

STEVEN R. ARNDT

PhD, CHFP

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HUMAN FACTORS

EDUCATION

UNIVERSITY OF WISCONSIN		
PhD	Industrial Engineering - Human Factors Specialization	1996
MSIE	Industrial Engineering - Human Factors Specialization	1991
BSE	Psychology	1988

LICENSES & CERTIFICATIONS

Certificant, Board of Certification in Professional Ergonomics, CHHFP #1644	2011
SAE Accident Reconstruction Certificate Program	2023

AFFILIATIONS

Human Factors and Ergonomics Society
American Society of Safety Engineers
Society of Automotive Engineers (SAE)
American Society of Testing and Materials

E30 on Forensic Sciences
E34 on Occupational Health and Safety
E58 on Forensic Engineering
F13 on Pedestrian/Walkway Safety and Footwear
F15 on Consumer Products
F18 on Electrical Protective Equipment for Workers
F24 on Amusement Rides and Devices

PROFESSIONAL PROFILE

Dr. Steve Arndt is a human factors scientist. Human factors is the scientific field of research dealing with the capabilities and limitations of people as they interact with systems made up of products, tools, technology, information, organizations, environments, and other people. He specializes in human perception, human performance, and ergonomics associated with industrial and occupational safety, consumer product design and use, as well as pedestrian and driver/operator behaviors and performance. Dr. Arndt is a consultant with substantial experience in the investigation and prevention of accidents and injuries related to consumer products, warning labels, instructions, training, industrial and occupational settings, and transportation related systems.

Dr. Arndt also investigates operator behavior, decision-making, perceptual capabilities and limitations associated with vehicle operation, and decision and motor control response times. Pedestrian and motor vehicle work has included the assessment of visibility and conspicuity of objects in low-light and low-visibility environments as well as driver distraction.

AREAS OF EXPERTISE

Human Factors and Human Performance
Ergonomics and Safety
Warnings, Labeling, and Instructions
Human Factors of Transportation
Driver Behaviors, Capabilities, and Limitations
Visibility and Conspicuity
Industrial and Construction Machinery Operation and Safety
Consumer Product Design and Safety

EXPERIENCE

Explico

2015 - Present

Principal

Exponent Failure Analysis Associates, Inc.

Human Factors

2005-2015

Principal

2003-2005

Senior Managing Scientist

2000-2003

Managing Scientist

1998-2000

Senior Engineer/Scientist

1996-1998

Engineer/Scientist

Wisconsin Center for Space Automation and Robotics (WCSAR)

1993-1996

Graduate Research Assistant

PEER-REVIEWER PUBLICATIONS

Kappler E., Figueroa Jacinto R., Arndt S. (2022). Evaluation of Visual Acuity and Perceptual Field of View Using the Varjo XR-3 Headset in a Virtual Environment. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting.

Figueroa Jacinto R., Kappler E., Petroskey K., Arndt S., Leipold T. (2022). Naturalistic Observations of Human Driving Perceptions and Vehicle Kinematics at Stop Sign-Controlled Intersections. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting.

Funk C, Petroskey K, Arndt S, Vozza A. *Vehicle Specific Headlamp Mapping for Nighttime Visibility*. Society of Automotive Engineers, SAE 2021-01-0880, 2021.

Figueroa-Jacinto R., Kappler E., Jin X., Arndt S., Rundell, S. (2021). Face Validity of Various Display Methodologies in Conveying Spatial Awareness and Depth Perception. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting.

Alper SJ, Arndt SR, Borgardt J, Johnson K, (2019). Human Factors and Medical Device Instructions for Use: it's Not Just Good Business and Good Science, it's the Law. In Proceedings of the Human Factors and Ergonomics Society International Health Care Symposium, Chicago, IL.

Sproule D, Figueroa-Jacinto R, Rundell S, Williams J, Perlmutter S, Arndt S, (2019). Characterization of Visual Acuity and Contrast Sensitivity Using Head-Mounted Displays in a Virtual Environment: A Pilot Study. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Seattle, WA.

Figuroa-Jacinto R, Sproule D, Williams J, Perlmutter S, Arndt S, Rundell S, (2019). Application of Stereoscopic Head-Mounted Displays and Interactive Virtual Reality Environments to an “Optical Illusion” Misstep and Fall Case. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Seattle, WA.

Figuroa-Jacinto R and Arndt S, (2018). Prevalence of the Use of Mobile Instant Messaging Applications: The Need to Assess Their Usage in Human Factors Investigations. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 62, No.1, pp. 406-410). Philadelphia, PA.

Perlmutter S, Cades DM, Heller MF, Giachetti RS, Sala JB, Arndt SA. Effects of mobile technology use on walking. Proceedings, 58th Human Factors and Ergonomics Society Annual Meeting, 2014.

Quartuccio J, Franz S, Gonzalez C, Kenner NM, Cades DM, Sala JB, Arndt SA, McKnight PE. Seeing is believing: The use of data visualization to identify trends for cycling safety. Proceedings, 58th Human Factors and Ergonomics Society Annual Meeting, 2014.

Cades DM, Arndt SR, Kwasniak AM. Driver distraction is more than just taking eyes off the road. Institution of Transportation Engineers Journal 2011; 81(7).

Weaver B, Ruberte L, Khan F, Arndt S. Normal pedal activation in real world situations. SAE 11B-0291/2022-01-0551, SAE World Congress 2011, Detroit, MI, 2011.

Khan F, Sala J, Arndt S. Reducing subjectivity when attempting auditory scene recreation in accident reconstruction. Proceedings, Human Factors and Ergonomics Society 54th Annual Meeting, San Francisco, CA, 2009.

Vigilante W, Rhoades T, Arndt SR, Cohen HH. Forensic human factors/ergonomics practice from the perspective of the forensic consulting firms. Proceedings, 53rd Annual Meeting of the Human Factors and Ergonomics Society, San Antonio, TX, 2009.

Arndt S, Krauss D, Weaver B. A previously unidentified failure mode for ladder-climbing fall-protection systems. Proceedings, American Society of Safety Engineers Professional Development Conference and Exposition, Las Vegas, NV, 2008.

Arndt SR, Wood CT, Delahunt PB, Wall CT, Krauss DA. Who's in the back seat? A study of driver inattention. Proceedings, 50th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2006.

Krauss DA, Kuzel MJ, Arndt SR, Delahunt PB. Validation of digital image representations of low-illumination scenes. SAE Paper 2006-01-1288, Society for Automotive Engineers, Inc., 2006.

Arndt SR, Hammoud SA, Cargill RS. Head accelerations experienced during everyday activities and while riding roller coasters. Proceedings, 48th Annual Meeting of the Human Factors and Ergonomics Society, New Orleans, LA, 2004.

Al-Tarawneh IS, Stevens WJ, Arndt SR. An analysis of home and hospital medical device incidents in the MAUDE database. Proceedings, 48th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2003.

Figuroa-Jacinto R and Arndt S, (2018). Prevalence of the Use of Mobile Instant Messaging Applications: The Need to Assess Their Usage in Human Factors Investigations. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 62, No.1, pp. 406-410). Philadelphia, PA.

Arndt SR, Cargill RS. Everyday life accelerations. Injury Insights, Publication of the National Safety Council, p. 6-7, June/July 2003.

Wood CT, Arndt S, Kelkar R. Children's use of various internal automobile trunk release mechanisms intended to reduce child entrapment risk. Proceedings, Human Factors and Ergonomics Society Annual Meeting, pp. 912-915, 1999.

Arndt S, Ayres T, McCarthy R, Schmidt R, Wood CT, Young D. Warning labels and accident data. Proceedings, Human Factors and Ergonomics Society Annual Meeting, pp. 550-553, Chicago, IL, October 1998.

OTHER PUBLICATIONS

Cades DM, Arndt SR, Sala JB, Krauss DA. What you need to know about the distracted driver. Feature Article in The Illinois Association of Defense Trial Counsel Quarterly 2013; 23(4)

Khan FS, Krauss DA, Alper SJ, Droll J, Arndt SR, Lakhiani SD, Cades DM. Do people heed warnings at gasstations? Proceedings, 2nd Annual World Conference of the Society for Industrial and Systems Engineering, pp. 114-117, Las Vegas, NV, November 5-7, 2013. ISBN: 97819384960-1-1.

Tsuji JS, Dahlstrom DL, Arndt SR, Rogers WS, Clark JA. Best uses of experts in producing labels and warnings for products containing engineered nanomaterials. BNA Expert Evidence Reporter, 12 EXER 20, January 9, 2012.

Tsuji JS, Dahlstrom DL, Arndt SR, Rogers WS, Clark JA. Labeling and warning for products containing engineering nanomaterials — Learning from the past or we are doomed to repeat it. Part II. BNA Tort Law Reporter, 26 TXLR 1435, December 8, 2011.

Tsuji J, Dahlstrom DL, Arndt S, Rogers WM, Clark J. Labeling and warning for products containing engineering nanomaterials — Learning from the past or we are doomed to repeat it. Part I, BNA Product Safety & Liability Reporter, Vol. 39, PSLR 1283, November 21, 2011.

Tsuji J, Dahlstrom DL, Arndt S, Rogers WM, Clark J. Engineered nanomaterials in the workplace: What to do when the genie is out of the bottle. BNA Toxic Law Reporter, Vol. 26, No. 27, July 14, 2011.

Khan FS, Sala JB, Arndt SR. Considerations in the textless presentation of warning and safety information Proceedings, 15th Annual International Conference on Industrial Engineering Theory, Applications and Practice, Mexico City, Mexico, 2010.

Khan FS, Sala JB, Arndt SR. Psychoacoustic response to auditory warnings. Proceedings, 14th Annual International Conference on Industrial Engineering Theory, Applications and Practice, Anaheim, CA, 2009.

Khan FS, Arndt SR, Krauss DA. Understanding the relationship between safety climate and warning compliance in occupational settings. Proceedings, 14th Annual International Conference on Industrial Engineering Theory, Applications and Practice, Anaheim, CA, 2009.

Krauss D, Arndt S, Lakhiani S, Khan F. Additional considerations when applying the “Safety Engineering Hierarchy” in industrial work settings. Proceedings, 13th Annual International Conference on Industrial Engineering: Theory, Applications and Practice, Las Vegas, NV, 2008.

Arndt S, Young D, Krauss D. Human factors issues in trucking – What does a qualified expert need to know? Trucking Law Seminar, Phoenix, AZ, April 17, 2008.

Huntley-Fenner G, Arndt S, Sanders K. Case study: Pedestrian behavior at grade crossings. Proceedings, 9th Annual International Conference on Industrial Engineering: Theory, Applications and Practice, 2005: 10:69-73.

Arndt S, Ayres TJ, Li L, Wood CT, Young D. Human factors in product recall planning. Proceedings, 6th Annual International Conference on Industrial Engineering – Theory, Applications and Practice, San Francisco, CA, November 18-20, 2001.

Arndt SR, Hammoud S, Kennett K. The role of human factors, biomechanics and accident reconstruction forklift accident investigations. Proceedings, 6th Annual International Conference on Industrial Engineering – theory, applications and Practice, San Francisco, CA, November 18-20, 2001.

Arndt S, Humphrey D, Kelkar R, Kelsh M, McCarthy R, Mrad R. Repetitive stress injuries: incidence trends, the regulatory landscape and verdict. Proceedings, Silicon Valley Ergonomics Conference & Exposition, ErgoCon '99, San Jose, CA, June 1-4, 1999.

Ayres TJ, Wood CT, McCarthy RL, Arndt SR. Relative rollover risk estimate for pickup trucks. Proceedings, 7th International Conference on Product Safety Research, Washington, DC, 1999.

Wood CT, Arndt SR, McCarthy RL. Using risk analysis to reduce the hazards on playgrounds. Proceedings, National Manufacturing Week Conference, Chicago, IL, March 1998.

Ayres TJ, Arndt SR, Young DE. Product-related risk of falling among the elderly. Proceedings, Silicon Valley Ergonomics Conference and Exposition, San Jose, CA, 1998.

DISSERTATION

Gauging and Predicting Manual Assembly Performance in Impaired Populations: An Analysis of the Reliability, Validity and Utility of the Telerebotic Performance Analysis System (TPAS), A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy (Industrial Engineering) at the University of Wisconsin-Madison, 1996.

PROFESSIONAL DEVELOPMENT

Crash Safety Solutions

Advanced Human Factors for Traffic Crash Reconstruction

Society of Automotive Engineers

Vehicle Crash Reconstruction: Principles and Technology, 2023

Accident Reconstruction, the Autonomous Vehicle and ADAS 2020

Driver Distraction from Electronic Devices: Insights and Implications, 2020

Applying Automotive EDR Data to Traffic Crash. Reconstruction, 2020

Introduction to Brake Controls: ABS, TCS, and ESC, 2020

Fundamentals of Vehicle Dynamics, 2020

Occupational/Industrial Health and Safety

Boom and Scissor Lift (Type 3, Groups A&B) Operator Training, 2021, JLG (OSHA/ANSI Compliant Course)

MEWP Supervisor Training Course, 2021, JLG (OSHA Compliant Course)

Team Leader for Process Hazard Analysis (PHA), 2013, Primatch (OSHA Compliant Course)

Qualified Individual for Fall Protection, 2008 (OSHA Compliant Course)

Forklift Safety Trainer, 2007 (OSHA Compliant Course)

OSHA-30 General Industry Train the Trainer, 2000 (OSHA Compliant Course)

Other

Protecting Human Research Participants – Training for Institutional Review Boards, 2020

USCCA Defensive Shooting Instructor, 2019

FAA Rated Remote Pilot (SUAS), 2017

