

H. Lenora Hardee  
Research Associate

H. Lenora Hardee is an experienced and skilled anthropometry and ergonomics professional who specializes in optimizing product usability. In her role as a research associate and anthropometry specialist, she collects and analyzes select anthropometric measurements for Anthrotech clients. She is also responsible for measuring the personnel and gathering information about the fit, comfort and effectiveness of products such as load-carrying systems and body armor.

Prior to joining Anthrotech, Hardee spent more than 15 years at Navistar (previously International Truck and Engine Corporation). Her most recent role there was Chief Technical Engineer, Ergonomics. In that position, she served as a technical expert in assessing compliance with regulatory requirements and in litigation involving any ergonomics issues, led the company through a reorganization of product development and standardized ergonomics integration into a product development process. Hardee completed ample, notable research into optimizing truck and bus design, by commissioning an anthropometric study of school bus drivers. She was also instrumental in shaping industry input for the National Institute of Occupational Safety and Health anthropometric survey of over-the-road truck drivers. As she was a user of anthropometric data in truck and bus design, she was uniquely positioned to provide guidance on these landmark studies. Research and evaluation methods included: task-oriented structured interviews, usability testing, literature reviews, on-the-road testing, competitive product analysis and more.

She earned her Ph.D. in Industrial Engineering and Operations Research (with a specialty in Ergonomics) and her M.S. in Industrial/Organizational Psychology from Virginia Polytechnic Institute and State University (Virginia Tech). She earned her B.A. in Psychology from Clemson University.

Hardee has stayed busy with multiple professional affiliations throughout her career, including being a founding member of Women in Trucking, and being a member of the Society of Women Engineers, the Human Factors and Ergonomics Society and the Society of Automotive Engineers.

In her spare time Hardee enjoys hanging out at the gym, volunteering for a local homeless shelter, and eating her way through the many wonderful restaurants in Chicagoland.



## H. LENORA HARDEE

### ANTHROTECH

#### EDUCATION

Virginia Tech                      Ph. D, Industrial Engineering and Operations Research 1985  
Virginia Tech                      MS, Industrial/Organizational Psychology, 1984  
Clemson University                      BA, Psychology, 1979

#### WORK EXPERIENCE

2016 – Present      **Anthrotech, Yellow Springs, Ohio**  
*Research Associate*

2011 – 2015      **Navistar (previously International Truck and Engine Corp),  
Lisle, Illinois**  
*Chief Technical Engineer, Ergonomics*

2004 – 2011      **Navistar, Fort Wayne, Indiana**  
*Staff Engineer, Ergonomics*

1998 – 2004      **Navistar, Fort Wayne, Indiana**  
*Product Development Engineer*

1991– 1998      **General Motors Corporation, Warren, Michigan**  
*Development Engineer*

1986– 1991      **General Motors Corporation, Warren, Michigan**  
*Senior Research Engineer*

#### PUBLICATIONS

Guan J, Hsaio H, Bradtmiller B, Kau T-Y, Reed MR, Jahns SK, Hardee HL, Piamonte DPT (2012) *U. S. Truck Driver Anthropometric Study and Multivariate Anthropometric Models for Cab Designs*, Human Factors, Vol 54, no. 5, pp. 849-871.

Jahns S, Reed M and Hardee, H (2001) *Methods for In-Vehicle Measurement of Truck Driver Postures*, SAE Technical Paper 2001-01-2821.

Hardee HL, Johnston CM, Kuiper JW, Thomas WE (1990) *Toward a Methodology for Evaluating Instrument-Panel Controls*, In D. Woods, E. Roth, (eds.) *Proceedings of the Human Factors Society 34th Annual Meeting*, Santa Monica, USA, pp. 613-617.

Dingus TA, Hardee HL and Wierwille WW (1987) Development of models for on-board detection of driver impairment. *Accident Analysis and Prevention*, 19(4), 271-283.

Hardee HL, Dingus TA and Wierwille WW (1985) *A comparison of three subsidiary tasks used as driver drowsiness countermeasures*. IEOR Department Report #8505. Vehicle Simulation Laboratory, Human Factors Group. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Dingus TA, Hardee HL and Wierwille WW (1985) *Detection of drowsy and intoxicated drivers based on highway driving performance measures*. IEOR Department Report #8504. Vehicle Simulation Laboratory, Human Factors Group. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Skipper JH, Wierwille WW and Hardee HL (1984) *An investigation of low-level stimulus-induced measures of driver drowsiness*. IEOR Department Report #8402. Vehicle Simulation Laboratory, Human Factors Group. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

## **PATENTS**

Bowman DS, Hardee HL, Penaloza JT, Wesler MMc (2007) US Patent No. 7,640,823, *Integrated automatic manual transmission lever-type shift selector*.