulu SL, **Allread WG**, Fathallah FA, & Ferguson SA, 1992, Industrial quantification of occupationally related low back disorder risk factors, *Proceedings of the Human Factors Society-36th Annual Meeting*, 757-760.
2. **Allread WG**, 1993, Dynamics of trunk performance during one-handed lifting, *Proceedings of the Human Factors & Ergonomics Society-37th Annual Meeting*, 569-663.
3. Lehman KR, **Allread WG**, Wright PL, & Marras WS, 1993, Quantification of hand grip force under dynamic conditions, *Proceedings of the Human Factors & Ergonomics Society-37th Annual Meeting*, 715-719
4. **Allread WG**, Marras WS, Granata KP, Davis KG, & Jorgensen MJ, 1996, Effects of box differences and employee job experience on trunk kinematics & low back injury risk during depalletizing operations, *Proceedings of the Human Factors & Ergonomics Society-40th Annual Meeting*, 651-655.
5. Marras WS, Granata KP, Davis KG, **Allread WG**, & Jorgensen MJ, 1996, Effects of box weight, size, and handle coupling on spine loading during depalletizing operations, *Proceedings of the Human Factors & Ergonomics Society-40th Annual Meeting*, 646-650.
6. Marras WS, **Allread WG**, Jorgensen MJ & Fathallah FA, 1997, A prospective validation of the LMM low back disorder risk model, *Proceedings of the 13th Triennial Congress of the International Ergonomics Association*, Tampere, Finland, 4, 301-302.
7. **Allread WG**, Marras WS, & Fathallah FA, 1998, The relationship between occupational musculo-skeletal discomfort and workplace, personal, and trunk kinematic factors, *Proceedings of the Human Factors & Ergonomics Society-42nd Annual Meeting*, 896-900.
8. **Allread WG**, 2000, A study of the relationship between personality and risk factors for musculo-skeletal disorders, *Proceedings of the joint 14th Triennial Congress of the International Ergonomics Association and the 44th Annual Meeting of the Human Factors & Ergonomics Society*, 5-52 – 5-55.
9. Marras WS, **Allread WG**, Burr DL, & Fathallah FA, 2000, Validation of low-back disorder risk model in a prospective study of ergonomic interventions in manual materials handling jobs, *Proceedings of the Joint 14th Triennial Congress of the International Ergonomics Association and the 44th Annual Meeting of the Human Factors and Ergonomics Society*, 5-5 – 5-7.
10. Prince P & **Allread WG**, 2007, A proactive approach for addressing baggage handling issues, *Proceedings of the 10th Annual Applied Ergonomics Conference*, Dallas, TX.
11. Fujishiro K, Heaney CA, Ferguson SA, **Allread WG**, & Marras WS, 2007, Physical workload and low back disorders: Does fairness matter? *Proceedings of the 135th Annual Meeting of the American Public Health Association*, Washington, DC.
12. **Allread WG** & Prince P, 2008, Using a wireless EMG system for field ergonomics assessments, *Proceedings of the 11th Annual Applied Ergonomics Conference*, Orlando, FL.
13. Ferguson S, Burr D, **Allread WG**, Ashida S, Fujishiro K, Heaney C, & Marras W, 2008, Prevalence of low back disorder in furniture distribution centers, *Proceedings of the Human Factors & Ergonomics Society-52nd Annual Meeting*.

14. Ferguson S, Marras WS, **Allread WG**, Knapik GG, Vandlen KA, Splittstoesser RE, & Yang G, 2009, Musculoskeletal disorder risk associated with auto rotation angle during an assembly task, *Proceedings of the Human Factors & Ergonomics Society-53rd Annual Meeting*.
15. **Allread WG**, 2011, Using new research to improve pushing/pulling tasks, *Proceedings of the 14th Annual Applied Ergonomics Conference*, Orlando, FL.
16. Ferguson S, **Allread WG**, Le P, Rose J, & Marras WS, 2011, Shoulder muscle oxygenation during repetitive tasks, *Proceedings of the Human Factors & Ergonomics Society-54th Annual Meeting*.
17. **Allread WG** & Missar V, 2013, Ergonomics methods to reduce injury risk among obese and aging employees, *Applied Ergonomics Conference*, Dallas, TX.
18. **Allread WG**, 2015, Closing the gap: Where to find and access new ergonomics research, *Applied Ergonomics Conference*, Nashville, TN.
19. **Allread WG** & Aurand, A, 2017, Ergonomics and productivity: Proof that they are not mutually exclusive, *Applied Ergonomics Conference*, Orlando, FL.
20. **Allread WG**, 2018, New push-pull guidelines based on biomechanical tolerances, *Applied Ergonomics Conference*, Atlanta, GA.
21. **Allread WG**, 2019, Push-pull guidelines based on biomechanical tolerances and use of its new web tool, *Applied Ergonomics Conference*, New Orleans, LA.
22. **Allread WG**, 2021, The impact of one-handed lifting on spine kinematics and injury risk, *21st Triennial Congress of the International Ergonomics Association*, Vancouver, Canada / Virtual.
23. Reid CR, Gallagher S, **Allread WG**, McGowan B, Fox RR, & Nussbaum MA, 2022, Discussion panel: examining the perpetual issue of musculoskeletal disorders (MSDs) – Challenges, gaps, and opportunities, *Proceedings of the Human Factors & Ergonomics Society-66th Annual Meeting*, Atlanta, GA.
24. Vossen, P, & **Allread WG**, 2023, A case for best work practices: Comparisons of trunk motions and low back injury risk between alternative hotel room cleaning methods, *American Public Health Association Annual Meeting and Expo*, Atlanta, GA.

Professional Service

1. Chairperson and Reviewer, Disease, Disability, and Injury Prevention and Control Special Emphasis Panel, Collaborative Program for the Identification and Prevention of Work-Related Musculoskeletal Disorders, July 24, 2000
2. Member, Human Factors Subcommittee of the Association for the Advancement of Medical Instrumentation (AAMI), for the development of an updated human factors standard for medical devices, 2002 - 2010
3. Co-Advisor, Human Factors and Ergonomics Society Student Chapter at The Ohio State University, 2003-present
4. Mentor, Board of Certification in Professional Ergonomics, 2007 – present
5. Organizing Committee and Conference Volunteer, Applied Ergonomics Conference, 2009 – present
6. Advisory Board Member, Healthy Facilities Institute, 2012 – 2019
7. Board of Directors, Applied Ergonomics Society, 2018-present
8. Editor, Applied Ergonomics Society newsletter, 2018-present
9. President Elect, Applied Ergonomics Society, 2021-2022
10. President, Applied Ergonomics Society, 2022-2023
11. Immediate Past President, Applied Ergonomics Society, 2023-present

Selected Presentations

1. *Quantifying the Risk of Physical Injury in Physically Demanding Maritime Tasks*, Maritime Human Factors 2000 Conference, Baltimore MD, March 13th, 2000.
2. *An Update and Thoughts on OSHA's Draft Proposed Ergonomics Standard*, Ohio Safety Congress & Expo, Columbus OH, April 5th, 2000.
3. *Biomechanics of the Low Back and Occupational Risk Factors for Injury*, American College of Occupational and Environmental Medicine, State-of-the-Art Conference 2000, Nashville TN, October 29th, 2000.
4. *Biomechanical Task Analysis using the Lumbar Motion Monitor*, 4th Annual Applied Ergonomics Conference, Baltimore MD, March 12th, 2002.
5. *Ergonomics and the Bottom Line: How to Profit from a Successful Ergonomics Program*, 6th Annual Workers' Compensation Conference, Columbus OH, May 23rd, 2001.
6. *Implementing an Ergonomics Process in Distribution Centers*, American Industrial Hygiene Conference & Exposition, New Orleans LA, June 6th, 2001.
7. *How to Establish an Effective Ergonomics Program*, Association of Occupational Health Professions in Healthcare National Conference, Pittsburgh PA, October 10th, 2001.
8. *Ergonomics in the Healthcare Industry—Research and Standards*, Association of Occupational Health Professions in Healthcare National Conference, Pittsburgh PA, October 11th, 2001.
9. *Costly Mistakes—How to Address Ergonomic Hazards and Risks—Ergonomics at Work*, 11th Annual Ohio Conference on OSHA, Columbus OH, October 31st, 2001.
10. *The Control of Occupationally Related Low Back Disorders*, 5th Annual Applied Ergonomics Conference, Baltimore MD, March 11th, 2002.
11. *Ergonomics: Applications, Benefits, and Recent Regulatory Activity*, National Safety Council, Central Ohio Chapter, Columbus OH, September 18th, 2002.
12. *Ergonomics at the Desk*, Ohio Library Council Conference, Toledo OH, May 1st, 2003.
13. *Reducing Costs Using an Effective Ergonomics Process*, Central Indiana Chapter, American Society of Safety Engineers, Indianapolis IN, July 16th, 2003.
14. *A Look at the Ergonomics "Big Picture": Understanding the Types of Factors Related to Injury Risk* (Keynote Address), Capital Area Safety Council Ergonomic Conference, Columbus OH, November 17th, 2004.
15. *Low-Back Injury Risk for Airline Baggage Handlers*, American Industrial Hygiene Conference & Exposition, Anaheim CA, May 25th, 2005.
16. *Essentials of Workplace Ergonomics: How Musculoskeletal Disorders Develop, and Methods to Reduce Injury Risk*, Kentucky Governor's Safety & Health Conference and Exposition, Louisville KY, May 1th, 2006.
17. *Ergonomics: Understanding the Types of Factors Related to Injury Risk*, Insurance Loss Control Annual Conference, Lexington KY, October 30th, 2007.
18. *The Center for Occupational Health in Automotive Manufacturing (COHAM)*, Automotive Manufacturing Solutions Global Conference, Detroit MI, October 3rd, 2007.
19. *Adapting Construction Work to the Changing Labor Force*, OSHA/OSU Construction Safety Day, Columbus OH, January 23rd, 2008.
20. *Using a Wireless EMG System for Field Ergonomics Assessments*, 2008 Applied Ergonomics Conference, Orlando FL, March 12th, 2008.
21. *Future Directions in Ergonomics: How the Study and Application of Ergonomics is Adapting to Our Changing World*, Logan County Safety Council, Bellefontaine OH, December 18th, 2008.
22. *Applied Ergonomics Research being Conducted at The Ohio State University*, 2009 Applied Ergonomics Conference, Reno NV, March 25th, 2009.

23. *Proving the Case: Cost Justifying an Ergonomics Intervention*, Ohio Safety Congress, Columbus OH, April 1st, 2009.
24. *Developing and Justifying Ergonomics Solutions*, Ohio Safety Congress, Columbus OH, April 1st, 2010.
25. *Ergonomics in the 21st Century: What We are Learning about Injury Causation*, American Society of Safety Engineers, Central Ohio Chapter, Columbus OH, January 21st, 2011.
26. *Cost-Justifying Ergonomics Improvements*, 2011 Indiana Safety & Health Conference, Indianapolis IN, March 2nd, 2011.
27. *Dynamics & Manual Materials Handling: Why Movement Matters*, 2011 Consortium for Advanced Research in Gas Industries, Milwaukee WI, April 28th, 2011.
28. *Easy Techniques to Train Associates about Ergonomics Principles*, 2011 Honda Environmental & Safety/Ergonomics Supplier Symposium, Dublin OH, November 9th, 2011.
29. *Using Ergonomics to Improve Materials Handling Work*, Northern Ohio Chapter, ASSE, Professional Development Conference, Cuyahoga Heights OH, February 2nd, 2012.
30. *What Every Workers' Compensation Administrator Should Know about Ergonomics*, Ohio Self-Insurers Association, 38th Annual Conference, Columbus OH, June 21st, 2012.
31. *New Computer Workstation Products: Will They Keep You Healthy?*, Central Ohio Chapter, ASSE, Columbus OH, November 16th, 2012.
32. *Using Ergonomics to Improve Forging Operations*, Forge Shop Best Practices Workshop, Cleveland, OH, January 23rd, 2013.
33. *Addressing Issues Related to the Aging and Obese Workforce*, Marion Area Chamber of Commerce, Marion, OH, January 22nd, 2014.
34. *New Ergonomics Research: Preventing Injuries and Safely Returning to Work those with a Low Back Disorder*, Ohio Association of Occupational Health Nurses, Columbus, OH, November 6th, 2015.
35. *Hitting the Target: Identifying Root Cause Exposures to Reduce Low-Back Injuries*, Ergo-X Conference, Los Angeles, CA, June 7th, 2016.
36. *New Ergonomics Research: Preventing Injuries and Safely Returning to Work those with a Low Back Disorder*, PPG Nurses Seminar, Pittsburgh, PA, June 22nd, 2016.
37. *Using Ergonomics to Adapt Your Workplace to the Changing Workforce*, Wyandot Chamber of Commerce Safety Council, Upper Sandusky, OH, October 18th, 2018.
38. *Reducing Physical Stress in the Work Environment: Focus on Computer Workstations*, Supreme Court of Ohio, Columbus, OH, September 12th, 2019.
39. *Pros and Cons of Using Exoskeletons for Military Work*, Wright-Patterson Air Force Base, OH, September 25th, 2019.
40. *Spine Loads due to Patient Handling: A Partial Summary of the Research*, Ohio State Havener Eye Institute Eye and Ear Institute, Columbus, OH, July 28th, 2022.
41. *Using Ergonomics to Adapt Your Workplace to the Changing Workforce*, Tuscarawas Valley Safety Council, Sugarcreek, OH, August 18th, 2022.