**CARRYL L. BALDWIN, PH.D.**

**Departmental Contact Information:**

Department of Psychology

Wichita State University

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**EDUCATION**

1997 Doctorate of Philosophy: Human Factors Psychology.

 University of South Dakota, Vermillion, South Dakota.

1994 Master of Arts: Human Factors Psychology.

 University of South Dakota, Vermillion, South Dakota.

1987 Bachelors of Arts: Psychology Major / Asian Studies Minor.

 University of Nebraska, Lincoln, Nebraska.

#### **PROFESSIONAL POSITIONS**

August 2019 to present, Distinguished Professor of Aging, Psychology Department, WSU

August 2019 to present, Director of the WSU Regional Institute on Aging, Wichita, KS

### July 2015 to August 2019, Program Director, Human Factors and Applied Cognition, GMU

### January 2014 to August 2016, Associate Chair of Undergraduate Programs in Psychology

### August 2011- August 2019, Associate Professor, Psychology Department (promoted to Full

###  Professor 2019)

### 2007 – July 2011, Assistant Professor, Psychology Department, GMU

### 2001-July 2007, Assistant Professor, Psychology Department, ODU, (tenured 2007).

1999-2001, Chair, Department of Social and Behavioral Sciences, Western Iowa Tech CC

1995-1999, Psychology Instructor/Program Advisor, Western Iowa Tech Community College.

**TEACHING**

**Course Taught at Wichita State University**

Undergraduate: *PSY 405- Human Factors Psychology*

Graduate: *PSY 928 – Neuroergonomics: Theory and Applications, PSY 905 -Cognitive Foundations*

**Courses Taught at George Mason University**

Undergraduate: PSY 317- *Cognitive Psychology, PSY 465- History and Systems of Psychology* , PSY 461 – *Human Factors: Cognitive Engineering of Everyday Things.*

Graduate: PSY 734 -*Seminar in Mental Workload: Theories and Assessment, PSY 530 - Cognitive Engineering; PSY 734- Multimodal Display Design: PSY 734 – Human Factors in Transportation: PSY 850 – Graduate Teaching Practicum: PSY 734- Medical Human Factors, PSY 768: Neuroergonomics*

**Courses Taught at Old Dominion University**

Undergraduate: *Sensation and Perception, Senior Seminar and Directed Readings*.

Graduate: *Sensation and Perception, Learning & Cognition, Human Performance, Psycholinguistics, Directed Readings in Mental Workload Assessment, Cognitive Aging and Human Navigation.*

**Courses Taught at Western Iowa Tech Community College**

*General Psychology, Lifespan Development, Child Psychology, Educational Psychology, Industrial Psychology, Human Relations, Abnormal Psychology*.

#### **GRANTS AWARDED**

*At Wichita State University (August 12, 2019 to present)*

**Baldwin, C.L.** (PI), Driver Vigilance Framework for Level 2 and Level 3 Driving Automation Systems. National Highway Traffic Safety Administration, October 2019 to August 2021, **$186,00** to Wichita State University.

#### **GRANTS AWARDED**

*At George Mason University (2007-August 11, 2019)*

Helton, W. H. (Co-I) and **Baldwin, C.L.** (Co-I), Driver Vigilance Framework for Level 2 and Level 3 Driving Automation Systems. National Highway Traffic Safety Administration, October 2019 to August 2021, $300,00.

**Baldwin, C.L. (PI), SHRP2 Research Support. Federal Highway Administration, August 16, 2018 to August 15, 2019. $66,249**

**Baldwin, C.L**. (PI), Wiese, E. (Co-PI). Mental Models of Advanced Driver Assistance Systems. Toyota Motors. August 2017- August 2019. **$636,124.**

**Baldwin, C. L.** (PI). Trust in Autonomy Testbed Development. Lockheed Martin, March 2017-September 2017. **$70,000.**

**Baldwin, C.L.**  (PI). Multimodal Interfaces to Support Implicit Attentional Control for Autonomous Systems. Northrup Grumman, September, 2016 –September 2017. **$175,000.**

**Baldwin, C.L.** (PI). Advanced Displays and Controls for Semiautonomous Systems. National Highway Safety Administration. Contract WPN 16-291, September, 2016 to September, 2017, $**100,000**.

**Baldwin, C.L.** (PI). SHRP2 Research Support. Federal Highway Administration, August 16, 2016 to August 15, 2018, **$127,152.**

Bannan, B., (Project Director) Peixoto, N. (Co-Director), and B**aldwin, C.** (Co-Director), Engineering networked tracking devices for smart medical and emergency response training. Provost Multidisciplinary Research Initiative. September 1, 2015 to August 31, 2016, **$50,000.**

**Baldwin,** C. L. (PI), Detection of Mind Wandering during Driving with Physiological Metrics. National Highway Safety Administration. Contract DTNH22-14-C-00404, September, 2014 to May 2017, **$288,408.**

**Baldwin,** C. L. (PI), Urgency Coding Validations and Continued Development and Validation of the HFCV Predictive DVI Software Tool. Sponsored by the National Highway Safety Administration, Subcontract with WESTAT. December 5 2013 to October 4, 2015, **$275,714**.

**Baldwin**, C. L. (PI), Multimodal Urgency Coding – II, Human Factors in Connected Vehicles -II(HFCV), Subcontract with WESTAT. Sponsored by National Highway Traffic Safety Administration. September 2011-July 2013, **$199,472.**

**Baldwin**, C. L. (PI), Forward Collision Warning Variability Research. Crash Warning Interface Metrics (CWIM) Phase 3 Subcontract with WESTAT. Sponsored by National Highway Traffic Safety Administration. September 2011-July 2013, **$299,945**.

**Baldwin**, C. L. (PI) , Shaw, T. (Co-PI). Intellidrive Project. Subcontract with WESTAT. Sponsored by National Highway Traffic Safety Administration. September 2010-September 2011, **$190,000.**

**Baldwin**, C. L. (PI). Real-Time Adaptive Training using Physiological Measures for Mitigation. Naval Research Lab, January 2009- December 2012, **$564,000**.

**Baldwin**, C. L. (PI). Crash Warning Interface Metrics. Subcontract with WESTAT. Sponsored by National Highway Traffic Safety Administration (NHTSA). October 2008-October 2010, **$274,488**.

Kozhevnikov, M. (PI). **Baldwin**, C. L. (Co-PI). ARRA/Virtual Reality. National Science Foundation (NSF). August 2009 – August 2010, **$54,085**

**Baldwin**, C. L. (PI), Dynamics of Phonological Learning. NSF subaward from Florida State University under Better Fuller, PI. February 2008-May 2010**, $84,013.**

**Baldwin**, C. L. (PI), Electrophysiological Indices of Sensory and Semantic Stages of Speech Processing. Faculty Research and Development Award, GMU, July 2008-July 2009, **$4,983**.

**Baldwin**, C. L. (PI)**,** C. Struckman-Johnson, (Co-PI). 2002-2008 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety, Annually Summer 2002 - 2008, $15,000 per year X 9 years = **$135,000**.

Struckman-Johnson, C. (PI), **Baldwin**, C. L. (Co-PI). 2009-2011 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety, Annually Summer 2002 - 2008, $20,000 per year X 4 years = **$40,000**.

*At Old Dominion University (2001-2006)*

Payne, B. (P.I.), Benjamin, R., Turner, C., Gainey, R., Baldwin, C. L., Monk-Turner, E., Gravenstein, S., Vandecar-Burden, T., Triplett (Co-PIs). Quality of Life Indicators among Elderly Persons: Measuring and Mapping the Interrelationships between Health, Transportation Needs, Happiness, Economics, and Mistreatment. ODURF Multidisciplinary Seed Funding Grant, January2007-August 2007, **$75,000**.

Baldwin, C. L. (P.I.). Comparison of Near Infrared Spectroscopy (NIRS) Imagent System, a Frontal Cerebral Oximeter, and EEG as indices of central executive activity. Training Grant for Jennifer May. NASA Langley Research Center, August 2006-January 2007, **$12,000**.

Baldwin, C. L. (P.I.). Assessing Pilot Workload with Near Infrared Spectroscopy (NIRS) and EEG. NASA Langley Research Center. GSRP Training Grant for Jennifer May. August 2005-August 2006, Grant # NNL05AA07H**, $24,000**.

Baldwin, C. L. (PI). Functional Hearing Ability within the Context of Driving. National Institute of Health. National Institute of Aging, June 2004-June 2007, **$124,000**.

Freeman, F. (PI), Baldwin, C.L., Scerbo, M.W., and Mikulka, P. (Co-PIs). Evaluation of NIRS as an Assessment of Brain Activity Related to Different Levels of Workload in a Vigilance Task. NASA Langley RC. November 2003-May 2005, **$60,325**.

Baldwin, C. L. (PI). Verbal versus Graphical Aviation Weather Displays. GSRP Training Grant for Joseph Coyne. NASA Langley Research Center, August 2002-2004, **$44,000**.

Freeman, F. (PI), Baldwin, C. L., Scerbo, M.W., and Mikulka, P. (Co-PIs). Neurophysiological and Behavioral Indices of Mental Workload as a Function of Traffic Density and Visibility in a Motion-Based Complex Visual-Motor Task. NASA Langley Research Center, 2003, **$20,000.**

McNamara, D.S. (PI), Scerbo, M.W., & Baldwin, C. L. (Co-PIs). Data-link aircraft communications: An examination of interference, coherence, and workload. Supplement. NASA, 2002, **$19,999.**

Morrow, J. (PI), and Baldwin, C. L. (Co-PI). Program Evaluation for the PRIDE Middle school program. Portsmouth Behavioral Services. 2002-2003, **$6,000**.

Baldwin, C. L. (PI), and Morrow, J. (Co-PI). Program Evaluation for the PRIDE Middle school program. Portsmouth Behavioral Services. 2002, **$10,000.**

McNamara, D.S. (PI), Baldwin, C. L. & Scerbo, M.W. (Co-PIs). Data-link aircraft communications: An examination of interference, coherence, and workload. NASA, 2001-2003, **$364,145.**

*At Western Iowa Technical Community College*

Baldwin, C.L., (PI)**,** Cindy Struckman-Johnson, (Co-PI). 2001 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety, 2001-2002, **$13,000.**

Baldwin, C. L., (PI), Cindy Struckman-Johnson, (Co-PI). 2000 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety, 2000-2001 **$15,000.**

Struckman-Johnson, C. (PI), Baldwin, C. L., (Co-PI).  *1998 South Dakota Statewide Seatbelt Use Survey.* South Dakota Department of Commerce and Regulation, Office of Highway Safety, 1998-1999, **$12,000.**

Baldwin, C. L. Principal Investigator (PI), Pure-tone threshold shift in moderate workload. Sioux City Foundry**,** 1998, **$600.**

**PUBLICATIONS**

\*Indicates graduate student co-author

\*\*Indicates undergraduate student co-author

**Books**

Baldwin, C. L. (2012). *Auditory Cognition and Human Performance: Research and Applications.* Clermont, FL: CRC Press – Taylor & Francis.

 Baldwin, C. (Ed.). (2017). *Advances in Neuroergonomics and Cognitive Engineering: Proceedings of the AHFE 2017 International Conference on Neuroergonomics and Cognitive Engineering,* (Vol. 586). New York: Springer.

 Baldwin, C. L., Lewis, B.A\*., Greenwood, P. (2019). *Designing Transportation Systems for Older Adults.*  Human Factors and Aging Series, W.A. Rogers & A.D. Fisk (Series Ed.),Clermont, FL: CRC Press – Taylor & Francis.

###### **Refereed Journal Articles**

1. [Baldwin, C. L., and Struckman-Johnson, D.](file:///C%3A%5CSony2004%5CPublications%5CPublished%5CBaldwin%26Struckman-Johnson%282002%29.doc)  (2002). Impact of speech presentation level on cognitive task performance: Implications for auditory display design. *Ergonomics, 45*(1), 61-74.

1. [Baldwin, C. L. (2002)](file:///C%3A%5CSony2004%5CPublications%5CPublished%5CAGING%26IVHS%5CBaldwin%2702%28OlderDrivers%29.pdf). Designing in-vehicle technologies for older drivers: Application of sensory-cognitive interaction theory. *Theoretical Issues In Ergonomic Science, 3*(4), 307-329.

1. [Baldwin, C. L. (2003)](file:///C%3A%5CSony2004%5CPublications%5CPublished%5CTIES%2703Neuroergonomics%5CBaldwinTIES.pdf). Neuroergonomics of mental workload: New insights from the convergence of brain and behavior in ergonomics research. *Theoretical Issues In Ergonomic Science, 4*(1-2), 132-141.

1. [Baldwin, C. L., and Coyne, J. T.\* (2005)](file:///C%3A%5CSony2004%5CPublications%5CPublished%5CBaldwin%26Coyne%282005%29.pdf). Dissociable aspects of mental workload: Examinations of the P300 ERP component and performance assessments. *Psychologia, 48*, 102-119*.*

1. Reagan, I.\*, and Baldwin, C. L. (2006). Facilitating route memory with auditory route guidance systems. *Journal of Environmental Psychology, 26*(2), 146-155*.*

1. [Baldwin, C. L. (2007](file:///C%3A%5CSony2004%5CPublications%5CPublished%5CBaldwin%282007%29Mem%26Cog1.pdf)). Cognitive implications of facilitating echoic persistence. *Memory & Cognition, 35*(4), 774-780*.*
2. Coyne, J. T.\*, Baldwin, C. L., and Latorella, K. A. (2008). Pilot weather assessment: Implications for Visual Flight Rules into Instrument Meteorological Conditions. *International Journal of Aviation Psychology, 18*(2), 153-166.
3. Baldwin, C. L. (2009). Individual Differences in Navigational Strategy: Implications for Display Design. *Theoretical Issues In Ergonomic Science, 10*(5), 443-458.
4. Baldwin, C. L., & Reagan, I.\* (2009). Individual differences in route-learning strategy and associated working memory resources. *Human Factors, 51*(368-377).

1. May, J. F.\*, & Baldwin, C. L. (2009). Driver fatigue: The importance of identifying causal factors of fatigue when considering detection and countermeasure technologies. *Transportation Research Part F: Traffic Psychology and Behaviour, 12*(3), 218-224.
2. Block, C. K.\*, and Baldwin, C. L. (2010). Cloze Probability and Completion Norms for 498 Sentences: Behavioral and Neural Validation using Event-Related Potentials. *Behavioral Research Methods, 42*(3), 665-670.
3. Baldwin, C. L., and Ash, I. (2011). The role of sensory acuity in working memory capacity in young and old adults. *Psychology and Aging, 25*(3), 85-91.
4. Baldwin, C. L. and May, J. F.\* (2011). Loudness interacts with semantics in auditory warnings to impact rear-end collisions, *Transportation Research Part F: Traffic Psychology and Behavior, 14*(1), 36-42.

1. Baldwin, C. L. (2011). Verbal collision avoidance messages during simulated driving: perceived urgency, alerting effectiveness, and annoyance. *Ergonomics, 54(4),* 328-337.
2. Baldwin, C. L., and Penaranda, B. N.\* (2012). Adaptive training using an artificial neural network and EEG metrics for within- and cross-task workload classification, *Neuroimage,49*(1), 48-56, DOI: 10.1016/j.neuroimage.2011.07.047.
3. Parasuraman, R., Baldwin, C. L., Knott, B., Warm, J. S., Finomore, V., Boehm-Davis, D., & Galster, S. M. (2012). Symposium: Neuroergonomics, technology, and cognition. Work, 41, 5167-5171. doi: 10.3233/WOR-2012-0094-5167
4. Baldwin, C. L., Eisert, J. L.\* Garcia, A.J.\*, Lewis, B.\*, Pratt, S. M.\* and Gonzalez, C.\* (2012). Multimodal Urgency Coding: Auditory, Visual, and Tactile Parameters and Their Impact on Perceived Urgency. *Work, 41, S1*, 3586-3591. DOI: 10.3233/WOR-2012-0669-3586.
5. Buzzell, G.\*, Roberts, D.\*, Baldwin, C. L., McDonald, C. (2013). Electrophysiological Indices of Spatial/ Semantic Conflict in the Auditory Modality: Effect of Individual Differences in Navigational Strategy. *International Journal of Psychophysiology. 90*(2), 265-271*.*
6. Baldwin, C. L., and Lewis, B. A\*. (2014). Equating Perceived Urgency across Modalities within a Simulated Driving Context. *Applied Ergonomics, 45*(5), 1270-1277*.*
7. Gonzalez, C. A.\*, and Baldwin, C. L. (2015). Effects of Pulse rate, Fundamental Frequency, and Burst Density on Auditory Similarity. Theoretical Issues in Ergonomic Science, 16(2). DOI:10.1080/1463922X.2014.941960
8. Lewis, B. L.\*, Eisert, J. L.\*, Baldwin, C. L. (2014). Effect of tactile location, pulse duration and interpulse interval on perceived urgency. Transportation Research Record, 2423, 10-14.
9. Baldwin, C. L., May, J. F., and Parasuraman, R. (2015). Motor Vehicle Crashes Due to Task-Induced Fatigue in Young and Older Drivers: Mitigation with Auditory Forward Collision Warnings. *International Journal of Human Factors and Ergonomics, 135(4),2280-2286*.
10. Barrow, J.\*, & Baldwin, C. L. (2015). Verbal-spatial facilitation and conflict in rapid spatial orientation tasks. *Human Factors*, 57(3), 507-22.
11. Garcia, A.J.\*, and Baldwin, C. L. (2016). Individual Differences in Rapid Spatial Orientation Across Spatial Frames of Reference. *International Journal of Human Factors and Ergonomics, 4(1), 73-88.*
12. Funke, G. J., Warm, J. S., Baldwin, C. L., Garcia, A. J., Funke, M. F., Dillard, M. B., Finomore, V. S., Jr., and Matthews, G. (2016). The Independence and Interdependence of Co-Acting Observers in Regard to Performance Efficiency, Workload, and Stress in a Vigilance Task.  *Human Factors, 58(6), 915-926.*
13. Barragán, D.\*, Roberts, D. M.\*, Baldwin, C. L. (2016). Validation of the Attention-Related Driving Errors Scale (ARDES) in an English-Speaking. *Human Factors.*, 58(8), 1262-1274.
14. Lewis, B. A.\*, Daniel M. Roberts, D. M.\*, Baldwin, C. L. (2016). CRASINS: An Improved Method for Urgency Scaling Within and Across Modalities, *International Journal of Human Factors and Ergonomics, 4(2), 126-143.*
15. Hancock, P. A., Baldwin, C. L., Warm, J. S., Szalma, J. L. (2017). Between Two Worlds: Discourse on the Vigilant and Sustained Contributions of Raja Parasuraman. *Human Factors, 59(1), 28-34.*
16. Werner, N.E.\*, Foroughi, C.K\*, Baldwin, C.L., Youmans, R., Boehm-Davis, D. A. (2017). Associative activation during interrupted task performance: A mixed methods approach to understanding the overall quality effects of interruptions. *Theoretical Issues in Ergonomics* Science, On-line first DOI: DOI: 10.1080/1463922X.2017.1284282.
17. Baldwin, C. L., & Lewis, B. A.\* (2017). Positive valence music restores executive control over sustained attention. Plos One, 12(11), e0186231. doi:10.1371/journal.pone.0186231
18. Baldwin, C. L., Roberts, D. M.\*, Barragan, D\*., Lee, J. D., Lerner, N., & Higgins, J. S. (2017). Detecting and Quantifying Mind Wandering during Simulated Driving. Frontiers in Human Neuroscience, 11, 406. doi:10.3389/fnhum.2017.00406
19. Lewis, B. A.\*, Eisert, J. L\*., & Baldwin, C. L. (2017). Validation of Essential Acoustic Parameters for Highly Urgent In-Vehicle Collision Warnings. Human Factors: The Journal of Human Factors and Ergonomics Society, 60(2), 248-261. doi:10.1177/0018720817742114
20. Baldwin, C. L., Roberts, D. M\*., & Lewis, B. A.\* (in press). Driving Simulator Evaluation of Unimodal and Bimodal Alerts under Varying Cognitive Load. Recent Advances in Psychology: An International Journal, 4(1).
21. Cisler, D.\*, Greenwood, P. M., Roberts, D. M., McKendrick, Ryan, & Baldwin, C. L. (2019). Comparing the Relative Strengths of EEG and Low-Cost Physiological Devices in Modeling Attention Allocation in Semiautonomous Vehicles. Frontiers in Human Neuroscience, 13. doi:10.3389/fnhum.2019.00109
22. Greenwood, P., Cisler, D\*., Chong, S. D\*., Dang, J., Roberts, D. M\*., McKendrick, R., and Baldwin, C. L. (under reveiew) Automation Transparency to Promote Appropriate Trust Calibration.
23. Calvo, J.\*, Baldwin, C. L. and Phillips, B. (2020). Effect of Age and Secondary Task Engagement on Motor Vehicle Crashes in a Naturalistic Setting. *Journal of Safety Research, 73*, 297-302.
24. Foster, P.P., Greenwood, P.M., Baldwin, C.L., Thompson, J.C., Epeseth, T., and Jiang, X. (2019) Editorial: Cognitive and Brain Aging: Interventions to Promote Well-Being in Aging. Frontiers in Aging Neuroscience.
25. Greenwood, P.M., and Baldwin, C.L. (2020). Editorial: Cognitive and Brain Aging: Interventions to Promote Well-Being in Aging. Frontiers in Aging Neuroscience
26. Gramann, K., McKendrick, R, Baldwin, C., Roy, R.N., Jeunet, C., Mehta, R.K., Vecchiato, G. (under review). Grand Field Challenges for Cognitive Neuroergonomics in the coming Decade.
27. Greenwood, P.M., Baldwin, C.L., and Lenneman, J., (under review) Informing Mental Models of Vehicle Automation.
28. Greenwood, P.M., Lenneman, J., and Baldwin, C.L. (submitted). Preferred Sources of Information about Automation in Vehicles. Transportation Research: Part F
29. Baldwin, C.L., Chong, S., Greenwood, P.M., and Lenneman, J. (in preparation). Neuroergonomic Assessment of Advanced Driver Assistance Systems (ADAS) Understanding and Associated Mental Workload.
30. Roberts, D. M.\*, Baldwin, C. L., Thompson, J., and McDonald, C. (in preparation). Time and Frequency Domain EEG Analysis of Crossmodal Spatial Attention.
31. Eissert, J.\*, Baldwin, C. L., Shaw, T., and Helton, W. H. (in preparation). Theoretical Explanations of Task-induced Fatigue.

**Book Chapters**

1. Schieber, F., and Baldwin, C. L. (1996). Vision, audition, and aging research. In F. Blanchard-Fields and T. M. Hess (Eds.), *Perspectives on Cognitive Change in Adulthood and Aging*. New York: McGraw-Hill .

1. Baldwin, C. L., Galinsky, A. M., Dell, T. L., and Benedetto, J. (1998). Examination of a successful ergonomic program implemented in a Midwestern metals facility. In A. C. Bittner, & P. Champney (Eds.) Advances in Occupational Ergonomics and Safety, III. London: Taylor and Francis.

1. Galinsky, A. M., Baldwin, C. L., Dell, T. L., and Benedetto, J. M. (1999). Automation in a metal castings operation. In, M.S. Scerbo and M. Mouloua (Eds.), Automation Technology and Human Performance: Current Research and Trends. Mahwah, NJ: Lawrence Erlbaum.

1. Baldwin, C. L., and Galinsky, A. M. (1999). Pure-tone threshold shifts during moderate workload conditions: Human performance implications for automated environments. In, M.S. Scerbo and M. Mouloua (Eds.), Automation Technology and Human Performance: Current Research and Trends. Mahwah, NJ: Lawrence Erlbaum.

1. Baldwin, C. L. (1999). Auditory processing. In A. Mital, M. Ayoub, S. Kumar, M-J. Wang, K. Landau (Eds.) Industrial and Occupational Ergonomics: Users Encyclopedia (CD-ROM). ISBN: 0-9654506-0-0.

1. Furukawa, H., Baldwin, C. L., Carpenter, E. M.\* (2004). Supporting drivers' cognitive map construction with visual geo-centered and auditory ego-centered guidance: Interference or improved performance? In, D.A. Vincenzi, M. Mouloua, and P.A. Hancock (Eds.), Human Performance, Situation Awareness and Automation: Current Research and Trends. Mahwah, NJ: Lawrence Erlbaum.

1. Carpenter, E. M.\*, Baldwin, C. L., and Furukawa, H. (2004). Cross-cultural analysis of navigational strategy: Further implications for IRANS design. In, D.A. Vincenzi, M. Mouloua, and P.A. Hancock (Eds.), Human Performance, Situation Awareness and Automation: Current Research and Trends. Mahwah, NJ: Lawrence Erlbaum.

1. Baldwin, C. L., (2006). User-centered design of in-vehicle route guidance systems. In Developments in Human Factors in Transport, Design, and Evaluation. D. de Waard, and K. A. Brookhuis (Eds.). Maastricht: Shaker Publishing.

1. Baldwin, C. L. (2009). Mental Workload and Driver Distraction with In-vehicle Displays. In Handbook of Vehicular Networks. M. Weigle and S. Olariu (Eds.), Boca Raton, FL: CRC of Taylor and Francis.
2. Coyne, J.T., Baldwin, C.L., Cole, A., Sibley, C., & Roberts, D.\* (2009). Applying real time physiological measures of cognitive load to improve training. Lecture Notes in Computer Science, Volume 5638/2009, pp 469-478. Springer Berlin.
3. Coyne, J. T., Sibley, C., Cole, A., Gibson, G., Baldwin, C. L., Roberts, D.,\* Barrow, J.\* (2010). Adaptive training in an Unmanned Aerial Vehicle: Examination of several candidate real-time metrics. In W, Karwowski and G. Salvendy, (Eds.), Applied Human Factors and Ergonomics, Boca Raton, FL: Taylor & Francis.
4. Baldwin, C. L., Coyne, J. T., Roberts, D. M.,\* Barrow, J. H.,\* Cole, A., Sibley, C., Taylor, B.,\* Buzzell, G.\* (2010). Prestimulus Alpha as a Precursor to Errors in a UAV Target Orientation Detection Task. In, Karwowski, W., and Salvendy, G., (Editors), 2010, Advances in Human Factors, Ergonomics, and Safety in Manufacturing and Service Industries, CRC Press, Taylor & Francis: London.

1. Baldwin, C. L., Coyne, J. T., & Christensen, J. (2012). EEG Metrics of Workload and Learner Engagement. In M. Fafrowicz, T. Marek, W. Karwowski & D. Schmorrow (Eds.), Neuroadaptive Systems: Theory and applications. Boca Roton, FL: Taylor & Francis/CRC Press.
2. Baldwin, C. L., and Garcia, A\*. (2015). Multi-modal and Cross-modal Perception: Audition. In R.R. Hoffman, P.A. Hancock, R. Parasuraman, J.R. Szalma, & M. Scerbo, (Eds.). Handbook of Applied Perception. New York: Cambridge University Press.
3. Garcia, A.\*, and Baldwin, C. L. (2015). Verbal and Visuospatial Processes in Spatial Navigation and Orientation. In Helen St Clair-Thompson (Ed.). Working Memory: Developmental Differences, Component Processes and Improvement Mechanisms. Hauppauge, NY: NOVA Science Publishers.
4. Baldwin, C. L., (2015). Auditory Perception. In Handbook of Human Systems Integration, D. Boehm-Davis, F. Durso (Eds.), Washington, D.C.: APA.
5. Baldwin, C.L., and Cisler, D.\* (2018). Neuroergonomics Methods of Assessing Learning. In Cognitive Load Measurement and Application: A Theoretical Framework for Meaningful Research and Practice. Robert Zheng (Ed.). New York: Routledge.
6. Baldwin, C.L. (2019). Neuroergonomics of Simulators and Behavioral Research Methods. In Neuroergonomics: The Brain at Work and in Everyday Life. San Diego, CA: Elsevier.
7. Baldwin, C. L., and McCandliss, I. (2019). Attention Management in Highly Autonomous Driving. *Human Performance in Automated and Autonomous Systems: Current Theory and Methods.* M. Mouloua and P. Hancock (Eds.) CRC Press.

**PROCEEDINGS ARTICLES**

Baldwin, C. L., and Schieber, F. (1995). Age differences in mental workload with implications for driving. In *Proceedings of the 39th Annual Conference of the Human Factors and Ergonomics Society.* Santa Monica, CA: HFES.

Galinsky, A. M., Baldwin, C. L., Dell, T. L. (1997). Industrial workers’ recall of accidents and their concordance with company records. In *Proceedings of the 41st Annual Conference of the Human Factors and Ergonomics Society*. Santa Monica, CA: HFES.

Baldwin, C. L. (1997). Speech amplitude and cognitive processing requirements. In *Proceedings of the 41st Annual Conference of the Human Factors and Ergonomics Society*. Santa Monica, CA: HFES.

Galinsky, A. M., Meyers, J. E., Berkhout, J., and Baldwin, C. L. (1999). Compensable mental injury: The relationship between emotional status and neuropsychological testing. In *Proceedings of the 43rd Annual Conference of the Human Factors and Ergonomics Society*. Houston, TX: HFES.

Baldwin, C. L., Struckman-Johnson, D., Galinsky, A. M., and Williams, E. H. (1999). Presentation level and the attentional workload of comprehending verbal messages: Implications for design of verbal warnings. *In Proceedings of the 43rd Annual Conference of the Human Factors and Ergonomics Society*. Houston, TX: HFES.

Williams, E. H.,\* and Baldwin, C. L. (2000). Effect of presentation level on the duration of the echoic trace. In *Proceedings of the 44th Annual Conference of the Human Factors and Ergonomics Society.* San Diego, CA: HFES.

Baldwin, C. L., and Reiss, R.\* (2000). Preferred navigational style assessment as a method of optimizing IRANS displays. *In Proceedings of the Fourth Conference on Automation Technology and Human Performance and the Third Conference on Situation Awareness in Complex Systems*. Savannah, Georgia.

Baldwin, C. L. (2001). Impact of age-related hearing impairment on cognitive task Performance: Evidence for improving existing methodologies. In *Proceedings of the 45th Annual Conference of the Human Factors and Ergonomics Society*. Minneapolis, MN: HFES.

Risser, M. R.,\* McNamara, D. S., Baldwin, C. L., Scerbo, M. W., Barshi, I. (2002). Interference while hearing or reading information: Considerations for ATC communication. In *Proceedings of the 46th Human Factors and Ergonomics Society Conference.* Baltimore, MD: HFES.

Baldwin, C. L., and Moore, C.\* (2002).Perceived urgency, alerting effectiveness and annoyance of verbal collision avoidance system messages**.** In *Proceedings of the 46th Human Factors and Ergonomics Society Conference.* (October 2002). Baltimore, MD: HFES.

Coyne, J.,\* and Baldwin, C. L. (2003). ERP indices of mental workload for traditional and text-based ATC commands during simulated flight. In *Proceedings of the 12th International Symposium of Aviation Psychology*. (March 2003. Dayton, OH).

Risser, M. R.,\* McNamara, D. S., Baldwin, C. L., and Scerbo, M. W (2003). Text versus Speech presentation of ATC Communications: Implications for Data-link. In *Proceedings of the 12th International Symposium of Aviation Psychology*. (March 2003. Dayton, OH).

Scerbo, M.W., Risser, M. R.,\* Baldwin, C. L., and McNamara, D.S. (2003). Implementing speech and simulated Data Link commands: The role of task interference and message length. In *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting* (pp. 95-99). Santa Monica, CA: Human Factors & Ergonomics Society.

Baldwin, C. L., and Coyne, J. T. \*(2003). Mental workload as a function of traffic density in an urban environment: Convergence of physiological, behavioral, and subjective Indices. In *Proceedings of the Human Factors in Driving Assessment 2003 Symposium* (July 2003. Park City, Utah).

Coyne, J. T.,\* and Baldwin, C. L. (2003). Comparison of the P300 and other workload assessment techniques in a simulated flight task. In *Proceedings of the Human Factors &Ergonomics Society 47th Annual Meeting.* Santa Monica, CA: Human Factors & Ergonomics Society.

Baldwin, C. L. (2003). Perceived urgency, alerting effectiveness and annoyance of verbal collision avoidance messages. In *Proceedings of the International Ergonomics Association.* (August 2003: Seoul Korea).

Moore, C. M.,\* and Baldwin, C.L. (2003). Textual vs. speech comprehension of procedural air traffic control commands. In *Proceedings of the Virginia Space Grant Consortium, Spring 03 Conference*. Hampton, VA. Website for electronic access to published paper: http://www.vsgc.odu.edu/moore.pdf

 Baldwin, C. L., Freeman, F., and Coyne, J. T.\* (2004). Mental workload as a function of road type and visibility: Comparison of neurophysiological, behavioral, and subjective indices. In *Proceedings of the Human Factors and Ergonomics Conference*. (October 2004: New Orleans, LA). HFES.

Reagan, I.,\* and Baldwin, C. L. (2004). Auditory route guidance systems and facilitating development of cognitive maps. In *Proceedings of the Human Factors and Ergonomics Conference*. (October 2004: New Orleans, LA). HFES.

 Baldwin, C. L. (2005). Driver state monitoring using neurophysiological, behavioral, and subjective indices. In *Proceedings of the ITS*, *5th European Congress and Exhibition on Intelligent Transport Systems and Services*. (June, 2005: Hannover, Germany).

 Baldwin, C. L., and May, J. F. \* (2005). Verbal collision avoidance messages of varying perceived urgency reduce crashes in high-risk scenarios. In *Proceedings of the Driving Assessment 2005 Symposium.* (June, 2005 Rockport, MN).

 May, J. F.,\* Baldwin, C. L., Freeman, F. G. (2005). Physiological measures of driver fatigue. In *Proceedings of the Augmented Cognition Conference, HCI International 2005*. (July 2005: Las Vegas, NV).

 Coyne, J. T.\*, Latorella, K. A., Baldwin, C. L. (2005). Influence of graphical Metars on pilots’ weather judgment. In *Proceedings of the Human Factors and Ergonomics Society*. (September, 2005: Orlando, FL).

 Moore, C. M.,\* Baldwin, C. L. (2005). Fidelity requirements of virtual environments intended to support spatial cognition. In  *Proceedings of the Human Factors and Ergonomics Society.* (September, 2005: Orlando, FL).

Baldwin, C. L., and May, J. F.\* (2006). Auditory CASs reduce crash potential in older drivers. In *Proceedings of the International Ergonomics Association.* (July 2006: Maastricht, The Netherlands).

Baldwin, C. L., Lewis, K. R.,\* Morris, A. E. (2006).\* Sensory-cognitive interactions in old and young listeners. In *Proceedings of the International Ergonomics Association.* (July 2006: Maastricht, The Netherlands).

Risser, M.,\* Scerbo, M., Baldwin, C. L., McNamara, D. (2006). Interference timing and acknowledgement response with voice and Datalink ATC commands. In *Proceedings of the Human Factors and Ergonomics Society* (October 2006: San Francisco, CA).

Reagan, I.,\* and Baldwin, C. L., (2006). Individual differences in working memory, sense of direction, and route-learning. In *Proceedings of the Human Factors and Ergonomics Society* (October 2006: San Francisco, CA).

May, J. F.,\* Baldwin, C. L., and Parasuraman, R. (2006). Prevention of rear-end crashes in drivers with task-induced fatigue through use of auditory collision avoidance warnings. In *Proceedings of the Human Factors and Ergonomics Society* (October 2006: San Francisco, CA).

 Barrow, J. H.\*, and Baldwin, C. L. (2009). Verbal-spatial cue conflict: Implications for the design of collision warning systems. *In Proceedings of the Driving Assessment 2009.* (June, 2009: Big Sky, Montana).

Coyne, J. T., Baldwin, C. L., Cole, A. Sibley, C., and Roberts, D. M.\* (2009). Applying Real Time Physiological Measures of Cognitive Load to Improve Training. In Proceedings of the Human Computer Interaction International 2009. (July, 2009: San Diego, CA).

Barrow, J. H.,\* and Baldwin, C. L. (2009). Semantic versus spatial audio cues: Is there a down side to semantic cueing? In *Proceedings of the Human Factors and Ergonomics Society* (October 2009: San Antonio, TX).

 Baldwin, C. L., (2009). Hearing levels affect higher order cognitive performance. In *Proceedings of the Human Factors and Ergonomics Society* (October 2009: San Antonio, TX).

Barrow, J. H.\*, & Baldwin, C. L. (2010). Navigation strategy matters when alerting the driver. In *Proceedings of the Virginia Social Sciences Association Annual Meeting.* (March, 2010, Petersburg, VA).

Buzzell, G.\*, Roberts, D.M., \*, Taylor, B.\*, Barrow, J. H.\*, & Baldwin, C. L. (2010). Neurophysiological Measures of Mental Workload in a Visual Search Task. In *Proceedings of the Virginia Social Sciences Association Annual Meeting.* (March, 2010, Petersburg, VA).

 Barrow, J. H.,\* and Baldwin, C. L. (2010). Spatial audio vs. verbal directional cues: an examination of salience and disruptiveness within a simulated driving context*. In Proceedings of the International Community of Auditory Display.* (June, 2010, Washington, D. C.).

 Coyne, J. T., Sibley, C., Cole, A., Gibson, G., Baldwin, C., Roberts, D\*., Barrow, J. H.\* et al. (2010). *Adaptive training in an Unmanned Aerial Vehicle: Examination of several candidate real-time metrics.* In Proceedings of the Applied Human Factors and Ergonomics Conference (July, 2010, Miami Beach, Florida).

 Barrow, J. H.,\* and Baldwin, C. L. (2010). Allowing for Individual Differences in Auditory Warning Design: Who Benefits from Spatial Auditory Alerts? *In Proceedings of the Human Factors and Ergonomics Society Annual Conference.* (September, 2010, San Francisco, CA).

Fong, A.. Sibley, C., Baldwin, C. L., and Coyne, J. T. (2010). A Comparison of Artificial Neural Networks, Logistic Regressions, and Classification Trees for Modeling Mental Workload. *In Proceedings of the Human Factors and Ergonomics Society Annual Conference.* (September, 2010, San Francisco, CA).

 Garcia, A.,\* Baldwin, C. L., and Dworsky, M.\* (2010). Gender Differences in Simulator Sickness In Fixed- versus Rotating-Base Driving Simulator. *In Proceedings of the Human Factors and Ergonomics Society Annual Conference.* (September, 2010, San Francisco, CA).

 Kidd, D. G.,\* Nelson, E. K.,\* and Baldwin, C. L. (2010).

The effects of repeated exposures to collision warnings on driving and secondary task performance. *In Proceedings of the Human Factors and Ergonomics Society Annual Conference.* (September, 2010, San Francisco, CA).

 Roberts, D. M.\*, Taylor, B.,\*, Barrow, J. H.,\*, Robertson, G., Buzzell, G., Sibley, C., Cole, A.,\* Coyne, J. T.,\* Baldwin, C. L.,\* (2010). EEG Spectral Analysis of Workload for a Part-task UAV Simulation. In Proceedings of the Human Factors and Ergonomics Society Annual Conference. (September, 2010, San Francisco, CA).

Robinson, E., Lerner, N., Jenness, J., Traube, E., Brown, T., Baldwin, C., Llaneras, R. (2011). Crash Warning Interface Metrics: Evaluating Driver-Vehicle Interface Characteristics for Advanced Crash Warning Systems. Proceedings of the 22nd International Technical Conference on the Enhanced Safety of Vehicles (June, 2011, Washington, DC).

 Coyne, J. T., Sibley, C., Baldwin, C. L., (2011). Ongoing Efforts Towards Developing a Physiologically Driven Training System. In Proceedings of the Human Computer Interaction Society Conference . (June, 2011: Orlando, FL).

 Garcia, A.\*, Funke, M., Funke, G., Warm, J. (2010). Team Vigilance: The effects of co-action on vigilance. *Warfighter Enhancement Activities, 4*(1), 12.

 Barrow, J.\* Baldwin, C., Roberts, D.\*, Taylor, B.\*. Sibley, C., Coyne, J., Mandulak, A., Buzzell, G.\*\*, Penaranda, N.\*\* (2011). Using Physiological Measures to Improve Training for UAV Operators. *Proceedings of the 16th International Symposium on Aviation Psychology (May, 2011, Dayton, Ohio).*

 Garcia, A.\*, Baldwin, C., Funke, M., Funke, G., Finomore, V., Dukes, A., Knott, B., Warm, J., (2011). The Effects of Co-Action on Workload and Stress in Team Vigilance. *Proceedings of the 16th International Symposium on Aviation Psychology (May, 2011, Dayton, Ohio).*

 Robinson, E., Lerner, N., Jenness, J., Traube, E., Brown, T., Baldwin, C., and Llaneras, R. (2011). Crash warning interface metrics: Evaluating driver-vehicle interface characteristics for advanced crash warning systems. Proceedings of the 22nd International Technical Conference on the Enhanced Safety of Vehicles (Paper No. 11-0252-O), Washington, DC.

Available at: <http://www-nrd.nhtsa.dot.gov/departments/esv/22nd/>

 Taylor, B. A.,\* Roberts, D. M.,\* and Baldwin, C. L., (2011). Age-Related Differences in Intra-Individual Speech Processing Variability. Proceedings of *Cognitive Neuroscience.* San Francisco, CA.

 Barrow, J., Borne, J., Wenger, L., and Baldwin, C. L. (2011). Musical Valence Affects Spatial Attention in a Likert Scale Rating Task. Barrow, J., Borne, J., Wenger, L., and Baldwin, C. L. (2011). Musical Valence Affects Spatial Attention in a Likert Scale Rating Task. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (September, 2011, Las Vegas, NV).

 Fong, A., Sibley, C., Coyne, J., Baldwin, C. (2011). Method for Characterizing and Identifying Task Evoked Pupillary Responses During Varying Workload Levels. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (September, 2011, Las Vegas, NV).

 Garcia, A. J\*., Baldwin, C. L., Funke, M., Funke, G., Knott, B., Finomore, V., Warm, J. (2011). Team Vigilance: The Effects of Co-Action on Workload in Vigilance. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (September, 2011, Las Vegas, NV).

 Sibley, C., Coyne, J. T., Baldwin, C. L. (2011). Pupil Dilation as an Index of Learning. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (September, 2011, Las Vegas, NV).

 Taylor, B.A.,\* Roberts, D.M.,\* & Baldwin, C.L. (2011). The Role of Age-Related Neural Timing Variability in Speech Processing. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (September, 2011, Las Vegas, NV).

 Baldwin, C. L., Kidd, D.,\* and Roberts, D.\* (2012). Negative Transfer in Auditory In-vehicle Collision Warning Systems. Proceedings of the Conference of International Ergonomics Association. (February 2012, Recife, Brazil).

Eisert, J.\*, and Baldwin, C. L. (2012). Vibrotactile Signals Effectively Convey Collision Avoidance Information With Less Annoyance. Proceedings of the Intelligent Transportation Society Annual Conference. (May 2012, Washington, D.C.).

Penaranda, B.\*, and Baldwin, C. L. (2012). Temporal factors of EEG and Artificial Neural Network Classifiers of Mental Workload. Proceedings of the Human Factors and Ergonomics Society. (October, 2012, Boston).

Gonzalez, C\*., Lewis, B. A\*., Baldwin, C. L. (2012). Revisiting pulse rate, frequency and perceived urgency: Have relationships changed and why? Proceedings of the 18th International Conference on Auditory Display (June 2012, Atlanta Georgia).

Barrow, J. H.\*, Wenger, L.\*, Bourne, J. E.\*\*, Baldwin, C. L. (2012). The Effect of Musical Valence on Pseudoneglect in a Likerttype Rating Task. Proceedings of the 12th International Conference on Music Perception and Cognition (ICMPC) (Greece, July 2012).

Pratt, S.\*, Gonzalez, C.\*, Lewis, B. A.\*, Baldwin, C. L. (2012). Perceived urgency scaling of tactile alerts. Proceeding of the Human Factors and Ergonomics Society Annual Meeting. (October 2012, Boston).

Baldwin, C, Spence, C., Bliss, J., Brill, C. J., Wogalter, M. S., Mayhorn, C. B., & Ferris, T. (2012). Multimodal cueing: The relative benefits of the auditory, visual, and tactile channels in complex environments. Proceedings of the Human Factors and Ergonomics Society 56th Annual Meeting.  Santa Monica, CA: Human Factors and Ergonomics Society.

Nadler, E., Traube, E., Lerner, N., Jenness, J., Brown, T., Baldwin, C., Chiang, D., Forkenbrock, G. (2013). Development of Crash Warning Interface Metrics (CWIM). Proceedings of the 23rd Enhanced Safety in Vehicles conference. (May 27-30, Seoul, Korea).

Eisert, J.\*, Garcia, A.\*, Payne, J. J.\*, Baldwin, C. L. (2013). Tactile Route Guidance Performance and Preference. Proceedings of the Human Factors and Ergonomics Society 57th Annual Meeting.  Santa Monica, CA: Human Factors and Ergonomics Society.

Lewis, B. A.\*, Penaranda, B. N.\*, Roberts, D. M.\*, and Baldwin, C. L. (2013). Max brake force as a measure of perceived urgency in a driving context. Proceedings of the Human Factors and Ergonomics Society 57th Annual Meeting.  Santa Monica, CA: Human Factors and Ergonomics Society.

Gonzalez, C. A.\*, Baldwin, C. L. (2013). Effects of Pulse rate, Fundamental Frequency, and Burst Density on Auditory Similarity. Proceedings of the Human Factors and Ergonomics Society 57th Annual Meeting.  Santa Monica, CA: Human Factors and Ergonomics Society.

Lewis,, B. A.\*, Penaranda, B. N.\*, Roberts, D. M.\*, & Baldwin, C. L. (2013). Effectiveness of Bimodal Versus Unimodal Alerts for Distracted Drivers. (June 2013, Bolton Landing, NY). Proceedings of the Driving Assessment Conference.

Garcia, A.\*, Eisert, J.\*, Finomore, V., & Baldwin, C. L. (2013). Comprehension of vibrotactile route guidance cues. Proceedings of the Human Computer Interaction International conference. (July 2013, Las Vegas, NV).

 Garcia, A.\*, Eisert, J., Payne, J.,\* Baldwin, C. L., & Finomore, V. (2013). Individual differences in perception of advanced navigation systems and their influence on route learning. Proceedings of the International Symposium of Aviation Psychology. (May, 2013: Dayton, OH).

 Iyer, N., Thompson, E., Romigh, G., Baldwin, C. L. & Simpson, B. (2013). Spatial attention in an auditory dual task. Published Abstract in the Proceedings of the Cognitive Hearing Sciences Conference. (June, 2013: Sweeden).

 Iyer, N., Thompson, E., Romigh, G., Baldwin, C. L. & Brian Simpson, B. (2014). 3aPPb3 Spatial attention in an auditory dual task. Published Abstract in the Proceedings of the Acoustical Society of America (October 2014: Indianapolis, Indiana).

 Singer, J., Lerner, N., Baldwin, C., Traube, E. (2015). [Auditory Alerts in Vehicles: Effects of Alert Characteristics and Ambient Noise Conditions on Perceived Meaning and Detectability](http://scholar.google.com/scholar_url?url=http://www-esv.nhtsa.dot.gov/Proceedings/24/files/24ESV-000455.PDF&hl=en&sa=X&scisig=AAGBfm0NduZ0JKApVZYLvBMpCs0V3c5P8A&nossl=1&oi=scholaralrt). 24th Enhanced Safety in Vehicles conference. (June 2015, Gothenburg, Sweden).

 Gable, T. M., Walker, B. N., Baldwin, C. L., Gable, T. M., Jeon, M., Kun, A. L., & Mehler, B. (2015, September). Collection and Analysis of Physiological Measures in Driving Research. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 59, No. 1, pp. 1593-1595). Sage CA: Los Angeles, CA: SAGE Publications.

 Lewis, B. A.,\* Baldwin, C. L. (2015). A Comparison of Traditional Psychophysical and Sorting Methods for In-Vehicle Display Design. In the Proceedings of the International Ergonomics Association, (August, 2015, Melbourne, Australia).

Jesso, M. N.,\* Lewis, B. A.,\* Tanangco, E. M.,\*\* Drury, R. W.,\*\* & Baldwin, C. L. (2015). Music Interventions during a Sustained Attention Response Task. In the *Proceedings of the International Ergonomics Association,* (August, 2015, Melbourne, Australia).

Eisert, J. L., Lewis, B. A., & Baldwin, C. L. (2015). Using the method of adjustment to enhance collision warning perception. In the *Proceedings of the International Ergonomics Association,* (August, 2015, Melbourne, Australia).

 Roberts, D.M.\*, Barragan, D.\*, Tweedie, D.M.\*, Cantwell, J.\*, Lipshie, N.\*, & Baldwin, C.L. (2016). Indices of internal distraction during simulated driving and the sustained attention to response task. *Proceedings of the International Symposium on Somnolence, Vigilance, and Safety.* (February, 2016, Brussels, Belgium).

 Barragan, D.\*, Roberts, D.M.\*, & Baldwin, C. L. (2016). English validation of the attention-related driving errors scale (ARDES) and its correlates. *Proceedings of the International Symposium on Somnolence, Vigilance, and Safety.* (February, 2016, Brussels, Belgium).

 Edworthy, J., & Baldwin, C. (2016, September). Medical Audible Alarms and IEC 60601-1-8. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, No. 1, pp. 634-635). Sage CA: Los Angeles, CA: SAGE Publications.

 Eisert, J., Di Nocera, F., Baldwin, C., Lee, J., Stephen Higgins, J., Helton, W. S., & Hancock, P. (2016, September). Vigilance and Fatigue: A Double Sided Coin?. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, No. 1, pp. 1563-1568). Sage CA: Los Angeles, CA: SAGE Publications.

 Barragán, D., Roberts, D. M., Chong, S. D., & Baldwin, C. L. (2016, September). Exploring Mind Wandering While Driving. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, No. 1, pp. 1956-1956). Sage CA: Los Angeles, CA: SAGE Publications.

 Barragan, D.; Roberts, D. M.; Chong, Steven S.; and Baldwin, C. L. (2017). Comparing Methods of Detecting Mind Wandering While Driving. In: *Proceedings of the Ninth International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design,* June 26-29, 2017, Manchester Village, Vermont. Iowa City, IA: Public Policy Center, University of Iowa, 2017: 79-86.

 Satterfield, K., Baldwin, C., de Visser, E., & Shaw, T. (2017, September). The Influence of Risky Conditions in Trust in Autonomous Systems. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 61, No. 1, pp. 324-328). Sage CA: Los Angeles, CA: SAGE Publications.

 Wiese, E., Shaw, T., Lofaro, D., & Baldwin, C. (2017, September). Designing Artificial Agents as Social Companions. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 61, No. 1, pp. 1604-1608). Sage CA: Los Angeles, CA: SAGE Publications.

Calvo, J. A., IV, Baldwin, C. L., and Phillips, B. H. (2018). Effect of Age and Intersections on Motor Vehicle Crashes. Extended abstract published in the Proceedings of the Naturalistic Driving Conference. (August, 2018, Blacksburg, VA).

Waltrip, M.\*, and Baldwin, C. L. (2018). Scalable Auditory Alarms. In Proceedings of the International Ergonomics Association. (August, 2018, Florence, Italy).  [https://link.springer.com/chapter/10.1007/978-3-319-96059-3\_6](https://secure-web.cisco.com/1kH216Ysfa6fevBczPnN_vEabb0R2XLbRb1FNAv06m4xFTqZ-QOEMzma1-mic0oyYiJpxLrvmGagJfw0wPimyB7ICSmAFDTCPNjMvG--V5N8H6dQLYGG7kR2dDDwgDcH-X3VPR2gJir3ZX-Wqee8VtVjhY7Qjp5sCzqMr7DVXMiFJUOWLRgGXnld7ga6mG_V9wSICJhbj3J7DBJsZGxoXkxksVtFwwUrCusZabt2TP7Y3ufvOY9xJ3ucx4-3UHuHBTnC7FcAKiXH3wPcZvXSpurkbx0SraZfsAdAmfcNBzVjkqBxiGfxTHhkJrGclACRMJQhKTcLIrV7Rc7NFS1Et-enJ8b5ypJ1tybqPSo-GXlsAc-jnb1dO4OOlEJWalq3qBx3KsDImumPml6k7ar2cgifO5pNo4Cr6CWXNJJYmWRfdkvO8e7Ipj685U2wsPolC/https%3A//link.springer.com/chapter/10.1007/978-3-319-96059-3_6)

TECHNICAL REPORTS

 Helton, W. H., Baldwin, C. L., Lee, Y-C., Jenness, J., Chong, S., Shupsky, T., and Jackson, K. (2020) Driver Vigilance Framework for Level 2 and Level 3 Driving Automaton Systems. Washington, DC: National Highway Traffic Safety Administration.

 Lerner, N., Singer, J., Huey, R., Brown, T., Marshall, D., Chrysler, S., Schmitt, R., Baldwin, C., Eisert, J., Lewis, B., Bakker, A., and Chiang, D. (2014). Crash Warning Interface Metrics (CWIM): Phase 3 Final Report. Washington, DC: National Highway Traffic Safety Administration.

 Lerner, N., Robinson, E., Jenness, J., Singer, J., Baldwin, C., Ward, N., Fitch, G. (2011). Human Factors for Connected Vehicles. Task 4 Report: Research Findings. Technical Report prepared for National Highway Traffic Safety Administration. Washington, D.C.

 Lerner, N., Jenness, J., Robinson, E., Brown, T., Baldwin, C., and Llaneras, R. (2011). Crash warning interface metrics. Washington, DC: National Highway Traffic Safety Administration.

Monk, C. A., Baldwin, C., Kidd, D.\*, & Nelson, E.\* (2009). Advanced Collision
Warning System Auditory Alerts Literature Review, Driver-Vehicle Interface (DVI) Survey, and Sound Inventory. Collision Warning Interface Metrics (CWIM) Task 2 Report under Task Order 15 (DTNH22-05- D-01002). National Highway Traffic Safety Administration: Washington, DC. [173 pages].

 Monk, C. A., Baldwin, C., Kidd, D.\*, & Nelson, E.\* (2009). Task 2 Research Plan. Collision Warning Interface Metrics (CWIM) Report under Task Order 15  (DTNH22-05-D-01002).

Struckman-Johnson, C., Baldwin, C. L., Struckman-Johnson, D. (2008, August). 2008 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety.

Struckman-Johnson, C., Baldwin, C. L., Struckman-Johnson, D. (2009, August). 2009 South Dakota Statewide Seatbelt Use Survey. South Dakota Department of Commerce and Regulation, Office of Highway Safety.

Baldwin, C. L., Struckman-Johnson, C.,Struckman-Johnson, D. *South Dakota Statewide Seatbelt and Helmet Survey.* South Dakota Department of Commerce and Regulation, Office of Highway Safety. Pierre, SD. A series of 11 annual technical reports, from 1998 to 2008.

 Baldwin, C. L. (2001). *Mental Workload Associated with Auditory Cockpit Displays*. NASA Contract to Catholic University of America, Washington, D.C., June 2001.

Baldwin, C. L., Morrow, J.  *Program Evaluation of the PRIDE program in Portsmouth Middle schools.* Portsmouth Behavioral Services Center. Portsmouth, VA. Center Director, Anne Lyons. A series of 2 annual reports, from 2002-2003.

#### **PUBLISHED ABSTRACTS**

####

Baldwin, C. L., and Williams, E. H.\* (1999). Cognitive implications of facilitated echoic persistence. In *Proceedings of the Third International Symposium on Cognition, Education, and Mental Health (p. 49)*. Banaras Hindu University; Varanasi, India.

#### Mathews, S. A.\*, and Baldwin, C. L. (2002). Display parameters affecting perceived urgency and annoyance in verbal warning signals. In *Proceedings of the Virginia Academy of Sciences.* June, 2002, Hampton, VA.

####

#### Ferris, R. D.,\* Baldwin, C. L., and Freund, B. M. (2002). Age differences in appropriate navigational command distance: A driving simulation study.In *Proceedings of the Virginia Academy of Sciences.* (80th Annual Meeting held May 2002 in Hampton, VA).

Baldwin, C. L., (2003). Impact of hearing impairment on neuropsychological test performance. *Journal of the International Neuropsychological Society*, 9(2), 257.

Baldwin, C. L. (2003). Data Link communications: Perspectives from air and ground. In *Proceedings of the Human Factors and Ergonomics Society*. (October, 2003: Denver, CO).

 Baldwin, C. L. (2004). Modeling driver state using neurophysiological, behavioral, and subjective indices. In *Proceedings of the HFES Europe Chapter Annual Meeting*. (October, 2004: Delft: The Netherlands.

Baldwin, C. L., May, J. F.,\* Freeman, F. G. (2005). Neurophysiological indices of perceptual workload: Implications for adaptive in-vehicle technologies. In *AugCog: HCI International* 2005. (July 2005: Las Vegas, NV).

Baldwin, C. L., and May, J. F.\* (2006). Verbal CAS alerts reduce crash probability in older drivers. *Cognitive Aging Conference.* (March 2006: Atlanta, GA).

Baldwin, C. L. (2007). Individual differences in Navigation: Implications for display design. (Abstract). In *Proceedings of the Human Factors and Ergonomics Society* (October 2007: Baltimore, MD).

Baldwin, C. L., Block, C. K.,\* Taylor, B.,\* Roberts, D.,\* & Barrow, J.\* (2010). Neurophysiological Indices of Speech Processing Difficulty (Abstract). *Cognitive Aging Conference*. Atlanta, Georgia: Georgia Institute of Technology.

Roberts, D.,\* Block, C. K.,\* Barrow, J.,\* Taylor, B.,\* Buzzell, G.,\*\* & Baldwin, C. L. (2010). Effect of stimulus quality on language processing in younger and older adults (Abstract). *Cognitive Neuroscience*. Montreal, Canada.

 Garcia, A.,\* and Baldwin, C. L. (2010). Congruent Motion Reduces Simulator Sickness in Driving Simulations. In conjunction with the Applied Human Factors and Ergonomics Conference. (July 2010, Miami, FL).

 Penaranda, N.,\*\* and Baldwin, C. L. (2010). More can be less: Selecting EEG features for an artificial neural network-based workload classification. In conjunction with the Applied Human Factors and Ergonomics Conference. (July 2010, Miami, FL).

 Penaranda, N.\*\* and Baldwin, C. L. (2011). Augmented learning: An application of EEG-based adaptive automation for learning tasks. Abstract published in conjunction with the 16th International Symposium on Aviation Psychology, (May, 2011, Dayton, Ohio).

Buzzell, G.\*, Baldwin, C., Roberts, D.,\* Barrow, J.,\* McDonald, C. (2012). Navigational Style and Electrophysiological Correlates of Conflict in an Auditory Spatial Stroop Task. Cognitive Neuroscience Society. (March 2012, Chicago, IL).

 Garcia, A.\*, Eisert, J.\*, and Baldwin, C. L. (2013). Individual Differences in Route Learning with Advanced Vibrotactile Navigation Systems. To be published in conjunction with the 17th International Symposium on Aviation Psychology, (May, 2013, Dayton, Ohio).

Buzzell, G., Baldwin, C. L., Wenger, L., Roberts, D., McDonald, C. (2012). Electrophysiological correlates of an Auditory Spatial Stroop Task. Published Abstract in conjunction with a Poster presented at the Society for Neuroscience, Washington, D. C.

 Baldwin, C. L., Roberts, D. M.\* Buzzell, G. A.\*, Sin, B. M.\*\*, Jesso, M\*., Simpson, B. D., and Iyer, N. (2014). Individual Differences in Change Deafness: Verbal Cognitive Style Aids Detection. Proceedings of the Cognitive Neuroscience Society. (April, 2014: Boston, MS).

Baldwin, C. L. (2014). Designing for an aging population. Presentation and panelist in conjunction with Transportation in an age-diverse society at the Human Factors and Ergonomics Society Annual Meeting (Chicago, IL: October 2014).

Baldwin, C. L. (2014). Restorative Effects of Music and Nature Sounds. Presented at the Applied Human Factors Conference (Krakow, Poland: July 2014).

Baldwin, C.L (2014). Speeded Responses to Signals from Novel Systems. Presented at the Applied Human Factors Conference (Krakow, Poland: July 2014).

Greenwood, P., Waltrip, M.\*, Dang, J.\*, Tulk, S.\*, Baldwin, C. L., and Lenneman, J. (2018). Information Used in Mental Model Formation of Advanced Driver Assistance Systems. Published abstract and poster presented at the Automated Vehicle Symposium. (July, 2018: San Francisco, CA).

Greenwood, P., McKendrick, R., Cisler, D.\*, Chong, S.D.\*, Dang, J.\*, and Baldwin, C. L. (2018). Automation Transparency to Promote Appropriate Trust Calibration. Published abstract and poster presented in conjunction with the APA Mind and Technology Conference. (April 2018; Washington, D.C.).

Baldwin, C. L., Greenwood, P,, Cisler, D., Dang, J., Chong, S. and McKendrick, R. (2018). Physiological Predictors of Speed of Detecting Automation Failures during Autonomous Driving. Published abstract and poster presented in conjunction with the APA Mind and Technology Conference. (April 2018; Washington, D.C.).

**INVITED ADDRESSES, COLLOQUIA AND PANEL PARTICIPATION**

\*denotes student contributer

Baldwin,C. L.(May, 1999). Impact of speech amplitude on cognitive processing: Implications for auditory warnings. *Invited Colloquium presented to the Cognitive Science Laboratory, Catholic University of America*, Washington, DC.

Baldwin**,** C. L. (April, 2002). In-vehicle telematics: Alerting effectiveness, perceived urgency, and annoyance of verbal collision avoidance messages. *Invited Address at the University of Plymouth. Psychology Department Colloquium,* Plymouth, UK.

Baldwin**,** C. L. (May, 2002). Designing advanced in-vehicle technologies for special populations. Younger and older drivers: High accident rate populations. *Invited Technical Presentation to the National Research Council Committee on Human Factors.* Woods Hole, Mass.

Baldwin, C. L. (2003). Perceived urgency and alerting effectiveness as a function of display parameters for verbal collision avoidance messages. *Invited address at the International Ergonomics Association Conference*, August 2003, in Seoul, Korea.

Baldwin, C. L. (2003). Neuroergonomics of mental workload: Application in a driving arena. Invited address at the *International Ergonomics Association Conference* held August 2003, in Seoul, Korea.

Baldwin, C. L. (2005). Driver state monitoring using neurophysiological, behavioral, and subjective indices. *Invited address at the ITS Hannover: 5th European Congress and Exhibition on Intelligent Transport Systems and Services.* (June, 2005: Hannover, Germany).

Baldwin, C. L. (2006). MidYear Human Factors Symposium. *Hosted by the HFES Student Chapter at George Mason University in coordination with the Virginia Tech and ODU HFES Student Chapters.* (November 17, 2006).

Baldwin, C. L. (2007). Acoustic and semantic warning parameters impact vehicle crash rates. Invited Address for a special session: *Innovations in Auditory Warnings*. Presented at the International Conference on Auditory Displays. (June 2007) Montreal, Canada.

Baldwin, C. L. (2008). Auditory In-vehicle Warnings to Mitigate Crashes in High Risk Drivers. Invited address presented in conjunction with a panel entitled. “Audio and Audio-Tactile Warnings and Alerts: Forming Today’s Soundscape” commenced at the Audio Engineering Society’s annual meeting in Amsterdam, the Netherlands, May 2008.

Baldwin, C. L. (2008). Usability of In-vehicle Technologies for High Crash Risk Populations: The Young, the Old, and the Restless. (November, 2008, Washington, DC). World Usability Day Symposium.

 Baldwin, C. L. (2010). Neuroadaptive Systems for Enhanced Training: A Neural Network Approach driven by neurophysiological state. (July, 2010, Dayton, OH). Wright Patterson Air Force Base.

 Baldwin, C. L. (2010). Applications of Sensory-Cognitive Interaction Theory for the Design of Advanced Technologies for Older Adults. Invited Colloquium presented at the Volen Center for Complex Systems, Brandeis University, (August, 2010, Waltham/Boston, Massachusetts).

 Baldwin, C. L. (2010). Neuroadaptive Systems for Enhanced Training: Recent Research (September, 2010, Fairfax, VA). Address given in conjunction with the CENTEC – Center of Excellence in Neuroergonomics, George Mason University.

 Baldwin, C.L. (2012). Using EEG and ERP in Driving Research. Invited Workshop presentation. Transportation Research Board Annual Meeting. Washington, DC.

 Baldwin, C. L. (2012). Individual Differences in Spatial Navigation Strategy evidenced at the Behavioral and Neurophysiological Level. Invited Colloquium presented at Tsinghua University (July 2012: Beijing, China).

 Baldwin, C. L. (2012). Generalizability of Artificial Neural Network-Based Classifiers: A Success and Qualification. Invited Colloquium presented at Northeastern University. (July 2012: Shenyang, China)

 Baldwin, C. L. (2013). Auditory Cognition: Individual Differences in Navigation & Auditory Spatial Perception. Invited Colloquium presented at Benares Hindu University. (February 2013: Varanasi, India).

 Baldwin, C. L. (2013). Individual Differences in Auditory Spatial Perception. Invited Colloquium presented at University of Pennsylvania, Computer Science Laboratory. (March 2013: Philadelphia, PA).

 Baldwin, C. L. (2014). Invited address entitled, “Individual Differences In Change Deafness: Implications For Display Design” presented at the Sonic Information Design Workshop in conjunction with the annual meeting of the International Community of Auditory Display. (June, 2014, New York City).

 Baldwin, C. L. (2014) Invited address entitled, “Speeded Response to Novel Signals,” a panel presentation presented in conjunction with the Applied Human Factors and Ergonomics Symposium. (July, 2014: Krakow, Poland).

 Baldwin, C. L. (2015). “Stop! Hey, What’s that sound? Designing Intuitive In-vehicle Warnings for Future Vehicles.” Mike McKay Distinguished Lecture in Cognition. (April 30, 2015). Randolph Macon College, Ashland, VA.

 Baldwin, C. L. (2015). Physiological Driver State Monitoring Challenges and Opportunities. Invited panel address in conjunction with the Human Factors and Ergonomics Association Annual Meeting. (October, 2015: Los Angeles, CA.)

 Baldwin, C. L. (2015). Challenges and Lessons Learned in Driver State Assessment – Applications in Mind Wandering. Invited panel address in conjunction with the Human Factors and Ergonomics Association Annual Meeting. (October, 2015: Los Angeles, CA.).

 Baldwin, C. L. (2016) Invited Address. Attentional Restoration through Music. Presented at Benares Hindu University (Februrary, 2016, Varanasi, India).

 Baldwin, C. L. (2016). Neuroergonomics in Human Machine Interaction. Presented to Northeastern University. (July, 2016, Shenyang, China).

 Roberts, D.M.\*, Baldwin, C.L. (2016). Differentiating cognitive states: detection of mind wandering. Transportation Research Board Annual Meeting. Washington, DC.

Baldwin, C.L. (2018). Attention Management in Highly Automated Systems. Industrial Engineering Colloquium. Penn State. (February, 2018: State College, Pennsylvania).

 Baldwin, C. L. (2018). Quantifying mind wandering while driving – meet the author. Invited class discussion at Tufts University (March, 2018: On-line).

 Baldwin, C. L., Edworthy, J., Schlesinger, J. J., Ozcan, Z. (2018). Reducing Alarm Fatigue Through Ergonomic Audible Warning Design. Invited Panel session in conjunction with the International Ergonomics Association Symposium. (August, 2018: Florence, Italy).

 Shupsky, T.\*, Morales, K.\*, Baldwin, C.L., Hancock, P., Eric T. Greenlee, E.T., Horrey, W. J., Klauer, C. (2020). Secondary Task Engagement During Automated Drives: Friend and Foe? Panel organized and presented in conjunction with the Human Factors and Ergonomics Association Annual Meeting. (October, 2020 – virtual conference).

**INVITED KEYNOTE ADDRESSES**

Baldwin, C. L. (October 2016) Invited Keynote: Neuroergonomics in Autonomous Systems, 1st annual Neuroergonomics Conference (October 2016: Paris, France).

Baldwin, C. L. (December 2016). Invited Keynote: Neuroergonomic Advances for Autonomous Vehicles, Fifth International Conference on Recent Advances is Cognition and Health. (December 2016: Banaras Hindu University, Varansi, India.

Baldwin, C. L. (September 2017) Invited Keynote: Visual and Multi-modal In-vehicle Collision Warnings. Optics (September 2017: Washington, D.C.)

Baldwin, C. L. (June 2018). Invited Keynote: Attention Management in Highly Automated Systems. 2nd Conference on Neuroergonomics, (June 2018: Drexel University, Philadelphia, PA).

Baldwin, C. L. (2018). Invited Keynote: Auditory Displays to Support Attention Management in Highly Autonomous Systems. International Conference on Auditory Display. June 2018: Houghton, Michigan.

**AWARDS**

Best Paper Award (2015) *International Human Factors and Ergonomics* for Baldwin, May and Parasuraman (2015)

HFE Woman of the Year (2020) For outstanding lifetime contributions to Human Factors.

**CONFERENCE AND SYMPOSIA ORGANIZER**

#### Baldwin, C. L. (2003). Panel Organizer & Chair: Data Link Communications: Perspectives from Air and Ground. Session held at the *Human Factors and Ergonomics Society* Annual National Meeting. (October, 2003).

#### Baldwin, C. L. (2008). Panel Organizer & Chair: Tenure: Lessons Learned from the recently Tenured. Session held at the HFES Junior Faculty Forum and Social in conjunction with the *Human Factors and Ergonomics Society* Annual National Meeting. (October, 2008, New York City).

Baldwin, C. L. (2010). Panel Organizer & Chair: Physiological and Neurophysiological Metrics for Real-time Adaptive Interfaces. Session held at the Applied Human Factors and Ergonomics Conference. (July, 2010, Miami, FL).

Baldwin, C, Spence, C., Bliss, J., Brill, C. J., Wogalter, M. S., Mayhorn, C. B., & Ferris, T. (2012). Panel Organizer & Chair: Multimodal cueing: The relative benefits of the auditory, visual, and tactile channels in complex environments. Proceedings of the Human Factors and Ergonomics Society 56th Annual Meeting.  (October, 2012, Boston, MS). Santa Monica, CA: Human Factors and Ergonomics Society.

#### Lewis, B.L., Baldwin, C.L., Chrysler, S.T., Foley, J.P., Hancock, P.A., Klauer, S.G. (2014). Transportation in an Age-Diverse Society. Panel session held at the *Human Factors and Ergonomics Society* Annual National Meeting. (October, 2014, Chicago).

#### **PROFESSIONAL PRESENTATIONS\***

Baldwin, C. L., and Schieber, F. (1995). Age Differences in Mental Workload with Implications for Driving. *Proceedings of the 39th Annual Conference of the Human Factors and Ergonomics Society*. Santa Monica, CA: HFES.

Galinsky, A. M., Baldwin, C. L., Dell, T. L. (October, 1997). Industrial Workers’ Recall of Accidents and Their Concordance with Company Records. *Proceedings of the 41st Annual Conference of the Human Factors and Ergonomics Society*. Santa Monica, CA: HFES.

Baldwin, C. L. (October, 1997). Speech Amplitude and Cognitive Processing Requirements. Paper presented at *the 41st Annual Conference of the Human Factors and Ergonomics Society*. Santa Monica, CA..

Baldwin, C. L., Galinsky, A. M., Dell, T. L., and Benedetto, J. (June, 1998). Examination of a Successful Ergonomic Program Implemented in a Midwestern Metals Facility. Paper presented at the *International Occupational Ergonomics and Safety Conference*. Ann Arbor Michigan.

 Baldwin, C. L., and Galinsky, A. M. (April, 1999). Pure-Tone Threshold Shifts During Moderate Workload Conditions: Human Performance Implications for Automated Environments. Poster presented at *Automation Technology and Human Performance Conference*. Norfolk, Virginia.

 Galinsky, A. M., Baldwin, C. L., Dell, T. L., and Benedetto, J. M. (April, 1999). Automation in a Metal Castings Operation. Poster presented at *Automation Technology and Human Performance Conference*. Norfolk, Virginia.

Baldwin,C. L., Struckman-Johnson, D., Galinsky, A. M., and Williams, E. H. (September, 1999). Presentation level and the attentional workload of comprehending verbal messages: Implications for design of verbal warnings. Paper presented at the 43rd Annual Conference of the Human Factors and Ergonomics Society. Houston, TX: HFES.

Galinsky, A. M., Meyers, J. E., Berkhout, J., and Baldwin, C. L. (1999, September). Compensable mental injury: The relationship between emotional status and neuropsychological testing. Paper presented at the 43rd Annual Conference of the Human Factors and Ergonomics Society. Houston, TX: HFES.

Baldwin, C. L., and Williams, E. H. (December, 1999). Cognitive Implications of Facilitated Echoic Persistence. Paper presented at the Third International Symposium on Cognition, Education, and Mental Health (December 16-19, 1999). Banaras Hindu University; Varanasi, India.

Williams, E. H., and Baldwin, C. L. (August, 2000) Effect of presentation level on the duration of the echoic trace. Poster presented at *the 44th Annual Conference of the Human Factors and Ergonomics Society*. San Diego, CA: HFES.

Baldwin, C. L., and Reiss, R. (October, 2000). Preferred Navigational Style Assessment as a Method of Optimizing IRANS Displays. Poster presented at the Fourth Conference on *Automation Technology and Human Performance and the Third Conference on Situation Awareness in Complex Systems*. Savannah, Georgia.

Baldwin, C. L. (October, 2001). Impact of Age-related Hearing Impairment on Cognitive Task Performance: Evidence for Improving Existing Methodologies. Paper presented at the *45th Annual Conference of the Human Factors and Ergonomics Society*. Minneapolis, MN: HFES.

Risser, M. R., McNamara, D. S., Baldwin, C. L., Scerbo, M. W., Barshi, I. (2002). Interference While Hearing or Reading Information: Considerations for ATC Communication. Paper presented at the 46th Human Factors and Ergonomics Society Conference. (October 2002). Baltimore, MD: HFES.

Baldwin, C. L., and Moore, C. (2002).Perceived Urgency, Alerting Effectiveness and Annoyance of Verbal Collision Avoidance System Messages**.** Poster presented at the *46th Human Factors and Ergonomics Society Conference*. (October 2002). Baltimore, MD: HFES.

Baldwin, C. L. (2003). Panel Organizer & Chair: Data Link Communications: Perspectives from Air and Ground. Session organized and chaired at the *Human Factors and Ergonomics Society Annual National Meeting*. (October, 2003).

Baldwin, C. L. (2003). Mental Workload as a Function of Traffic Density in an Urban Environment: Convergence of Physiological, Behavioral, and Subjective Indices. Paper presented at the *Human Factors in Driving Assessment 2003 Symposium* (July 2003. Park City, Utah).

Baldwin, C. L., (February, 2003). Impact of Hearing Impairment on Neuropsychological Test Performance. Poster presented at the *International Neuropsychological Society 2003 Conference*, February 2003, Honolulu, Hawaii.

Coyne, J., and Baldwin, C. L. (2003). ERP Indices of Mental Workload for Traditional and Text-based ATC Commands During Simulated Flight. Paper presented at the 12th International Symposium of Aviation Psychology. (April 2003. Dayton, OH).

Risser, M. R., McNamara, D. S., Scerbo, M. W., Baldwin, C. L. (2003). Text versus Speech presentation of ATC Communications: Implications for Data-link. Paper presented at the 12th International Symposium of Aviation Psychology. (April 2003. Dayton, OH).

Furukawa, H., Baldwin, C. L., Carpenter, E. M. (2004) Supporting Drivers' Cognitive Map Construction with Visual Geo-Centered and Auditory Ego-Centered Guidance: Interference or Improved Performance? Paper presented at the *Human Performance, Situation Awareness and Automation Conference*. (March 2004, Daytona Beach, FL).

Carpenter, E. M., Baldwin, C. L., and Furukawa, H. (2004). Cross-cultural analysis of navigational strategy: Further implications for IRANS design. Paper presented at the *Human Performance, Situation Awareness and Automation Conference*. (March 2004, Daytona Beach, FL).

Baldwin, C. L. (2004). Modeling Driver State Using Neurophysiological, Behavioral, and Subjective Indices. Presented at the European Chapter of the Human Factors and Ergonomics Society. (October, 2004, Delft, The Netherlands).

 Baldwin, C. L., May, J. F., Freeman, F. G. (2005). Neurophysiological Indices of Perceptual Workload: Implications for Adaptive In-vehicle Technologies. Presented at AugCog: HCI International 2005. (July 2005: Las Vegas, NV).

Baldwin, C. L. (2005). User-centered design of In-vehicle navigational aids. Presented at the European Chapter of Human Factors and Ergonomics Society Annual Meeting. (October, 2005: Toriono, Italy).

May, J. F., Baldwin, C. L., Freeman, F. G. (2005). Physiological Measures of Driver Fatigue. Proceedings of AugCog: HCI International 2005 . (July 2005: Las Vegas, NV).

 Coyne, J. T., Latorella, K. A., Baldwin, C. L. (2005). Influence of Graphical Metars on Pilots’ Weather Judgment. Proceedings of the Human Factors and Ergonomics Society. (September, 2005: Orlando, FL).

 Moore, C. M., Baldwin, C. L. (2005). Fidelity Requirements of Virtual Environments Intended to Support Spatial Cognition. Proceedings of the Human Factors and Ergonomics Society. (September, 2005: Orlando, FL).

Baldwin, C. L., and May, J. F. (2006). Auditory CASs reduce crash potential in older drivers. Proceedings of the International Ergonomics Association. (July 2006: Maastricht, The Netherlands).

Baldwin, C. L., Lewis, K. R., Morris, A. E. (2006). Sensory-Cognitive Interactions in Old and Young Listeners. Proceedings of the International Ergonomics Association. (July 2006: Maastricht, The Netherlands).

Baldwin, C. L., May, J. F., and Reagan, I. (2006). Auditory In-vehicle messages and Older Drivers. Paper presented at the Human Factors and Ergonomics Society (October 2006: San Francisco, CA).

Reagan, I., and Baldwin, C. L., (2006). Individual Differences in Working Memory, Sense of Direction, and Route-learning. Proceedings of the Human Factors and Ergonomics Society (October 2006: San Francisco, CA).

Baldwin, C. L., Reagan, I., Lawrence, J. H., and Turner, R. T. (2007). Auditory In-vehicle Technologies to Support Older Drivers. Presented at the **5th International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design. (July, 2007) Stevenson, Washington.**

Baldwin, C. L. (2007). Individual differences in Navigation: Implications for display design. (Invited panel address). Human Factors and Ergonomics Society (October 2007: Baltimore, MD).

 Baldwin, C. L. (2008). Sensory contributions to complex working memory span performance. Poster presented at the Cognitive Aging Conference in Atlanta, Georgia – April 2008.

Baldwin, C. L. and Lewis, K. R. (2008). Auditory collision avoidance messages reduce crash probabilities in young drivers. Paper presented at the APA Division 21 Midyear meeting. (March 2008; Fairfax, VA)

Baldwin, C. L., Lewis, K. (2008). Auditory Warnings Reduce Crash Probabilities in Young Drivers. (Presented in September, 2008, New York City). Annual Meeting of the Human Factors and Ergonomics Society.

 Coyne, J. T., Baldwin, C. L., Cole, A. Sibley, C., and Roberts, D. M. (2009). Applying Real Time Physiological Measures of Cognitive Load to Improve Training. Paper presented at Human Computer Interaction International 2009. (July, 2009: San Diego, CA).

Baldwin, C. L., Block, C. K., Taylor, B., Roberts, D., & Barrow, J. (2010). Neurophysiological Indices of Speech Processing Difficulty (March, 2010, Atlanta, GA). *Cognitive Aging Conference*.

 Baldwin, C. L., Coyne, J. T., Roberts, D. M., Barrow, J. H., Cole, A., Sibley, C., Taylor, B., and Buzzell, G. (2010). Prestimulus Alpha as a Precursor to Errors in a UAV Target Orientation Detection Task. (July, 2010, Miami, FL). *Applied Human Factors and Ergonomics*.

 Baldwin, C. L. (2013). Auditory Cognition Individual Differences in Navigation & Auditory Spatial Perception. (February, 2013: Varanasi, India). Symposium on Health and Cognition held at Benares Hindu University.

 Baldwin, C. L. (2013). Mental Workload and Driver State Monitoring Using Electrophysiological, Behavioral, and Subjective Indices. Invited classroom presentation at Bejing Normal University. (April, 2013: Beijing, China).

 Baldwin, C. L. (2013). Neuroergonomics: Driver State Monitoring & Training. Invited classroom presentation at Beijing Normal University. (April, 2013: Beijing, China).

 Clarke, E. G., and Baldwin, C. L. (2014). Restorative Effects of Music and Nature Sounds. Presentation given at the Applied Human Factors and Ergonomics Symposium. (July, 2014: Krakow, Poland.

\**listing only papers presented by C. L. Baldwin up until 2014 at national or international scientific conferences (student presentations are not listed).*

**POSTERS PRESENTED**

Roberts, D\*., Block, C. K.\*, Barrow, J.\*, Taylor, B.\*, Buzzell, G.\*, & Baldwin, C. L. (2010). Effect of stimulus quality on language processing in younger and older adults (Abstract). *Cognitive Neuroscience*. Montreal, Canada.

 Penaranda, N.,\* and Baldwin, C. L. (2010). More can be less: Selecting EEG features for an artificial neural network-based workload classification. In conjunction with the Applied Human Factors and Ergonomics Conference. (poster presentation, July 2010, Miami, FL).

 Garcia, A., and Baldwin, C. L. (2010). Congruent Motion Reduces Simulator Sickness in Driving Simulations. In conjunction with the Applied Human Factors and Ergonomics Conference. (poster presentation, July 2010, Miami, FL).

 Baldwin, C.L., Roberts\*, D.M., George A. Buzzell\*, G.A., Sik Sin, B.\*, Jesso, M.\*, Simpson, B. D., and Iyer, N. (2014). Individual Differences in Change Deafness: Verbal Cognitive Style Aids Detection. Cognitive Neuroscience Society Symposium. (April 2014: Boston, MS).

 Jesso, M.\*, Roberts, D.M.\*, Buzzell, G.A.\*, McDonald, C.G., & Baldwin, C.L. (2015). Electrophysiological evidence for facilitation of auditory change detection with spatialized audio. Annual Meeting of the Cognitive Neuroscience Society. San Francisco, California.

 Roberts, D.M.\*, Barragan, D.\*, and Baldwin, C.L. (2016). Differentiating cognitive states: detection of mind wandering. Annual Meeting of the Cognitive Neuroscience Society. New York City.

Editorial Duties

 Journal of Experimental Psychology: Applied –Associate Editor (2011-2013)

 Frontiers in Psychology – Human Media Interaction– Editorial Board member

 Human Factors – Guest Editor Special Issue

 Frontiers – Guest Editor Special Issue

 Frontiers in Human Neuroscience – Guest Editor Special Issue

International Journal of Human Factors – Associate Editor

Review panels

1. NIH-NIA NIH –(National Institutes of Health) – NIA (National Institute on Aging) Project Review Panel 2011
2. NIH Fellowships: Learning, Memory, Language, Communication and Related Neurosciences 2015 Review Panel (Reviewed 47 applications, prime on 3, 2nd on 4, and 3rd reviewer on 7)
3. NSF 2011 Grant Proposal Review Panel
4. US Israeli Bi-national Grant Competition – Reviewer 2011
5. NIOSH (National Institute for Occupational Safety & Health) Scientific Review Panel Member 2007-2009
6. NASA Proposal Review Panel, 2016
7. Peer Review Panel for the National Center for Construction Safety and Health Research and Translation, 2014

Journals Reviewed for

Human Factors and Ergonomics Journal

Theoretical Issues in Ergonomic Science

Ergonomics

Journal of Transport and Health

Applied Ergonomics

Accident Analysis and Prevention

International Journal of Psychophysiology

Transportation Research – Part F

Frontiers in Aging Neuroscience

International Journal of Information Technology and Decision Making

Frontiers in Human Neuroscience

IEEE-Transactions on Systems, Man and Cybernetics, Part A

International Journal of Human Computer Studies

Journal of Experimental Psychology: Applied

Behavioral Research Methods

Personality and Individual Differences

Psychological Belgica

**PROFESSIONAL MEMBERSHIPS**

 Human Factors and Ergonomics Society (Member)

 International Ergonomics Association – Auditory Ergonomics (Member)

 Psychophysiology in Ergonomics Society (Member)

 International Community of Auditory Displays (Member)

Cognitive Neuroscience Society (Member)

Association for Psychological Science (Member)

Society of Audio Engineers – Human Factors Committee (Member)

**GRADUATE STUDENT SUPERVISON**

*Doctoral Degrees Completed -Chaired*

Joseph Coyne, Dissertation Committee, Chair (Ph.D. completed December 2004) -ODU

Ellen Carpenter, Dissertation Committee Chair (Ph.D. completed June 2008) –ODU

Ian Reagan, Dissertation Committee Chair (Ph.D. completed 2009) - ODU

Gregory Anderson, Dissertation Committee Chair (Ph.D. completed 2014) - GMU

Jane Barrow, Dissertation Committee Chair (Ph.D. completed 2014) - GM

Andre Garcia, Dissertation Committee Chair (Ph.D. completed 2014) - GMU

Bridget A. Lewis, Dissertation Committee Chair (Ph.D. completed 2017) - GMU

Daniel M. Roberts, Dissertation Committee Chair (Ph.D. completed 2018) - GMU

Jesse Eisert, Dissertation Committee Chair (Ph.D. completed 2018) – GMU

Doctoral Degree Major Advisor

Jose Calvo, Qualifying Exam Committee Chair

Dean Cisler, Qualifying Exam Committee Chair

Brian Taylor, Qualifying Exam and Dissertation Chair

*Doctoral Degrees Completed –Committee Member*

Julie Stark, Dissertation Committee member (Ph.D. completed May 2004) -ODU

Jay Hope, Master’s Thesis Committee member (M.S. completed May 2004) -ODU

Mathew Risser, Dissertation Committee member (Ph.D. completed December 2004) –ODU

Olesya Blazhenkova, Dissertation Committee member (Ph.D. completed May 2009). -GMU

Cyrus Foroughi, Dissertation Committee member (Ph.D. completed May 2017) -GMU

Nick Herbert (U of Leeds), External Examiner for Dissertation, (Ph.D. completed 2017 –Unviersity of Leeds

Jeff Wilson, Dissertation Committee member (Ph.D. completed 2016) -Georgia Tech

Thomas Gables, Dissertation Committee member (Ph.D. completed 2017) -Georgia Tech

Haneen Saquer, Dissertation Committee member (Ph.D. completed 2016) -GMU

Christian Gonzalez, Dissertation Committee member (Ph.D. completed 2016) -GMU

Eric Nelson, Dissertation Committee member (Ph.D. completed) -GMU

Melissa Scheldrup, Dissertation Committee member (Ph.D. expected 2018) -GMU

Yi-Fang Tsai, Dissertation Committee member (Ph.D. completed) -GMU

Nicole Werner, Dissertation Committee member (Ph.D. completed 2016) -GMU

*Masters Degrees Completed - Chaired*

Ian Reagan, Thesis Committee Chair (M.S. completed August 2005) -ODU

Colleen Moore, Thesis Committee, Chair (M.S. completed December 2005) -ODU

Cady Block, Thesis Committee, Chair (M.S. completed August 2008) - ODU

Dan Roberts (M.S. completed May 2010) -GMU

Andre Garcia (M.S. completed May 2010) -GMU

*Masters Degrees Completed – Committee Member*

Corey Fallon, Masters Thesis Committee member, (M.S. completed May 2005) -ODU

Gina Bondi, Master Thesis Committee member, (M.S. defense November 2006) -ODU

Randall Spain, Masters Thesis Committee member (M.S. defense November 2007) -ODU

*Graduate Students Supervised at Old Dominion University*

Jennifer Freeman, ABD, Previous Dissertation Committee Chair

Ian Reagan, Guidance Committee Chair, Doctoral Student Advisor

April Rose Panganiban, Masters Thesis Committee, Chair & Doctoral Student Advisor

Katrina Lewis, Masters Thesis Committee, Chair & Masters Student Advisor

Robert Turner, Human Factors Doctoral Student, Advisor

Jeffrey Lawrence, Masters Thesis Committee, Chair & Advisor

Cady Block, First Year Project Supervisor & Masters Student Advisor

*Additional Graduate Student Committee Membership at George Mason University*

Greg Anderson, Qualifying Exam Committee Member, 2008

Yi-Fang Tsai, Qualifying Exam Committee Member, 2009

David Kidd, Qualifying Exam Committee Member, 2010

Jane Barrow, Qualifying Exam Committee Chair, 2010

Jennifer Blackburn, M.A. in ZAL – Interdisciplinary Zoology Program at GMU,

 Thesis Committee Chair, 2010

Erik Nelson, Qualifying Exam Committee Member, 2011

Lindsay Wenger, MA Committee member

Brian Kidwell, Qualifying Exam Committee Member, 2014

Kelly Satterfield, Qualifying Exam Committee Member

Danelia Barrigan, Qualifying Exam Committee Member, 2018

*Graduate Students Committee Membership at Old Dominion University*

Corey Fallon, Guidance Committee member, 2003-2007

Ernesto Bustamante, Guidance Committee member, 2003 - 2007

Carlotta Boone, Dissertation Committee member, 2004 -2008

Betsy Schmidt, Guidance Committee member -ODU

Gary Capabianco, Guidance Committee member -ODU

Kate Selgrade, Guidance Committee member May 2006 -ODU

Jamie (LoVerde) Finamore, Dissertation Committee Chair, -ODU

Jason Pennise, Master’s Thesis Committee member, (Applied Linguistics) -ODU

Courtney Hanley, Master’s Student Advisor

Rebecca Ferris, 1st Year Project Supervisor, 2001-2002.

Suzan Clarke, Directed Readings Supervised, 2002

Veena Nair, Directed Readings Supervised, 2004

*Additional Graduate Student Supervision at George Mason University*

Josh Brown, 2011

John Payne, 2011

Stephanie Pratt, 2011-2012

Matthew Jesso, 2014

Benjamin Ruggeberg, 2014-2015

Eric Engle, 2014

John Gibson, 2014-2015

Donald Tweedie, 2015-2017

Ungela Syed-Egan, 2014-2016

Iian Layne, 2016-2017

Michael Waltrip, 2017

Zachariah Dirazonian, 2017

Randall Drury, 2015-2017

Steven Chong, 2016-2018

**UNDERGRADUATE HONORS and OSCAR RESEARCH SUPVERSISED**

George Buzzell, Honors Project Committee Chair, 2010-2011

Bello (Nick) Penaranda, Honors Project Committee Chair, Spring 2010 –2011

Florianne Efantis, Honors Project Committee member, 2012

Laya Muralidharan, Honors Project Committee member, 2013

Bum (Scott) Sik Sin, Oscar Project Supervisor, 2013-2014

Randall Drury, Oscar Project Supervisor, 2014-2105

Fernando Barrientos Oscar Project Supervisor, 2017-present

**UNDERGRADUATE STUDENT RESEARCH SUPERVISION**

William Anthony Layton, Fall 2007 – Fall 2008

Timothy Hoang, Fall 2007-Spring 2008

Patrick Kessler, Spring 2008

Charles Rong, Spring 2008

Alexandria Wahlstrom, Spring 2008

Chelsea Logan Hagar, Spring 2008

Casey McBurney, Fall 2008-Spring 2009

Sahar Malik, Fall 2008

Sara Bednar, Fall 2008

Cynthia Budala, Fall 2008

George Buzzell, Fall 2009

Israr Mirza – Fall 2009

Blanca Machuca – Fall 2009-Spring 2010

Janet Borne – Fall 2009-Summer 2010

Dane Stewart – Spring 2010

Krista Knudson – Spring 2010

Bello (Nick) Penaranda – Spring 2010-2011

Kate Brynildsen, Summer 2011

Rhonda Ramsey, 2013

Ederlyn Tanango -2012-2013

Farah Al Najar, 2014-2015

Randall Drury, 2014-2015

Steven Chong, 2015-2016

Mohar Eradiri, 2016

Shawn Mulvey, 2016-2017

Ahmed Mouer, 2016

Andrew Flores, 2016

Eslam Hassan -2017

Fernando Barrientos -2017-2019

**SELECTED RECENT MEDIA ENGAGEMENTS AND INTERVIEWS**

Pittburgh Post-Gazette Interview:  [In a story about self-driving cars, Mason’s Carryl Baldwin says humans have a problem ‘monitoring’ things.](http://www.post-gazette.com/news/transportation/2016/09/16/Hodgepodge-of-self-driving-vehicle-laws-raises-safety-concerns/stories/201609150203) (2018)

Atlas Obscura (November 15, 2016)

<https://www.atlasobscura.com/articles/an-alarm-designer-on-how-to-annoy-people-in-the-most-effective-ways>

CNN: Great Big Story- Engineering the Most Annoying Sound Ever – 2017 <https://www.greatbigstory.com/stories/engineering-the-most-annoying-sound-ever>

CBC: As it Happens “Listen to the most annoying sound ever’ – made to warn driver of head on collisions (March 27, 2017)

http://www.cbc.ca/radio/asithappens/as-it-happens-monday-edition-1.4042503/listen-to-the-most-annoying-sound-ever-made-to-warn-drivers-of-head-on-collisions-1.4042506

Security Management –Pay Attention (June 2017, print edition)

<https://sm.asisonline.org/Pages/Pay-Attention.aspx>

Philly Voice (August 31, 2017) Study Finds Daydreaming While Driving Common and Dangerous

**ADDITIONAL SERVICE**

Distracted Driving Task Forces for Delegate Anderson

Presentations given for OLLI – Oscher Life Long Learning 2016, 2018

International Community on Auditory Display – Dissertation ThinkTank Panel – 2018

Transportation Research Board – Workshop Director 2014, 2015, 2018

Human Factors and Ergonomics Society

 Early Career Professionals (**Steering Committee Member** 2009-2011)

 Perception and Performance Technical Group (**Student Paper Award Review Committee)**

Individual Differences Technical Group of Human Factors and Ergonomics Society – Newsletter Editor 2011-2013

Perception and Performance Technical Group of Human Factors and Ergonomics Society –Program Chair – 2015

Technical Program Committee Member for a Workshop on Intelligent vehicular networks (InVeNET 2009) in conjunction with MASS 2009. (Held October 12th, 2009 - Macau SAR, P.R.C.)

FABBS (Federation of Brain and Behavioral Sciences) Appointed Member representing HFES, 2012-2014.

SAE (Society of Automotive Engineers) Appointed Member of the Standards Committee for Controls and Displays, 2012.

Scientific Advisory Committee Member for the 3d International Conference on Affective and Pleasurable Design that will be held in conjunction with the 6th Int Conference on Applied Human Factors and Ergonomics (AHFE July 2015 Caesars Palace Hotel, Las Vegas, Nevada)

Reviewer of Student Submissions for the Perception and Performance TG Scholarship, 2014.

Applied Human Factors and Ergonomics Society -AHFES (2017) – Neuroergonomics track, and Internet of Things track, Program Director

International Conference on Neuroergonomics 2016, 2018 Program Committee Driving Assessment 2013, 2015, 2017 Program Committee

Physiological Computing Systems Conference, Program Committee 2016, 2017, 2018

NSF-Student Think Tank panel member, International Community of Auditory Display 2018

Automotive UI – 2018, Associate Chair

**GMU UNIVERSITY SERVICE**

CHSS Faculty Senate, Parliamentarian and Chair of the Nominations Committee, 2011-2014

CHSS Curriculum Committee – 2017-present

GMU Technology Advisory Committee – 2011-2013

GMU Representative to MITRE –University Research Collaborative Partnership - 2018