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### **Current Appointment**

2012-present. Psychology Department, University of Central Florida. Associate Professor

### **Additional Affiliation**

2006-present. Institute for Simulation and Training, University of Central Florida. Contributing Faculty Member

### **Current Research Interests**

- The interactive effects of task and person characteristics (individual differences) on human performance, workload, and stress associated with signal detection tasks
- Applications of signal detection theory to threat detection tasks in the contexts of monitoring with or without the automated aids
- The role of motivation in human-technology interaction

### **Education**

*Ph.D.* Human Factors/Experimental Psychology, The University of Cincinnati, 1999.  
Title: *Sensory and temporal determinants of workload and stress in sustained attention*  
Dissertation Committee Chair: Joel S. Warm, Ph.D.

*M.A.*, The University of Cincinnati, Department of Psychology, 1997.  
Title: *Intraclass and interclass transfer in training for vigilance*  
Thesis Committee Chair: Joel S. Warm, Ph.D.

*B.S.*, University of Michigan, Chemistry, 1990.

### **Occupational Experience**

2006-2012. Psychology Department, University of Central Florida. Assistant Professor.

2002-2006 Institute for Simulation and Training, University of Central Florida, Research Associate.

1999-2002 Psychology Department, State University of New York at Farmingdale. Assistant Professor.

Fall quarter, 1998, Winter and Spring quarters, 1999. Institute for Data Sciences, University of Cincinnati. Statistical Consultant. Responsible for consulting with graduate students in the University community who require assistance with statistical analyses, research design, and/or data management issues associated with their research.

1991-1995 The Procter & Gamble Company. Research Associate. Responsible for the synthesis of new chemical entities for biological evaluation.

## Publications

Note: Underlined author names were students or post-doctoral researchers working under my supervision at the time of publication.

## Peer Reviewed Journals

- Szalma, J.L.**, & Hancock, P.A. (in press). A signal improvement to signal detection analysis: Fuzzy SDT on the ROCs. *Journal of Experimental Psychology: Human Perception and Performance*.
- Sellers, B., Fiore, S.M., & **Szalma, J.L.** (in press). Developing a scale of environmental efficacy. *The International Journal of Environmental, Cultural, Economic, and Social Sustainability*.
- Szalma, J.L.**, & Hancock, P.A. (2012). What's all the noise? Differentiating dimensions of acoustic stress and the limits to meta-analysis—Reply to Smith (2012). *Psychological Bulletin*, 138, 1269-1273.
- Szalma, J.L.**, & Teo, G.W.L. (2012). Spatial and temporal task characteristics as stress: A test of the dynamic adaptability theory of stress, workload, and performance. *Acta Psychologica*, 139, 471-485.
- Szalma, J.L.** (2011). Workload and stress in vigilance: The impact of display format and task type. *American Journal of Psychology*, 124, 441-454.
- Szalma, J.L.**, & Hancock, P.A. (2011). Noise effects on human performance: A meta-analytic synthesis. *Psychological Bulletin*, 137, 682-707.
- Szalma, J.L.**, & Taylor, G.S. (2011). Individual differences in response to automation: The big five factors of personality. *Journal of Experimental Psychology: Applied*, 17, 71-96.
- Szalma, J.L.** (2009). Individual differences in performance, workload, and stress in sustained attention: Optimism and pessimism. *Personality and Individual Differences*, 47, 444-451.
- Szalma, J.L.** (2009). Individual differences in human-technology interaction: Incorporating variation in human characteristics into human factors research and design. *Theoretical Issues in Ergonomics Science*, 10, 381-397.
- Oron-Gilad, T., **Szalma, J.L.**, Stafford, S.C., & Hancock, P.A. (2008). The workload and performance relationship in the real world: A study of police officers in a field shooting exercise. *International Journal of Occupational Safety and Ergonomics*, 14, 119-131.
- Conway, G., Szalma, J.L., & Hancock, P.A. (2007). A quantitative meta-analytic examination of whole-body vibration effects on human performance. *Ergonomics*, 50, 228-245.
- Hancock, P.A., Mouloua, M., Gilson, R., **Szalma, J.**, & Oron-Gilad, T. (2007). Provocation: Is

- the UAV control ratio the right question? *Ergonomics in Design*, 15, 7, 30-31
- Hancock, P.A., Ross, J.M., & **Szalma, J.L.** (2007). A meta-analysis of performance response under thermal stressors. *Human Factors*, 49, 851-877.
- Szalma, J.L.**, Hancock, P.A., Dember, W.N., & Warm, J.S. (2006). Training for vigilance: The effect of KR format and dispositional optimism and pessimism on performance and stress. *British Journal of Psychology*, 97, 115-135.
- Szalma, J.L.**, Hancock, P.A., Warm, J.S., Dember, W.N., & Parsons, K.S. (2006). Training for vigilance: Using predictive power to evaluate feedback effectiveness, *Human Factors*, 48, 682-692.
- Oron-Gilad, T., **Szalma, J.L.**, Stafford, S.C., & Hancock, P.A. (2005). Police officers seat belt use while on duty. *Transportation Research: Part F*, 8, 1-18.
- Szalma, J.L.**, Warm, J.S., Matthews, G., Dember, W.N., Weiler, E.M., Meier, A., & Eggemeier, F.T. (2004) Effects of sensory modality and task duration on performance, workload, and stress in sustained attention. *Human Factors*, 46, 219-233.
- Hancock, P.A., & **Szalma, J.L.** (2004). On the relevance of qualitative methods for ergonomics. *Theoretical Issues in Ergonomics Science*, 5, 499-506.
- Hancock, P.A., & **Szalma, J.L.** (2003). The future of neuroergonomics. *Theoretical Issues in Ergonomics Science*, 4, 238-249.
- Hancock, P.A., & **Szalma, J.L.** (2003). Operator stress and display design. *Ergonomics in Design*, 11, 13-18.
- Hancock, P.A., & **Szalma, J.L.** (2003). Vigilance and the price of freedom. *Gateway: Human Systems Information Analysis Center*, 13, pp. 5, 20. Available on-line at <http://iac.dtic.mil/hsiac>
- Grier, R.R., Warm, J.S., Dember, W.N., Matthews, G., Galinsky, T.L., **Szalma, J.L.**, & Parasuraman, R. (2003). The vigilance decrement reflects limitations in effortful attention, not mindlessness. *Human Factors*, 45, 349-359.
- Nikolaides, N., Bogdan, S.E., & **Szalma, J.L.** (2002). Preparation of 8-alkyl 7-(2-Imidazolinylamino) Quinolines via palladium mediated alkylations. *Synthetic Communications*, 32, 2027-2033.

## Guest Editor

- Szalma, J.L.** (2009). Guest Editorial: Individual differences: Incorporating human variation into human factors/ergonomics research and practice. *Theoretical Issues in Ergonomics Science*, 10, 377-379.

## Books

- Hoffman, R.R., Hancock, P.A., Scerbo, M.W., Szalma, J.L., & Parasuraman, R. (in press)(Eds.). *The Cambridge handbook of applied perception*. Cambridge: Cambridge University Press.
- Hancock, P.A., & **Szalma, J.L.** (2008)(Eds.), *Performance under stress*. Aldershot, Hampshire, UK: Ashgate.

## Book Chapters

- Bohil, C.J., **Szalma, J.L.**, & Hancock, P.A. (in press). Psychophysical methods and signal detection: Recent advances in theory. In: R.R. Hoffman, P.A. Hancock, M.W. Scerbo,

- J.L. Szalma, and R. Parasuraman (Eds.), *The Cambridge handbook of applied perception*. Cambridge: Cambridge University Press.
- Matthews, G., **Szalma, J.L.**, Panganiban, A.R., Neubauer, C., & Warm, J.S. (in press). Profiling task stress with the Dundee Stress State Questionnaire. In: L. Cavalcanti and S. Azevedo (Eds.), *Psychology of stress: New research*. Hauppauge, NY: Nova Publishers.
- Szalma, J.L.**, & Matthews, G. (in press). Motivation and emotion in sustained attention. In: R.R. Hoffman, P.A. Hancock, M.W. Scerbo, J.L. Szalma, and R. Parasuraman (Eds.), *The Cambridge handbook of applied perception*. Cambridge: Cambridge University Press.
- Szalma, J.L.** (2012). Individual differences in stress, fatigue, and performance. In: G. Matthews, P.A. Desmond, C. Neubauer, and P.A. Hancock (Eds.), *The handbook of operator fatigue* (pp. 75-90). Aldershot, Hampshire, UK: Ashgate.
- Szalma, J.L.**, Hancock, G.M., & Hancock, P.A. (2012). Task loading and stress in human-computer interaction: Theoretical frameworks and mitigation strategies. In: J.A. Jacko (Ed.), *The human-computer interaction handbook: Fundamentals, evolving technologies, and emerging applications, 3<sup>rd</sup> ed* (pp. 55-75). New York: CRC PressTaylor & Francis Group.
- Hancock, P.A., & **Szalma, J.L.** (2008). Stress and performance. In: P.A. Hancock and J.L. Szalma (Eds.), *Performance under stress* (pp. 1-18). Aldershot, Hampshire, UK: Ashgate.
- Szalma, J.L.** (2008). Individual differences in stress reaction. In: P.A. Hancock and J.L. Szalma (Eds.), *Performance under stress* (pp. 323-357). Aldershot, Hampshire, UK: Ashgate.
- Szalma, J.L.**, & Hancock, P.A. (2008). Task loading and stress in human-computer interaction: Theoretical frameworks and mitigation strategies. In: J.A. Jacko and A. Sears (Eds.), *The human-computer interaction handbook: Fundamentals, evolving technologies, and emerging applications, 2<sup>nd</sup> ed.* (pp. 115-132). New York: Erlbaum Taylor & Francis Group.
- Hancock, P.A., Oron-Gilad, T., & **Szalma, J.L.** (2007). Elaborations of the multiple-resource theory of attention. In: A. Kramer, D. Wiegmann, and A. Kirlik (Eds.), *Attention: From theory to practice* (pp. 45-56). Oxford: Oxford University Press.
- Hancock, P.A., & **Szalma, J.L.** (2007). Stress and neuroergonomics. In: R. Parasuraman and M. Rizzo (Eds.), *Neuroergonomics: The brain at work*. (pp. 195-206). Oxford: Oxford University Press.
- Hancock, P.A., **Szalma, J.L.**, & Oron-Gilad, T. (2005). Time, emotion, and the limits to human information processing. In: D.K. McBride and D. Schmorow (Eds.), *Quantifying Human Information Processing* (pp. 157-175). Lanham, MD: Lexington Books.
- Hancock, P.A., **Szalma, J.L.**, & Oron-Gilad, T. (2005). Time, emotion, and the dynamics of information processing in individuals and the organizations they form. In: P. Carayon, M. Robertson, E. Kleiner, and P.L.T. Hoonakker (Eds.), *Human Factors in Organizational Design and Management VIII* (575-580). IEA Press: Santa Monica, CA.
- Oron-Gilad, T., **Szalma, J.L.**, Thropp, J.E., & Hancock, P.A. (2005). Incorporating individual differences into the adaptive automation paradigm. In: P. Carayon, M. Robertson, E. Kleiner, and P.L.T. Hoonakker (Eds.), *Human Factors in Organizational Design and Management VIII*. (pp. 581- 586), IEA Press: Santa Monica, CA.
- Szalma, J.L.**, & Hancock, P.A. (2005). Individual differences in information processing. In: D.K. McBride and D. Schmorow (Eds.), *Quantifying Human Information Processing* (pp. 177-193). Lanham, MD: Lexington Books.
- Szalma, J.L.**, Oron-Gilad, T., & Hancock, P.A. (2005). Individual differences in workload, stress, and coping in police officers engaged in shooting tasks. In: P. Carayon, M.

Robertson, E. Kleiner, and P.L.T. Hoonakker (Eds.), *Human Factors in Organizational Design and Management VIII*. (pp. 587-592), IEA Press: Santa Monica, CA.

**Szalma, J.L.**, Miller, L.C., Hitchcock, E.M., Warm, J.S., & Dember, W.N. (1998). Intraclass and interclass transfer of training for vigilance. In M.W. Scerbo and M. Mouloua (Eds.), *Automation Technology and Human Performance: Current Research and Trends*. (pp. 183-187). Mahwah, NJ: Erlbaum

### Conference Proceedings (Peer Reviewed)

Schmidt, T.N., Teo, G.W.L., Hancock, G.M., Amicarelle, Z., **Szalma, J.L.**, & Hancock, P.A. (in press). Action video game players and vigilance performance. *Proceedings of the Human Factors and Ergonomics Society*, 57.

Teo, G.W.L., Schmidt, T.N., **Szalma, J.L.**, Hancock, G.M., & Hancock, P.A. (in press). The Effects of Feedback in Vigilance Training on Performance, Workload, Stress and Coping. *Proceedings of the Human Factors and Ergonomics Society*, 57.

Schmidt, T.N., Teo, G.W.L., **Szalma, J.L.**, Hancock, G.M., & Hancock, P.A. (2012). The effect of video game play on performance in a vigilance task. *Proceedings of the Human Factors and Ergonomics Society*, 56, 1544-1547

**Szalma, J.L.**, & Teo, G.W.L. (2012). The joint effect of task characteristics and extraversion on the performance, workload, and stress of signal detection. *Proceedings of the Human Factors and Ergonomics Society*, 56, 1054-1058.

Teo, G.W.L., Schmidt, T.N., **Szalma, J.L.**, Hancock, G.M., & Hancock, P.A. (2012). The effect of knowledge of results for training vigilance in a video game-based environment. *Proceedings of the Human Factors and Ergonomics Society*, 56, 1421-1425.

Teo, G.W.L., **Szalma, J.L.**, Schmidt, T.N., Hancock, G.M., & Hancock, P.A. (2012). Evaluating vigilance in a dynamic environment: Methodological issues and proposals. *Proceedings of Human Factors and Ergonomics Society*, 56, 1586-1590.

**Szalma, J.L.**, & O'Connell, M. (2011). Fuzzy signal detection theory: A Monte Carlo investigation. *Proceedings of the Human Factors and Ergonomics Society*, 55, 1366-1369.

**Szalma, J.L.**, Teo, G., Hancock, P.A., & Murphy, J.S. (2011). Knowledge of results and diagnostic power: Implications for vigilance training to support improvised explosive device detection. *Proceedings of the Human Factors and Ergonomics Society*, 55, 1548-1551.

Teo, G. & **Szalma, J.L.** (2011). The effects of task type and source complexity on vigilance performance, workload, and stress. *Proceedings of the Human Factors and Ergonomics Society*, 55, 1180-1184.

Oleson, K.E., Yordon, R.E., **Szalma, J.L.**, & Hancock, P.A. (2011). The evolution of meta-analytic trends: Comparisons across data collection intervals through a specific case context. *Proceedings of the Human Factors and Ergonomics Society*, 55, 1380-1384.

Teo, G., **Szalma, J.L.**, & Schmidt, T. (2011). Predicting performance, subjective states, and coping style in a vigilance task: The role of individual differences. *Proceedings of the Human Factors and Ergonomics Society*, 55, 1467-1471.

**Szalma, J.L.**, & Hancock, P.A. (2010). A meta-analytic review of the effects of noise on performance: Moderating effects of task and noise characteristics. *Proceedings of the Human Factors and Ergonomics Society*, 54, 1660-1664.

**Szalma, J.L.**, & Teo, G.W.L. (2010). The joint effect of task characteristics and neuroticism on the performance, workload, and stress of signal detection. *Proceedings of the Human Factors and Ergonomics Society*, 54, 1052-1056.

- Teo, G.W.L., & **Szalma, J.L.** (2010). The effect of spatial and temporal task characteristics on performance, workload, and stress. *Proceedings of the Human Factors and Ergonomics Society*, 54, 1699-1703.
- Taylor, G.S., & **Szalma, J.L.** (2009). The effects of the adaptability and reliability of automation on performance, stress, and workload. *Proceedings of the Human Factors and Ergonomics Society*, 53, 160-164.
- Warm, J.S., Finomore, V., Shaw, T.H., Funke, M.E., Hausen, M.J., Matthews, G., Taylor, P., Vidulich, M.A., Repperger, D.W., **Szalma, J.L.**, & Hancock, P.A. (2009). Effects training with knowledge of results on diagnosticity in vigilance performance. *Proceedings of the Human Factors and Ergonomics Society*, 53, 1066-1070.
- Ross, J.M., **Szalma, J.L.**, Hancock, P.A., Barnett, J.S., & Taylor, G. (2008). The effect of automation reliability on user automation trust and reliance in a search-and-rescue scenario. *Proceedings of the Human Factors and Ergonomics Society*, 52, 1340-1344.
- Szalma, J.L.**, Hancock, P.A., & Quinn, S. (2008). A meta-analysis of the effect of time pressure on human performance. *Proceedings of the Human Factors and Ergonomics Society*, 52, 1513-1516.
- Szalma, J.L.**, Thropp, J.E., & Hancock, P.A. (2008). Combining spatial and temporal task demands: Effects on performance, workload, and stress. *Proceedings of the Human Factors and Ergonomics Society*, 52, 1238-1242.
- Ross, J.M., **Szalma, J.L.**, & Hancock, P.A. (2007). Empirical examination of trust in automation across multiple agents in a search and rescue operation. *Proceedings of the Human Factors and Ergonomics Society*, 51, 1501-1505.
- Conway, G., **Szalma, J.L.**, Saxton, B., & Hancock, P.A. (2006). The effects of whole-body vibration on human performance: A meta-analytic examination. *Proceedings of the Human Factors and Ergonomics Society*, 50, 1741-1745.
- Ross, J.M., **Szalma, J.L.**, & Hancock, P.A. (2006). A meta-analysis of performance under thermal stress. *Proceedings of the Human Factors and Ergonomics Society*, 50, 1736-1740.
- Szalma, J.L.**, & Hancock, P.A. (2006). Performance, workload, and stress in vigilance: The power of choice. *Proceedings of the Human Factors and Ergonomics Society*, 50, 1609-1613.
- Szalma, J.L.**, Oron-Gilad, T., Saxton, B., & Hancock, P.A. (2006). Application of fuzzy signal detection theory to the discrimination of morphed tank images. *Proceedings of the Human Factors and Ergonomics Society*, 50, 1716-1720.
- Delos Santos, K., Stafford, S., **Szalma, J.**, Oron-Gilad, & T., Hancock, P. (2005). Evaluation of threat by police officers: Initial findings. *Proceedings of the Human Factors and Ergonomics Society*, 49, 846-849.
- Burke, K., **Szalma, J.**, Oron-Gilad, T., Duley, A., & Hancock, P.A. (2005). Testing the efficiency and effectiveness of soldier performance under increasing task demand. *Proceedings of the Human Factors and Ergonomics Society*, 49, 2119-2123.
- Greenwood-Ericksen, A., Oron-Gilad, T., **Szalma, J.L.**, Stafford, S., & Hancock, P.A. (2004). Workload and performance: A field evaluation in a police shooting range. *Proceedings of the Human Factors and Ergonomics Society*, 48, 1953-1957.
- Murphy, L., **Szalma, J.L.**, & Hancock, P.A. (2004). Comparison of fuzzy signal detection and traditional signal detection theory: Analysis of duration discrimination of brief light flashes. *Proceedings of the Human Factors and Ergonomics Society*, 48, 2494-2498.
- Ross, J.M., **Szalma, J.L.**, & Hancock, P.A. (2004). The impact of dispositional optimism and

- pessimism on stress as a function of psychophysical task characteristics. *Proceedings of the Human Factors and Ergonomics Society*, 48, 1233-1237.
- Stafford, S.C., Oron-Gilad, T., Szalma, J.L., & Hancock, P.A. (2004). Individual differences related to shooting performance in a police night-training shooting exercise. *Proceedings of the Human Factors and Ergonomics Society*, 48, 1131-1135.
- Thropp, J.E., Szalma, J.L., & Hancock, P.A. (2004). Performance operating characteristics for spatial and temporal discriminations: Common or separate capacities? *Proceedings of the Human Factors and Ergonomics Society*, 48, 1880-1884.
- Ganey, H.C.N., Szalma, J.L., Hancock, P.A., Mouloua, M., Connolly, A., Dalton, J., & Davis, F. (2003). The role of choice and individual differences in the mitigation of noise and task stressors in vigilance. *Proceedings of the Human Factors and Ergonomics Society*, 47, 1078-1081.
- Murphy, L., Szalma, J.L., & Hancock, P.A. (2003). Comparison of fuzzy signal detection and traditional signal detection theory: Approaches to performance measurement. *Proceedings of the Human Factors and Ergonomics Society*, 47, 1967-1971.
- Ross, J.M., Szalma, J.L., Thropp, J.E., & Hancock, P.A. (2003). Performance, workload, and stress correlates of temporal and spatial task demands. *Proceedings of the Human Factors and Ergonomics Society*, 47, 1712-1716.
- Stafford, S.C., Szalma, J.L., Hancock, P.A., & Mouloua, M. (2003). Application of fuzzy signal detection theory to vigilance: The effect of criterion shifts. *Proceedings of the Human Factors and Ergonomics Society*, 47, 1678-1682.
- Thropp, J.E., Szalma, J.L., Ross, J.M., & Hancock, P.A. (2003). Individual differences in dispositional pessimism, stress, and coping as a function of task type. *Proceedings of the Human Factors and Ergonomics Society*, 47, 1073-1077.
- Ward, P., Hancock, P.A., Ganey, H.C.N., & Szalma, J.L. (2003). Naturalistic driving: User and task analysis. *Proceedings of the 2<sup>nd</sup> International Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design*, 70-72.
- Hancock, P.A., Ganey, H.C.N., & Szalma, J.L. (2002). Performance under stress: A re-evaluation of a foundational law of psychology. *Proceedings of the 23<sup>rd</sup> Army Science Conference*, Orlando FL.
- Hancock, P.A., Szalma, J.L., & Weaver (2002). The distortion of perceptual space-time under stress. *Proceedings of the 23<sup>rd</sup> Army Science Conference*, Orlando FL.
- Hancock, P.A., Ward, P., Szalma, J.L., Stafford, S., & Ganey, H.C.N. (2002). Stress and human information processing: A descriptive framework presented in a novel manner. *Proceedings of the 23<sup>rd</sup> Army Science Conference*, Orlando FL.
- Szalma, J.L. (2002). Workload and stress of configural displays in vigilance tasks. *Proceedings of the Human Factors and Ergonomics Society*, 46, 1536-1540.
- Szalma, J.L. (2002). Individual differences in the stress and workload of sustained attention. *Proceedings of the Human Factors and Ergonomics Society*, 46, 1002-1006.
- Szalma, J.L., Parsons, K.S., Warm, J.S., & Dember, W.N. (2000). Continuous vs. partial knowledge of results in training for vigilance. *Proceedings of the XIV<sup>th</sup> Triennial Congress of the International Ergonomics Association and the Human Factors Society*, 44, (pp. 3-386 – 3-389).
- Szalma, J.L., Warm, J.S., Matthews, G., Dember, W.N., Weiler, E.M., Meier, A., & Eggemeier, F.T. (1999) Sensory determinants of workload and stress in sustained attention. *Proceedings of the Human Factors Society*, 43, 1289-1293.

## Technical Reports

- Duley, A.R., Flynn, J., Abich, J., Drabik, H., **Szalma, J.L.**, & Hancock, P.A. (2007). *Collaborative Technologies and their effect on operator workload in BMC<sup>2</sup> domains*. Technical Report AFRL-HE-WP-TR-2007-0054. Orlando, FL, June. [<http://handle.dtic.mil/100.2/ADA470708>]
- Hancock, P.A., Conway, G., & **Szalma, J.L.** (2005). *The incorporation of comprehensive vibration effects into IMPRINT*. Technical report DAAD-19-01-C-0065, UCF-MIT-ARL-05-02. Orlando, FL, April.
- Hancock, P.A., Ross, J.M., Oron-Gilad, T., & **Szalma, J.L.** (2005). *The Incorporation of Comprehensive Thermal Stress Effects into IMPRINT*. Technical Report DAAD-19-01-C-0065, UCF-MIT-ARL-05-01. Orlando, FL, April.
- Hancock, P.A., Conway, G., & **Szalma, J.L.** (2006). *A Meta-Analysis of Noise Effects on Operator Performance for IMPRINT*. Technical Report DAAD-19-01-C-0065, UCF-MIT-ARL-06-01. Orlando, FL, June.
- Hancock, P.A., **Szalma, J.L.**, & van Driel, M. (2007). *A review of literatures*. Defense Equal Opportunity Management Institute Internal Report CCC-07-1. Orlando, FL, winter.
- Hancock, P.A., **Szalma, J.L.**, & van Driel, M. (2007). *An initial framework for enhancing cultural competency*. Defense Equal Opportunity Management Institute Internal Report CCC-07-2. Orlando, FL, winter.
- Szalma, J.L.**, & Hancock, P.A. (2008). *The Department of Defense's assessment for cross-cultural proficiency training related to emerging languages*. Unpublished Report to DEOMI. Patrick AFB: The Behavioral Consultant Group.
- Szalma, J.L.**, Teo, G., & Schmidt, T. (2011). *Individual differences in sustained attention: Identifying operators with superior vigilance*. Unpublished Report to Air Force Research Laboratory. Wright-Patterson AFB: Performance Research Laboratory, UCF.

## Presentations and Symposia (Peer Reviewed)

- Szalma, J.L.** (2012, August). *Individual differences research and application in human factors*. Paper presented at the 2012 American Psychological Association Annual Convention, Orlando, FL.
- Schmidt, T.N., Teo, G.W.L., Hancock, G.M., **Szalma, J.L.**, & Hancock, P.A. (2012, August). *IED detection under alerted conditions in a videogame based environment using a two-alternative forced choice task*. Paper presented at the 2012 American Psychological Association Annual Convention, Orlando, FL.
- Schmidt, T.N., Teo, G.W.L., Hancock, G.M., **Szalma, J.L.**, & Hancock, P.A. (2012, August). *Event rate through a dynamic videogame environment in a vigilance task*. Paper presented at the 2012 American Psychological Association Annual Convention, Orlando, FL.
- Teo, G.W.L., Hancock, G.M., Schmidt, T.N., **Szalma, J.L.**, & Hancock, P.A. (2012, August). *The effects of knowledge of results on vigilance training*. Paper presented at the 2012 American Psychological Association Annual Convention, Orlando, FL.
- Szalma, J.L.**, Hancock, G.M., Schmidt, T.N., Teo, G.W.L., & Hancock, P.A. (2012, May). *Sustained attention can be trained using a video game-based task*. Poster presented at the Association for Psychological Science Annual Convention, Chicago, IL.



- Jacobson, C., Oleson, K.E., **Szalma, J.L.**, & Hancock, P.A. (2011, April). *Examining the effects of optimism while under stress*. Paper presented at the 2011 Student Conference on Human Factors and Applied Psychology, Daytona, FL.
- Szalma, J.L.**, & Hancock, P.A. (2010, October). *Individual differences in response to automation as a function of dispositional trust*. Paper presented at the annual meeting of the Human Factors and Ergonomics Society European Chapter: Human Centered Automation, Berlin, Germany.
- Szalma, J.L.**, Teo, G.W.L., & Hancock, P.A. (2010, October). *Knowledge of results and diagnostic power: Implications for vigilance training to support improvised explosive device detection using automated aids*. Poster presented at the annual meeting of the Human Factors and Ergonomics Society European Chapter: Human Centered Automation, Berlin, Germany.
- Szalma, J.L.**, & Teo, G.W.L. (2010, August). *Cognitive performance under stress: A test of the maximal adaptability model of Hancock and Warm (1989)*. Paper presented at the 2010 American Psychological Association Annual Convention, San Diego, CA.
- Szalma, J.L.**, & Taylor, G. (2009, July). *Individual differences in stress and workload response to adaptive automation*. Paper presented at the 14<sup>th</sup> Biennial Meeting of the International Society for the Study of Individual Differences, Evanston, IL.
- Szalma, J.L.**, Hancock, P.A., & McDonald, D.P. (2009, February). *Attitude of military personnel to the challenge of culture: Initial findings*. Conference Proceedings of the 7<sup>th</sup> Biennial Equal Opportunity, Diversity and Culture Research Symposium, DEOMI, Patrick AFB, Cocoa Beach, FL.
- Van Driel, M., McDonald, D. Crepeau, L.J., Parks, K., Marcum, R., McGuire, W.G.  
**Szalma, J.L.**, & Hancock, P.A. (2008). Cultural competencies for global collaboration. In: *Conference Proceedings of the XIXth International Congress of the International Association for Cross-Cultural Psychology*, Bremen, Germany, July.
- Szalma, J.L.** (2007, October). *The psychometric approach to individual differences: Implications for human factors research and practice*. Paper presented at the 2007 Annual Meeting of the Human Factors and Ergonomics Society, Baltimore, MD.
- Hancock, P.A., **Szalma, J.L.**, Koltko-Rivera, M., & Vincenzi, D. (2006, October) *Application of fuzzy signal detection theory to threat detection in extreme environments*. Paper presented at the Society for Human Performance in Extreme Environments, San Francisco, CA.
- Ross, J., Conway, G., **Szalma, J.L.**, Saxton, B., Braczyk, A., & Hancock, P.A. (2006, October) *A meta-analysis of periodic noise stress on human performance*. Paper presented at the Society for Human Performance in Extreme Environments, San Francisco, CA.
- Thropp, J., Oron-Gilad, T., **Szalma, J.L.**, & Hancock, P.A. (2006, October). *Low and high levels of attentional control in adaptive automation*. Paper presented at the 50<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society, San Francisco, CA.
- Szalma, J.L.**, & Hancock, P.A. (2006, November). *Fuzzy signal detection theory: Tests of assumptions and comparison to traditional analyses*. Poster presented at the 47<sup>th</sup> annual meeting of the Psychonomic Society, Houston, TX.
- Szalma, J.L.**, & Hancock, P.A. (2006, November). *Fuzzy signal detection theory and human performance: A review of empirical evidence for model validity*. Paper presented at the annual meeting of the Human Factors and Ergonomics Society European Chapter: Human Factors Issues in Complex System Performance, Sheffield, UK.

- Szalma, J.L., & Hancock, P.A.** (2006, November). *Understanding performance, workload, and stress: An individual differences perspective*. Poster presented at the annual meeting of the Human Factors and Ergonomics Society European Chapter: Human Factors Issues in Complex System Performance, Sheffield, UK.
- Szalma, J.L.** (2005, September). Application of theories of motivation and emotion to Hedonomics. In: T. Oron-Gilad (Chair) and P.A. Hancock (Co-Chair). *The role of Hedonomics in the future of industry, service, and product design*. Symposium panel conducted at the 49<sup>th</sup> annual meeting of the Human Factors and Ergonomics Society, Orlando, FL.
- Thropp, J., Szalma, J., & Hancock, P.** (2005, September). *Comparison of spatial and temporal discrimination performance across various difficulty levels*. Poster presented at the 49<sup>th</sup> annual meeting of the Human Factors and Ergonomics Society, Orlando, FL.
- Thropp, J.E., Oron-Gilad, T., Szalma, J.L., & Hancock, P.A.** (2005, August). *Incorporating individual differences into the adaptive automation paradigm*. Paper presented at the 2005 American Psychological Association Annual Convention, Washington, D.C.
- Hancock, P.A., & Szalma, J.L.** (2005, August). *Marriage of mind and machine: Advanced human-machine interaction*. Paper presented at the 2005 American Psychological Association Annual Convention, Washington, D.C.
- Ross, J.M., Szalma, J.L., & Hancock, P.A.** (2005, March). *Meta-analytic review of the effects of temperature on performance*. Paper presented at the 2005 American Psychological Association Division 21/19 & Human Factors and Ergonomics Society Potomac Chapter Annual Symposium on Applied Experimental Research, George Mason University, Fairfax, VA.
- Morgan, J.F., Oron-Gilad, T., Hancock, P.A., & Szalma, J.L.** (2005, March). *Perception of morphed objects: Generating psychophysical functions for the evolution of a shape*. Paper presented at the 2005 American Psychological Association Division 21/19 & Human Factors and Ergonomics Society Potomac Chapter Annual Symposium on Applied Experimental Research, George Mason University, Fairfax, VA.
- Stafford, S.C., Oron-Gilad, T., Szalma, J.L., Delos Santos, K., & Hancock, P.A.** (2004, November). *Attitude toward seatbelt usage among police officers*, ICTTP, Nottingham England, 2004.
- Szalma, J.L., Ross, J.M., & Hancock, P.A.** (2004, July). *The influence of Dispositional Optimism and Pessimism on Task Engagement for Spatial and Temporal Discrimination*. Paper presented at the 2004 American Psychological Association Annual Convention, Honolulu, Hawaii.
- Szalma, J.L., & Hancock, P.A.** (2004, July). *Alternatives to Grouping Individuals in the Analysis of Individual Differences Data: Applications to Dispositional Pessimism*. Poster presented at the 2004 American Psychological Association Annual Convention, Honolulu, Hawaii.
- Szalma, J.L., Stafford, S.C., Oron-Gilad, T., Delos Santos, K., & Hancock, P.A.** (2004, July). *Attitudes of Police Officers Toward Seat Belt Use While on Duty*. Paper presented at the 2004 American Psychological Association Annual Convention, Honolulu, Hawaii.
- Ross, J.M., Szalma, J.L., & Hancock, P.A.** (2004, March). *Effects of Spatial/Temporal Task Demands on False Alarms*. Poster presented at the 2004 American Psychological Association Division 21/19 Mid-Year Symposium, Engineering and Military Psychology: Improving Lives and Enhancing National Security. Ft. Belvoir, VA.

- Stafford, S.C., Oron-Gilad, T., **Szalma, J.L.**, Delos Santos, K., & Hancock, P.A. (2004, March). *Improving Seatbelts for Police and Military Personnel*. Paper presented at the 2004 American Psychological Association Division 21/19 Mid-Year Symposium, Engineering and Military Psychology: Improving Lives and Enhancing National Security. Ft. Belvoir, VA.
- Thropp, J.E., **Szalma, J.L.**, Ross, J.M., & Hancock, P.A. (2004, March). *Impact of Extraversion on Performance and Workload in Target Detection*. Paper presented at the 2004 American Psychological Association Division 21/19 Mid-Year Symposium, Engineering and Military Psychology: Improving Lives and Enhancing National Security. Ft. Belvoir, VA.
- Ward, P., **Szalma, J.L.**, & Hancock, P.A. (2003, October). *The stress and performance relationship and the effect of performance moderators*. Poster presented at the 47<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society, Denver, CO.
- Ward, P., Hancock, P.A., Ganey, H.C.N., Mouloua, M., & **Szalma, J.L.** (2003, August). *The task of modeling driver performance*. Paper presented at the Congress of the International Ergonomics Association, Seoul, South Korea.
- Hancock, P.A., Ganey, H.C.N., & **Szalma, J.L.** (2003, August). *Stress and performance: Contrasting different descriptive relationships*. Paper presented at the Congress of the International Ergonomics Association, Seoul, South Korea.
- Szalma, J.L.**, & Hancock, P.A. (2003, May). *Fuzzy signal detection theory: Capturing the uncertainty in natural decision making*. Poster presented at the 6<sup>th</sup> International Conference on Natural Decision Making, Pensacola, FL.
- Szalma, J.L.**, Hancock, P.A., Weaver, J.L., Mouloua, M., & Stafford, S.C. (2003, March). *Applications of fuzzy signal detection theory to law enforcement*. Paper presented at the 49<sup>th</sup> annual meeting of the Southeastern Psychological Association, New Orleans, LA.
- Ross, J.M., **Szalma, J.L.**, Thropp, J., & Hancock, P.A. (2003, March). *Performance, workload, and stress with temporal and spatial task demands*. Poster presented at the Mid-Year Symposium of Division 21: Applied Experimental and Engineering Psychology, Division 19: Military Psychology of the American Psychological Association and the Potomac Chapter of the Human Factors and Ergonomics Society: Contemporary and Emerging Issues in Human Factors, Engineering and Military Psychology, Ft. Belvoir, VA.
- Murphy, L.L., **Szalma, J.L.**, Hancock, P.A., & Stafford, S.C. (2003, March). *Comparison of methods of analyses from fuzzy and traditional signal detection theory*. Poster presented at the Mid-Year Symposium of Division 21: Applied Experimental and Engineering Psychology, Division 19: Military Psychology of the American Psychological Association and the Potomac Chapter of the Human Factors and Ergonomics Society: Contemporary and Emerging Issues in Human Factors, Engineering and Military Psychology, Ft. Belvoir, VA.
- Szalma, J.L.**, Ward, P., & Hancock, P.A. (2003, March). *Application of fuzzy signal detection theory to the evaluation of performance under stress*. Paper presented at the Mid-Year Symposium of Division 21: Applied Experimental and Engineering Psychology, Division 19: Military Psychology of the American Psychological Association and the Potomac Chapter of the Human Factors and Ergonomics Society: Contemporary and Emerging Issues in Human Factors, Engineering and Military Psychology, Ft. Belvoir, VA.
- Ward, P., **Szalma, J.L.**, & Hancock, P.A. (2003). *Predicting performance under stressful conditions: A theoretical and empirical approach*. Paper presented at the Mid-Year Symposium of Division 21: Applied Experimental and Engineering Psychology, Division 19: Military Psychology of the American Psychological Association and the Potomac Chapter of the Human Factors and Ergonomics Society: Contemporary and Emerging Issues

- in Human Factors, Engineering and Military Psychology, Ft. Belvoir, VA.
- Hancock, P.A., **Szalma, J.L.**, Mouloua, M., & Stafford, S. (2002, October). *Defeating terrorism using human factors/ergonomics*. Poster presented at the 46<sup>th</sup> annual meeting of the Human Factors and Ergonomics Society, Baltimore, MD.
- Szalma, J.L.**, Hancock, P.A., Mouloua, M., & Parasuraman, R. (2002). *Applications of fuzzy signal detection theory to responses to terrorism*. Poster presented at the 46<sup>th</sup> annual meeting of the Human Factors and Ergonomics Society, Baltimore, MD.
- Grier, R.R., **Szalma, J.L.**, Warm, J.S., Dember, W.N., Galinsky, T.L., & Parasuraman, R. (1999, April). *Vigilance: Mindlessness or Mindfulness?* Paper presented at the 91st annual meeting of the Southern Society for Philosophy and Psychology, Louisville, KY.
- Meyers, W.R., Gerety, C.A., **Szalma, J.L.**, Dember, W.N., & Elmore, A.L. (1998). *Jean-Marie Le Pen, Vladimir Zhirinovskiy, and the world press*. Paper presented at the 21st Annual Scientific meeting of the International Society of Political Psychology, Montreal, Canada, July, 1998.

### Presentations and Symposia (Invited)

- Andre, A.D., Parasuraman, R., Rantanen, E.M., **Szalma, J.L.**, & Durso, F.T. (2012, October). *Past president's forum—Our future HF/E professors and researchers: Is anyone in the pipeline?* Discussion Panel presented at the 2012 Annual Meeting of the Human Factors and Ergonomics Society, Boston, MA.
- Szalma, J.L.**, Duley, A., Flynn, J., & Hancock, P.A. (2007, May). *Collaborative technologies and their effect on operator workload in BMC<sup>2</sup> domains*. Paper presented at the 2007 International Symposium on Collaborative Technologies and Systems, Orlando, Florida.
- Hancock, P.A., **Szalma, J.L.**, Ross, K.G., & Merlo, J.L. (2007, January). *Detecting danger in uncertain circumstances: Applying fuzzy signal detection theory to understanding cultural cues*. Paper presented at the 6<sup>th</sup> Biennial Equal Opportunity/Equal Employment Opportunity Research Symposium, Defense Equal Opportunity Management Institute, Patrick Air Force Base, Florida.
- Szalma, J.L.**, Oron-Gilad, T., & Hancock, P.A. (2005, May). *Stress, workload, and the detection of threat*. Paper presented at the ARO Workshop-Symposium on Bugging Bugs and Brains: Communication and Applications from Cellular Internals to Mental Contents, Cashiers, NC.
- Szalma, J.L.**, Oron-Gilad, T., & Hancock, P.A. (2004, September). Examination of attentional mechanism underlying stress and performance. In C.S. Burke (Chair) and P.A. Hancock (Co-chair), *Stress effects on soldier performance*. Symposium panel discussion conducted at the 48<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society, New Orleans, LA.
- Szalma, J.L.** (2004, July). *Fuzzy signal detection theory and human performance assessment*. Paper presented at the invited Workshop on Modeling Stress Effects for Performance Predictions, Orlando, FL.
- Oron-Gilad, T., **Szalma, J.L.**, & Hancock, P.A. (2004, July). *Scalable operator control units (OCU's) for future force warrior (FFW) operations*. Paper presented at the invited Workshop on Modeling Stress Effects for Performance Predictions, Orlando, FL.
- Szalma, J.L.**, Stafford, S.C., Oron-Gilad, T., Murphy, L.L., & Hancock, P.A. (2004, April). *Fuzzy signal detection theory: Basic and applied research*. Paper presented at the International Conference on Human Performance, Orlando, FL.

- Szalma, J.L., Ross, J.M., Thropp, J.E., & Hancock, P.A.** (2004, April). *Distortion of spatial and temporal perception under stress*. Paper presented at the International Conference on Human Performance, Orlando, FL.
- Hancock, P.A., **Szalma, J.L.**, Oron-Gilad, T., Mouloua, M., Gilson, R.D., & the MURI-OPUS Group. (2004, April). *Operator performance under stress: A multiple university research initiative*. Paper presented at the International Conference on Human Performance, Orlando, FL.
- Oron-Gilad, T., **Szalma, J.L.**, & Hancock, P.A. (2004, April). *Stress and performance in virtual environments*. Paper presented at the ARO Workshop-Symposium on Sensing and Processing by Neuronal and Microbial Communities, Cashiers, NC.
- Szalma, J.L.**, Oron-Gilad, T., & Hancock, P.A. (2004, April). *Examination of attentional mechanism underlying stress and performance*. Paper presented at the ARO Workshop-Symposium on Sensing and Processing by Neuronal and Microbial Communities, Cashiers, NC.
- Szalma, J.L.** & Hancock, P.A. (2004, March). Expertise and performance under stress. In S. Fiore (Chair), *From the Perceptual to the Organizational: How can the science of expertise better inform the practice of human performance?* Symposium panel discussion conducted at the Human Performance, Situation Awareness, and automation Conference, Daytona Beach, FL.
- Szalma, J.L.** (2003, October). Analysis of individual differences data: Alternatives to ANOVA. In W. Karwowski (Chair) and H.M. Cuevas (Co-chair), *Considering the importance of individual differences in human factors research: No longer simply confounding noise*. Symposium panel discussion conducted at the 47<sup>th</sup> annual meeting of the Human Factors and Ergonomics Society, Denver, CO.
- Szalma, J.L.**, Ward, P., & Hancock, P.A. (2003, April). *Fuzzy signal detection theory: Initial evidence for a novel approach to evaluation of decision-making under uncertainty*. Paper presented at the U.S. Army Research Office Workshop, Seeing Both the Scene and Unseen: Human Sight and Microscopic Studies. Cashiers, North Carolina.
- Szalma, J.L.**, Hancock, P.A., & Weaver, J.L. (2003, April). Development of a theory of stress and attentional narrowing. In G. Matthews (Chair) and J.L. Szalma (Co-chair), *Developing the cognitive theory of stress and performance*. Symposium conducted at the 95<sup>th</sup> annual meeting of the Southern Society for Philosophy and Psychology, Atlanta, GA.
- Ward, P., **Szalma, J.L.**, & Hancock, P.A. (2003, April). *Adaptive experts and automaticity: Explanations of failing under pressure*. Paper presented at the U.S. Army Research Office Workshop, Seeing Both the Scene and Unseen: Human Sight and Microscopic Studies. Cashiers, North Carolina.
- Ward, P., **Szalma, J.L.**, & Hancock, P.A. (2003, April). Expertise: A long term adaptation to stress? In: G. Matthews (Chair) and J.L. Szalma (Co-chair), *Developing the cognitive theory of stress and performance*. Symposium conducted at the 95<sup>th</sup> annual meeting of the Southern Society for Philosophy and Psychology, Atlanta, GA.
- Hancock, P.A., **Szalma, J.L.**, & Mouloua, M. (2003, March). Applications of psychology to homeland security. In: J.L. Szalma (Chair), *Applications of psychology to homeland defense*. Symposium conducted at the 49<sup>th</sup> annual meeting of the Southeastern Psychological Association, New Orleans, LA.
- Szalma, J.L.**, Hancock, P.A., & Mouloua, M. (2003, March). Application of Fuzzy Signal Detection Theory to Homeland Defense. In: J.L. Szalma (Chair), *Applications of psychology*

*to homeland defense*. Symposium conducted at the 49<sup>th</sup> annual meeting of the Southeastern Psychological Association, New Orleans, LA.

## Newsletter Articles

**Szalma, J.L.** (2007). Neural, genetic, cognitive, and psychometric approaches to individual differences. *HFES Bulletin*, 50, 4.

## White Papers

Hancock, P.A., **Szalma, J.L.**, & Weaver, J.L. (2002). *The distortion of perceptual space-time under stress*. Unpublished white paper, MIT<sup>2</sup> Laboratory, University of Central Florida. Available at [www.mit.ucf.edu](http://www.mit.ucf.edu)

**Szalma, J.L.**, & Hancock, P.A. (2002). *On mental resources and performance under stress*. Unpublished white paper, MIT<sup>2</sup> Laboratory, University of Central Florida. Available at [www.mit.ucf.edu](http://www.mit.ucf.edu)

Ward, P., **Szalma, J.L.**, & Hancock, P.A. (2003). *Stress, human information processing, and performance mediators: Application of a descriptive framework to current modeling tools*. Unpublished white paper, MIT<sup>2</sup> Laboratory, University of Central Florida. Available at [www.mit.ucf.edu](http://www.mit.ucf.edu)

## Manuscripts Submitted or in Preparation

O'Connell, M.E., & **Szalma, J.L.** *Fuzzy signal detection theory: Comparison of two response bias manipulations for ROC analysis*. Manuscript submitted to *Attention, Perception, and Psychophysics*.

**Szalma, J.L.** *Automated technology for autonomous humans: Motivational design principles for human-technology interaction*. Manuscript submitted to *Human Factors*. Revise and Resubmit

**Szalma, J.L.** *Individual differences in response to automation: Interactive effects of automation reliability and interpersonal trust*. Manuscript in preparation.

**Szalma, J.L.** *Stress and human performance: A theoretical integration*. Manuscript in preparation.

**Szalma, J.L.**, & O'Connell, M.E. *Fuzzy signal detection theory: A Monte Carlo investigation*. Manuscript in preparation.

**Szalma, J.L.**, & Teo, G.W.L. *Interactive effects of affective traits and task characteristics in sustained attention*. Manuscript in preparation.

## Symposia Chaired

*Developing the Cognitive Theory of Stress and Performance* (Co-chair). 95<sup>th</sup> annual meeting of the Southern Society for Philosophy and Psychology, April, 2003

*Applications of Psychology to Homeland Defense*. 49<sup>th</sup> annual meeting of the Southeastern Psychological Association, March, 2003.

## Grants

University of Central Florida

- 1) Principal Investigator, *Training for Vigilance in a Videogame-based Environment: The Effectiveness of Knowledge of Results and Diagnosticity of Feedback on Performance, Workload, and Stress*, \$398,472.00. Funding Agency: Army Research Institute. Period of Performance: March, 2011-March 2013.

Main Goal: To develop a training module for sustained attention based on vigilance theory and research. The project would utilize signal detection scenarios in the Virtual Battlefield Space (VBS2) software using stimuli with features similar to those of critical signals will be included in the scenarios as distracters. The proposed research would result in the creation of VBS2 module that trains soldiers to improve their vigilance skills.

- 2) Principal Investigator, *Individual Differences in Sustained Attention: Identifying Operators with Superior Vigilance*, \$31,718.00. Funding Agency: Ball Aerospace, Inc., on behalf of the Air Force Research Laboratory. Agency Contract Number: Period of Performance: 03/8/2010-12/31/2010

Main Goal: To identify the operator characteristics associated with superior vigilance performance and resistance to the negative effects of workload and stress. Note that with respect to person characteristics, much of individual differences research in vigilance (and in cognitive performance generally) have examined traits in isolation, and have rarely examined them together. Hence, a goal for the proposed research will be to identify relevant *trait profiles* via regression and structural equation modeling for predicting vigilance performance. In addition, this project extends the analysis of vigilance performance to include measures of diagnostic power and how variations in task and person characteristics influence the diagnostic power of observers.

- 3) Principal Investigator, *Adaptive Automation in Human-Agent Teams: The Effects of Role Change, Task Demand, & Operator Characteristics*, \$74,765. Funding Agency: U.S. Army Research Laboratory. Agency Contract Number: W911NF0620041. Period of Performance: 8/1/2006 – 8/31/2007.

Main Goal: To investigate the interactive effects of adaptive automation, changes in task demand, system reliability, and individual differences in operator characteristics on human performance in human agent systems. Specifically, this project investigated how the characteristics of the non-human agent (a simulated UGV with adaptive automation) and the characteristics of the human (affective traits) jointly affect operator performance, workload, and stress as well as the level of trust by the operator of the non-human agent.

- 4) Co-Principal Investigator, *A Multimodal Approach to Unmanned Vehicle Operations in Dynamic Environments*, \$101,140. Funding Agency: U.S. Army Research Laboratory (Co-PI with R. Gilson and P.A. Hancock; credit split: 33%; College/Department indirect split: 100% [33% per co-PI]). Agency Contract Number W911NF0620041. Period of Performance: 8/1/2006 – 8/31/2007.

Main Goals: 1) Expand our current tactile language to be useful to operators of UV's and UGVs in ever changing, uncertain, and hostile environments. 2) Develop a system

(language) of tactile signals which allow a human operator to attain a sense of presence of the UV while operating said UV. 3) Develop a system of UV feedback to the human soldier while the soldier directs a UV that he or she does not necessarily control.

- 5) Principal Investigator, *Empirical Examination of Trust in Automation Across Multiple Agents in a Search and Rescue Operation*, \$49,430. Funding Agency: U.S. Army Research Laboratory. Agency Contract Number: W911NF0620041. Period of Performance: 8/1/2006 – 8/31/2007.

Main Goal: To investigate human-agent interaction in the context of UGV tasks. Specifically, this project investigated how unreliable automation affected operators' performance and trust in the system, and how these errors impact subsequent utilization of the automation (i.e., their trust of the automation).

- 6) Co-Principal Investigator, *Scalable Interfaces*, \$74,991. Funding Agency: Micro Analysis and Design/Army Research Laboratory. (Co-PI with P.A. Hancock). Credit: 40% (\$29,996.40). Agency Contract Number: 800506610/0066. Period of Performance: 03/29/2006 – 01/24/2007.

Main Goal: This work relates directly to the human robot interaction work being pursued by the Advanced Decision Architecture of the Collaborative Technology Alliance. The project is investigating scalable interfaces for mounted and dismounted robotic interaction and teaming for Future Combat Systems and in particular their effect on Soldier decision making.

- 7) Co-Principal Investigator, *Collaborative Technologies and their Effect on Operator and Team Workload in BMC<sup>2</sup> Domains: A Multi-Modal Approach*, \$99,921. Funding Agency: U.S. Air Force Research Laboratory. (Co-PI with P.A. Hancock and A. Duley). Agency Contract Number FA865005C6651. Period of Performance: 8/31/2005 – 08/30/2006.

Main Goal: To understand operator and team workload/performance issues in Battle Management Command and Control (BMC<sup>2</sup>) domains.

- 8) Co-Principal Investigator, *Incorporating Human Behavior and Constraints into Unit of Action Simulations*, \$97,295. Funding Agency: Micro Analysis and Design/Army Research Laboratory. (Co-PI with P.A. Hancock). Agency Contract Number: 800505410/TO #54. Period of Performance: 06/30/2005 – 04/30/2006.

Main Goal: Add new components to soldier-centered tools and to demonstrate their utility on a range of case studies, and to assess the effects of time pressure on human performance using meta-analytic techniques.

- 9) Co-Principal Investigator, *Output Analysis, Maintenance, and Stressor Enhancements for IMPRINT*, \$49,049.00. Funding Agency: Micro Analysis and Design/Army Research Laboratory. (Co-PI with P.A. Hancock and T. Oron-Gilad) Agency Account number: 800504110. Period of Performance: 09/28/2004 – 04/26/2005.



Main Goal: Develop methods for analyzing and assessing human performance simulations using IMPRINT Standard and IMPRINT Pro, and investigate the effect of environmental stressors on human performance using meta-analytic techniques. The result will be development of specifications for output analysis enhancements to IMPRINT with emphasis on maintenance modeling.

- 10) Co-Principal Investigator, *Individual Differences in Human Information Processing Capabilities: Sensitivity to Variations in Workload, Stress, and Fatigue*, \$118,996.00. Funding Agency: US Department of Interior/DARPA (Co-PI with P.A. Hancock and T. Oron-Gilad). Agency Contract Number: NBCHI030012. Period of Performance: 04/23/2004 – 10/31/2004.

Main Goal: To examine the individual differences in trait and state and how these mediate the link between stress, fatigue, and workload, and the performance of tasks requiring different forms of information processing capabilities.

### **SUNY Farmingdale**

- 1) Principal Investigator, *SUNY Farmingdale Technology Grant*. January, 2000. Awarded \$40,000 for the acquisition of equipment to build a psychology laboratory.

### **Courses Taught**

#### **Graduate:**

*University of Central Florida*

Human Factors 1 (EXP 5256) Fall 2006/Fall 2007/Fall 2008/Fall 2009/Fall 2010/Fall 2011/Fall 2012

Personality Theories (PPE 5055) Spring 2011  
Professional Issues (PSY 7939), Summer, 2005.

Team taught a second semester graduate course in Human Factors (EXP 6257). Spring, 2003, 2004, 2005, 2006.

Directed Research (EXP 6918)  
Independent Research (EXP 6908)  
Dissertation Research (PSY 7980)

*University of Cincinnati*

Graduate Teaching Assistant for the first year course in statistics for graduate students. Responsibilities included consultation with graduate students during office hours, holding review sessions, and teaching the computer portion of the class (applications of SAS to data analysis), and serving as substitute lecturer as needed.

#### **Undergraduate:**

*University of Central Florida*

Honors General Psychology (PSY 2012H) Fall 2007/Spring 2008, Fall 2008/Spring 2009/Fall 2009/Spring 2010/Spring 2011/Fall 2011/Spring 2012/Fall 2012/Spring 2013

General Psychology (PSY 2010) Summer B, 2009, Summer B, 2010, Summer B, 2011

Motivation (EXP 3304) Spring 2007/2008, Summer, 2008/Spring 2009/Spring 2010/Spring 2012/Spring 2013

Honors Developmental Psychology (DEP 2004H) Fall 2006

Directed Research/Directed Independent Research (PSY 4912)

Honors Undergraduate Directed Readings I (PSY 4903H)

Honors Undergraduate Directed Readings II (PSY 4904H)

Honors Undergraduate Thesis Research (PSY 4970H)

*SUNY Farmingdale*

Introduction to Psychology

Introduction to Human Factors. The human factors course was taught in both the traditional classroom and as an on-line course via the SUNY Learning Network.

*University of Cincinnati*

Motivation and Emotion

Sensation and Perception

Graduate Teaching Assistant: Research Methods. Taught a laboratory section of an undergraduate research methods course.

**Supervision of Student Researchers***Ph.D. Student Dissertation Committee Chair/Co-Chair*

Jennifer Ross (2008; Co-chair): Title: *Moderators of trust and reliance across ,multiple decision aids* Status: Completed Spring Semester, 2008.

Grant Taylor (2012; Chair). Title: *Comparing types of adaptive automation within a multi-tasking environment*. Status: Completed Spring Semester, 2012.

*Current Ph.D. Students*

Jeremy Flynn (Modeling & Simulation) (Summer 2012)(ABD)

Nicholas Fraulini (Fall 2012)

Gabriella Hancock (Fall 2011)

Maureen O'Connell (Fall 2007-present)(ABD)

Grace Teo (Fall 2008-present)

Sidra Van de Car (Fall 2008-present) (ABD)

*Current M.S. Student (Modeling & Simulation)*

Tarah Schmidt (Fall 2011)

*Ph.D. Dissertation Committees*

David Schuster (Fall 2012; committee member). Title: *The effects of diagnostic aiding on situation awareness under robot unreliability*. Status: Proposal successfully defended.

Luiz Xavier (Fall 2012; committee member). Title: *Plugging up the leaky STEM pipeline with a stereotype threat mentoring intervention*. Status: Proposal successfully defended.

Mitch Tindall (Fall 2012; committee member). Title: TBD. Status: Proposal in progress

Julian Abich (Fall 2012; committee member). Title: *Comprehensive workload measurement: Subjective, performance, & physiological*. Status: Proposal successfully defended.

Anne Sinatra (graduated May, 2012; committee member). Title: *The Cocktail party effect applies to fictional characters: The impact of expertise and stimulus degradation on performance in a dichotic listening task*.

Michael Curtis (graduated May, 2011; committee member). Title: *Validation of Discrimination Training Task Using a Model of Category Learning*.

Katherine Del Giudice (graduated December, 2010; committee member). Title: *Trust on the Web: The Impact of Social Consensus on Information Credibility*.

Steven Gunter (graduated December, 2010; committee member). Title: *How do Situational Judgments Tests and Situational Interviews Compare? An Examination of Construct and Criterion Validity*.

Justin Morgan (graduated May, 2008; committee member). Title: *Hysteresis Effects in Driving*

Razia Nayeem (graduated May, 2008; committee member). Title: *Investigating the Effects of Tactile Stress on a Military Tourniquet Application Task*

Peter Terrence (graduated May, 2008; committee member). Title: *Tactile Working Memory and Multimodal Loading*

Kelly Burke (graduated May, 2006; committee member). Title: *Decision Making Accuracy and Shooting Performance: Effects of Time Pressure and Prior Task Loading*

Jennifer Thropp (graduated May, 2006; committee member) Title: *Individual Preferences Using Automation*

*Graduate students supervised*

*Independent Study*

Gabriella Hancock (summer 2011), UCF Summer Mentoring Fellowship Program. The project involved a quantitative review of the research literature on training for sustained attention, as well as data collection for a transfer of training study using a video game to train vigilance.

Razia Nayeem (summer, 2007) In this project the effect of response and stimulus set size on performance on a temporal discrimination was investigated. The purpose for this research was to test the validity of fuzzy signal detection theory and to compare that model to the traditional signal detection model.

Stephanie Quinn (summer, 2007) The project was completion of a meta-analytic study of the effect of time pressure on human performance.

#### *Undergraduate Honors Theses, 2007-present*

##### *Thesis Chair*

Lindzee Bailey (2008) Title: *The Effect of Choice on Performance of Vigilance Tasks*. Status: Thesis completed Spring Semester 2008.

Garrett Grainger (2009) Title: *Effect of Social Exclusion and Cognitive Ability on Workplace Deviance*. Status: Data collection complete. Thesis completed Summer Semester 2009.

##### *Undergraduate Honors Thesis Committee Member*

Ashley M. Hughes (2010) Title: *Trauma as a Predictive factor for Performance under Stress*. Thesis completed Summer Semester 2010.

##### *RAMP Scholar*

Danae Higginbotham (Fall 2007-Spring 2008)  
McNair Scholar

David Tademy (Spring 2008-Summer 2008)

##### *Other Undergraduate Students Supervised*

Jennifer Isard (Spring 2012-present)

Tarah Schmidt (Fall 2010-Fall 2011)

Drew Hampton (Fall 2007 – Spring 2010)

Catherine Neubauer (Fall 2007-May 2008)

Mallory Renfro (Spring 2007 – Fall 2007)

Bonnie Saxton (2005-2006)

Stephanie Colombo (Spring 2005- Spring 2006)

Agneiszka (Agnes) Zyzdryn (Fall 2005 – Fall 2006)

Jaclyn Baron (Spring 2004 – Spring 2005)

Jennifer Moore (Spring 2004 – Spring 2005).

Rosaura Ramos (Fall 2002 – Spring 2003). LEAD Scholar.

##### *Graduate Students Supervised, 2002-2006*

Cleve Mortimer, Jennifer Ross, Jennifer Thropp, H.C. Neil Ganey, Razia Nayeem, Shawn Stafford, Kelly Burke, Lauren Murphy, Sidra Van De Car, Karen Delos Santos, Tim Smoker

### *Post-Doctoral Supervision*

Aaron Duley, Ph.D. (2005-2007)

Gareth Conway, Ph.D. (2005-2007)

### **Awards**

Psychology Award for Outstanding Graduate Thesis, Cincinnati Psychological Association and Cincinnati Academy of Professional Psychology, April, 2000.

University of Cincinnati Graduate Summer Research Fellowship. Summer, 1998.

### **Professional Affiliations**

- 1) Member, American Psychological Association
  - a. Member, APA Division 21 (Applied Experimental and Engineering Psychology)
  - b. Member, APA Division 5 (Testing and Measurement)
- 2) Member, Human Factors and Ergonomics Society
  - a. Member, Individual Differences in Performance Technical Group of the Human Factors and Ergonomics Society
  - b. Member, Perception & Performance Technical Group of the Human Factors and Ergonomics Society
  - c. Member, Education Technical Group of the Human Factors and Ergonomics Society
  - d. Member, Cognitive Engineering and Decision Making Technical Group of the Human Factors and Ergonomics Society
- 3) Member, Association for Psychological Science
- 4) Member, International Society for the Study of Individual Differences

### **Professional Service (external)**

Editorial Board Member (Consulting Editor) for the *Journal of Experimental Psychology: Applied*. (effective January 2013).

Technical Program Chair (2006-2012) Individual Differences in Performance Technical Group of the Human Factors and Ergonomics Society

Member, Conference Committee: The 10<sup>th</sup> International Conference on Naturalistic Decision Making (NDM), 2011.

Program Chair (2010) Division 21 (Applied Experimental and Engineering Psychology) APA Annual Convention

Elected Member-at-Large of APA Division 21 (Applied Experimental and Engineering Psychology) Executive Committee 2011-2012.

Newsletter Editor (2003-2006) for the Individual Differences in Performance Technical Group of the Human Factors and Ergonomics Society.

Chair (2002-2003) of the Perception and Performance Technical Group of the Human Factors and Ergonomics Society.

Member, Annual Meeting Program Advisory Committee, Human Factors and Ergonomics Society. (2005-2007).

Served as Peer Reviewer for the following journals: *American Journal of Psychology*; *Applied Cognitive Psychology*; *Consciousness and Cognition*; *Educational Psychology*; *Ergonomics*; *Experimental Brain Research*; *Human Factors*; *Journal of Cognitive Engineering and Decision Making*; *Journal of Cognitive Psychology*; *Journal of Experimental Psychology: Applied*; *Neuro Image*; *Noise and Health*; *Personality and Individual Differences*; *Psychological Research*; *Simulation in Healthcare*; *Stress, Anxiety, and Coping*; *Theoretical Issues in Ergonomics Science*.

Reviewer for the PPTG, and IDIP TG annual meeting programs (2002-2005).

Reviewer for the CEDM TG annual meeting program, 2004-2005.

### **Professional Service (internal)**

(2006-present) Member, Applied Experimental/Human Factors Graduate Committee.

(2011-present) Chair of Psychology Department Website Committee

(2010-2011) Member, Applied Experimental/Human Factors Search Committees: One for a junior rank position (i.e., assistant professor) and the second an open-rank search. In each case I was the only untenured member of the committee.

(2007-2011) Psychology Department Website coordinator for the Applied Experimental/Human Factors Program

(2007; 2009-2011) Served on College of Sciences Awards Committee to select candidates for the Awards for Excellence in Undergraduate Teaching, in Professional Service, and in Undergraduate Mentoring.

(2007-2008) Served as a reviewer for the *UCF Undergraduate Research Journal*.

(Spring 2008, 2009, 2010, 2011) Participated in the Research Open House sponsored by Psi Chi.

(2007-2009) Participated in the Summer Research Academy Research Showcase Program, Office of Undergraduate Studies. This involved providing undergraduates interested in research at UCF a tour of my laboratory and presentation of a poster describing a portion of my research.

(2007) Member, Search Committee for Instructor/Undergraduate Advising Co-coordinator position. Outcome: Successful hire of preferred candidate (Ms. Karen Cox).

(2007) Member, Search Committee for Instructor Position. Outcome: Successful hire of preferred candidate (Dr. Daniel McConnell).

(2006-2007) Co-coordinated the revision and distribution of the AEHF Graduate Student Handbook.