

CURRICULUM VITAE

William J. Horrey

January, 2009

Office Address:

Liberty Mutual Research Institute for Safety
71 Frankland Road
Hopkinton, MA 01748
Phone: (508) 497-0237
Fax: (508) 435-0482

Home Address:

113 Acton Street
Maynard, MA 01754
Home: (987) 897-0905
Cell: (508) 314-3621

Email: william.horrey@libertymutual.com
Personal Website: <http://mysite.verizon.net/horrey/>

EDUCATION

- 2005 **Ph. D. Psychology**
Thesis: The distracted driver: Modeling the impact of information bandwidth, in-vehicle task priority, and spatial-separation on driver performance and attention allocation (Advisor: Christopher D. Wickens)
University of Illinois at Urbana-Champaign
- 2002 **M.A. in Psychology**
Thesis: Driving and side task performance: The effects of display clutter, separation, and modality (Advisor: Christopher D. Wickens)
University of Illinois at Urbana-Champaign
- 1999 **B.Sc. in Psychology (Honors)**
Thesis: Vision enhancement in automobiles: The effects of display type on perception-response time (Advisor: Jeff K. Caird)
University of Calgary, AB, Canada

AWARDS AND HONORS

- 2007 LMRIS Best Paper Award
Liberty Mutual Research Institute for Safety
- 2003 Honda Outstanding Student Paper Award
2nd International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design
- 2002 List of Outstanding Teachers
Campus-wide Student Evaluations; Fall & Spring semesters
- 1999 Academic Achievement Award
Department of Psychology, University of Calgary
- 1998-1999 Undergraduate Merit Award
University of Calgary

RESEARCH INTERESTS

Transportation Human Factors, Models of Selective and Divided Attention, Visual Attention, Automation, Human Information Processing, Driver Distraction, Workload and Situation Awareness.

TEACHING EXPERIENCE

2002 **Teaching Assistant** (Fall, Spring)
"Human Factors in Human-Machine Systems"
Instructor: Prof. Esa Rantanen, University of Illinois

RESEARCH EXPERIENCE

2005-Present **Research Scientist**
Center for Behavioral Sciences, Liberty Mutual Research Institute for Safety

2000-2005 **Graduate Research Assistant** (with Chris Wickens, Dan Simons, and Arthur Kramer)
Beckman Institute for Advanced Science and Technology

1999-2000 **Research Assistant** (with Jeff Caird)
Cognitive Ergonomics Research Laboratory, University of Calgary

1999 **Research Specialist** (with Peter Hancock, Tom Smith, and Herbert Pick)
Human Factors Research Laboratory, University of Minnesota

PUBLICATIONS AND MANUSCRIPTS

Horrey, W.J., Lesch, M.F. & Garabet, A. (in press). Dissociation between driving performance and drivers' subjective estimates of performance and workload in dual-task situations. *Journal of Safety Research*.

Horrey, W.J., Lesch, M.F. & Melton, D.F. (in press). Perception and management of distraction due to in-vehicle tasks while driving. *Professional Safety*.

Lehto, M.R., Lesch, M.F. & Horrey, W.J. (in press). Warnings and automation. In S. Nof (Ed.), *Handbook of Automation*.

Horrey, W.J. (2009). On allocating the eyes: Visual attention and in-vehicle technologies. In C. Castro (Ed.), *Human Factors of Visual and Cognitive Performance in Driving* (pp. 151-166). Boca Raton, FL: CRC Press.

Horrey, W.J. & Lesch, M.F. (2009). Driver-initiated distractions: Examining strategic adaptation for in-vehicle task initiation. *Accident Analysis & Prevention*, 41(1), 115-122.

Horrey, W.J., Lesch, M.F., & Garabet, A. (2008). Assessing the awareness of performance decrements in distracted drivers. *Accident Analysis & Prevention*, 40(2), 675-682.

Horrey, W.J. & Wickens, C.D. (2008). Models of attention, distraction and highway hazard avoidance. In M.A. Regan, J.D. Lee & K.L. Young (Eds.), *Driver Distraction: Theory, Effects and Mitigation*. Orlando, FL: CRC Press.

Horrey, W.J. & Wickens, C.D. (2007). In-vehicle glance duration: Distributions, tails and model of crash risk. *Transportation Research Record*, 2018, 22-28.

Horrey, W.J. & Simons, D.J. (2007). Examining cognitive interference and adaptive safety behaviours in tactical vehicle control. *Ergonomics*, 50(8), 1340-1350.

Kramer, A.F., Cassavaugh, N., Horrey, W.J., Becic, E., & Mayhugh, J. (2007). Influence of age and proximity warning devices on collision avoidance in simulated driving. *Human Factors*, 49(5), 935-949.

- Horrey, W.J. & Wickens, C.D. (2006). Examining the impact of cell phone conversations on driving using meta-analytic techniques. *Human Factors*, 48(1), 196-205.
- Horrey, W.J., Wickens, C.D., & Consalus, K.P. (2006). Modeling drivers' visual attention allocation while interacting with in-vehicle technologies. *Journal of Experimental Psychology: Applied*, 12(2), 67-78.
- Horrey, W.J., Wickens, C.D., Strauss, R., Kirlik, A., & Stewart, T.R. (2006). Supporting situation assessment through attention guidance and diagnostic aiding: The benefits and costs of display enhancement on judgment skill. In A. Kirlik (Ed.), *Adaptive Perspectives on Human-Technology Interaction: Methods and Models for Cognitive Engineering and Human-Computer Interaction* (pp. 55-70). Oxford: University Press.
- Caird, J.K., Edwards, C.J., Creaser, J.I. & Horrey, W.J. (2005). Older driver failures of attention at intersections: Using change blindness methods to assess turn decision accuracy. *Human Factors*, 47(2), 235-249.
- Horrey, W.J. & Wickens, C.D. (2004). Driving and side task performance: The effects of display clutter, separation, and modality. *Human Factors*, 46(4), 611-624.
- Wickens, C.D., Goh, J., Helleburg, J., Horrey, W.J., & Talleur, D.A. (2003). Attentional models of multi-task pilot performance using advanced display technology. *Human Factors*, 45(3), 360-380.
- Caird, J.K., Horrey, W.J., & Edwards, C.J. (2001). Effects of conformal and non-conformal vision enhancement systems on older driver performance. *Transportation Research Record*, 1759, 38-45.
- Caird, J.K. & Horrey, W.J. (in preparation). Twelve common questions about driving simulation. In D. Fisher, M. Rizzo, J.D. Lee, & J.K. Caird (Eds.), *Handbook of Driving Simulation for Engineering, Medicine, and Psychology*.
- Caird, J.K., Fisher, D.F., Pollatsek, A., Pradhan, A., & Horrey, W.J. (in preparation). Eye movements and driving simulators. In D. Fisher, M. Rizzo, J.D. Lee, & J.K. Caird (Eds.), *Handbook of Driving Simulation for Engineering, Medicine, and Psychology*.
- Horrey, W.J., Lesch, M.F., Kramer, A.F., & Melton, D.F. (in review). Examining the effects of a computer-based training module on drivers' willingness to engage in distracting activities while driving.
- Kidd, D.G. & Horrey, W.J. (in review). Do drivers' perceptions of distracted driving become more accurate over time?
- Wang, Y., Zhang, W., Lesch, M.F., Horrey, W.J., Chen, C., & Wu, S. (in preparation). Changing drivers' attitudes towards cell phone use through participative simulation testing and feedback.
- Zhou, R., Horrey, W.J., & Yu, R. (in review). The effect of conformity tendency on pedestrians' road-crossing intentions in China: An application of the Theory of Planned Behavior.

PEER-REVIEWED PROCEEDINGS AND PRESENTATIONS

- Kidd, D. & Horrey, W.J. (2009). Do drivers' estimates of distraction become calibrated to their actual distracted driving performance with greater exposure? *Proceedings of the 88th Annual Meeting of the Transportation Research Board*. Washington, DC: National Academy of Sciences.
- Horrey, W.J. & Lesch, M.F. (2008). Factors related to drivers' self-reported willingness to engage in distracting in-vehicle activities. *Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting* (pp. 1546-1550). Santa Monica, CA: Human Factors and Ergonomics Society.

- Horrey, W.J. & Lesch, M.F. (2008). Adaptive task management for driver-initiated distractions. *Proceedings of the 4th International Conference on Traffic and Transport Psychology*.
- Garabet, A., Horrey, W.J., & Lesch, M.F. (2007). Does exposure to distraction in an experimental setting impact driver perceptions of cell phone ease of use and safety? *Proceedings of the Fourth International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Stevenson, Washington*, 387-393.
- Horrey, W.J., Lesch, M.F., & Garabet, A. (2007). The awareness of performance decrements due to distraction in younger and older drivers. *Proceedings of the Fourth International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Stevenson, Washington*, 54-60.
- Horrey, W.J. & Wickens, C.D. (2007). In-vehicle glance duration: Distributions, tails and a model of crash risk. *Proceedings of the 86th Annual Meeting of the Transportation Research Board*. Washington, DC: National Academy of Sciences.
- Horrey, W.J., Simons, D.J., Buschmann, E.G., & Zinter, K.M. (2006). Assessing interference from mental workload using a naturalistic simulated driving task: A pilot study. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting* (pp. 2003-2007). Santa Monica, CA: Human Factors and Ergonomics Society.
- Kramer, A.F., Cassavaugh, N.D., Horrey, W.J., Becic, E., Mayhugh, J., & Kurokawa, K. (2005). Examination of the efficacy of proximity warning devices for young and older drivers. *Proceedings of the Third International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Rockport, Maine*.
- Horrey, W.J. & Wickens, C.D. (2004). Cell phones and driving performance: A meta-analysis. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting* (pp. 2304-2308). Santa Monica, CA: Human Factors and Ergonomics Society.
- Horrey, W.J. & Wickens, C.D. (2004). Focal and ambient visual contributions and driver visual scanning in lane keeping and hazard detection. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting* (pp. 2325-2329). Santa Monica, CA: Human Factors and Ergonomics Society.
- Kramer, A.F., Cassavaugh, N., Mayhugh, J., Horrey, W.J., & Becic, E. (2004). Detecting and responding to critical events during automobile driving: Aging, expertise, and detection aids. *Proceedings of the Cognitive Aging Conference 2004, Atlanta, Georgia* (p. 95).
- Wickens, C.D., Alexander, A.L., Horrey, W.J., Nunes, A., & Hardy, T.J. (2004). Traffic and flight guidance depiction on a synthetic vision system display: The effects of clutter on performance and visual attention allocation. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting* (pp. 218-222). Santa Monica, CA: Human Factors and Ergonomics Society.
- Caird, J.K., Edwards, C.J., Creaser, J.I. & Horrey, W.J. (2003). Older driver failures of attention at intersections: Using change blindness methods to assess turn decision accuracy. *Proceedings of the 82nd Annual Meeting of the Transportation Research Board*. Washington, DC: National Academy of Sciences.
- Horrey, W.J., Alexander, A.L., & Wickens, C.D. (2003). Does workload modulate the effects of in-vehicle display location on concurrent driving and side task performance? *Driving Simulation Conference North America 2003 Proceedings, Dearborn, Michigan* (ISSN 1546-5071).
- Horrey, W.J. & Wickens, C.D. (2003). Multiple resource modeling of task interference in vehicle control, hazard awareness and in-vehicle task performance. *Proceedings of the Second International*

Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Park City, Utah, 7-12.

- Horrey, W.J., Wickens, C.D., & Alexander, A.L. (2003). The effects of head-up display clutter and in-vehicle display separation on concurrent driving performance. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting* (pp. 1880-1884). Santa Monica, CA: Human Factors and Ergonomics Society.
- McCarley, J.S., Wickens, C.D., Goh, J., & Horrey, W.J. (2002). A computational model of attention/situation awareness. *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting*. Santa Monica, CA: Human Factors and Ergonomics Society.
- Horrey, W.J. & Wickens, C.D. (2001). Supporting situation assessment through attention guidance: A cost-benefit and depth of processing analysis. *Proceedings of the Human Factors and Ergonomics Society 45th Annual Meeting* (pp. 316- 320). Santa Monica, CA: Human Factors and Ergonomics Society.
- Caird, J.K., Edwards, C.J., Creaser, J., Scialfa, C.T., & Horrey, W.J. (2001). The effect of time constraints on older and younger driver decisions to turn at intersections using a modified change blindness paradigm. *Proceedings of Driving Assessment 2001: International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*.
- Caird, J.K., Horrey, W.J., & Edwards, C.J. (2001). The effects of conformal and non-conformal vision enhancement systems on older driver performance. *Proceedings of the 80th Annual Meeting of the Transportation Research Board* (Paper 01-0479). Washington, DC: National Academy of Sciences.
- Horrey, W.J., Caird, J.K., & Chugh, J.S. (2000). Vision enhancement in automobiles: The effects of display type on perception-response time. *Proceedings of the IEA 2000/HFES 2000 Congress* (p. 3-380). Santa Monica, CA: Human Factors and Ergonomics Society.

PAPERS AND TECHNICAL REPORTS

- Lesch, M.F., Horrey, W.J. & Lehto, M. (2008). *Automated Warning Systems* (Internal Report TM 08-05). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J., Lesch, M.F., Kramer, A.F., and Melton, D.F. (2008). *Can a Computer-Based Training Module Reduce Driver Willingness to Engage in Distracting Activities?* (Internal Report TM 08-03). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J. (2007). *Telematics and In-Vehicle Technologies: Implications for Drivers' Visual Scanning Behavior* (Internal Report TM 07-04). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J. & Lesch, M.F. (2007). *Perception and Management of Distraction Due to In-Vehicle Tasks While Driving* (Internal Report TM 07-05). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J. & Y.I. Noy (2007). *Transportation Human Factors Research at the Liberty Mutual Research Institute for Safety: 2007 and Beyond* (Internal Report TM 07-01). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J., Simons, D.J., Lleras, A., & Scott, D.L. IV (2007). *Estimates of Crash Avoidance: Discrepancies between Drivers' Judgments and Actual Performance* (Technical Report HFD-0701). Savoy, IL: University of Illinois, Human Factors Division.

- Horrey, W.J. & Melton, D. (2006). *Drivers' Judgments About Safety Thresholds: Discrepancies Between Perception and Reality* (Internal Report TM06-01). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J. & Pransky, G.S. (2006). *Assessing the Crash Risk for Adult Drivers with Attention Deficit Hyperactivity Disorder* (Internal Report TM06-04). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J., Pransky, G.S., Huang, Y-h., Smith, G., & Melton, D. (2006). *Issues Surrounding an Aging Workforce in the Commercial Transport Industry* (Internal Report TM06-08). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J., Simmons, L. & Teare, P. (2005). *An Overview of the Liberty Mutual Safety Research Vehicle* (Internal Report TM05-18). Hopkinton, MA: Liberty Mutual Research Institute for Safety.
- Horrey, W.J., Wickens, C.D., & Consalus, K.P. (2005). *The Distracted Driver: Modeling the Impact Information Bandwidth, In-Vehicle Task Priority, and Spatial-Separation on Driver Performance and Attention Allocation* (Technical Report AHFD-05-11/GM-05-2). Savoy, IL: University of Illinois, Aviation Human Factors Division.
- Horrey, W.J. & Wickens, C.D. (2004). *The Impact of Cell Phone Conversations on Driving: A Meta-Analytic Approach* (Technical Report AHFD-04-2/GM-04-1). Savoy, IL: University of Illinois, Aviation Human Factors Division.
- Wickens, C.D., Alexander, A.L., Thomas, L.C., Horrey, W.J., Nunes, A., & Hardy, T.J. (2004). *Traffic and Flight Guidance Depiction on a Synthetic Vision System Display: The Effects of Clutter on Performance and Visual Attention Allocation* (Technical Report AHFD-04-10/NASA(HPM)-04-1). Savoy, IL: University of Illinois, Aviation Human Factors Division.
- Horrey, W.J., Alexander, A.L., & Wickens, C.D. (2003). *Does Workload Modulate the Effects of In-Vehicle Display Location on Concurrent Driving and Side Task Performance?* (Technical Report AHFD-03-1/GM-03-1). Savoy, IL: University of Illinois, Aviation Human Factors Division.
- Caird, J.K., Edwards, C.J., Creaser, J.I. & Horrey, W.J. (2002). *Contributing factors to accidents at intersections for older drivers* (Rep. No. TP13939E). Montreal, Canada: Transport Development Centre, Transport Canada.
- Horrey, W.J. & Wickens, C.D. (2002). *Driving and Side Task Performance: The Effects of Display Clutter, Separation, and Modality* (Technical Report ARL-02-13/GM-02-2). Savoy, IL: University of Illinois, Aviation Human Factors Division.
- Horrey, W.J. & Wickens, C.D. (2001). *Supporting Battlefield Situation Assessment Through Attention Guidance and Diagnostic Aiding: A Cost-Benefit and Depth of Processing Analysis* (Technical Report ARL-01-16/FED-LAB-01-1). Savoy, IL: University of Illinois, Aviation Research Lab.
- Wickens, C.D., Helleburg, J., Goh, J., Xu, X., & Horrey, W.J. (2001). *Pilot Task Management: Testing an Attentional Expected Value Model of Visual Scanning* (Technical Report ARL-01-14/NASA-01-7). Savoy, IL: University of Illinois, Aviation Research Lab.
- Caird, J.K., Horrey, W.J., Chugh, J.S., & Edwards, C.J. (2000). *The Effects of Conformal and Non-Conformal Vision Enhancement Systems on Older Driver Performance* (Rep. No. TP 13422E). Montreal, Canada: Transportation Development Centre, Transport Canada.
- Caird, J.K., Horrey, W.J., & Edwards, C.J. (2000). *Contributing Factors to Accidents at Intersections by Older Drivers: Research and Development Plan* (Int. Rep.). Montreal, Canada: Transportation Development Centre, Transport Canada.

PROFESSIONAL AFFILIATIONS

Associate Ergonomics Professional (BCPE Certificate Number 1502)
Human Factors and Ergonomics Society
Transportation Research Board
American Psychological Association
Association for Psychological Science

PROFESSIONAL ACTIVITY

Chair, Surface Transportation Technical Group, HFES (2008-)

Program Chair / Review Coordinator, TRB 2009 Annual Meeting (*AND10 Committee*)

Committee: HFES Publications Committee (2007-)
Transportation Research Board *AND10 Vehicle User Characteristics* (2006-)

Editorial: Associate Editor, *Human Factors Journal* (2008-)

Reviewer: *Accident Analysis and Prevention*
Applied Ergonomics
Automatica
Ergonomics
Human Factors Journal
IET Intelligent Transport Systems
International Journal of Industrial Ergonomics
Journal of Experimental Psychology: Applied
Journal of Occupational and Environmental Hygiene
Perception
Psychological Science
Transportation Research Record

REFERENCES

Dr. Christopher D. Wickens
Institute of Aviation, Aviation Research Laboratory
University of Illinois at Urbana-Champaign
Willard Airport, #1 Airport Road, Savoy, IL 61874
Tel: (217) 244-8817
Email: cwickens@s.psych.uiuc.edu

Dr. Jeff K. Caird
Department of Psychology
University of Calgary
2500 University Drive NW
Calgary, AB, Canada T2N 1N4
Tel: (403) 220-5571
Email: jkcaird@ucalgary.ca

Dr. Y. Ian Noy
Liberty Mutual Research Institute for Safety
71 Frankland Road
Hopkinton, MA 01748
Tel: (508) 497-0215
Email: ian.noy@libertymutual.com

Dr. Peter A. Hancock
Department of Psychology
University of Central Florida
Tel: (407) 823-2310
Email: phancock@pegasus.cc.ucf.edu