



# National Advanced Driving Simulator Presentations and Publications

## 2015

### Oral Presentations

Wu<sup>1</sup>, Xingwei, Linda N. Boyle, and Dawn Marshall. "Sampling Biases Associated with Driver D." Human Factors and Ergonomics. Los Angeles. 26 Oct. 2015. Address.

Brown T., Spurgin A., Milavetz G., Gaffney G., and Johnson R. (2015). *Do drowsy driver drugs differ?* Unpublished paper presented at 2015 Driving Assessment Conference.

Milavetz G., Brown T.L., Murry D.J., Berka C., Johnson R.J., and Spurgin A.L. (2014). *Evaluating drugged driving: further studies using a central nervous system stimulant or a depressant.* Unpublished paper presented at Association for Advancement of Automotive Medicine 58th Annual Conference, Munich, Germany, October 13, 2014.

Spurgin A.L., Milavetz G., Brown T.L., and Murry D.J. (2014). *Development of a standardized driving simulation protocol to assess impairment by drugs.* Unpublished paper presented at 2014 Midyear Clinical Meeting and Exhibition ASHP, Anaheim, CA December 9, 2014.

Spurgin A.L., Milavetz G., Brown T.L., and Gaffney G. (2015). *Title unknown.* Unpublished paper presented at Association for Advancement of Automotive Medicine 59th Annual Conference. Philadelphia, PA, October, 2015 (Accepted).

Gaffney G., Milavetz G., Brown T.L., Spurgin A., and Johnson R.J. (2015). *Peak versus off-peak effects of cannabis: impacts on driving performance.* Unpublished paper presented at NIDA International Forum, Phoenix, AZ June 2015.

Stone, B., Correa, K., Brown, T., Spurgin, A., Johnson, R. (In Review). *Behavioral and neurophysiological signatures of benzodiazepine-related driving impairments.* Unpublished paper to be presented at Frontiers in Quantitative Psychology and Measurement.

### Journal Publications

Xiong, H., & Boyle, L. N. (2013). Drivers' Selected Settings for Adaptive Cruise Control (ACC): Implications for Long-Term Use. In *PROCEEDINGS of the HUMAN FACTORS and ERGONOMICS SOCIETY 57th ANNUAL MEETING - 2013*. Retrieved from <http://pro.sagepub.com/>

Xiong, H., Boyle, L. N., Moeckli, J., Dow, B. R., & Brown, T. L. (2012, February 13). Use Patterns Among Early Adopters of Adaptive Cruise Control. In *Human Factors: The Journal of the Human Factors and Ergonomics Society*. Retrieved from <http://hfs.sagepub.com/>

Balk, S. A., & Yang, C. D. (2014, August). Assessing driver reactions to two collision warning systems-Findings from a simulation experiment. *Institute of Transportation Engineers. ITE Journal*, 84(8), 33-38.

Hague, M. M., Ohlhauser, A. D., Washington, S., & Boyle, L. N. (2015). Decisions and actions of distracted drivers at the onset of yellow lights. *Accident Analysis and Prevention, AAP* (3772), 1-10. doi:<http://dx.doi.org/10.1016/j.aap.2015.03.042>

Xiong, H., & Boyle, L. N. (2013). Drivers' Selected Settings for Adaptive Cruise Control (ACC): Implications for Long-Term Use [Electronic version]. *PROCEEDINGS of the HUMAN FACTORS and ERGONOMICS SOCIETY 57th ANNUAL MEETING - 2013*, 1-5.

Chrysler, S. T., Cooper, J., McGehee, D. V., & Yager, C. (unknown date). COMPARISON OF DRIVER DISTRACTION EVALUATIONS ACROSS TWO SIMULATOR PLATFORMS AND AN INSTRUMENTED VEHICLE. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 544-550.

Dawson, J. D., Yu, L., Chen, K., Rusch, M., Johnson, A. M., Aksan, N. S., & Sunda, T. (unknown date). NEUROPSYCHOLOGICAL PREDICTORS OF SAFETY IN URBAN LEFT-TURN SCENARIOS. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 226-232.

Giang, W. C., Hoekstra-Atwood, L., & Donmez, B. (2014). Driver Engagement in Notifications: A Comparison of Visual-Manual Interaction between Smartwatches and Smartphones [Electronic version]. *Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting - 2014*, 2161-2165.

Stahl, P., Donmez, B., & Jamieson, G. A. (2014). Correlations among self-reported driving characteristics and simulated driving performance measures [Electronic version]. *Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting - 2014*, 2018-2022.

Hoekstra-Atwood, L., Chen, H., Giang, W., & Donmez, B. (2014, September 17). Measuring Inhibitory Control in Driver Distraction [Electronic version]. *AutomotiveUI '14*, all. doi:<http://dx.doi.org/10.1145/2667317.2667326>

Stahl, P., Donmez, B., & Jamieson, G. A. (2014, October). Anticipation in Driving: The Role of Experience in the Efficacy of Pre-event Conflict Cues. *IEEE TRANSACTIONS ON HUMAN-MACHINE SYSTEMS*, 44(5), 603-613.

Hope, R. J., Lew, R., Colby, K. A., & Dyre, B. P. (2012). Optically-Controlled Braking Responses to Variable Deceleration Magnitudes in a Car-Following Task. *PROCEEDINGS of the HUMAN FACTORS and ERGONOMICS SOCIETY 56th ANNUAL MEETING - 2012*, 1698-1702.

Gable, T. M., & Walker, B. N. (2013, October 28). Driving Simulator Sickness Screening: Efficient and Effective New Protocol. *Adjunct Proceedings of the 5th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI , 13)*, 101-102.

Harbluk, J. L., Burns, P. C., Hernandez, S., Tam, J., & Glazduri, V. DETECTION RESPONSE TASKS: USING REMOTE, HEADMOUNTED AND TACTILE SIGNALS TO ASSESS COGNITIVE DEMAND WHILE DRIVING. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 78-84.

Heitbrink, D. A. (2011, June). SCRIPTING AUTOMATION FOR A GRAPHICAL SCENARIO AUTHORING SYSTEM. *IMAGE 2011 Conference*, all.

Hardy, A. F., & Hill, J. D. (2013, April 15). CREATING SCANNING PATTERN MAPS OF DRIVER FIXATIONS DURING HAZARDS. *Proceedings of the 2013 Joint Rail Conference JRC2013, JRC2*, 1-4.

Jeon, M. (2014, September 17). Advanced Vehicle Sonification Applications. *AutomotiveUI '14*, all. doi:<http://dx.doi.org/10.1145/2667239.2667284>

Fakhrhosseini, S. M., Jeon, M., Lautala, P., & Nelson, D. (2015, March 23). AN INVESTIGATION ON DRIVER BEHAVIORS AND EYE-MOVEMENT PATTERNS AT GRADE CROSSINGS USING A DRIVING SIMULATOR. *Proceedings of the 2015 Joint Rail Conference, JRC2*, 1-6. Retrieved from <http://proceedings.asmedigitalcollection.asme.org/>

Jansen, S., Westphal, A., Jeon, M., & Riener, A. (2013, October 27). Detection of Drivers' Incidental and Integral Affect Using Physiological Measures. *Automotive UI' 13*, all.

Jeon, M., Walker, B. N., & Gable, T. M. (2014). Anger Effects on Driver Situation Awareness and Driving Performance. *PRESENCE*, 23(1), 71-89.

Jeon, M., Gable, T. M., Davison, B. K., Nees, M. A., Wilson, J., & Walker, B. N. Menu navigation with in-vehicle technologies: auditory menu cues improve dual task performance, preference, and workload. *Accepted manuscript*, 1-53.

Jeon, M., Walker, B. N., & Gable, T. M. (2015, April 11). The effects of social interactions with in-vehicle agents on a driver's anger level, driving performance, situation awareness, and perceived workload. *Applied Ergonomics*, 50, 185-199.

Kay, G., Ahmad, O., Brown, T., & Veit, A. COMPARISON OF THE MINISIM AND STISIM DRIVING SIMULATORS FOR THE DETECTION OF IMPAIRMENT: AN ALCOHOL VALIDATION STUDY. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 191-197.

Simen, A. A., Gargano, C., Cha, J., Drexel, M., Bautmans, A., Heirman, I., & Laethem, T. (2015). A randomized, crossover, placebocontrolled clinical trial to assess the sensitivity of the CRCDS Mini-Sim to the next-day residual effects of zopiclone. *Therapeutic Advances in Drug Safety*, 1-12. doi:DOI: 10.1177/ 2042098615579314

## Presentations and Publications

Shen, S., & Neyens, D. M. (2014). Assessing drivers' performance when automated driver support systems fail with different levels of automation. *Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting - 2014*, 2068-2072.

Tran, C., Bark, K., & Ng-Thow-Hing, V. (2013, October 28). A Left-Turn Driving Aid Using Projected Oncoming Vehicle Paths with Augmented Reality. *Proceedings of the 5th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI , 13)*, 300-307.

Peng, Y., Ng Boyle, L., Ghazizadeh, M., & Lee, J. D. FACTORS AFFECTING GLANCE BEHAVIOR WHEN INTERACTING WITH IN-VEHICLE DEVICES: IMPLICATIONS FROM A SIMULATOR STUDY. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 474-480.

Peng, Y., Ng Boyle, L., & Lee, J. D. (2014, June 3). Reading, typing, and driving: How interactions with in-vehicle systems degrade driving performance. *Transportation Research Part F*, 182-191.

Reyes, M. L., & Khan, S. A. EXAMINING DRIVER BEHAVIOR IN RESPONSE TO WORK ZONE INTERVENTIONS: A DRIVING SIMULATOR STUDY. *Prepared for the Smart Work Zone Deployment Initiative Pooled Fund Study Contract # SWZDI 2008-01*, 1-67.

Chen, K., Anderson, S. W., Rusch, M. L., Aksan, N. S., Dawson, J. D., & Rizzo, M. "CHOKING UNDER PRESSURE" IN OLDER DRIVERS. *PROCEEDINGS of the Seventh International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design 432*, 432-438.

Saffarian, M., & Senders, J. W. (2014, September 4). HOW MUCH VISUAL ATTENTION DOES BRAKING REQUIRE? A STUDY OF THE EFFECT OF MEMORY OF THE SCENE ON DRIVER'S BRAKING BEHAVIOUR. *Driving Simulation Conference 2014*, 38, 38.1-38.8.

Schwarz, C., He, Y., & Veit, A. (2011, June). EYE TRACKING IN A COTS PC-BASED DRIVING SIMULATOR: IMPLEMENTATION AND APPLICATIONS. *IMAGE 2011 Conference*, all.

Shaw, A., Bae, J., Woolery, W., Greenwood, A. T., Rodgers, M. O., Corso, G. M., & Hunter, M. P. Effects of Attention Deficit Disorders on Driver Perception and Reaction. *Southeastern Transportation Research, Innovation Development and Education Center*, all.

He, Y., Brown, T., Veit, A., Dolan, J., Laroche, C., Ahmad, O., & Heitbrink, D. (2009, May 18). PC-Based Driving Simulator for Development and Testing of Active Vehicle Safety Systems. *2009 Vehicle Active Safety Symposium*, all.

Wilkinson, M., Brown, T., & Ahmad, O. (2012). The National Advanced Driving Simulator (NADS) Description and Capabilities in Vision-Related Research. *Optometry Clinical Research*, all.

Waytz, A., Heafner, J., & Epley, N. (2014). The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle. *Journal of Experimental Social Psychology*, 52, 113-117.

## Reports

Allen S., He Y., and Horosewski V. (2012). *Visualization resources for Iowa State University and the Iowa DOT: An automated design model to simulator converter*. Published paper presented at Iowa State University, Institute of Transportation November, 2012.

Berka, C., Johnson, R., Raphael, G., & Brown, T. (2015). *Phase 2 Final Report: August 27, 2012 – February 23, 2015 Quantification of Behavioral and Physiological Effects of Drugs Using a Mobile Scalable Device* (pp. 1-101).

Charness, Neil, Ainsley Mitchum, Michael Champion, Blake Cowing, and Cary Stothart. *Final Report: Aging Driver And Pedestrian Safety: Human Factors Studies*. Rep. no. BDK83 977-09. Tallahassee: Florida State University, 2011. Print.

Charness, Neil, Walter Boot, Ainsley Mitchum, Cary Stothart, and Heather Lupton. *Final Report: Aging Driver And Pedestrian Safety: Parking Lot Hazards Study*. Rep. No. BDK83 977-12. Tallahassee: Florida State University, 2012. Print.

Boot, W., Charness, N., Stothart, C., Fox, M., Mitchum, A., Lupton, H., & Landbeck, R. *Final Report: Aging Road User, Bicyclist, and Pedestrian Safety: Effective Bicycling Signs and Preventing Left Turn Crashes*. Rep. No. BDK83 977-15. Tallahassee: Florida State University, 2013. Print.

Boot, W., Charness, N., Mitchum, A., Landbeck, R. & Stothart, C. *Final Report: Aging Road User Studies of Intersection Safety*. Rep. No. BDV30 Two 977-04. Tallahassee: Florida State University, 2014. Print.

Dyre, Brian P., and Ahmed Abdel-Rahim. *Improving Passing Lane Safety and Efficiency for Alaska's Rural Non-divided Highways*. Rep. Vol. T2-12-14. Fairbanks: Alaska Department of Transportation, 2014. Print.

Dixon, Michael P., Brian Dyre, J. D. Wulfhorst, Ahmed Abdel-Rahim, Alex Grover, Mark Meyer, Monica A. Reyna, and Barbara E. Foltz. *Evaluation of IdaShield Sign Safety Benefits at Highway-Rail Crossing in Idaho*. Rep. no. FHWA-ID-14-223. Moscow: Idaho Transportation Department, 2014. Print.

Bertola, Mary Anne, Stacy A. Balk, and Jim Shurbutt. *Evaluating Driver Performance on Rural Two-Lane Horizontal Curved Roadways Using a Driving Simulator*. Rep. no. FHWA-HRT-12-073. McLean: Federal Highway Administration, 2012. Print.

## Presentations and Publications

Gable, Thomas M., and Bruce N. Walker. *Georgia Tech Simulator Sickness Screening Protocol*. Rep. no. GT-PSYC-TR-2013-01. Atlanta: Georgia Tech School of Psychology, 2013. Print.

Winton, Riley W., Thomas M. Gable, and Bruce N. Walker. *Georgia Tech Psychology MiniSim Driving Simulator Training Manual*. Rep. no. GT-PSYC-TR-2015-01. Atlanta: Georgia Tech School of Psychology, 2015. Print.

Berka, Chris, Robin Johnson, Giby Raphael, and Tim Brown. *Phase 2 Final Report: August 27, 2012 – February 23, 2015 Quantification of Behavioral and Physiological Effects of Drugs Using a Mobile Scalable Device*. Rep. no. N44DA-12-1206. N.p.: n.p., 2015. Print.

## Theses-Dissertations

D'Addario, P. M. (2014). *Perception-Response Time to Emergency Roadway Hazards and the Effect of Cognitive Distraction* (Master's thesis).

Peng, Y. (2014). *Driver Behavioral Adaptation to In-Vehicle Technologies: Influence of Demands and Exposures* Doctoral dissertation, University of Washington, Seattle

Reyes, M. L. (2010). *Examining driver performance in response to work zone interventions in a driving simulator* Doctoral dissertation, University of Iowa, Iowa City

Xiong, H. (2013). *Quantifying Drivers' Use of In-Vehicle Systems: Implications for Long-term Behavior* Doctoral dissertation, University of Washington, Seattle

## Patents

Moran, Kevin, and Robert Denaro. METHOD AND SYSTEM FOR VEHICLE ESC SYSTEM USING MAP DATA. Navteq B.V., assignee. Patent US 8,630,779 B2. 14 Jan. 2014. Print.