

Justin M. Haney

PhD

Senior Staff Consultant



Dr. Haney is a senior staff consultant for Engineering Systems Inc. (ESi). His background includes biomedical engineering and industrial engineering with a focus on biomechanics, ergonomics, and occupational safety. He has extensive experience conducting human motion analyses and evaluating human behavior, performance, and mental workload in experimental studies related to workplace safety.

Prior to joining ESi, Dr. Haney was a research biomedical engineer at the National Institute for Occupational Safety and Health (NIOSH). His previous research investigated human motion behavior and perceived safety during human–robot interaction in the workplace.

He has presented his work at a variety of professional scientific conferences and has published several peer-reviewed journal articles and conference proceedings.

Education

PhD, Industrial and Operations Engineering. University of Michigan. 2019

MS, Bioengineering. University of Pittsburgh. 2014

BS, Bioengineering. University of Pittsburgh. 2012

Positions Held

Engineering Systems Inc., Ann Arbor, Michigan

- Senior Staff Consultant, 2025 – Present

National Institute for Occupational Safety and Health, Morgantown, West Virginia

- Research Biomedical Engineer, Division of Safety Research, 2019–2025

University of Michigan, Ann Arbor, Michigan

- Graduate Student Researcher, Inclusive Mobility Laboratory, 2015–2019

Contact Information

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ESi Ann Arbor

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Ann Arbor, MI 48108

Areas of Specialization

- Biomechanical Accident Reconstruction
- Human Factors & Ergonomics
- Slips, Trips & Falls
- Occupational Safety
- Experimental Design & Testing
- Human Motion Analysis
- Motion Capture Systems
- Biomechanical & Physiological Instrumentation
- Statistical Data Analysis
- Human–Robot Interaction

Creighton University, Omaha, Nebraska

- Research Associate, Rehabilitation Science Research Laboratory, 2014–2015

University of Pittsburgh, Pittsburgh, Pennsylvania

- Graduate Student Researcher, Human Movement and Balance Laboratory, 2012–2014

Shriners Hospitals for Children, Erie, Pennsylvania

- Biomechanical Researcher, Movement Analysis Laboratory, 2011

Professional Affiliations/Honors

American Society of Safety Professionals

- Member, 2025 – Present

Human Factors and Ergonomics Society

- Member, Occupational Ergonomics Technical Group, 2015– Present
- Member, Human–AI–Robot Teaming Technical Group, 2020 – Present
- Member, Forensics Professional Technical Group, 2025 – Present
- Reviewer, Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 2016 – Present

American Society of Human Engineers

- Reviewer, International Conference on Computing in Civil Engineering, 2024

Human Factors

- Reviewer, 2021

Institute of Industrial and Systems Engineers

- Reviewer, Transactions on Occupational Ergonomics, 2023

International Association for Automation and Robotics in Construction

- Reviewer, 2022

Journal of Applied Ergonomics

- Reviewer, 2020 – Present

Journal of Safety Research

- Reviewer, 2022 – 2023

Publications

“Effects of Robot Arm Design and Movement Speed During Human-Robot Interaction,” **J.M. Haney**, D. Ammons, and H.S. Choi, Applied Ergonomics, Vol. 129, pp. 104578, 2025.

“Case Study Evaluation of an Auditory Alert for an Autonomous Mobile Robot,” **J.M. Haney**, M. Cheng, and E.J. Haas, Robotics Tomorrow, May 29, 2025.

“Enhancing Safety in Collaborative Workspaces: Defining Attention and Avoidance Zones Using Path Planning with Mobile Robotic Systems,” M.H. Cheng, H.E. Camargo, and **J.M. Haney**, Proceedings of the ASME 2024 International Mechanical Engineering Congress and Exposition, Vol. 11, November 2024.

“A Literature Review on Safety Perception and Trust During Human-Robot Interaction with Autonomous Mobile Robots That Apply to Industrial Environments,” **J.M. Haney** and C.J. Liang, IISE Transactions on Occupational Ergonomics and Human Factors, Vol. 1, pp. 22, 2024.

“Safety Perception and Behaviors During Human-Robot Interaction in Virtual Environments,” D. Mitchell, H. Choi, and **J.M. Haney**, Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol. 64, No. 1, pp. 2087–2091, 2021.

“The Effect of Prolonged Walking with Intermittent Standing on Erector Spinae and Soleus Muscle Oxygenation and Discomfort,” A.J. Chambers, **J.M. Haney**, T. Huppert, and M.S. Redfern, Journal of Sports Science & Medicine, Vol. 18, No. 2, pp. 337, 2019.

“Modeling Hand Trajectories During Sequential Reach Movements in a Pulley Threading Task,” **J.M. Haney**, T. Wang, C. D’Souza, M.L.H. Jones, and M.P. Reed, Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol. 62, No. 1, pp. 823–827, 2018.

“Spatial and Temporal Patterns in Sequential Precision Reach Movements,” **J.M. Haney**, T. Wang, C. D’Souza, M.L.H. Jones, and M.P. Reed, Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol. 61, No. 1, pp. 929–930, 2017.

“A Pilot Study of the Effects of Pulley Location and Design Parameters on Hand Movements During Pulley Threading Operations,” **J.M. Haney**, M. Owczarczak, C. D’Souza, M.L.H. Jones, and M.P. Reed, Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol. 60, No. 1, pp. 908–912, 2016.

Presentations

“Enhancing Safety in Collaborative Workspaces: Defining Attention and Avoidance Zones Using Path Planning with Mobile Robotic Systems,” M.H. Cheng, H.E. Camargo, and **J.M. Haney**, ASME 2024 International Mechanical Engineering Congress and Exposition, Portland, OR, November 17–21, 2024.

“Ergonomic Guidelines for Proper Seated Posture,” **J.M. Haney** and S. Lim, FDA and PTO 3rd Annual Wellness Fair, Detroit, MI, August 2017.

“Ergonomic Guidelines for Proper Seated Posture,” C. Green and **J.M. Haney**, FDA and PTO 2nd Annual Wellness Fair, Detroit, MI, July 2016.

“Persistence of Motor Unit Firing in People with Parkinson's Disease–Related Fatigue,” D. Katsavelis, **J.M. Haney**, L. Nun, and A. Threlkeld, American Physical Therapy Association Combined Sections Meeting, Anaheim, CA, 2016.

“Knee Flexion During Resisted Side-Stepping Decreases Tensor Fascia Lata Muscle Activation,” A. Scharmann, M. Donnelly, **J.M. Haney**, and A. Threlkeld, American Physical Therapy Association Combined Sections Meeting, Anaheim, CA, 2016.

“The Effect of Flooring on Muscle Oxygenation During Long-Term Walking Using Near Infrared Spectroscopy,” **J.M. Haney**, M.S. Redfern, T. Huppert, and A.J. Chambers, World Congress of Biomechanics, Boston, MA, 2014.

“The Effect of Flooring on Soleus Muscle Oxygenation During Long-Term Standing Using Near Infrared Spectroscopy,” **J.M. Haney**, M.S. Redfern, T. Huppert, and A.J. Chambers, The Midwest American Society of Biomechanics Regional Conference, Akron, OH, 2014.

“Effects of Prolonged Standing on Oxygen Saturation in the Soleus and Erector Spinae Muscles of the Lower Back Using Near Infrared Spectroscopy,” **J.M. Haney**, M.S. Redfern, T. Huppert, and A.J. Chambers, American Society of Biomechanics Conference, Omaha, NE, 2013.