

Andrew S. Merryweather, Ph.D.

Department of Mechanical Engineering, University of Utah
1495 E 100 S, MEK1550
Email: a.merryweather@utah.edu
Phone: 801.581.8118
Fax: 801.585.5261

Education

B.S. in Mechanical Engineering, 1998-2003, Utah State University, Logan, UT

M.S. in Mechanical Engineering, 2003-2007, University of Utah, Salt Lake City, UT
Thesis: "Model Development for the Estimation of Back Compressive Force and Subsequent Low Back Disorder Risk"

Ph.D. in Mechanical Engineering, 2006-2008, University of Utah, Salt Lake City, UT
Dissertation: "Lower Limb Biomechanics of Walking on Slanted and Level Railroad Ballast"
Chair: Donald S. Blawieck

Professional Experience (most recent first)

Associate Professor, Department of Mechanical Engineering, University of Utah, 2018 – present

Co-Director, TetraAdapt Community, 501(c)(3), (www.tetradapt.us), 2018 – present

Program Director, Ergonomics and Safety – Rocky Mountain Center for Occupational and Environmental Health – NIOSH ERC, 2015 – present

Co-Owner, Merryweather Farms LLC, (www.merryweathersfarm.com), 2017-present

Assistant Professor, Department of Mechanical Engineering, University of Utah, 2012-2018

Research Assistant Professor, Department of Mechanical Engineering, University of Utah, 2008-2012

Research Fellow, American Society of Safety Engineers - Liberty Mutual Research Institute, Summer 2012

President, Upstream Ergonomics Design Consulting, Cottonwood Hts, Utah, 2011-present

- Training, consultation, workflow design, and process/tool design emphasizing ergonomic and biomechanical analysis of occupational hazards to reduce worker injuries and increase system efficiency

Graduate Student, Teaching and Research Assistant, Department of Mechanical Engineering, University of Utah, Occupational Injury Prevention Research and Training Program, 2003-2008

- ME EN 6100 – *Ergonomics* (Lab TA), University of Utah, Fall 2006
- ME EN 6110 – *Industrial Safety* (Course TA), University of Utah, Spring 2007

Auxiliary Faculty Appointments

Department of Physical Therapy and Athletic Training, University of Utah, 2012-present

Department of Family and Preventive Medicine, University of Utah, 2013-present

Department of Biomedical Engineering, University of Utah, 2020-present

Research Interests

Occupational Biomechanics, 3D-Musculoskeletal Modeling, Injury Prevention, Rehabilitation
Ergonomics, Design, Motion Capture, Rehabilitation Robotics, Human Factors and Design, Adaptive Sports and Technology, Aging and Fall Prevention

Teaching Activities

Courses Taught:

- ME EN 5100/6100 – *Ergonomics* (Instructor), University of Utah, Fall 2008, 2017, 2018, 2019, 2020, 2021
- ME EN 5120/6120 – *Human Factors in Engineering Design* (Instructor), Fall 2009, 2011
- ME EN 5035/6035 – *Design of Experiments for Engineers* (Instructor), Spring 2016, 2017, 2019, 2020, 2021
- ME EN 5535/6535 – Introduction to Biomechanics (Instructor), Fall 2020, 2021
- ME EN 7100 – *Advanced Ergonomics* (Instructor), Spring 2010, 2012, 2013, 2014, 2016, 2018, 2020, 2022
- ME EN 7105 – *Advanced Ergonomics Lab* (Instructor), Spring 2010, 2012, 2013
- FP MD 6715/ME EN 6140 – Occupational Safety and Health Solutions (Co-Instructor), Spring 2010, 2011, 2012, 2013, 2017, 2018, 2019
- ME EN 4000 – Engineering Design 1 (Instructor), Fall 2011, Fall 2012, Spring 2015
- ME EN 1000 – Introduction to Robotics and System Design, Fall 2012, 2013, 2014

Regular Lectures:

- FPMD 6750 – Fundamentals of Industrial Hygiene (Safety and Ergonomics)
- BIOEN 6900 – Human Motion Analysis (Motion Analysis and Ergonomics Applications)
- ME EN 3900 – Professionalism Seminar (Safety's role as an Engineer)
- ME EN 7960 – Robotics Seminar (Motion Capture)
- ME EN 5535 – Introduction to Biomechanics (Motion Capture and Anthropometry)
- PUBH 4310 – Utah State University – Industrial Hygiene Recognition of Hazards

Senior design projects supervised (selected from 25):

- Alpine Tetra Ski – Downhill ski controlled using sip n puff
- PATW - Powered All-Terrain Wheelchair
- E-Tetra Bike - Hand Cycle for persons with Tetraplegia
- Training Cane - Electronic cane to train children with vision impairments
- Inova-Flex - Variable resistance lifting system for strength training and rehabilitation
- SITE Soccer - An instrumented Soccer Ball and Goal System for persons with vision impairment
- Knee Scooter - A project to design a hands-free mobility device to support movement during non-weight bearing injury recovery
- E-Tetra Kayak - A modified sea kayak for persons with Tetraplegia including powered assistance, rudder control, seating system and powered sail management
- Beginning Braille Training Device – A voice controlled system with active braille dot display to teach users how to read and understand braille characters.

Publications

Book Chapter

(Reverse Chronological by Year)

1. **Merryweather AS**, Trkov M, Gubler KK. (2019) *Chapter 29 - Surface transitions and stair climbing and descent*. In: Scataglini S, Paul G, eds., (pp. 397-413) *DHM and Posturography*: Academic Press.
2. Morse, J., **Merryweather, A.**, Bloswick, D. (2016). Chapter 20 Research Approaches to the Prevention and Protection of Patient Falls. *Fall Prevention and Protection: Principles*,

Guidelines, and Practices (pp. 341-368): CRC Press.

3. **Merryweather, A.**, Bloswick, D. (2007). Biomechanics During Ladder and Stair Climbing and Walking on Ramps and Other Irregular Surfaces. *Biomechanics in Ergonomics, Second Edition*: CRC Press.

Peer-Reviewed Publications

(Reverse Chronological by Year)

2022

1. Shi, Y., Pang, H., Xu, H., Li, X., Cao, Y., Merryweather, A., . . . Xiang, J. (2022). Effects of orthotic insole on gait patterns in children with mild leg length discrepancy. *Gait Posture*, 93, 191-197. doi:10.1016/j.gaitpost.2022.02.003
2. Trkov, M., Stevenson, D. T., & Merryweather, A. S. (2022). Classifying hazardous movements and loads during manual materials handling using accelerometers and instrumented insoles. *Appl Ergon*, 101, 103693. doi:10.1016/j.apergo.2022.103693

2021

1. Yazdani A, Novin RS, Merryweather A, Herman T. Ergonomically Intelligent Physical Human-Robot Interaction: Postural Estimation, Assessment, and Optimization. arXiv preprint arXiv:2108.0597
2. Yazdani A, Novin RS, Merryweather A, Herman T. DULA: A differentiable Ergonomics Model for Postural Optimization in Physical HRI. arXiv preprint arXiv:2107.06875.
3. Homayounpour M, Butler D, Vasta S, Merryweather A. Validation of an Inverse Kinematic VR Manikin in Seated Tasks: Application in Ergonomics Training. Congress of the International Ergonomics Association pgs. 367-373
4. Xu H, Li X, Shi Y, Taylor D, Christman M, Morse J, Merryweather A. Hospital bed height influences biomechanics during bed egress: A Comparative Controlled study of patients with Parkinson disease. *Journal of Biomechanics* 115, 110116
5. Gomez, N. G., Gaspar, F. W., Thiese, M. S., & **Merryweather, A. S.** (2021). Trends in incidence and correlation between medical costs and lost workdays for work-related amputations in the State of California from 2007 to 2018. *Health Sci Rep*, 4(3), e319. doi:10.1002/hsr2.319
6. Homayounpour, M., Gomez, N. G., Vasavada, A. N., & **Merryweather, A. S.** (2021). Cervical Muscle Activation Due to an Applied Force in Response to Different Types of Acoustic Warnings. *Ann Biomed Eng*, 49(9), 2260-2272. doi:10.1007/s10439-021-02757-4
7. Homayounpour, M., Gomez, N. G., Vasavada, A. N., & **Merryweather, A. S.** (2021). The role of neck muscle co-contraction and postural changes in head kinematics after safe head impacts: Investigation of head/neck injury reduction. *J Biomech*, 128, 110732. doi:10.1016/j.jbiomech.2021.110732
8. Kapellusch, J. M., Bao, S. S., Malloy, E. J., Thiese, M. S., **Merryweather, A. S.**, & Hegmann, K. T. (2021). Validation of the Revised Strain Index for Predicting Risk of Incident Carpal Tunnel Syndrome in a Prospective Cohort. *Ergonomics*, 1-10. doi:10.1080/00140139.2021.1940306

9. Novin, R. S., Taylor, E., Hermans, T., & **Merryweather, A.** (2021). Development of a Novel Computational Model for Evaluating Fall Risk in Patient Room Design. *HERD*, 14(2), 350-367. doi:10.1177/1937586720959766
10. Piatkowski, M., Taylor, E., Wong, B., Taylor, D., Foreman, K. B., & **Merryweather, A.** (2021). Designing a Patient Room as a Fall Protection Strategy: The Perspectives of Healthcare Design Experts. *Int J Environ Res Public Health*, 18(16). doi:10.3390/ijerph18168769
11. Wang, Y., Truong, T. E., Chesebrough, S. W., Willemsen, P., Foreman, K. B., **Merryweather, A. S.**, . . . Minor, M. A. (2021). Augmenting Virtual Reality Terrain Display with Smart Shoe Physical Rendering: A Pilot Study. *IEEE Trans Haptics*, 14(1), 174-187. doi:10.1109/TOH.2020.3029896
12. Xu, H., Li, X., Shi, Y., An, L., Taylor, D., Christman, M., . . . **Merryweather, A.** (2021). Hospital bed height influences biomechanics during bed egress: A comparative controlled study of patients with Parkinson disease. *J Biomech*, 115, 110116. doi:10.1016/j.jbiomech.2020.110116

2020

13. Mortensen, J. D., Vasavada, A. N., & **Merryweather, A. S.** (2020). Sensitivity analysis of muscle properties and impact parameters on head injury risk in american football. *Journal of biomechanics*, 109411. doi:<https://doi.org/10.1016/j.jbiomech.2019.109411>
14. Roya Sabbagh Novin, Ellen Taylor, Tucker Hermans, **Andrew Merryweather**. (2020). Development of a Novel Computational Model for Evaluating Fall Risk in Patient Room Design. 8/20/2020. arXiv:2008.09169. <https://arxiv.org/abs/2008.09169>
15. Thiese MS, Lu ML, **Merryweather A**, Tang R, Ferguson SA, Malloy EJ, Marras WS, Hegmann KT, Kapellusch J. (2020). Psychosocial Factors and Low Back Pain Outcomes in a Pooled Analysis of Low Back Pain Studies. *J Occup Environ Med*. 2020, 15 Jun. doi:10.1097/jom.0000000000001941. PMID: 32568818.
16. Wang, H., An, L., Feng, X., Zhao, J., **Merryweather, A.**, & Xu, H. (2020). Ground reaction force adaptation during cross-slope walking on railroad ballast. *Gait Posture*, 75, 66-71. doi:<https://doi.org/10.1016/j.gaitpost.2019.10.001>
17. Amir Yazdani, Roya Sabbagh Novin, Andrew Merryweather, Tucker Hermans. (2020). Estimating Human Teleoperator Posture Using Only a Haptic-Input Device. 3/20/2020 arXiv:2002.10586 <https://arxiv.org/abs/2002.10586>
18. An L., Li X., Shi Y., Wu R., Zhang J., Wang H., Merryweather A., Hu J. & Xu H. (2020). Musculoskeletal modelling for knee contact force during gait after knee replacement. *Acta Medica Mediterranea*. Vol. 36, 1193-1200. Journal Article, Published, 01/01/2020.

2019

19. Novin, R. S., Yazdani, A., **Merryweather, A.**, & Hermans, T. (2019). A Model Predictive Approach for Online Mobile Manipulation of Nonholonomic Objects using Learned Dynamics. *arXiv preprint arXiv:1912.09565*.

20. Cheng M, Thiese MS, Wood EM, Kapellusch J, Foster J, Drury D, **Merryweather A**, Hegmann KT & (2019). Relationship Between Opioid Use and Pain Severity Ratings in Workers with Low Back Pain. *Journal of occupational and environmental medicine*. Journal Article, In press, 07/01/2019.
21. Ferguson SA, **Merryweather A**, Thiese MS, Hegmann KT, Lu ML, Kapellusch JM & Marras WS (2019). Prevalence of low back pain, seeking medical care, and lost time due to low back pain among manual material handling workers in the United States. *BMC musculoskeletal disorders*. Vol. 20, 243. Journal Article,. *BMC Musculoskeletal Disorders*, Volume 20, Article number: 243, In Press 05/22/2019
<https://doi.org/10.1186/s12891-019-2594-0>
22. K Bo Foreman, Christopher Wilson, Leland E Dibble, and **Andrew S Merryweather** Training Persons with Parkinson Disease using an Advanced CAVE Virtual Reality System. Vol. 33, No. 1_ supplement, In Press, April 2019 Abstract Number:335.4
https://www.fasebj.org/doi/abs/10.1096/fasebj.2019.33.1_supplement.335.4
23. Cardona A, Thiese M, Kapellusch J, **Merryweather A**, Wood E & Hegmann K (2019). Role of Biomechanical Factors in Resolution of Carpal Tunnel Syndrome among a Population of Workers. *Journal of occupational and environmental medicine*. Journal Article, In press, 02/01/2019.

2018

24. Trapp, S. K., Altizer, R., **Merryweather, A.**, Lee, V., Campbell, C., Rivera-Melo, B., . . . Rosenbluth, J. (2018). Tilt Tracker: Technical Note on an mHealth System to Monitor and Prevent Ulcer Development Among Power Wheelchair Users. *Technology & Innovation*, 20(1-2), 3-9. doi:10.21300/20.1-2.2018.3
25. Eilertsen, M., **Merryweather, A.**, & Roundy, S. (2018). Characterization of load reduction while lifting drywall using an unpowered drywall lifting device. *Work*, 60(4), 661-671. doi:10.3233/wor-182773
26. Yoon, S. K., Thiese, M. S., Ott, U., Kapellusch, J., **Merryweather, A.**, Wood, E. M., . . . Hegmann, K. T. (2018). The Role of Elbow Tender Point Examination in the Diagnosis of Lateral Epicondylitis. *J Occup Environ Med*. doi:10.1097/jom.0000000000001496
27. Hang Xu, MaryEllen Hunt, K.Bo Foreman, Jie Zhao, Andrew Merryweather. “Gait alterations on irregular surface in people with Parkinson's disease.” *Clinical Biomechanics*. Vol. 57, August 2018, Pages 93-98.
28. Hegmann KT, **Merryweather A**, Thiese MS, Kendall R, Garg A, Kapellusch J, Foster J, Drury D, Wood EM & Melhorn JM (2018). “Median Nerve Symptoms, Signs, and Electrodiagnostic Abnormalities Among Working Adults.” *The Journal of the American Academy of Orthopaedic Surgeons*. Vol. 26, 576-584. 08/01/2018.
29. Mortensen JD, Vasavada AN & Merryweather AS. “The inclusion of hyoid muscles improve moment generating capacity and dynamic simulations in musculoskeletal models of the head and neck.” *PloS one*. 13(6): e0199912.
<https://doi.org/10.1371/journal.pone.0199912>

30. Hang Xu, Andrew **Merryweather**, K. Bo Foreman, Jie Zhao, MaryEllen Hunt. “Dual-task interference during gait on irregular terrain in people with Parkinson’s disease.” *Gait & Posture*, Volume 63, June 2018, Pages 17-22, <https://doi.org/10.1016/j.gaitpost.2018.04.027>.
31. Mortensen J., Trkov M., **Merryweather A.** “Exploring novel objective functions for simulating muscle coactivation in the neck.” *Journal of Biomechanics*, V. 71, 2018, Pages 127-134, ISSN 0021-9290, <https://doi.org/10.1016/j.jbiomech.2018.01.030>.
32. Kapellusch JM, Silverstein BA, Bao SS, Thiese MS, **Merryweather AS**, Hegmann KT & Garg A (2018). “Risk assessments using the Strain Index and the TLV for HAL, Part II: Multi-task jobs and prevalence of CTS.” *Journal of occupational and environmental hygiene*. Vol. 15, 157-166. 01/01/2018.
33. Hejrati B, **Merryweather AS** & Abbott JJ. “Generating Arm-Swing Trajectories in Real-Time Using a Data-Driven Model for Gait Rehabilitation With Self-Selected Speed.” *IEEE Engineering in Medicine and Biology Society*. Vol. 26, 115-124. 01/01/2018.

2017

34. **Merryweather, A. S.**, Thiese, M. S., Kapellusch, J. M., Garg, A., Fix, D. J., & Hegmann, K. T. (2017). Occupational factors related to slips, trips and falls among home healthcare workers. *Saf Sci*, doi:10.1016/j.ssci.2017.07.002
35. Hegmann, K. T., Thiese, M. S., Kapellusch, J., **Merryweather, A.**, Bao, S., Silverstein, B., . . . Garg, A. (2017). Association between Epicondylitis and Cardiovascular Risk Factors in Pooled Occupational Cohorts. *BMC Musculoskelet Disord*, 18(1), 227. doi:10.1186/s12891-017-1593-2
36. Thiese, M., **Merryweather, A.**, Koric, A., Ott, U., Wood, E., Kapellusch, J., . . . WISTAH Hand Study Research Team. (Accepted manuscript online: May 17, 2017) The Association Between Wrist Ratio and Carpal Tunnel Syndrome: Effect Modification by Body Mass Index. *Muscle Nerve*, 10.1002/mus.25692, n/a-n/a. doi:10.1002/mus.25692
37. Applegate, K., Thiese, M., **Merryweather, A.**, Kapellusch, J., Drury, D., Wood, E., . . . Hegmann, K. (2017). Association Between Cardiovascular Disease Risk Factors and Rotator Cuff Tendinopathy: A Cross-Sectional Study. *J Occup Environ Med*, 59(2), 154-160. doi:10.1097/JOM.0000000000000929
38. Xu, H., Greenland, K., Bloswick, D., Zhao, J., **Merryweather, A.** (2017). Vacuum Level Effects on Knee Contact Force for Unilateral Transtibial Amputees with Elevated Vacuum Suspension. *J Biomech*, 57, 110-116. doi:10.1016/j.jbiomech.2017.04.013
39. Boregowda, S., Handy, R., Sleeth, D., **Merryweather, A.** (2017). Constructal Model of Fitts’s Law To Predict Speed–Accuracy Trade-Off. *International Journal of Design & Nature and Ecodynamics*, 12(1), 44-54.
40. Xu, H., Greenland, K., Bloswick, D., Zhao, J., **Merryweather, A.** (2017). Vacuum Level Effects on Gait Characteristics for Unilateral Transtibial Amputees with Elevated Vacuum Suspension. *Clin Biomech (Bristol, Avon)*, 43, 95-101. doi:10.1016/j.clinbiomech.2017.02.008

41. Xu, H., Jampala, S., Bloswick, D., Zhao, J., **Merryweather, A.** (2017). Evaluation of Knee Joint Forces during Kneeling Work with Different Kneepads. *Appl Ergon*, 58, 308-313. doi:10.1016/j.apergo.2016.07.003
42. Christensen, J., Wilson, C., **Merryweather, A.,** Foreman, K.B. (2017). Kinematics of the Pelvis, Torso and Lower Limb during Obstacle Negotiation While Under Temporal Constraints. *Anatomical Record-Advances in Integrative Anatomy and Evolutionary Biology*, 300(4), 732-738. doi:10.1002/ar.23554

2016

43. Bao, S., Kapellusch, J., **Merryweather, A.,** Thiese, M., Garg, A., Hegmann, K., Silverstein, B. (2016). S02-3 Relationships Between Work Organisation Factors and Carpal Tunnel Syndrome and Epicondylitis. *Occup Environ Med*, 73(Suppl 1), A96-A96.
44. Boregowda, S., Handy, R., Sleeth, D., **Merryweather, A.** (2016). Measuring Entropy Change in a Human Physiological System. *Journal of Thermodynamics*, 2016.
45. Thiese, M., Hegmann, K., Kapellusch, J., **Merryweather, A.,** Bao, S., Silverstein, B., . . . Garg, A. (2016). Psychosocial Factors Related to Lateral and Medial Epicondylitis: Results from Pooled Study Analyses. *J Occup Environ Med*, 58(6), 588-593. doi:10.1097/JOM.0000000000000701
46. Hegmann, K., Thiese, M., Kapellusch, J., **Merryweather, A.,** Bao, S., Silverstein, B., . . . Drury, D. L. (2016). Association Between Cardiovascular Risk Factors and Carpal Tunnel Syndrome in Pooled Occupational Cohorts. *J Occup Environ Med*, 58(1), 87-93. doi:10.1097/JOM.0000000000000573
47. Bao, S., Kapellusch, J., **Merryweather, A.,** Thiese, M., Garg, A., Hegmann, K., . . . Tang, R. (2016). Impact of Work Organizational Factors on Carpal Tunnel Syndrome and Epicondylitis. *J Occup Environ Med*, 58(8), 760-764. doi:10.1097/JOM.0000000000000790
48. Hejrati, B., Chesebrough, S., Foreman, K.B., Abbott, J.J., **Merryweather, A.** (2016). Comprehensive Quantitative Investigation of Arm Swing during Walking at Various Speed and Surface Slope Conditions. *Human Movement Science*, 49, 104-115. doi:10.1016/j.humov.2016.06.001
49. Xu, H., **Merryweather, A.,** Bloswick, D. (2016). Evaluation of a Force Plate System for Measuring Center of Pressure in Railroad Ballast. *Gait Posture*, 46, 179-183. doi:10.1016/j.gaitpost.2016.03.013
50. Bao, S., Kapellusch, J., **Merryweather, A.,** Thiese, M., Garg, A., Hegmann, K., Silverstein, B. A. (2016). Relationships Between Job Organisational Factors, Biomechanical and Psychosocial Exposures. *Ergonomics*, 59(2), 179-194. doi:10.1080/00140139.2015.1065347

2015

51. **Merryweather, A.,** Morse, J., Doig, A., Godfrey, N., Gervais, P., Bloswick, D. (2015). Effects of Bed Height on the Biomechanics of Hospital Bed Entry and Egress. *Work*, 52(3), 707-713. doi:10.3233/WOR-152110

52. Tung, K., Shorti, R., Downey, E., Bloswick, D., Merryweather, A. (2015). The Effect of Ergonomic Laparoscopic Tool Handle Design on Performance and Efficiency. *Surg Endosc*, 29(9), 2500-2505. doi:10.1007/s00464-014-4005-9
53. Thiese, M., Hegmann, K., Kapellusch, J., **Merryweather, A.**, Bao, S., Silverstein, B., Garg, A. (2015). Associations Between Job Physical and Psychosocial Factors in a Pooled Study. Paper presented at the Proceedings of the Human Factors and Ergonomics Society Annual Meeting.
54. Christman, M., Morse, J., Wilson, C., Godfrey, N., Doig, A., Bloswick, D., Merryweather, A. (2015). Analysis of the Influence of Hospital Bed Height on Kinematic Parameters Associated with Patient Falls During Egress. *Procedia Manufacturing*, 3, 280-287.
55. Yoo, B., Kim, S., Merryweather, A., Bloswick, D. (2015). 1C1-3 The Effect of Carrying a Military Backpack on a Transverse Slope and Sand Surface on Lower Limb Kinetics. *The Japanese Journal of Ergonomics*, 51(Supplement), S398-S403.
56. Morse, J., Gervais, P., Pooler, C., **Merryweather, A.**, Doig, A., Bloswick, D. (2015). The Safety of Hospital Beds: Ingress, Egress, and In-Bed Mobility. *Glob Qual Nurs Res*, 2, 2333393615575321. doi:10.1177/2333393615575321
57. Xu, H., Wang, Y., Greenland, K., Bloswick, D., Merryweather, A. (2015). The Influence of Deformation Height on Estimating the Center of Pressure during Level and Cross-Slope Walking on Sand. *Gait Posture*, 42(2), 110-115. doi:10.1016/j.gaitpost.2015.04.015
58. Smith, L., Hunt, M., Dibble, L., Merryweather, A., Foreman, K.B. (2015). Obstacle Height and Divided Attention Affects Obstacle Crossing in People with Parkinson Disease. *Faseb Journal*, 29(1 Supplement), 705.701. Retrieved from <Go to ISI>://WOS:000361722700436
59. Xu, H., Bloswick, D., Merryweather, A. (2015). An Improved OpenSim Gait Model with Multiple Degrees of Freedom Knee Joint and Knee Ligaments. *Comput Methods Biomech Biomed Engin*, 18(11), 1217-1224. doi:10.1080/10255842.2014.889689
60. Thiese, M., Hegmann, K., Kapellusch, J., **Merryweather, A.**, Bao, S., Silverstein, B., Garg, A. (2015). Associations Between Distal Upper Extremity Job Physical Factors and Psychosocial Measures in a Pooled Study. *Biomed Res Int*, 2015, 643192. doi:10.1155/2015/643192
61. Xu, H., Merryweather, A., Bloswick, D., Mao, Q., Wang, T. (2015). The Effect of Toe Marker Placement Error on Joint Kinematics and Muscle Forces using OpenSim Gait Simulation. *Biomed Mater Eng*, 26 Suppl 1, S685-691. doi:10.3233/BME-151360

2014

62. Shorti, R., Merryweather, A., Thiese, M., Kapellusch, J., Garg, A., Hegmann, K. (2014). Fall Risk Factors for Commercial Truck Drivers. *Journal of Ergonomics*, 9(S3), 1-9.
63. Kapellusch, J., Garg, A., Boda, S., Hegmann, K., Moore, J., Thiese, M., **Merryweather, A.**, . . . Malloy, E. (2014). Association Between Lifting and Use of Medication for Low

Back Pain: Results from the Backworks Prospective Cohort Study. *J Occup Environ Med*, 56(8), 867-877. doi:10.1097/JOM.0000000000000197

64. Steele, T., **Merryweather, A.**, Blowski, D. (2014). Manual Material Handling Guidelines for the Shoulder: Biomechanical Support for the Liberty Mutual Tables as Developed by Snook and Ciriello. *International Journal of Industrial Ergonomics*, 44(2), 275-280. doi:10.1016/j.ergon.2013.10.008
65. Xu, H., **Merryweather, A.**, Blowski, D. (2014). Joint Loading, Muscle Co-Contraction, Ligament Force and Peak Knee Contact Forces when Walking on Railroad Ballast. *International Journal of Human Factors Modelling and Simulation* 11, 4(2), 87-101.
66. Garg, A., Boda, S., Hegmann, K., Moore, J., Kapellusch, J., Bhoyar, P., **Merryweather, A.**, . . . Malloy, E. (2014). The NIOSH Lifting Equation and Low-Back Pain, Part 1: Association with Low-Back Pain in the Backworks Prospective Cohort Study. *Hum Factors*, 56(1), 6-28. doi:10.1177/0018720813486669
67. Garg, A., Kapellusch, J., Hegmann, K., Moore, J., Boda, S., Bhoyar, P., **Merryweather, A.**, . . . Malloy, E. (2014). The NIOSH Lifting Equation and Low-Back Pain, Part 2: Association with Seeking Care in the Backworks Prospective Cohort Study. *Hum Factors*, 56(1), 44-57. doi:10.1177/0018720813491284
68. Smith, L., Hunt, M., Dibble, L., **Merryweather, A.**, Foreman, K. (2014). Examining Causes and Contributors to Falls in Parkinson Disease (728.9). *The FASEB journal*, 28(1 Supplement), 728.729.
69. Garg, A., Kapellusch, J., Hegmann, K., Thiese, M., **Merryweather, A.**, Wang, Y., Malloy, E. (2014). The Strain Index and TLV for HAL: Risk of Lateral Epicondylitis in a Prospective Cohort. *Am J Ind Med*, 57(3), 286-302. doi:10.1002/ajim.22279

2013

70. Greenland, K., **Merryweather, A.**, Blowski, D. (2013). The Effect of Lifting Speed on Cumulative and Peak Biomechanical Loading for Symmetric Lifting Tasks. *Saf Health Work*, 4(2), 105-110. doi:10.1016/j.shaw.2013.04.001
71. Steele, T., **Merryweather, A.**, Dickerson, C., Blowski, D. (2013). A Computational Study of Shoulder Muscle Forces during Pushing Tasks. *International Journal of Human Factors Modelling and Simulation*, 4(1), 1-22.
72. Garg, A., Hegmann, K., Moore, J., Kapellusch, J., Thiese, M., Boda, S., **Merryweather, A.**, . . . BackWorks Study Team. (2013). Study protocol title: A Prospective Cohort Study of Low Back Pain. *BMC Musculoskelet Disord*, 14, 84. doi:10.1186/1471-2474-14-84

2012

73. Pate, M., **Merryweather, A.** (2012). Utah Farm Owner/Operators' Safety Practices and Risk Awareness Regarding Confined Space Work in Agriculture. *J Agric Saf Health*, 18(4), 273-284. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23189514>
74. Garg, A., Kapellusch, J., Hegmann, K., Wertsch, J., **Merryweather, A.**, Deckow-Schaefer, G., . . . WISTAH Hand Study Research Team. (2012). The Strain Index (SI) and Threshold Limit Value (TLV) for Hand Activity Level (HAL): Risk of Carpal

Tunnel Syndrome (CTS) in a Prospective Cohort. *Ergonomics*, 55(4), 396-414.
doi:10.1080/00140139.2011.644328

75. Garg, A., Hegmann, K., Wertsch, J., Kapellusch, J., Thiese, M., Bloswick, D., **Merryweather, A.**, . . . WISTAH Hand Study Research Team. (2012). The WISTAH Hand Study: A Prospective Cohort Study of Distal Upper Extremity Musculoskeletal Disorders. *BMC Musculoskeletal Disord*, 13, 90. doi:10.1186/1471-2474-13-90
76. Yi, W., Xu, H., **Merryweather, A.** (2012). The Technology of Merging Single Force Plate Gait Trials to Simulate Full Gait Cycle in Environmental Health Research. *Advanced Materials Research* 518:639-646. doi:10.4028/www.scientific.net/AMR.518-523.639

2011 and Earlier

77. Greenland, K., **Merryweather, A.**, Bloswick, D. (2011). Prediction of Peak Back Compressive Forces as a Function of Lifting Speed and Compressive Forces at Lift Origin and Destination - a Pilot Study. *Saf Health Work*, 2(3), 236-242.
doi:10.5491/SHAW.2011.2.3.236
78. **Merryweather, A.**, Yoo, B., Bloswick, D. (2011). Gait Characteristics Associated with Trip-Induced Falls on Level and Sloped Irregular Surfaces. *Minerals*, 1(1), 109-121.
doi:10.3390/min1010109
79. **Merryweather, A.**, Loertscher, M., Bloswick, D. (2009). A Revised Back Compressive Force Estimation Model for Ergonomic Evaluation of Lifting Tasks. *Work*, 34(3), 263-272. doi:10.3233/WOR-2009-0924
80. **Merryweather, A.**, Bloswick, D., Sesek, R. (2008). A Calculation of Dynamic Back Compressive Force: A Pilot Study to Identify Load Displacement Velocity Constants. *J SH&E Res*, 5, 1-15

Conference Proceedings/Presentations (refereed/reviewed)

(Reverse Chronological by Year)

2020

1. Ahmad Alsaleem, Ross Imburgia, **Andrew Merryweather**, Jeffrey Rosenbluth, Stephen Trapp, and Jason Wiese. 2020. Applying Ability-Based Design Principles to Adaptive Outdoor Activities. In Proceedings of the 2020 ACM Designing Interactive Systems Conference (DIS '20). Association for Computing Machinery, New York, NY, USA, 1–12. DOI:<https://doi.org/10.1145/3357236.3395508>

2019

2. Alsaleem, A., Imburgia, R., Godinez, M., **Merryweather, A.**, Altizer, R., Denning, T., . . . Wiese, J. (2019). Leveraging Shared Control to Empower People with Tetraplegia to Participate in Extreme Sports. Paper presented at the The 21st International ACM SIGACCESS Conference on Computers and Accessibility. Pages 470-481.
<https://doi.org/10.1145/3308561.3353775>

3. Homayounpour, M., Mortensen, J. D., & Merryweather, A. S. (2019). Auditory Warnings Invoking Startle Response Cause Faster and More Intense Neck Muscle Contractions Prior to Head Impacts. Paper presented at the Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Sage Journals. Vol 63, Issue 1, 2019 <https://doi.org/10.1177/1071181319631320>
4. Schreiber M., Trkov M. & Merryweather A. (2019). Influence of Frequency Bands in EEG Signal to Predict User Intent. International IEEE/EMBS Conference on Neural Engineering, NER. Vol. 2019-March, 1126-1129. Article, Refereed Conference Proceedings, Published, 05/16/2019.
5. Mortensen J., Trkov M. & Merryweather A. (2019). Improved ergonomic risk factor assessment using opensim and inertial measurement units. Proceedings - 2018 IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies, CHASE 2018. 27-28. Article, Refereed Conference Proceedings, Published, 02/21/2019.
6. Mortensen J. & Merryweather A. (2019). Using OpenSim to Investigate the Effect of Active Muscles and Compliant Flooring on Head Injury Risk. (pp. 744-751). Vol. 819, Advances in Intelligent Systems and Computing. Article, Refereed Conference Proceedings, Published, 01/01/2019.
7. Trkov M. & Merryweather A. (2019). Estimation of Lifting and Carrying Load During Manual Material Handling. (pp. 153-161). Vol. 825, Advances in Intelligent Systems and Computing. Article, Refereed Conference Proceedings, Published, 01/01/2019.

2018

7. Novin, R. S., Yazdani, A., Hermans, T., & Merryweather, A. (2018). *Dynamic Model Learning and Manipulation Planning for Objects in Hospitals using a Patient Assistant Mobile (PAM) Robot*. Paper presented at the 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
8. Mortensen, J., Trkov, M., & Merryweather, A. (2018). *Improved ergonomic risk factor assessment using opensim and inertial measurement units*. Paper presented at the 2018 IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE).
9. Tang, R., Lu, M.-L., **Merryweather, A. S.**, Thiese, M. S., Hegmann, K. T., Ferguson, S. A., . . . Kapellusch, J. M. (2018). *Distributions of Job Physical Exposure Data in a Pooled Study of Low Back Pain Prospective Cohorts*. Paper presented at the Proceedings of the Human Factors and Ergonomics Society Annual Meeting.
10. Taylor D, Merryweather A, Morse J. Biomechanical Characterization of the Hand Touch Corrective Behavior in the Frail Elderly During Bed Egress. Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care. Vol 7, Issue 1, pp. 237 – 239, June 29, 2018. HFES, Boston MA, March 26, 2018. <https://doi.org/10.1177/2327857918071055>
11. Mortensen, J, Merryweather A., Exploring Individual Muscle Characteristics on Free Throw Performance, RMASB, Estes Park CO April 13, 2018

12. Kryztopher D. Tung, Rami Shorti, Colton Ottley, **Donald Bloswick**, **Andrew Merryweather**. "A Realtime Method for Estimating Full Body Hydration Levels in Wildland Firefighters." Southeastern ERC Symposium, Savannah GA, April 3-4 2018.

2017

13. Mortensen, J., **Merryweather, A.** (2017) Exploring Novel Objective Functions for Simulating Muscle Coactivation in the Neck. 2017 Summer Biomechanics, Bioengineering and Biotransport Conference (SB³C). June 2017, Tuscon, AZ.
14. Yazdani, M., Sabbagh Novin, R., **Merryweather, A.** (2017) Improvement of human safety in fault-tolerant human and robot collaboration using convex optimization and receding horizon control, NIOSH State of the Science Conference, June 2017, Aurora, CO.
15. Patterson, M., **Merryweather, A.**, Foreman, B. (2017). Gait Parameters of Patients with Parkinson Disease to Develop Innovative Virtual Reality Training Environments. Proceedings of the 22nd Annual Meeting of the Gait and Clinical Movement Analysis Society, Salt Lake City, UT, May 22-26, 2017.
16. Xu, H., Greenland, K., Bloswick, D., **Merryweather, A.** (2017). Vacuum Level Effects on Knee Contact Force for Unilateral Transtibial Amputees with Elevated Vacuum Suspension. Proceedings of the 22nd Annual Meeting of the Gait and Clinical Movement Analysis Society, Salt Lake City, UT, May 22-26, 2017.

2016

17. Wilson, C., Chesebrough, S., **Merryweather, A.**, Dibble, L., Foreman, K. (2016). Gait Parameters during Obstacle Negotiation in a Virtual Environment. Proceedings of the 21st Annual Meeting of the Gait and Clinical Movement Analysis Society, Salt Lake City, UT, May 22-26, 2016.

2015

18. **Merryweather, A.** (2015). Modeling Physical Exposure Risk Factors for LBP: How Much is Too Much? Presented at American Industrial Hygiene Conference and Expo (AIHce), Salt Lake City, UT, June 3, 2015.
19. Miller, J., **Merryweather, A.**, Minor, M. (2015). Design and Simulation of an Ankle Foot Simulator. Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird Resort, Utah, June 17-20, 2015.
20. Christman, M., Morse, J., Wilson, C., Godfrey, N., Doig, A., Bloswick, D., **Merryweather, A.** (2015). Analysis of the Influence of Hospital Bed Height on Kinematic Parameters Associated with Patient Falls During Egress. 6th International Conference on Applied Human Factors and Ergonomics and the Affiliated Conferences, Las Vegas, NV, July 26-30, 2015.
21. **Merryweather, A.**, Kapellusch, J., Boa, S., Thiese, M., Silverstein, S., Hegmann, K., Garg, A. (2015). Are Work Pace, Overtime, Job Rotation or Secondary Employment Associated with CTS and Epicondylitis? 19th Triennial Congress of the International Ergonomics Association, Melbourne, Australia, August 11, 2015.
22. **Merryweather, A.**, Hunt, M., Smith, L., Foreman, B., Minor, M. (2015). Gait Alterations on Irregular Terrain in Older Adults with or without Parkinson Disease: Fall Risk Implications. 19th Triennial Congress of the International Ergonomics Association, Melbourne, Australia, August 12, 2015.

2014

23. Greenland, K., MacWilliams, B., Bloswick, D., **Merryweather, A.** (2014). Effect of Vacuum Socket Suspension on Unilateral Trans-Tibial Amputee Gait. AAOP Annual Meeting, Journal of Proceedings, Chicago, IL, February 26-March 1, 2014.
24. **Merryweather, A.**, Godfrey, N., Steele, T. (2014). Characterization of Various Probing Bards used in the Gas Services Industry: A Biomechanics Study Using 3-D Motion Analysis Techniques and Instrumentation. 17th Annual Applied Ergonomics Conference, March 24-27, 2014.
25. Godfrey, N., Doig, A., Morse, J., Bloswick, D., **Merryweather, A.** (2014). Hospital Bed Height as a Contributing Factor to Patient Safety. 17th Annual Applied Ergonomics Conference, March 24-27, 2014.
26. Tung, K., Shorti, R., Downey, E., Bloswick, D., **Merryweather, A.** (2014). Evaluating the Effect of Implementation of Ergonomic Principles into Laparoscopic Tool Handle Design on Surgeon Performance and Efficiency. SAGES Annual Meeting: Putting the Patient First, Salt Lake City, UT, April 5, 2014.
27. Paul, S., **Merryweather, A.**, LaStayo, P. (2014). Development and Evaluation of a Research and Rehabilitation Device for Lateral Epicondylalgia. National Occupational Research Agenda (NORA) Young/New Investigators Symposium, April, 18, 2014.
28. Morse, J., **Merryweather, A.**, Wilson, C., Godfrey, N., Doig, A., Bloswick, D. (2014). Integrated Qualitatively–Driven (QUAL-QUAN) Mixed Methods Designs. Mixed Methods International Research Association, Boston, MA, June 27-29, 2014.

2013

29. Xu, H., **Merryweather, A.**, Bloswick, D. (2013). Development of a Musculoskeletal Model to Determine Knee Contact Force during Walking on Ballast using OpenSim. Proceedings of the 11th International Symposium Computer Methods in Biomechanics and Biomedical Engineering, Salt Lake City, UT, April 3-7, 2013.
30. Morse, J., **Merryweather, A.**, Doig, A., Wilson, C., Bloswick, D. (2013). The Evaluation of Safe Bed Height and Side Rail Use. Phase 1: Development of a Model. Paper presented to the 46th Annual Communicating Nursing Research Conference, Western Institute of Nursing, Anaheim, CA, April 10-13, 2013.
31. Doig, A., **Merryweather, A.**, Morse, J., Bloswick, D. (2013). Challenges of Biomechanical Data Capture in an Anthropometrically Diverse Geriatric Population at Risk for Falls. Paper presented at the Proceedings of the International Symposium of Human Factors and Ergonomics in Healthcare, March 12, 2013.
32. Shorti, R., Tung, K., Downey, E., Bloswick, D., **Merryweather, A.** (2013). Evaluating the Performance of a Novel Laparoscopic Tool Handle Design and Upper Extremity Biomechanics. Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Emerging Technology, Baltimore Convention Center, Baltimore, MD, April 17-20, 2013.

33. Grenis, T., Hutchings, B., Sorenson, K., Van Horssen, B., Williams, C., DeVries, L., Merryweather, A. (2013). Green Machine: Electric Yard and Garden Helper. Paper presented at the ASME 2013 Summer Bioengineering Conference, June 26-29, 2013.
34. Myers, M., Evans, Z., Cintron, O., Cornwell, R., Perkins, T., Cosman, C., Merryweather, A. (2013). E-Tetra Kayak: Adaptive Sport Kayak for Recreational Therapy for Persons with Spinal Cord Injuries. Paper presented at the ASME Summer Bioengineering Conference, June 26-29, 2013.
35. Garg, A., Kapellusch, J., Hegmann, K., Thiese, M., **Merryweather, A.** (2013). Exposure-Response Relationships Between Biomechanical Stressors and Incidence of Carpal Tunnel Syndrome and Lateral Epicondylitis. Presented at the Eighth International Scientific Conference on Prevention of Work-related Musculoskeletal Disorders, Busan, Korea, July 9, 2013. Premus 2013;76
36. Garg, A., Boda, S., Kapellusch, J., Hegmann, K., Thiese, M., **Merryweather, A.** (2013). Individual, Psychosocial and Job Physical Risk Factors for Low-back Pain: Results from a 3-year Prospective Cohort Study. Presented at the Eighth International Scientific Conference on Prevention of Work-related Musculoskeletal Disorders. Busan, Korea, July 9, 2013. Premus 2013;83
37. Vogt, A., **Merryweather, A.**, Beschorner, K., Bamberg, S. (2013). Potential to Fall of Bipedes using Foot Kinematics. Conference Proceedings IEEE Eng Med Biol Soc, 2013. 4746-4750. doi:10.1109/EMBC.2013.6610608

2011

38. **Merryweather, A.**, Pate, M., Vemparala, S. (2011). Self-Reported Tractor Operator Falls, Ergonomics and Musculoskeletal Pain. Paper presented at the American Society of Agricultural and Biological Engineers Annual International Meeting 2011, Louisville, KY.
39. **Merryweather, A.**, Pate, M., Vemparala, S. (2011). Tractor Mounting/Dismounting Biomechanics Related to Falls. Paper presented at the American Society of Agricultural and Biological Engineers Annual International Meeting 2011, Louisville, KY.
40. Pate, M., Young, C., **Merryweather, A.** (2011). Farm Owner/Operators' Perceptions of Risk Associated with Confined Spaces in Agriculture. Paper presented at the 2011 Louisville, Kentucky, August 7-10, 2011.

2010

41. **Merryweather, A.**, Yoo, B., Blosswick, D. (2010). Trip-induced Falls on Crushed Rock Aggregate, Specifically Railroad Ballast. International Conference on Fall Prevention and Protection (ICFPP), West Virginia, May 19-20, 2010.
42. Hegmann, K., Garg, A., Thiese, M., Kapellusch, J., Wood, E., Deckow-Schaefer, G., Blosswick, D., **Merryweather, A.**, Moore, J. (2010). Risk Factors for Lateral Epicondylalgia from a 7-year Prospective Cohort Study. Presented at the Prevention of Musculoskeletal Disorders (PREMUS) Conference, Angiers, France, August 31, 2010.
43. Garg, A., Hegmann, K., Wertsch, J., Kapellusch, J., **Merryweather, A.**, Schaeffer, G., Thiese, M., Blosswick, D. (2010). Individual, Psychosocial and Job Physical Risk Factors

for CTS: Results from a 7-year Prospective Cohort Study. Presented at the Prevention of Musculoskeletal Disorders (PREMUS) Conference, Angiers, France, August 31, 2010.

44. **Merryweather, A., Shorti, R.,** Thiese, M., Caughey, W., Hegmann, K. (2010). Commercial Truck Driver Mounting/Dismounting Behavior Related to Falls. International Conference on Commercial Driver Health and Wellness, Baltimore MA, November 8-10, 2010.

Other Papers Published or Presented

(Reverse Chronological by Year)

2019

1. Yazdani, Sabbagh Novin, **Merryweather**, Hermans. "Posture estimation of human working with tele-operation robots using probabilistic approaches." RSS 2019. Other, 06/2019. <http://www.roboticsconference.org/>
2. Nathan Leddige, Tyler McCord, Joshua Merris, Jared Stenberg, Andrew Merryweather, Eric Wood, and Leon Pahler. Health Hazards in an Aircraft Part Assembly Operation. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/19/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
3. Jonathan Mortensen, William Tatom, Hansjorg Schwertz, Hannah Phillips, Uchenna Ogbonnaya, Andrew Merryweather, Eric Wood, and Leon Pahler. Ergonomic solutions for healthcare employees. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/19/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
4. Sarvenaz Chaeibakhsh , Dorien Butter, Kenneth Foreman, Andrew Merryweather. Effect of Wearing Insoles on Human Normal Pattern During Non-steady State Activities of Daily Living. 17th Annual Regional National Occupational Research Agenda (NORA)Young/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2019-nora>
5. Jonathan Mortensen, Andrew Merryweather. The Effect of Posture and WBV on Neck Muscle Activation Requirements. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
6. Jenny L, Dang, Matthew S. Thiese, Kurt T. Hegmann, Jay Kapellusch, **Andrew Merryweather**, Eric Wood, and Melissa Cheng. Quantifying the Relationship between Job Task and Depression. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
7. Amir Yazdani, Roya Sabbagh Novin, **Andrew Merryweather**, Tucker Hermans. Human Posture Estimation and Ergonomics Analysis Solely from the Robot in Physical Human-Robot Interaction. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>

8. Mitja Trkov, **Andrew S. Merryweather**. Using machine learning approach to classify lifting tasks from instrumented insole measurements. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019. Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
9. Lauren Haggerty, Kaylin Lake, Dorothy Taylor, Yudi Wibisono, Eric Wood, Andrew Merryweather, and Leon Pahler. Potential Inhalation Concerns in Manufacturing Company. 17th Annual Regional National Occupational Research Agenda (NORA)/New Investigators Symposium. April 18-19, 2019 . Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
10. Nathan Leddige, Andrew Merryweather. Fall Impact Force Attenuation using Compliant Flooring Surfaces. 17th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium. April 18-19, 2019 . Other, Presented, 04/18/2019. <https://nora.mech.utah.edu/files/2013/11/2018-nora>
11. Homayounpour, Mohammad, Mortensen, Jon, Merryweather, Andrew. "Changes in Head Kinematic due to Different Types of Warnings." 9th Annual Rocky Mountain American Society of Biomechanics Conference. Estes Park CO 04/05/2019. <https://sites.google.com/site/asbrockymountain/>

2018

12. Hang Xu, K.Bo Foreman, **Andrew Merryweather**. "Dual-task interference during gait on irregular terrain in people with Parkinsons disease." 16th Annual NORA Symposium, University of Utah, April 19, 2018.
13. Rohan Srinivas, Nathan Leddige, Andrew Merryweather. "Compliant Flooring Surfaces Study Aimed at Reducing Fall Injuries in Hospitals and Elderly Homes." 16th Annual NORA Symposium, University of Utah, April 19, 2018.
14. Mohammad Homayounpour, Andrew Merryweather. "A Testbed to Study Neck Stiffness and Concussion Risk following Acoustic Warnings." 16th Annual NORA Symposium, University of Utah, April 19, 2018.
15. Dorothy Taylor, Alex Tatom, Janice Morse, Andrew Merryweather. "Biomechanical Characterization of the Hand Touch Corrective Behavior of the Frail Elderly During Bed Egress." 16th Annual NORA Symposium, University of Utah, April 19, 2018.
16. Mitja Trkov, Earl "Chip" Van Wagoner, Andrew Merryweather. "Real-time Monitoring of Injury Risk During Manual Material Handling Using Wearable Sensors." 16th Annual NORA Symposium, University of Utah, April 19, 2018.

2016

17. Brown, N., Merryweather, A., Lilquist, J., Imburgia, R. (2016). Innovative Engineering to Improve the Quality of Life for Individuals with High Level Spinal Cord Injury. Paper presented at the UCUR 2016.

18. Brown, N., Merryweather, A., Koplin, M., DaBell, P., & Schendel, K. (2016). Person Specific Control System for Adaptive Equipment in Recreational Therapy. Paper presented at the UCUR 2016.

2014

19. Godfrey, N., Morse, J., Bloswick, D., Doig, A., Christman, M., Wilson, C., Merryweather, A. (2014). Biomechanics of Fall Prone Subjects during the Hospital Bed Exit Task. 28th Annual Update in Physical Medicine and Rehabilitation, Park City, UT, January 30 – February 1, 2014.
20. Hopkins, J., Rees, D., Merryweather, A. (2014). A Novel Pediatric Adaptive Skiing System. 2014 Undergraduate Research Symposium, April 1, 2014.
21. Rees, D., Hopkins, J., Merryweather, A. (2014). Pediatric Adaptive Ski. 2014 Undergraduate Research Symposium, April 1, 2014.

2013

22. Shorti, R., Tung, K., Downey, E., Bloswick, D., Merryweather, A. (2013). Evaluation of a Novel Laparoscopic Tool Handle Design and Its Influence on Upper Extremity Biomechanics: Preliminary Results. 11th Annual Regional NORA Young/New Investigator Symposium, April 2013.
23. Koch, ., Gammon, J., Giske, A., Marshall, A., Slotnaes, A., Merryweather, A., Pahler, L., Wood, E. (2013). Ergonomic Assessment of Soiled Laundry Sorting Procedure at a Hospital Laundry Facility in Utah. 11th Annual Regional NORA Young/New Investigator Symposium, April 2013.
24. Farokhi, A., Fechser, M., Patil, S., Okorie, O., Sevy, S., Merryweather, A., Pahler, L., Wood, E. (2013). Noise Mapping and Personal Dosimetry for a Bag Manufacturing Company. 11th Annual Regional NORA Young/New Investigator Symposium, April 2013.
25. Cruz, M., Jones, T., Patton, L., Payne, R., Steel, R., Wood, E., Merryweather, A., Pahler, L. (2013). Health Hazards in an Iron Pipe Power Pole Assembly Operation. 11th Annual Regional NORA Young/New Investigator Symposium, April 2013.
26. Hopkins, J., Merryweather, A. (2013). Standing Balance Performance and Associated Morse Fall Risk Score. Undergraduate Research Symposium, Spring 2013.
27. Landes, C., Godfrey, N., Merryweather, A., Bloswick, D. (2013). 3D Motion Capture Data Processing. Undergraduate Research Symposium, Spring 2013.

2012

28. Steele, T., Merryweather, A., Dickerson, C., Bloswick, D. (2012). A Computational Study of Shoulder Muscle Forces during Pushing Tasks. 10th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.
29. Steele, T., Klein, H., McGowan, J., Wood, E., Merryweather, A., Pahler, L. (2012). Comprehensive Analysis of Core Knock-Out Process at a Steel Foundry. 10th Annual

Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.

30. Gogate, S., Snead, J., Day, J., Albright, T., Wood, E., **Merryweather, A.,** Pahler, L. (2012). Health and Safety Program Writing for a Small Business in the Microchip Processing Industry. 10th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.
31. Knight, J., Ali, F., Sadati, S., Erlingsson, E., Wood, E., **Merryweather, A.,** Pahler, L. (2012). Ergonomic Analysis of a Central Processing Sink Station. 10th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.
32. Burton, J., Chamberlain, K., Dudhiya, P., Wang, B., Wood, E., **Merryweather, A.,** Pahler, L. (2012). Assembly Line Ergonomic Analysis. 10th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.
33. Ryan, S., Nield, C., Stettler, N., Wood, E., **Merryweather, A.,** Pahler, L. (2012). Noise Mapping and Personal Dosimetry for a Dental Manufacturing Company. 10th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2012.

2011 and earlier

34. Nolin, J., Probst, R., Brodhag, L., Wood, E., Sleeth, D., **Merryweather, A.** (2011). Comprehensive Noise Study at a Metal Refinery, 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.
35. Newkirk, W., Green, T., Morgan, A., Kraft, J., Sleeth, D., Wood, E., **Merryweather, A.** (2011). Airborne Silver Exposure at a Precious Metals Refinery. 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.
36. Corbridge, J., Kargis, J., Mehr, D., Ott, U., Wood, E., **Merryweather, A.,** Sleeth, D. (2011). Comprehensive Dust Sampling Study at an Architectural Woodworking Plant. 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.
37. Campbell, D., Greenland, K., Transtrum, M., **Merryweather, A.,** Wood, E., Sleeth, D. (2011). An Ergonomic Assessment of Team Lifted Objects in a Production Process. 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.
38. Andrews, R., Pankey, P., Raphael, M., **Merryweather, A.,** Sleeth, D., Wood, E. (2011). Assessment of Upper Extremity Musculoskeletal Disorders in a Partially Automated Laboratory Sorting System. 9th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.
39. Raphael, M., **Merryweather, A.,** Butler, L., Bloswick, D. (2011). Testing and Comparison of Four Manual Wheelchair Designs. 9th Annual Regional National

Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 2011.

40. Xu, H., **Merryweather, A.**, (2011). Influence of Foot Marker Placement on Predicted Muscle Force During Gait. Presented at the Rocky Mountain American Society of Biomechanics Conference, Estes Park, CO, April 8-9, 2011.
41. **Merryweather, A.**, Blosswick, D., Balaji, A.K. (2011). Ergonomics and Safety: Role in Sustainable Manufacturing. Presented at the Two-Day Workshop: Innovation for Sustainable Manufacturing & Workforce Effectiveness, Lexington, KY, June 21-22, 2011.
42. Greenland, K., **Merryweather, A.** (2010). Motion Capture in Ergonomics. 2nd Annual ERC Interdisciplinary Forum on Measurement Systems for Occupational Health and Safety Research, April 8-9, 2010.
43. Shorti, R., **Merryweather, A.** (2010). Force/Pressure Instrumentation. 2nd Annual ERC Interdisciplinary Forum on Measurement Systems for Occupational Health and Safety Research, April 8-9, 2010.
44. Brammer, C., **Merryweather, A.** (2010). Motion Capture in Ergonomics. 2nd Annual ERC Interdisciplinary Forum on Measurement Systems for Occupational Health and Safety Research, April 8-9, 2010.
45. **Merryweather, A.**, Greenland, K. (2010). Motion Analysis in Biomechanics: Art or Technique? 2nd Annual ERC Interdisciplinary Forum on measurement Systems for Occupational Health and Safety Research, April 8-9, 2010.
46. **Merryweather, A.** (2010). Ergonomics and MSDs in Transportation. Rocky Mountain Academy-Planes, Trains, and Trucks: The Role of Occupational and Environmental Medicine in the Transportation Industry, April 8-9, 2010.
47. Graziano, K., Oostema, S., Thiese, M., Wood, E, Larson, R, **Merryweather, A.** (2010). Piece Rate Compensation and Upper Extremity Musculoskeletal Disorders in Sewing Machine Operators. Proceedings of 8th Annual Regional NORA Young/New Investigators Symposium, April 2010.
48. McDonald, J., Sterzer, B., Ewing, G., Larson, R., **Merryweather, A.**, Wood, E. (2010). Assessment of Combustible Airborne Dust Hazards in a Printing Facility. Proceedings of 8th Annual Regional NORA Young/New Investigators Symposium, April 2010.
49. Migel, A., Freestone, J., Godfrey, N., Wood, E., Larson, R., **Merryweather, A.** (2010). Manual Material Handling at a Window Covering Manufacturer. Proceedings of 8th Annual Regional NORA Young/New Investigator Symposium, April 2010.
50. Stansfield, E., Shorti, R., Alaves, V., Wood, E., Larson, R., **Merryweather, A.** (2010). Low Cost Engineering Control to Reduce a Noise Hazard at a Hydraulic Seal Facility. Proceedings of 8th Annual Regional NORA Young/New Investigator Symposium, April 2010.

51. **Merryweather, A.** (2010). Relationships Between Whole Body Fatigue and Balance during Vehicle Entry. Lucien Brouha Work Physiology Symposium, Milwaukee, WI, September 22-24, 2010.
52. **Merryweather, A.,** MacWilliams, B., Bloswick, D. (2008). Temporal-Spatial Analysis of Medial/Lateral (Side-to-Side) Sloped Aggregate Surfaces. 6th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 17, 2008.
53. Quincy, J., **Merryweather, A.,** Bloswick, D. (2007). Methods and Procedure Validation of Transverse Plane Sloped Surface Walking GAIT: A Kinematic and Kinetic Analysis. 5th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 19, 2007.
54. **Merryweather, A.,** Bloswick, D. (2007) A Calculation of Back Compressive Force: Implementing a Load Displacement Velocity Constant. 5th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 19, 2007.
55. Lortscher, M., **Merryweather, A.,** Bloswick, D. (2006). A Revised Back Compressive Force Estimation Model for Ergonomic Evaluation of Lifting Tasks. 4th Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 21, 2006.
56. **Merryweather, A.,** Sesek, R., Daniels II, J., Bloswick, D. (2005). Utah Ergo Analyzer Posture Classification Tool vs. Peak Motus Motion Analysis in 2D Wrist Flexion/Extension and Ulnar/Radial Deviation. 3rd Annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, Salt Lake City, April 22, 2005.

Poster Presentations

2019

1. Butter, Chaeibakhsh, Foreman, Merryweather. “The Effect of Wearing Insoles on Lower Extremity Kinematics During Activities of Daily Living in Adults” 2019 ASME/IMECE
2. Homayounpour, M, Mortensen, J, Merryweather, A. “Posture and Muscle Activation Changes Prior to an Impact in Response to a Directional Warning”, 2019 ASME/IMECE 2019
3. Mitja Trkov, **Andrew Merryweather.** “Load Weight while Lifting can be Estimated using Instrumented Insoles” 2019 BMES
4. Taylor, D, Morse, J, **Merryweather, A.** Is bouncing during sit-to-stand-walk a factor of frailty?. 10/17/2019 BMES
5. Mortensen, J., Trkov, M., Merryweather, A. Improved Ergonomic Risk Factor Assessment Using OpenSim and Inertial Measurement Units. NORA 2019
https://nora.mech.utah.edu/files/2013/11/2019-nora-symposium-booklet-final_asm.pdf

2018

6. **d, Entremont K., Merryweather, A.** "Integrating Product-Safety Curriculum to Enhance Design and Reinforce Engineering Ethics." 2018 ASEE Annual Conference & Exposition. Salt Palace Convention Center. 06/26/2018.
<https://www.asee.org/public/conferences/106/papers/21752/view>
7. Aaron Cox, Kyle Christian, Devin Owens, Charlotte Robison-Hanchett, Andrew Merryweather. "Ergonomic Concerns at a Leading Manufacturer of Medical Imaging Equipment." NORA Symposium, University of Utah, 4/19/2018.
8. Alex Cox, Benjamin Heaton, Danielle Mecate, Andrew Merryweather. "Health Hazards in a Personal Hygiene Manufacturing Facility" NORA Symposium, University of Utah, 4/19/2018.
9. Jesse Zmoos, Ben Borsh, Cody Jackson, Michael Fitch, Naomi Riches, Andrew Merryweather. "Health Hazards in a Composite Components Manufacturing Facility." NORA Symposium, University of Utah, 4/19/2018.
10. Hang Xu, Andrew Merryweather. "Dual-task interference during gait on irregular terrain in people with Parkinson's disease." NORA Symposium, University of Utah, 4/19/2018.
11. Rohan Srinivas, Nathan Leddige, Andrew Merryweather. "Compliant Flooring Surfaces Study Aimed at Reducing Fall Injuries in Hospitals and Elderly Homes." NORA Symposium, University of Utah, 4/19/2018.
12. Mohammad Homayounpour, Andrew Merryweather. "A Testbed to Study Neck Stiffness and Concussion Risk following Acoustic Warnings." NORA Symposium, University of Utah, 4/19/2018.
13. Dorothy Taylor, Alex Tatom, Andrew Merryweather. "Biomechanical Characterization of the Hand Touch Corrective Behavior of the Frail Elderly During Bed Egress." NORA Symposium, University of Utah, 4/19/2018.
14. Dorothy Taylor, Alex Tatom, Janice Morse, Andrew Merryweather. "Biomechanical Characterization of the Hand Touch Corrective Behavior in the Frail Elderly During Bed Egress" RMASB, Estes Park CO April 13, 2018
15. Rohan Srinivas, Nathan Leddige, Andrew Merryweather. "Compliant Flooring Surfaces Aimed at Reducing Fall Injuries Among the Elderly." RMASB, Estes Park CO April 13, 2018
16. Mohammad Homayounpour, Andrew S. Merryweather. "A Testbed to Study Neck Stiffness, Muscle Response, Acoustic Warnings and Concussion Risk." RMASB, Estes Park CO April 13, 2018
17. Hang Xu, K. Bo Foreman, Andrew Merryweather. "Dual-task interference during gait on irregular terrain in people with Parkinson's disease." RMASB, Estes Park CO April 13, 2018

18. Kryztopher D. Tung, Rami M. Shorti, Colton Ottley, **Don Bloswick**, **Andrew Merryweather**. “A Real-Time Method for Estimating Full Body Hydration Levels in Wildland Firefighters.” RMASB, Estes Park CO April 13, 2018
19. Dorothy Taylor, **Andrew Merryweather**, and Janice Morse. “Fall Proxy Identification With Biomechanical Characterization of Corrective Behaviors and Implications for Health Care for the Frail Elderly” HFES, Boston MA, March 26, 2018.
20. Dorien Butter, **Andrew Merryweather**. “Effect of Terrain Transitions on Postural Imbalances and Gait Discontinuities.” Undergraduate Research Symposium, U of U, 04/11/2018.

2017

21. Mortensen, J., **Merryweather, A.** (2017) Modeling Directional Neck Stiffness and Muscle Coactivation in OpenSim, Presented at the 41st Annual Meeting of the American Society of Biomechanics, August 8-11, 2017, Boulder, Colorado,
22. **Merryweather, A.**, Sabbagh Novin, R., Yazdani, M. (2017) Optimal Motion and Mobility Aid Manipulation Planning to Enable Personal Activity Monitoring and Facilitate Safer Sit-to-Walk Transition, The Fifth International Conference on Ambulatory Monitoring of Physical Activity and Movement (ICAMPAM), Bethesda, US, June 22, 2017
23. Srinivas, R., **Merryweather, A.** (2017). Compliant Flooring using Shock Absorbing Material Sandwiched with Vinyl Composition Tile Aimed at Reduction of Fall Injuries in Hospitals. Presented at the 15th Annual Regional NORA Young/New Investigator Symposium, April 2017, Salt Lake City, UT.
24. Yazdani, M., Novin, R.S., **Merryweather, A.** (2017). Towards Safe Human and Robot Collaboration in Industrial Environments Using Fault-Tolerant and Optimal Trajectory Planning for Robot Manipulators. Presented at the 15th Annual Regional NORA Young/New Investigator Symposium, April 2017, Salt Lake City, UT.
25. Wilson, C., Chesebrough, S., **Merryweather, A.**, Foreman, B. (2017). Creating Real-time Feedback for a Custom Virtual Reality System. E-Poster Presented at the 22nd Annual Meeting of the Gait and Clinical Movement Analysis Society (GCMAS), May 22-26, 2017.

2016

26. Brown, N., Koplin, M., DaBell, P., Schendel, K., Rosenbluth, J., Imburgia, R., **Merryweather, A.** (2016). Person Specific Control System for Adaptive Equipment in Recreational Rehabilitation. 14th Annual Regional NORA Young/New Investigator Symposium, April 2016.
27. Brown, N., Lilquist, J., Imburgia, R., **Merryweather, A.** (2016). Person Specific Control System for Adaptive Equipment in Recreational Rehabilitation. 14th Annual Regional NORA Young/New Investigator Symposium, April 2016.

2015

28. Castillo, J., Daly, A., Eastman, A., Freckleton, K., Gubler, K., Silotti, A., Merryweather, A. (2015). Beginning Braille Learning Device. Summer Biomechanics, Bioengineering and Biotransport Conference, June 17-20, 2015, Snowbird Resort, UT.

2014

29. Christman, M., Hunt, M., Fan, W., Fiszer, J., Merryweather, A. (2014). Poster: Radiation Protective Apron Ergo Project. National Occupational Research Agenda (NORA) Young/New Investigators Symposium, April 17-18, 2014.
30. Christman, M., Morse, J., Wilson, C., Godfrey, N., Doig, A., Bloswick, D., Merryweather, A. (2014). Kinematic Analysis of Sit-to-Walk Movement in a Fall-Prone Population. 7th World Congress of Biomechanics, Boston, Massachusetts, July 6-11, 2014.
31. Wilson C., Morse J., Godfrey N., Doig A., Christman M., Bloswick D., Merryweather, A. (2014). Patient Mobility in Hospital Beds with and Without Side Rails. 7th World Congress of Biomechanics, Boston, Massachusetts, July 6-11, 2014.
32. Tung, K., Shorti, R., Downey, E., Bloswick, D., Merryweather, A. (2014). Evaluation of an Ergonomic Laparoscopic Handle Design and Upper Extremity Musculoskeletal Disorder Risk Factors. 7th World Congress of Biomechanics, Boston, Massachusetts, July 6-11, 2014.
33. Hunt, M., Smith, L., Foreman, B., Minor, M., Merryweather, A. (2014). Characterization of Gait Over Irregular Terrain to Inform a Virtual Reality Rehabilitation Environment. 7th World Congress of Biomechanics, Boston, Massachusetts, July 6-11, 2014.

2013

34. **Merryweather, A.,** Doig, A., Morse, J., Bloswick, D. (2013). Standing Balance Performance and Associated Morse Fall Scale Risk Score. Presented at the HFES 2013 International Symposium on Human Factors and Ergonomics in Health Care: Advancing the Cause, March 12, 2013.
35. Doig, A., **Merryweather, A.,** Morse, J., Bloswick, D. (2013). Challenges of Biomechanical Data Capture in an Anthropometrically Diverse Geriatric Population at Risk for Falls. Presented at the HFES 2013 International Symposium on Human Factors and Ergonomics in Health Care: Advancing the Cause, March 12, 2013.
36. **Merryweather, A.,** Doig, A., Morse, J., Bloswick, D. (2013). Standing Balance Performance and Associated Morse Fall Scale Risk Score. Presented at the 7th Annual Center on Aging Poster Retreat, April 8, 2013.
37. Doig, A., **Merryweather, A.,** Morse, J., Bloswick, D. (2013). Challenges of Biomechanical Data Capture in an Anthropometrically Diverse Geriatric Population at Risk for Falls. Presented at the 7th Annual Center on Aging Poster Retreat, April 8, 2013.
38. Cosman, C., Cornwell, R., Evans, Z., Cintron, O., Myers, M., Perkins, C., Bloswick, D., Merryweather, A. (2013). E-tetra Kayak: Adaptive Sport Kayak for Recreational

Therapy for Persons with Spinal Cord Injuries. ASME Summer Bioengineering Conference, June 26-29, 2013.

2012

39. Yoo, B., Kim, S., **Merryweather, A.** (2012). Locating Missing or Blocked PSIS Markers Using Thigh Clusters. Presented at the UKC2012, Park City, UT, August 8-11, 2012.
40. Kim, S., Yoo, B., Lee, S., **Merryweather, A.** (2012). Customized Load Cell Design to Calculate Shoulder Reaction Forces while Carrying a Backpack. Presented at the UKC2012, Park City, UT, August 8-11, 2012.

2011 and earlier

41. Raphael, M., **Merryweather, A.**, Bloswick, D. (2011). Metabolic Comparison of Alternative Propulsion Wheelchairs. Poster Presentation at the 2011 Disability Studies Forum, Salt Lake City, UT, March 18, 2011.
42. Yoo, B., **Merryweather, A.**, Kim, S. (2011). Effects of Different Surface Conditions on Postural Sway. Presented at the UKC2011, Park City, UT, Aug 10-14, 2011.
43. Kim, S., **Merryweather, A.**, Yoo, B. (2011). Factor Analysis of Military Driver Behavior and Accident Liability. Presented at the UKC2011, Park City, UT, August 10-14, 2011.
44. Yoo, B., Kim, S., **Merryweather, A.** (2011). A Technique for Dynamic Marker Identification to Locate Occluded Anatomical Landmarks. Presented at the Annual Conference of the American Society of Biomechanics, Long Beach, CA, August 11-14, 2011.
45. Harsha, S., **Merryweather, A.**, Kallakanti, M. (2011). Influence of Different Kneepads and Location of Work on Knee Stresses. Presented at the National Occupational Research Symposium, Morgantown, West Virginia. October 17-19, 2011.
46. Jampala, S., Kallakanti, M., **Merryweather, A.** (2010). Evaluating the Effectiveness of Kneepads during Kneeling Work. 2010 Intermountain Graduate Research Symposium, March 2010.
47. Jampala, S., Kallakanti, M., **Merryweather, A.** (2010). Analysis of Internal Knees Stresses during Kneeling Work. 2010 Intermountain Graduate Research Symposium, March 2010.
48. Knuteson, C., **Merryweather, A.**, Bloswick, D. (2010). Powered All-Terrain Wheelchair (PATW). Poster Presentation at the 2010 Disability Studies Forum, Salt Lake City, UT, March 2010.
49. Hogenson, B., Glassett, L., Mackay, D., Greer, J., Brady, S., **Merryweather, A.** (2010). PARACYCLE. Poster Presentation at the 2011 Disability Studies Forum, Salt Lake City, UT, March 2010.
50. Butler, L., Raphael, M., **Merryweather, A.** (2010). Understanding the Biomechanics of Alternative Wheelchair Designs. ACCESS Program for Women in Science and Mathematics, April 2010.

51. **Merryweather, A.**, MacWilliams, B., Bloswick, D. (2008). Lower Limb Biomechanics on Aggregate Surfaces. 4th Annual Mountain West Biomedical Engineering Conference, Park City, UT, Sept. 5-6, 2008.

Keynote Presentations/Invited Talks

(Reverse Chronological)

1. Current Research on Slips, Trips and Falls, presented at the 36th Annual Utah Conference on Safety and Industrial Hygiene, (October 9, 2019), Salt Lake City, UT.
2. Andrew S. Merryweather. Probabilistic Posture Modeling Enhances the Ergonomics and Safety of Human-Robot Collaborations. Expanding Research Partnerships Webinar Series 2019. NIOSH. April 10, 2019
3. Andrew S. Merryweather. OpenSim as a Platform for Improving Quantitative Ergonomic Assessments. Center for Occupational and Environmental Health: NIOSH ERC Ergonomics Webinars. UC Berkeley. August 21, 2019
4. Advancing Human Safety and Ergonomics through Sensing and Simulation (October 8, 2018), seminar presented to faculty and students at the Gene and Linda Voiland School of Chemical Engineering and Bioengineering, Pullman, WA.
5. Innovations to Address Preventable Falls, presented to the seniors of Friendly Neighborhood, Columbus, Liberty, Tenth East, Sunday Anderson, and River's Bend Senior Centers at the Falls Prevention Day, Liberty Park, Salt Lake City, UT, September 22, 2017
6. Technology to Detect and Prevent Falls and Reduce Injuries, presented to the Utah Falls Prevention Coalition-part of the National Council on Aging (NCOA), Salt Lake City, UT, May 16, 2017
7. Innovations to Address Preventable Falls, Presented at the 11th Annual Research Retreat for the Center on Aging at the University of Utah, April 28, 2017
8. Occupational Biomechanics, Ergonomics and Safety: Applications for Job Tasks in the Mining Sector, Presented at the Mining Engineering Department Seminar at the University of Utah, February 2, 2017.
9. Presentation on Devices for Spinal Cord Injury Rehabilitation used in Outdoor Recreation. Spinal Cord Injury Annual Update Meeting, Salt Lake City, UT, 2014, 2015, 2017
10. Defining Roles: Updated Ergonomics Programs Help Manage Employee Health and Safety, 2013 Risk Management Conference, Salt Lake City, UT, Aug. 8, 2013
11. A Glance from the Past...Evening of Excellence, Keynote speaker at Wasatch High School Evening of Excellence, Heber City, UT, April 22, 2013
12. Rehabilitation and Adaptive Technologies: Realizing Ideas Through Design, Eighth Annual James R. Swenson, M.D. Scientific Symposium Day, Salt Lake City, UT, May 23, 2013

Honors and Awards

1. National Institute for Occupational Safety and Health (NIOSH) Fellowship, 2004-2008
2. Workers Compensation Fund of Utah Safe Workplace Scholarship, 2004, 2005
3. ASSE Student Scholarship, 2006
4. 2nd Place Award-National Ergonomics Student Design Competition, 2008
5. Advisor to 1st Place Team - National Ergonomics Student Design Competition, 2009
6. Advisor to 2nd Place Team - National Ergonomics Student Design Competition, 2010
7. Advisor to Top 5 Finisher - National Ergonomics Student Design Competition, 2011
8. University Teaching Award, Low Cost Tool for Motion Tracing and 3D Modeling, 2011-2012, Amount: \$2,995
9. Advisor to Team “Training Cane” – Winner Boeing Award for Innovation, May 2012
10. ASSE Fellow at the Liberty Mutual Research Institute for Safety, 2012
11. Advisor to Top 5 Finisher - National Ergonomics Student Design Competition, 2013
12. Team Mentor (The Green Machine), 3rd Place Undergraduate Design Competition, American Society of Mechanical Engineers Summer Bioengineering Conference, June 2013
13. Recognized as an outstanding teacher (Top 10%), spring 2013, 2014
14. Advisor to Team(s) “Alpine Tetra Ski”, “Sign-Language Trainer”, and “Snow Sports Ski Winch”, each of which were recognized with honors from Boeing, 2014
15. Safety Professional of the Year, Awarded by the American Society of Safety Engineers, Utah Section, 2015
16. Faculty Innovation Research and Entrepreneurship (**FIRE**) Scholars Program - University of Utah Center for Medical Innovations, Selected as a founding member, May 2017
17. Advisor to Dr. Rami M. Shorti, the 2016-2017 Outstanding Dissertation of the Year Award in Mechanical Engineering at the University of Utah, in recognition for Rami’s devotion to advancing research intellectual merit and benefiting the broader impacts to society, May 2017
18. The IEA/Liberty Mutual Medal. The award and a cash prize of US\$ 10,000 recognizes outstanding original research leading to the reduction or mitigation of work-related injuries and/or to the advancement of theory, understanding, and development of occupational safety research. For the paper titled, “Relationships between job organisational factors, biomechanical and psychosocial exposures” is published by Stephen S. Bao, Jay M. Kapellusch, **Andrew S. Merryweather**, Mathew S. Thiese, Arun Garg, Kurt T. Hegmann & Barbara A. Silverstein. July 2017
19. 2018 NIOSH Bullard-Sherwood Award for Research to Practice Honorable Mention Intervention Category, Hegmann KT, Blowski D, **Merryweather A**, Thiese MS.
20. 2019 Best of Ogden Awards – Merryweather Farm, LLC – Farm Category

Students Supervised

PH.D. AND M.S. COMMITTEES CHAIRED
Ph.D. Students (current: 7, graduated: 9)

Student Name	Degree (<i>Mech. Eng.</i> <i>unless noted</i>)	Grad. Date	Dissertation or Research Project
Nicolas Gomez	PhD	2022 (exp)	Lower limb prosthetic ankle to improve lifting symmetry
Sarvenaz Chaeibakhsh	PhD	2021 (exp)	Hospital Room Configuration Optimization and Machine Learning using Instrumented Insoles
Mohammad Hodayounpour	PhD	May 2021	Robotic Testbed to Evaluate the Biomechanical Response of Human Neck to Startle
Dorothy Taylor	PhD	2021 (exp)	Transitioning between Standing and Seated Postures Among the Elderly. Fall prevention and protection technology.
Mojtaba Yazdani	PhD	2021 (exp)	Improved OpenSim Neck Model with Integrated RealTime Control to Simulate Whiplash Injuries and Concussion
Roya Sabbagh Novin	PhD	May 2021	Real Time Biomechanical Modeling to Simulate Human Gait and Improve Traction Control in Humanoid Robots
Melynda Schreiber	PhD	May 2021	Flexible Exoskeletons for Disabilities and Rehabilitation
Jon Mortenson	PhD	May-19	Optimization Model to Predict Concussive Forces During an Impact to the Head and Torso to Establish Training Protocols for Athletes
Kryztopher Tung	PhD	May-18	Evaluation and Design of Laparoscopic Instruments
Rami Shorti	PhD	May-16	Biomechanical Stress During Vehicle Ingress/Egress
Sungdo Kim (Co-advisor with Don Bloswick)	PhD	May-14	Back and Shoulder Stresses During Backpack Use on Uneven Surfaces
Byungju Yoo (Co-advisor with Don Bloswick)	PhD	May-14	Lower Extremity Stresses During Backpack Use on Uneven Surfaces
Hang Xu	PhD	May-13	A Model of Lower Extremity Muscle Force and Knee Contact Force
Kasey Greenland	PhD	May-12	Optimization of Vacuum Based Prosthetic Limb Attachment

M.S. Students (current: 3, graduated: 22)

Student Name	Degree (<i>Mech. Eng.</i> <i>unless noted</i>)	Grad. Date	Thesis or Research Project
Ryan DiNapoli	MS	May-20	Automotive Seat Back Testing and Injury Ratings during low speed rear-end collisions
Alex Tatom	MS	2021(exp)	Adaptive Alpine Ski - Roll over protection system

Student Name	Degree (<i>Mech. Eng. unless noted</i>)	Grad. Date	Thesis or Research Project
Nathan Leddige	MS	Dec-19	Impact Flooring Characterization and Injury Prevention from a Simulated Fall Event
Tyler Trogdon	MS	Aug-18	Training and Exposure Monitoring Device using a Wearable System
Kyle Christian	MS	May-19	Anatomical Ankle for Robotic Testbed
Kelton Gubler	MS	Dec-19	Gait transitions on irregular terrain
Nicolas Brown	MS	May-18	Rehabilitation Technology to enhance quality of life of patients with Spinal Cord Injury
Jonathan Miller (Co-advisor with Mark Minor)	MS	May-16	Robotic Testbed - Ankle Foot Simulator
Nate Godfrey (Co-advisor with Don Bloswick)	MS	May-15	Dynamic Postural Stability Assessment during hospital Bed entry/egress and Bedside Transitions
Marissa Christman	MS	May-15	Muscle weakness and fall risk during hospital bed entry/egress
Seth Paul	MS	May-15	Rehabilitation strength training device
MaryEllen Hunt	MS	Dec-14	Balance control and virtual terrain display for persons with Parkinson's Disease
Dhaval Dineshbhai Patel	MS	Dec-12	Design and Simulation of a Control System for a Hybrid Lift Assist Device
Mohan Krishna Kallakanti	MS	Dec-12	Kinetic and Kinematic Evaluation of Kneeling Work
James Nolin	MS	Aug-12	A Control System for an Active Wearable Lift Assist Device
Sarvari Vemparala	MS	Dec-11	Tractor Ingress/Egress Biomechanics
Christopher Brammer	MS	Dec-11	Biomechanical Analysis and User Feedback to Evaluate Optimal Design Specifications in LAD
Sree Harsha Jampala	MS	Aug-11	Evaluation of Kneeling Stresses During Kneeling Work
Steigerwaldt, Brett (Co-advisor with Mark Minor)	MS	May-11	Active shoe sole for walking on low-angled terrain
Matt Raphael (Co-advisor with Don Bloswick)	MS	May-11	Efficiency Evaluation of Alternative Propelled Wheelchairs
Josh Quincy	MS	Dec-10	Knee Biomechanics Walking on Railroad Ballast and the Associated Risk Factors for Knee Osteoarthritis
Byungju Yoo	MS	Dec-10	Potential Trip/fall Hazards of Walking on Railroad Ballast

M.E. / non-thesis Masters Students (current: 0, graduated: 10)

Name	Degree (<i>Mech. Eng. unless noted</i>)	Grad. Date	Project or Emphasis
Karthik Suresh	MSNT	May-18	Non-Thesis Masters emphasis in Ergonomics and Human Factors
Adam Daly	MSNT	May-18	Non-Thesis Masters emphasis in Ergonomics and Human Factors
Megan Buelte	MSNT	May-18	Non-Thesis Masters emphasis in Ergonomics and Human Factors
Erik Groberg	MS	May-17	Improved Shoulder Fatigue Model to Predict Subacromial Impingement Syndrome during assembly work.
Rohan Srinivas	MSNT	May-17	Compliant flooring structure to reduce traumatic injuries from falls
Mohit Binaykiya	MSNT	May-17	Improve patient transfer mechanism for hand cycle ingress/egress
Thomas Goates	MSNT	May-17	Non-Thesis Masters emphasis in Ergonomics and Human Factors
Ryan Adamson	MSNT	May-17	Improved Design of Kneeling Scooter for indoor usage and stairs
Bric Balmforth	MS	May-16	Wearable Real-Time Hand Posture, Force and EMG Sensor
Derrick Franklin	M.E.	Aug-09	The effects of lifting velocity on back compressive force and Shoulder moment during lifting tasks

UNDERGRADUATE RESEARCH AND SPECIAL PROJECTS

Undergraduate Thesis Advised (5)

Name	Degree (<i>Mech. Eng. unless noted</i>)	Grad. Date	Thesis or Research Project
Katrina Cernucan	BS Biomed. Eng	2021 (exp)	SmartCell Insoles to reduce standing fatigue and increase sway control during standing balance
Margaret Patterson	BS Biomed. Eng	Dec-17	Parkinsonian Gait during Dual Tasks and Treadmill Training
John Lillquist	BS Mech Eng (Honors)	May-17	Speed Controlled Braking System for Downhill Mountain Chair
Jacob Hopkins	BS Mech Eng (Honors)	May-16	Design and Testing of a Pediatric Sit-Ski
Josh Quincy	BS Biomed. Eng	Dec-07	Gait Analysis on Transversely Sloped Surfaces
Manndi Lortscher	BS Biomed. Eng	May-07	Revision of a Hand Calculated Back Compressive Force Model

Undergraduate Research Advised (24)

Student Name(s)	Project	Year	Funding
Callie Eppich	Ankle Injury Biomechanics and Fatigue in Ballet	Spring 2020	ACCESS

Student Name(s)	Project	Year	Funding
Moriah Henning	Characterization of an Open-Source 3D-Printed Robotic Hand	Spring 2018 Summer 2018	UROP/NSF SITE
Dorien Butter	Gait Analysis in Patients with Parkinson's Disease and Healthy Adults: Effect of Terrain Transitions on Postural Imbalances and Gait Discontinuities	Summer 2017	UROP
Miranda Newsome	Biomechanics of Vacuuming	Spring 2015- Spring 2016	Janitor's Closet
Maggie Patterson	Biomechanics of Vacuuming (2015/ Parkinson Gait and Obstacle Avoidance (2016-2017)	Spring 2015- Present	Engineering Scholars
Nicolas Brown	Downhill Mountain Chair	Summer 2015- Spring 2016	Craig H. Nelson Foundation
Paige DaBell	Downhill Mountain Chair	Spring 2015- Spring 2016	Engineering Scholars
Keith Schendel	Downhill Mountain Chair	Fall 2015-Spring 2016	Engineering Scholars
Raeleigh Wilkinson	Passive, Wearable Exoskeleton	Fall 2015- Summer 2016	RMCOEH-PPRT
Matt Koplin	Downhill Mountain Chair	Fall 2015-Spring 2016	None
Pranjal Muthe	Robotic Testbed-Slip Simulation	Fall 2015-Spring 2016	RMCOEH-PPRT
John Lillquist	Downhill Mountain Chair	Fall 2014-Present	Dr. Jeff Rosenbluth
Summer Willis	Characterization of Robotic Device to Provide Treatment for Lateral Epicondylalgia	Spring/Summer 2014	UROP
Dallin Rees	Design and development of a pediatric sit-ski for the National Ability Center at Park City Mountain Resort	Fall 2013, Spring 2014	UROP
Jacob Hopkins	Design and development of a pediatric sit-ski for the National Ability Center at Park City Mountain Resort	Fall 2013	UROP
Jared McDonald	Design and prototype of an ultrasonic device for children who are blind	2012-2013	UROP
Jarrold Chase Page	Analysis and modeling of patient biomechanics during bedside transitions	Spring 2013	Engineering Scholars
Mykel Leffler	Analysis and modeling of patient biomechanics during bedside transitions	Spring 2013	Merrill Scholarship
Jacob Hopkins	Analysis and modeling of upper extremity biomechanics during powered screwdriver use	Spring 2013	UROP
Chris Landis	Analysis and modeling of patient biomechanics during bedside transitions	Spring 2013	UROP
Boris Martinez	Analysis and modeling of patient biomechanics during bedside transitions	Summer 2012- Spring 2013	AHRQ-Bed Study
Josh Quincy	Analysis of knee loading on ballast	2008-2009	None
Louise Butler	Analysis of alternative wheelchair propulsion systems	Spring 2010	ACCESS

Student Name(s)	Project	Year	Funding
Manndi Loertcher	Lifting simulation and low back analysis: a revise method for calculating back compressive forces	2007-2008	NIOSH

Special Projects Directed (25 Projects /135 Students)

Senior Design Teams	Project Description	Year	Funding
Kyle Eichmeier Kylar Segale Trevor Schwehr Alex Campbell Landon Jensen Kevin Banick	Outrigger and Stability System for PAD	2020	Neilsen Foundation - Innovation Program
Valesca Wall Emily Kemker Spencer Howes Tyler Scott Taylor Thorpe	Tetra Fisher	2019	Neilsen Foundation - Innovation Program
Tanner Hesterman Davis England Nicolas Miller Spencer Kofoed Andrew Campbell Connor Hood	Portable Storable Ramp	2019-2020	Neilsen Foundation - Innovation Program
Chung Yang Yuan Gordon Kou Tanner Andrews	Powered Swimming Wheelchair	2019	Neilsen Foundation - Innovation Program
Mark Santo Eric Devey Zach Hansen Spencer Brewster Anthony Snow Graham Noteboom	Power Assisted Nordic Ski	2019-2020	Neilsen Foundation - Innovation Program
Steven Turner Craig Butler Nick Smith Jaron Stevens Thackery Archuletta Mitch Wheat	Lifting Coach - Smart Lifting Exposure Monitor	2018-2019	RMCOEH - Pilot Project Research Grant
Far Zainal Nathan Dibb Hakimi Nazlie Joe Pollard Joshua Call	Robotic Screen Mount	2018-2019	Neilsen Foundation - Innovation Program

Senior Design Teams	Project Description	Year	Funding
Siti Zulaiha Azmi James Bailey Chris Holland, Emily Mitchell Shiv Patel Ahmad Zaman	Powered Nordic Ski	2018- 2019	Neilsen Fondation - Innovation Program
Brian Dorcheus Nathen Blas Cody Salyer Daniel Sant Colter McKean	Semi-Autonomous Self Docking Control System for the Portable Accessible Docking System (PAD) - Focus on Sip N Puff and bite controller	Jul-05	NSF:SITE Neilsen Foundation
Mikayla Hayward Quincy Stevens Kory Cross Irsyad Badri Hyrum Peterson	Essential Tremor Dampening Device	2017- 2018	NSF: SITE
Daniel Gomm Ethan Clark Hunter Brown Kenton Young	Robotic Face Tracking Articulating Arm for Spinal Cord Injury Patients	2017- 2018	NSF: SITE
Zandon Midson Aaron Sonderegger Benjamin Rosser	Semi-Autonomous Self Docking Control System for the Portable Accessible Docking System (PAD)	2017- 2018	NSF: SITE
Miranda Newsome Dallin Rees Austin Frick Jennifer Magee Elliott Barth	Adaptive Water Ski: Carbon fiber waterski for adaprive sporting programs, including suspension cage and improved floatation	2016- 2017	NSF: SITE
Andrew Silotti Adam Daly Jason Castillo Kelton Gubler (Kay) Beau Freckleton Austin Eastman	Beginning Braille Training Device: Haptic device with voice recognition to translate speech to braille for teaching and learning.	2014- 2015	NSF: SITE
Austin Matthews Tyler Miller David Landrith Josh McCleary Daniel Blich Tyler Naegle Kyle Richards	Alpine Tetra Ski: Develop an electronically controlled Kart Ski for persons with high level spinal cord injuries to be using with the University of Utah TRAILS program.	2013- 2014	NSF: SITE & Dr. Jeff Rosenbluth
Ben Bradshaw Phillip Thompson Chris Dickson Kyle Coxon Spencer Dailey Ross Imburgia	Snow-Sports Ski Winch: Design a revolutionary ski- winch for urban snow sports with remote control operation and memory settings.	2013- 2014	None

Senior Design Teams	Project Description	Year	Funding
Shawn Harris Scott Larsen Lindy Jepsen Helen Ho Giman Lee (EE)	Sign Language Training System: Develop a system for sign language interpretation and teaching with hand/arm gesture recognition and facial expressions.	2013-2014	NSF: SITE
Steven Sauve Sadec Hansen Xabier Ovalle Christian Holbert Ryan Baguley	Adaptive Motocross: Develop a stability system to allow people with spinal cord injuries to safely start and stop on a motorcycle	2012-2013	NSF: SITE & Dr. Jeff Rosenbluth
Chris Cosman Raleigh Cornwell Zak Evans Orlando Cintron Mike Myers Caleb Perkins	E-Tetra Kayak: Design a control system and hardware to interface with a standard sea kayak and allow use by a person with tetraplegia.	2012-2013	NSF: SITE & Dr. Jeff Rosenbluth
Anthony Chyr Jessica Johnson Ken Openshaw Mike Porter Josh Perschon	Robotic Test Bed: Design of a robotically controlled testbed and ankle joint to simulate gait trajectories and forces and evaluate the performance of a smart shoe.	2012-2013	NSF-HCC-Virtual Terrain Display
Nadar Badizadegan Brady Warner Poh Shing Cheah Elton Jasaraj	SITE - Blind Soccer: Design a robust system to provide an entertaining and learning experience for children who are blind by playing soccer.	2012-2013	NSF-SITE
Taylor Grenis Brian Hutchings Kolby Sorenson Bryan Van Horssen Clay Williams	Green Machine: Robotic Yard and Garden Helper	2012-2013	NSF-SITE
Ted Housel Anne-Grethe Slotnaes Lindsay Patton Scott Williams	Knee Scooter: Design and construct an assistive device for persons with lower leg/ankle disability to provide independent, indoor mobility.	2012-2013	None
Ryan Barlow Ryan Braegger Ian Cowie Jake Muehle Wen Kuo	E-Tetra Bike: Design and seating and control system for a recumbent bike to be used by persons with tetraplegia	2011-2012	Dr. Jeff Rosenbluth
Chase Kimbal Christine Quinn Jake Ryland Jonathan Miller Derek Wiscombe Iranga Samarasingha	Training Cane: Design an electronic travel cane and receiver to teach important skills to children who are blind. Won the Boeing Award for Innovation at 2012 Design Day	2011-2012	None

Senior Design Teams	Project Description	Year	Funding
Brandon Hogenson Dan MacKay Lewis Glassett Jeremy Greer Shawn Brady	Paracyle: Design an off-road handcycle for persons with paraplegia with combined directional control and propulsion.	2009-2010	None

DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE

Departmental Committee Service

1. DEMS Group (2021-present) – Role: Chair
2. Department Executive Committee (2021-present) – Role: Member
3. Systems Engineering Search Committee (2020) – Role: Chair
4. Safety Committee (2012-2018) – Role: Member
5. Ad Hoc SPIRAL Review Committee (2012-2014) – Role: Member
6. Faculty Candidate Search Committee (2014) – Manufacturing – Role: Member
7. Faculty Candidate Search Committee (2015) – Design – Role: Member
8. Capstone Design Ad hoc Committee (2015-2018) – Role: Member
9. Curriculum Committee (2015-present) – Role: Member

Miscellaneous Departmental Service

1. Examiner: Mechanical Engineering PhD qualifying exams
2. Robot Inspector: FIRST Robotics, (2010 – present)
3. Team Mentor – Ergonomics Design Competition 2013, 2014, 2016
4. PhD and MS Student Committee Member

College Committee Service

1. System Engineering Certificate Program Committee, (2020) – Role: Chair

University Committee Service

1. Reviewer: Funding Incentive Seed Grants, The University of Utah – (1 Review)
2. Advisor: University of Utah Student Section of ASSE (2009 – present)
3. Member: Center on Aging (2012 – present)
4. Rocky Mountain Center for Occupational and Environmental Health
Role: Program Director-Ergonomics and Safety & Occupational Injury Prevention Programs (July 2015-Present) – Member of Center Executive Committee
5. Bennion Center’s Community Engaged Learning Committee (CEL) (2021-present)

Other College and University Service

College

1. Engineering Day Presenter and Lab Tour Host 2014, 2015, 2016, 2018, 2019, 2020, 2021
2. College of Engineering New Student Orientation: Faculty Panel: 2016, 2017, 2019

University

1. Reviewer: Funding Incentive Seed Grants, The University of Utah – (2 Reviews)
2. Advisor: University of Utah Student Section of ASSP (formerly ASSE) (2009 – present)
3. Member: Center on Aging (2012 – present)
4. Program Director-Ergonomics and Safety Program, The Rocky Mountain Center for Occupational and Environmental Health (July 2015-Present)
5. Program Director-Occupational Injury Prevention Research Training Program, The Rocky Mountain Center for Occupational and Environmental Health (July 2015-October 2016)
6. UROP Mentor (6 recipients)
7. ACCESS Program Student Mentor (2 former)

PROFESSIONAL EXTERNAL SERVICE

Membership in Professional Societies

1. ASSP (formerly ASSE) Utah Section Executive Committee (2010-present)
2. ASSP (formerly ASSE) Utah Section Web Master (2015-present)
3. Task Force Member – 2011 ASSE Student Leadership Conference
4. Task Force Chair – 2012 ASSE Student Leadership Conference
5. Member of FReSH – Farm Safety and Health Committee (Review Training and Technical content for an online forum - http://www.extension.org/farm_safety_and_health)
6. Gait and Clinical Movement Analysis Society (GCMAS) – (2017- present)
7. International Society for the Measurement of Physical Behavior (ISMBP) – (2017-present)
8. Human Factors and Ergonomics Society (HFES) – (2015-present)
9. American Society of Mechanical Engineers (ASME) – (2012-present)
10. Project Team Mentor and Company Liaison – Occupational Safety and Health Solutions – 6-8 local companies per year (2010-present) – solving safety and health related problems for companies with multi-disciplinary student teams

Grant Reviews

1. NSF – March 2014, 2016, 2020, 2021, 2022
2. University of Alabama at Birmingham, Department of Environmental Health Sciences, Deep South Center for Occupational Health and Safety, Pilot/Small Projects Research Training Program (N=2), 2015
3. Rocky Mountain Center for Occupational and Environmental Health, Pilot Project Research Training Program (N=4), 2015, 2016, 2017
4. Canada Foundation for Innovation, Peer Review - John R. Evans Leaders Fund (N=1), 2020

Conference Involvement

1. Organizing Committee: 11th International Symposium On Computer Methods In Biomechanics And Biomedical Engineering (CMBBE-2013) – (8 Reviews)
2. ASME Summer Bioengineering Conference 2011-present (Biomechanics Review Committee) – (7 Reviews)

3. IEEE International Conference on Robotics and Automation (ICRA) – (5 Reviews)
4. IEEE SusTech 2015: Session Co-Chair: New Session in Agriculture and Sustainability
5. Organizing Chair – Annual New and Young Investigator Symposium (NORA) – (2016 – present) (www.NORA.mech.utah.edu)
6. Organizing Co-Chair – Rocky Mountain American Society of Biomechanics Regional Meeting – 2020, Estes Park, CO (<https://sites.google.com/site/asbrockymountain/home>)
7. Organizing Co-Chair – Rocky Mountain American Society of Biomechanics Regional Meeting – 2021, Estes Park, CO (<https://sites.google.com/site/asbrockymountain/home>)

Government

1. Gait Lab Development Committee: SLC VA Hospital (2014)
2. Rehabilitation Hospital Information Committee: Provide technical information about space and infrastructure requirements for the new UU Rehabilitation Hospital being planned.
3. Governor’s Office of Economic Development: System Engineering Program Development, University of Utah College of Engineering

Other Universities

1. FReSH: Occupational Health Online Articles - The Pennsylvania State University (5 Reviews)

Publishers

1. None

Reviewer for Academic Journals

Journal Name – (Number of Reviews) – 5-Year Impact Factor

1. *WORK: a Journal of prevention assessment and rehabilitation* (Member of Editorial Board 2008-present) – (12 Reviews/year) – 0.715
2. *Human Factors and Ergonomics Society (HFES)* – (3 Reviews) – 1.767
3. *Ergonomics* – (3 Reviews) – 1.850
4. *Applied Ergonomics* – (3 Reviews) – 2.107
5. *Journal of Applied Biomechanics* – (2 Reviews) – 1.010
6. *Journal of Biomechanics* – (2 Reviews) – 2.496
7. *IEEE 2015 SusTech* – (3 Reviews) – NA
8. *Clinical Biomechanics* – (8 Reviews) – 1.997
9. PLoS One – (4 Reviews) – 2.776

GRANTS/CONTRACTS/GIFTS/PROPOSALS

Funded Research Grants (Current)

1. Total Amount: \$39,968
 Funding Agency: Analog Devices Inc
 Proposal Title: Quantifying Human Posture With A Motion Sensing Garment (MSG) System
 Award Year: 2/1/2021- 7/30/2021
 People Involved: Andrew Merryweather (PI),

My Share: \$39,968

2. Total Amount:
Funding Agency: DOD - PR203018 CDMRP
Proposal Title: A Containment Device to Protect Health Care Personnel from Infectious Aerosols
Award Year: 1/15/2021- 1/14/2023
People Involved: Rachael Jones (PI), Andrew Merryweather (Co-I), Jeremy Biggs (Co-I), Frank Drews (Co-I)
My Share: 225,172

3. Total Amount: \$1,872,630
Funding Agency: DHHS Agency For Healthcare Research
Proposal Title: Reconfiguring the Patient Room Using a Fall Protection Strategy to Increase Patient Stability During Ambulation
Award Year(s): 09/30/2018-9/29/2023
People Involved: Janice Morse (PI), Andrew Merryweather (PI), Bo Foreman (Co-I), Ellen Taylor (Co-I)
My Share: \$561,789

4. Total Amount: \$99,991
Funding Agency: DHHS Agency For Healthcare Research
Proposal Title: Developing Biomechanical Models From Initiated Fall Actions and Reactions in Frail Elderly Patients
Award Year(s): 07/01/2018-06/30/2020
People Involved: Janice Morse (PI), Andrew Merryweather (Co-I)
My Share: \$39,996

5. Total Amount: \$1,747,428
Funding Agency: NSF - SMART-INT
Proposal Title: Reducing Traumatic Brain Injury Risk with Impact Compensation
Award Years(s): 09/01/16-08/31/2022
People Involved: Minor, Mark (PI); Coats, Brittany (Co-I); Carrier, David (Co-I); **Merryweather, Andrew (Co-I)**; Schurig, David (Co-I); Patwari, Neal (Key); Hansen, Colby (Key)
My Share: \$250,095.50

6. Total Amount: \$642,970
Funding Agency: CDC National Institute for Occupational Safety and Health (NIOSH)
Proposal Title: Rocky Mountain Center for Occupational and Environmental Health Targeted Research Training
Award Years(s): 07/01/2016 – 6/30/2018
People Involved: Hegmann, Kurt (PI); Handy, Rod (Co-I); **Merryweather, A (Co-I)**; Thiese, Matthew (Co-I); Sleeth, Darrah (Co-I); Murtaugh, M (Key)
My Share: \$ 135,058

7. Total Amount: \$224,525

Funding Agency: CDC National Institute for Occupational Safety and Health (NIOSH)
Proposal Title: Rocky Mountain Center for Occupational and Environmental Health:
Ergonomics and Safety Program
Award Year(s): 07/01/2016 – 6/30/2018
People Involved: Hegmann, Kurt (PI); **Merryweather, A** (Program Director)
My Share: \$ 224,525.00

8. Total Amount: \$92,757
Source: CDC (NIOSH), 1R01OH010916-01
Award Year(s): 92,75710/1/2015-9/31/2018
Proposal Title: Exposure-Response Relationships for Low Back Pain from Pooled Data
People Involved: Hegmann (PI-Subcontract); **Merryweather, A** (Key)
Amount: \$6,981
9. Total Amount \$4,480
Funding Agency: CDC National Institute for Occupational Safety and Health (NIOSH)
Proposal Title: Evaluation of a Novel Hazard Exposure Monitoring Device
Award Year: 07/01/2016-6/30/2017
People Involved: Tung, Kryztopher (PI); **Merryweather, A** (Advisor)
My Share: \$4,480
10. Total Amount \$7,136
Funding Agency: CDC National Institute for Occupational Safety and Health (NIOSH)
Proposal Title: Improve human safety in human-robot collaboration for industrial tasks
Award Year: 07/01/2016-6/30/2017
People Involved: Mojtaba Yazdani (PI); **Merryweather, A** (Advisor)
My Share: \$7,136
11. Total Amount: \$123,753
Funding Agency: NSF-GARDE
Award Year(s): 7/1/2012 - 6/30/2017
Title: Selective Innovative Technology and Engineering (Site) - Senior Design Projects.
People Involved: **Merryweather, A.** (PI); Meek, S. (Co-I); Blosswick, D. (Co-I)
My Share: \$123,753
12. Total Amount: \$10,650
Funding Agency: University of South Florida, US Department of Health & Human Services
Award Year(s): 7/1/2015-6/30/2017
Proposal Title: Biosensor For Heat Stress
People Involved: Tung, Kryztopher (PI); **Merryweather, A** (Advisor)
My Share: \$10,650
13. Total Amount: \$1,052,550
Funding Agency: NSF
Award Year(s): 5/1/2012-4/30/2016
Proposal Title: Haptic Virtual Reality Terrain Display
People Involved: Minor, Mark (PI); Johnson, D. (Co-I); **Merryweather, A.** (Co-I);
Hollerbach, J. (Co-I); Foreman, K. (Co-I)

My Share: \$213,986.77

14. Total Amount: \$300,000
Funding Agency: Craig H Nielsen Foundation
Award Year(s): 12/2014-12/2017
Proposal Title: Innovations in Rehabilitation Technology Development
People Involved: Jeffrey Rosenbluth (PI-School of Medicine); **Merryweather** (Co-I)
My Share: \$78,000

Funded Research Grants (Past)

1. Total Amount: \$3000
Funding Agency: NSF I-corps, UU Center for Medical Innovations
Award Year(s): 11/4/2015 – 4/6/2016
Proposal Title: Insole Asymmetric Load Prediction Model: I-Corps Seed Grant Application
People Involved: Fehlberg (PI); Mark **Merryweather**, A. (Co-I)
My Share: \$3,000
2. Total Amount: \$3000
Funding Agency: NSF I-corps, UU Center for Medical Innovations
Award Year(s): 11/4/2015 – 4/6/2016
Proposal Title: Pain Feedback Model for Therapeutic Exercise: I-Corps Seed Grant Application
People Involved: **Merryweather**, A (PI); Fehlberg, Mark (Co-I)
My Share: \$3,000
3. Total Amount: \$4,480
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2015-6/30/2016
Proposal Title: Evaluation of a Novel Hazard Exposure Monitoring Device
People Involved: Tung, K. (PI); **Merryweather**, A. (Co-I)
My Share: \$4,480
4. Total Amount: \$7,000
Source: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2015-6/30/2016
Project Title: Slips: Characterization of Contributing Factors associated with Footwear, Floor Surfaces, and Gait using a Robotic Testbed
People Involved: Fehlberg, M. (PI); **Merryweather**, A. (Co-I)
My Share: \$7,000
5. Total Amount: \$8,500
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2014 - 6/30/2015
Proposal Title: Submaximal Hand Forces & Shoulder Muscle Activation During Simulated Work
People Involved: Groberg, E. (PI); **Merryweather**, A. (Co-I); Hegmann, K. (Co-PI)
My Share: \$8,500

6. Total Amount: \$116,396
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 8/30/2013 – 8/29/2014
Proposal Title: Similarities and Differences between physical exposure assessments among NIOSH CTS Consortium members
People Involved: Hegmann (PI); **Merryweather, A. (Key)**
My Share: \$19,522
7. Total Amount: \$949,659
Funding Agency: DHHS Agency for Healthcare Research and Quality (AHRQ)
Award Year(s): 9/1/2011 – 6/30/2014
Proposal Title: Linkages between the safety of the hospital bed, patient falls and immobility
People Involved: Morse, J. (PI); **Merryweather, A. (Co-I)**; Doig, A. (Co-I); Blowski, D. (Co-I)
My Share: \$331,287
8. Total Amount: \$9,620
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2009 – 6/30/2010
Proposal Title: Evaluating Knee Joint Stresses During Kneeling Work
People Involved: **Merryweather, A. (PI)**
My Share: \$9,620
9. Total Amount: \$8,293
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2009 – 6/30/2010
Proposal Title: Modified guidelines for safe material handling using dynamic forces
People Involved: **Merryweather, A. (PI)**
My Share: \$8,293
10. Total Amount: \$2,179
Funding Agency: NIOSH PPRT_T42 OH008414
Award Year(s): 7/1/2009 – 6/30/2010
Proposal Title: A Device to Reduce BCF and Improve Return to Work Scenarios for Workers with LBP
People Involved: **Merryweather, A. (PI)**
My Share: \$2,179
11. Total Amount: \$10,478
Funding Agency: High Plains Intermountain Center for Agricultural Health and Safety
Award Year(s): 09/15/2010-03/31/2011
Proposal Title: Slip, Trip, and Fall Injuries Among Tractor Operators
People Involved: **Merryweather, A. (PI)**
My Share: \$10,478

12. Total Amount: \$12,078
 Funding Agency: NIOSH PPRT_T42 OH008414
 Award Year(s): 7/1/2009 – 6/30/2010
 Proposal Title: Slips, Trips, and Falls Among Commercial Truck Drivers
 People Involved: **Merryweather, A.** (PI); Thiese, M. (Co-I)
 My Share: \$12,078

13. Total Amount: \$7,421
 Funding Agency: NIOSH PPRT_T42 OH008414
 Award Year(s): 7/1/11 – 6/30/12
 Proposal Title: Assembly Force Requirements and Human Capabilities for Upstream Design Planning
 People Involved: **Merryweather, A.** (PI)
 My Share: \$7,421

14. Total Amount: \$5,574
 Funding Agency: NIOSH PPRT_T42 OH008414
 Award Year(s): 7/1/12 – 6/30/13
 Proposal Title: Characterizing Slip Potential During Truck Cabin Ingress/Egress
 People Involved: Shorti, R. (PI); **Merryweather, A.** (Co-PI); Thiese, M. (Co-PI)
 My Share: \$5,574

15. Total Amount: \$4,742
 Funding Agency: NIOSH PPRT_T42 OH008414
 Award Year(s): 7/1/12 – 6/30/13
 Proposal Title: Upper Extremity and Biomechanics Assessment of Laparoscopic Surgery
 People Involved: Shorti, R. (PI); **Merryweather, A.** (PI)
 My Share: \$4,742

16. Total Amount: \$8,500
 Funding Agency: NIOSH PPRT_T42 OH008414
 Award Year(s): 7/1/2013 – 6/30/2014
 Proposal Title: Innovaflex Tendon Rehabilitation Device
 People Involved Paul, S., PI (PI); **Merryweather, A.** (Co-PI)
 My Share: \$8,500

Other Competitive Grants and Awards

1. Amount: \$2,995
 Source: University Teaching Award
 Award Year(s): 2011-2012
 Proposal Title: Low Cost Teaching Tool for Motion Tracking and 3D Modeling
 People Involved: **Merryweather, A.** (PI)
 Amount: \$2,995

DISCLOSURES, PATENTS ISSUED, AND SOFTWARE DISTRIBUTED

Disclosures

1. Technology Commercialization Office U-5252
 Disclosure Title: Innova-Flex

Date: July 12, 2012

2. Technology Venture Commercialization Office U-5754
Disclosure Title: Powered Lift Assist Device for Drywall Installation
Date: March 18, 2014
3. Technology Venture Commercialization Office U-5772
Disclosure Title: Orthotic Smart Shoe for Modulating Foot-Ground Interaction
Date: April 15, 2014
4. Technology Venture Commercialization Office U-5827
Disclosure Title: Wrist-elbow strength assessment and rehabilitation device
Date: August 17, 2014
5. Technology Venture Commercialization Office U-5926
Disclosure Title: Pattern-Based Universal Sip/Puff Controller
Date: November 11, 2014
6. Technology Venture Commercialization Office U-6546
Disclosure Title: Tetra-Fisher
Date: April 4, 2018
7. Technology Venture Commercialization Office U-6550
Disclosure Title: Lifting Coach
Date: April 18, 2018

Pending Disclosures

1. Technology and Venture Commercialization Office
Disclosure Title: Phoenix paragliding system for persons with disabilities

Patents

1. **Exercise therapy and rehabilitation system and method**
03/03/16 - 20160059077 - A method is provided for performing exercise therapy and rehabilitation. A first therapy module can be performed. The first therapy module comprises at least one first physical metric for rotating, by a resistance device, at least one joint of a limb of a user. At least one psychophysical metric and
Inventors: Seth Paul, **Merryweather, A**

Software

1. Title: Low Back Physical Exposure Database
Publisher: University of Utah
Date: 2006 (Jay Kapellusch & **Merryweather, A**)
Distribution: Used by University of Utah and UWM research teams to store, manage and analyze manual materials handling and other LBP related job physical exposure data.
2. Title: Extractor
Publisher: University of Utah
Date: 2012 (**Merryweather, A**)
Distribution: Used by University research teams to process data and create models to study biomechanics during patient bed ingress/egress.

Ergonomic Consultation (C) and/or Training (T) including:

- LDS Church Records and Granite Mountain Vault (C,T)
- Black Diamond Equipment (C)
- Kennecott Utah Copper (C)
- Dupont Holographics (T)
- SKF Polyseal (C)
- Fezter Fine Architectural Wood Work (C)
- LDS Church Printing Division (C)
- Hunter Douglas Blinds (C)
- Smead Manufacturing (C)
- Edwards Life Sciences (C,T)
- Parker Hannifan (C)
- Aphadominche (C)
- Georgia Pacific, LLC (C,T)
- Rocky Mountain Center for Occupational and Environmental Health Comprehensive Review of Industrial Hygiene (Ergonomics) - August 5-9, 2013 (T)
- Ultradent Products (C,T)
- Henkle (C)
- Albany Engineering (C)
- Boeing (C)
- Haemonetics (C)
- Varex Medical Imaging (C)
- DECKED LLC (C)

Other Qualifications

- Fluent in Spanish