

Selected Medical Modeling and Simulation Scholarly Activities

The National Center for Collaboration
in Medical Modeling and Simulation

Eastern Virginia Medical School

and

Old Dominion University
Virginia Modeling, Analysis and Simulation Center

Through December 31, 2012

Patents Pending

- “Subject Activated System & Method for Simulating Normal & Abnormal Conditions”. Non-Provisional Patent Application No. 11/589,912 filed October 31, 2006. EVMS Inventors: Thomas W. Hubbard, M.D., J.D., Gayle A. Gliva-McConvey, and John A. Ullian, Ph.D. ODU Inventors: Bo Sun, M.S., Hector M. Garcia, M. Arch., and Frederic D. McKenzie, Ph.D.
- “System, Device, and Methods for Simulating Surgical Wound Debridements”. Provisional Patent Application No. 60/706,414 filed August 8, 2005. Patent Cooperation Treaty Patent Application PCT/US2006/031063 filed August 8, 2006. EVMS Inventor: Leonard J. Weireter, M.D. ODU Inventors: Lee A. Belfore, II, Ph.D., Jennifer Seevinck, M.Phil., Frederic D. McKenzie, Ph.D., Mark W. Scerbo, Ph.D., Hector M. Garcia, M. Arch., Sylva Girtelschmid, M.S., Emre Baydogan, M.S., Wesley Adam Taggart, R. Bowen Loftin, Ph.D., Jessica R. Crouch, Ph.D., and Yuzhong Shen, Ph.D.
- “System, Method and Medium for Simulating Normal and Abnormal Medical Conditions”. Provisional Patent Application No. 60/621,084 filed October 25, 2004. Patent Cooperation Treaty Patent Application PCT/US2005/038150 filed October 25, 2005. EVMS Inventors: Thomas W. Hubbard, M.D., J.D., John A. Ullian, Ph.D., Gayle A. Gliva-McConvey, and Robert J. Alpino, M.I.A. ODU Inventors: Frederic D. McKenzie, Ph.D., Hector M. Garcia, M. Arch., and Reynel J. Castelino, M.S.

Licensing Agreements

- Eastern Virginia Medical School and Old Dominion University’s Virginia Modeling, Analysis and Simulation Center completed a Licensing Agreement with Cardionics, Inc., located in Webster, Texas, for a Virtual Pathology Stethoscope developed by the EVMS/ODU team to aid in training medical personnel to properly diagnose pathology in otherwise healthy standardized (simulated) patients during the medical education process.

SELECTED PUBLICATIONS

Books and Edited Books

- Szalma, J.L., Scerbo, M.W., Parasuraman, R., Hancock, P.A., & Hoffman, R.R. (in press) *The Handbook of Applied Perception Research*. Cambridge University Press.
- Sokolowski, J.A., Banks, C.M. *Handbook of Modeling and Simulation Applications*. Hoboken, NJ: John Wiley & Sons, Inc., 2012.
- Sokolowski, J.A., Banks, C.M. *Modeling and Simulation in the Medical and Health Sciences*. Hoboken, NJ: John Wiley & Sons, Inc., 2011.
- Sokolowski, J.A., & Banks, C.M. *Modeling and Simulation Fundamentals: Theoretical Underpinnings and Practical Domains*. Hoboken, NJ: John Wiley & Sons, 2010.
- Sokolowski, J.A., Banks, C.M. *Principles of Modeling and Simulation: A Multidisciplinary Approach*. Hoboken, NJ: John Wiley & Sons, Inc., 2009.

Journal Articles

- Combs, C.D. (2012). ROI: What is it and does it really matter? *MEdSiM*, 2:2012, 14-17.
- Prytz, E. & Scerbo, M.W. (2012) Spatial judgments in the horizontal and vertical planes from different vantage points. *Perception*, 41, 26-42.
- Stefanidis, D., Scerbo, M.W., Smith, W., Acker, C.E., & Montero, P.N. (2012). Simulator training to automaticity leads to improved skill transfer compared with traditional proficiency-based training: A randomized controlled trial. *Annals of Surgery*, 255, 30-37.
- Elliott, M.J., Caprise, P.A., Henning, A.E., Kurtz, C.A., & Sekiya, J.K. (2012). Diagnostic knee arthroscopy: a pilot study to evaluate surgical skills. *Arthroscopy*, 28, 2, 218-224.
- Scerbo, M.W., Murray, W.B., Alinier, G., Antonius, T., Caird, J., Stricker, E., Rice, J., & Kyle, R. (2011). A path to better healthcare simulation systems: Leveraging the integrated systems design approach. *Simulation in Healthcare*, 6, Supplement, S20-S23.
- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2011). Time and number of displays impact critical signal detection in fetal heart rate tracings. *American Journal of Perinatology*, 28, 435-442.
- Yurko, Y.Y., Scerbo, M.W., Prabhu, A.S., Acker, C.E., & Stefanidis, D. (2010). Higher mental workload is associated with poorer laparoscopic performance as measured by the NASA-TLX tool. *Simulation in Healthcare*, 5, 267-271.
- Baydogan, E., Belfore, L.A., Scerbo, M.W., & Saurav, M. (2009). Virtual operating room team training via computer-based agents. *International Journal of Intelligent Control and Systems*, 14, 115-122.

- Mielke, R.R., Scerbo, M.W., Gaubatz, K.T., & Watson, G.S. (2009). A multidisciplinary model for M&S graduate education. *International Journal of Simulation and Process Modeling*, 5, 3-13.
- Tran, P., Weireter, L., Sokolowski, W., Lawsure, K., & Sokolowski, J. (2009). HAZUS modeling for hurricane effect on a healthcare campus: Implications for health care planning. *The American Surgeon*, Volume 75, Number 11, pp. 1059-1064.
- Glaiberman, C.B., Jacobs, B., Street, M., Duncan, J.R., Scerbo, M.W., & Pilgrim, T. (2008). Simulation in training: one year experience using an efficiency index to assess interventional radiology fellow training status. *Journal of Vascular and Interventional Radiology*, 19, 1366-1371.
- Freed, G.L., Cazares, L.H., Fichandler, C.E., Fuller, T.W., Sawyer, C.A., Stack, B.C. Jr., Schraff, S., Semmes, O.J., Wadsworth, J.T., and Drake, R.R. (2008). Differential Capture of Serum Proteins for Expression Profiling and Biomarker Discovery in Pre- and Posttreatment Head and Neck Cancer Samples. *Laryngoscope*, 118, 61-68.
- Stefanidis, D., Scerbo, M.W., Sechrist, C., Mostafavi, A., & Heniford, B.T. (2008). Do novices display automaticity during simulator training? *The American Journal of Surgery*, 195, 210-213.
- Tracy, M.B., Chen, H., Weaver, D., Malyarenko, D.I., Sasinowski, M., Cazares, L.H., Drake, R.R., Semmes, O.J., Tracy, E.R., and Cooke, W.E. (2008). Precision Enhancement of MALDI-TOF-MS Using High Resolution Peak Detection and Label-Free Alignment. *Proteomics*, 8, 1530-1538.
- Hussein, R., & McKenzie, F.D. (2007, December). Identifying ambiguous prostate gland contours from histology using capsule shape information and least squares curve fitting. *International Journal of Computer Assisted Radiology and Surgery*, Volume 2, Numbers 3-4, December 2007, pp. 143-150.
- Schellhammer, P.F., Diaz, J.I., Fabrizio, M.D., Davis, J.W., Given, R.W., Main, B., Chaganty, N.R., Hussein, R. & McKenzie, F.D. (2007, October). Computer Modeling Technology to Assess ExtraCapsular Tissue Coverage of Whole Mount Sections after Retropubic and Laparoscopic Radical Prostatectomy, *The Journal of Urology*, 178, 4, 1301-1305.
- Van Dongen, H.P.A., Mott, C.G., Huang, J., Mollicone, D.J., McKenzie, F.D., & Dinges, D.F. (2007, September). Confidence intervals for individualized performance models. *SLEEP Journal*, Volume 30, No. 9, September 2007, p. 1083.
- Van Dongen, H.P.A., Mott, C.G., Huang, J., Mollicone, D.J., McKenzie, F.D., & Dinges, D.F. (2007, September). Optimization of biomathematical model predictions for cognitive performance impairment in individuals: accounting for unknown traits and uncertain states in homeostatic and circadian processes. *SLEEP Journal*, Volume 30, No. 9, September 2007, pp. 1129-1143.
- Gaff, H., Hartley, D. & Leahy, N. (2007). An epidemiological model for Rift Valley fever virus. *Electronic Journal of Differential Equations*. Volume 2007(115): pp 1-12.
- Joshi, H.R., Lenhart, S., Lou, H., & Gaff, H. (2007). Harvesting control in an integrodifference population model with concave growth term. *Nonlinear Analysis: Hybrid Systems*, 2007, 1: pp. 417-429.
- Furuno, J.P., Harris, A.D., Wright, M.O., Hartley, D.M., McGregor, J.C, Gaff, H.D., Hebden, J.N., Standiford, H.C., & Perencevich, E.N. (2007). Utility of active surveillance culturing for methicillin-resistant *Staphylococcus aureus* upon intensive care unit discharge. *Infection Control and Hospital Epidemiology*, 2007, 28: pp. 66-670.

- Scerbo, M.W., & Dawson, S. (2007). High fidelity, high performance? *Simulation in Healthcare*, 2,224-230.
- Drake, R.R., Cazares, L.H. and Semmes, O.J. (2007). Mining the Low Molecular Weight Proteome of Blood. *Proteomics, Clinical Applications*, 1(8);758-768.
- Cazares, L.H., Diaz, J.I., Drake, R.R., and Semmes, O.J. (2007). MALDI/SELDI Protein Profiling of Serum for the Identificaiton of Cancer Biomarkers. *Methods Mol Biol.*, 2007;428:125-140.
- Shin, S., Cazares, L.H., Schneider, H., Mitchell, S., Semmes, O.J., Laronga, C., Perry, R.R. and Drake, R.R. (2007). Serum Biomarkers to Differentiate Benign and Malignant Mammographic (BIRADS4) Lesions. *J. Am. Coll. Surg.*, 204, 1065-1071.
- Van Dongen, H.P.A., Mott, C.G., Huang, J., Mollicone, D.J., McKenzie, F.D., & Dinges, D.F. (in press). Optimization of Biomathematical Model Predictions for Cognitive Performance Impairment in Individuals Accounting for Unknown Traits and Uncertain States in Homeostatic and Circadian Processes. *SLEEP Journal*. Accepted for publication in April 2007.
- Stefanidis, D., Scerbo, M.W., Korndorffer, J.R. Jr., & Scott, D.J. (2007). Redefining simulator proficiency using automaticity theory. *The American Journal of Surgery*, 193, 502-506.
- Combs, C.D. (2006). Startling technologies promise to transform medicine. *British Medical Journal (BMJ)*, Volume 333, 1308-1311.
- Scerbo, M. W., Schmidt, E. A., & Bliss, J. P. (2006). Comparison of a virtual reality simulator and simulated limbs for phlebotomy training. *Journal of Infusion Nursing*, Volume 29, Number 4, July/August, 214-224.
- Scerbo, M. W., Bliss, J. P., Schmidt, E. A., & Thompson, S. N. (2006) The efficacy of a medical virtual reality simulator for training phlebotomy. *Human Factors*, Volume 48, Number 1, Spring 2006, 72-84.
- Drake, R.R., Deng, Y. Schwegler, E.E., & Gravenstein, S. (2005). Proteomics for biodefense applications: Progress and opportunities. *Expert Review of Proteomics*, Volume 2, Number 2, April 2005, 209-213.
- Sokolowski, J.A. (2003). Enhanced decision modeling using multiagent system simulation. *SIMULATION: Transactions of the Society for Modeling and Simulation International*, Vol. 79, No. 4, pp. 232-242.
- Stefanidis, D., Scerbo, M.W., Korndorffer, Jr., J.R., & Scott, D.J. (in press). Redefining simulator proficiency using automaticity theory. *The American Journal of Surgery*.

Book Chapters

- Anderson, B.L., & Scerbo, M.W. (in press). Using simulation to examine perceptual challenges faced by healthcare providers. In J.L. Szalma, M.W. Scerbo, R. Parasuraman, P.A. Hancock, & R.R. Hoffman, (Eds.). *The handbook of applied perception research*. Cambridge University Press.
- Stephens, C.L., Scerbo, M.W., & Pope, A.T. (2012). Adaptive automation for mitigation of hazardous states of awareness. In G. Matthews, P.A. Desmond, C. Neubauer & P.A. Hancock (Eds.) *The handbook of operator fatigue* (pp. 415-440). Burlington, VT: Ashgate.

- Scerbo, M.W. & Anderson, B.L. (2012). Medical simulation. In P. Carayon (Ed.) *Handbook of human factors and ergonomics in health care and patient safety, 2nd Ed.* (pp. 557-571). Boca Raton, FL: CRC Press.
- Sokolowski, J.A. (2012). Human behavior modeling. In J.A. Sokolowski and C. Banks (Eds.), *Handbook of modeling and simulation applications*. Hoboken, NJ: John Wiley & Sons.
- Combs, C.D. (2011). Humans as models. In J.A. Sokolowski and C. Banks (Eds.), *Modeling and simulation in the medical and health sciences*. Hoboken, NJ: John Wiley & Sons.
- Sokolowski, J.A. (2011). The practice of modeling and simulation: Tools of the trade. In J.A. Sokolowski and C. Banks (Eds.), *Modeling and simulation in the medical and health sciences*. Hoboken, NJ: John Wiley & Sons.
- Sokolowski, J.A. (2010). Monte carlo simulation. In J.A. Sokolowski and C. Banks (Eds.), *Modeling and simulation fundamentals: Theoretical underpinnings and practical domains*. Hoboken, NJ: John Wiley & Sons.
- Combs, C.D. (2009). Medical modeling and simulation. In J.A. Sokolowski and C. Banks (Eds.), *Principles of modeling and simulation: A multidisciplinary approach*. Hoboken, NJ: John Wiley & Sons.
- Sokolowski, J.A. (2009). Simulation: Models that vary over time. In J.A. Sokolowski and C. Banks (Eds.), *Principles of modeling and simulation: A multidisciplinary approach*. Hoboken, NJ: John Wiley & Sons.
- Sokolowski, J.A. & Banks, C.M. (2009). Modeling and simulation: Real world examples. In J.A. Sokolowski and C. Banks (Eds.), *Principles of modeling and simulation: A multidisciplinary approach*. Hoboken, NJ: John Wiley & Sons.
- Scerbo, M.W. (2008). Human factors issues in automation. In R.A. Felder, M. Alwan, & M. Zhang (Eds.). *Systems engineering approach to medical automation* (pp. 5-20). Boston: Artech House.
- Schmidt-Panos, E., & Scerbo, M.W. (2009). Simulation advances in medical training: Laparoscopic skill acquisition. In D.A. Vincenzi, J.A. Wise, M. Mouloua, & P.A. Hancock (Eds.), *Human factors in simulation and training* (pp.371-385). Boca Raton, FL: CRC Press.
- Kady, R., & Davis, J. (2008). Ergonomics and human factors engineering: cost analysis and budgeting. In Joel M. Haight (Ed.), *The safety professionals handbook: technical applications*. Des Plaines, IL: American Society of Safety Engineers.
- Scerbo, M. W. (2006). Medical virtual reality simulators. In W. Karwowski (Ed.), *International encyclopedia of ergonomics and human factors, 2nd Ed.* (1181-1185). Boca Raton, FL: CRC Press.

Proceedings Articles

- Banks, C.M. & Sokolowski, J.A. (2012). Modeling and simulation for patient blood management. In *Proceedings of the 2012 Spring Simulation Conference*. March 26-29, 2012. Orlando, FL.
- Kennedy, R.A., Anderson-Montoya, B.L., Scerbo, M.W., Prytz, E., Belfore, L.A., Abuhamad, A.Z., Davis, S.S., & Chauhan, S.P. (2012). The influence of visual aids on detecting early and late decelerations in maternal-fetal

heart rate patterns. *Proceedings of the Human Factors & Ergonomics Society 56th Annual Meeting* (pp. 1317-1321). Santa Monica, CA: Human Factors & Ergonomics Society.

- Prytz, E., Montano, M., & Scerbo, M.W. (2012). Using Fitts' Law for a 3D pointing task on a 2D display: Effects of depth and vantage point. *Proceedings of the Human Factors & Ergonomics Society 56th Annual Meeting* (pp. 1391-1395). Santa Monica, CA: Human Factors & Ergonomics Society.
- Scerbo, M.W., Meglan, D., Liu, A., & Dawson, S. (2012). Creating healthcare simulation training systems: A designer's forum. *Proceedings of the Human Factors & Ergonomics Society 56th Annual Meeting* (pp. 724-727). Santa Monica, CA: Human Factors & Ergonomics Society.
- Banks, C.M. & Sokolowski, J.A. (2011). Developing a simulation training tool from a medical protocol. In *Proceedings of EMSS: The European Modeling & Simulation Symposium 2011*. September 12-14, 2011. Rome, Italy, pp. 740-746.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2011). Attentional and mental workload demands in nonverbal communication. *Proceedings of the Human Factors & Ergonomics Society 55th Annual Meeting* (pp. 1190-1194). Santa Monica, CA: Human Factors & Ergonomics Society.
- Prytz, E., Scerbo, M.W., & Kennedy, R. (2011). Spatial judgments from different vantage points: A different perspective. Attentional and mental workload demands in nonverbal communication. *Proceedings of the Human Factors & Ergonomics Society 55th Annual Meeting* (pp. 1274-1278). Santa Monica, CA: Human Factors & Ergonomics Society.
- Scerbo, M.W. (2011). The role of simulation in teaching medical teamwork. *Proceedings of the Human Factors & Ergonomics Society 55th Annual Meeting* (pp. 868-869). Santa Monica, CA: Human Factors & Ergonomics Society.
- Banks, C.M. & Sokolowski, J.A. (2010). Meeting the challenges of STEM education: Teaching modeling and simulation with real-world applications. In *Proceedings of the 2010 Spring Simulation Conference*. April 11-15, 2010. Orlando, FL, pp. 146-151.
- Scerbo, M.W., Turner, T.R., Newlin-Canzone, E., Meglan, D., Waddington, R., King, D., & Champion, H. (2010). A preliminary evaluation of a burr hole drilling simulator for craniotomy. *Proceedings of the Human Factors & Ergonomics Society 54th Annual Meeting* (pp. 2361-2365). Santa Monica, CA: Human Factors & Ergonomics Society.
- Sokolowski, J.A. & Banks, C.M. (2010). Modeling complex social behavior: A system dynamics approach. In *Proceedings of the 19th Conference on Behavior Representation in Modeling and Simulation*. March 22-25, 2010. Charleston, SC.
- Banks, C.M. & Sokolowski, J.A. (2009). Advancing cognitive agent-based modeling: Personifying the agents. In *Proceedings of the 2009 Summer Simulation Multiconference*. July 13-16, 2009. Istanbul, Turkey, pp. 54-60.
- Scerbo, M.W., Turner, T.R., Meglan, D.A., & Waddington, R. (2009). Evaluating visual and haptic feedback on a virtual reality simulator for orthopedic bone pinning. *Proceedings of the Human Factors & Ergonomics Society 53rd Annual Meeting* (pp. 1116-1120). Santa Monica, CA: Human Factors & Ergonomics Society.

- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2009). Detecting critical patterns in maternal-fetal heart rate tracings over time. *Proceedings of the Human Factors & Ergonomics Society 53rd Annual Meeting* (pp. 1121-1125). Santa Monica, CA: Human Factors & Ergonomics Society.
- Mielke, R.R., Scerbo, M.W., Gaubatz, K.T., & Watson, G.S. (2008). A Multidisciplinary model for M&S graduate education. 2008 Spring Simulation Multiconference, Ottawa, Canada.
- Combs, C.D. & Combs, W.C. (2008). An analysis of trends in the medical modeling and simulation research literature. In *Proceedings of the 20th International Conference of the Society for Medical Innovation and Technology (SMIT 2008)*. The Society for Medical Innovation and Technology, Niedernhansen, Germany.
- Combs, C.D., & Walia, M. (2008). Visualizing the medical modeling and simulation database: trends in the research literature. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 16*, (83-88). Amsterdam: IOS Press.
- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2008). Detecting critical patterns in maternal-fetal heart rate signals. *Proceedings of the Human Factors & Ergonomics Society 52nd Annual Meeting* (pp. 1478-1482). Santa Monica, CA: Human Factors & Ergonomics Society.
- Scerbo, M.W., Anderson, B.L., Belfore, L.A., & Abuhamad, A.Z. (2008). Monitoring simulated maternal-fetal heart rate signals. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 16*, (439-441). Amsterdam: IOS Press.
- Gwynne, S., Kady, R., & Davis, J. (2007). Development and validation of crawling model in existing computational egress tool. *Proceedings of the 11th International Conference on Fire Science and Technology (Interflam 2007)*. London, UK.
- Scerbo, M.W., Belfore, L.A., Garcia, H.M., Weireter, L.J., Jackson, M.W., Nalu, A., Baydogan, E., Bliss, J.P., & Seevinck, J. (2007). A virtual operating room for context-relevant training. *Proceedings of the Human Factors & Ergonomics Society 51st Annual Meeting* (pp. 507-511). Santa Monica, CA: Human Factors & Ergonomics Society.
- Sun, B., and McKenzie, F.D. (2007). Real-time simulated sonography with virtual pathology for augmented standardized patients. In *Proceedings of the 10th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2007): Workshop on Interaction in Medical Image Analysis and Visualization*. October 29 to November 2, 2007, Brisbane, Australia.
- Anderson, B.L., Scerbo, M.W., & Belfore, II, L.A. (2007). Stress and workload associated with monitoring simulated maternal-fetal heart rate signals. In *Proceedings of the MODSIM World 2007 Conference and Exposition*, September 11-13, 2007, Virginia Beach, VA.
- Baydogan, E., Belfore, II, L.A., & Mazumdar, S. (2007). Decoupled agent architecture for virtual operating room training simulations. In *Proceedings of the MODSIM World 2007 Conference and Exposition*, September 11-13, 2007, Virginia Beach, VA.
- Belfore, II, L.A., Scerbo, M.W. & Anderson, B. (2007). A fetal heart rate monitor simulator. In *Proceedings of the MODSIM World 2007 Conference and Exposition*, September 11-13, 2007, Virginia Beach, VA.
- Combs, C.D. and Alpino, R.J. (2007). The emerging imperative for medical simulation. In *Proceedings of the MODSIM World 2007 Conference and Exposition*, September 11-13, 2007, Virginia Beach, VA.

- Cuper, T. and McKenzie, F. (2007). Registration of 3D CT model of the pectus excavatum chest to subject: methodologies utilizing 3D laser surface scanning. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Heyl, A.R., and Schmidt-Panos, E.A. (2007). Improving residency training in ob-gyn emergencies utilizing simulated team drills. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Kelly, A., Jackson, M., Newlin, E.T., & Scerbo, M.W. (2007). Evaluation of a procedural checklist for anesthesia pre-induction and induction. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Mazumdar, S., Baydogan, E., & Belfore, II, L.A. (2007). OntoVOR: The design of a knowledge-base for a virtual operating room. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Nalu, A.T., Scerbo, M.W., & Weireter, Jr., L.J. (2007). Individual personality characteristics for virtual agents in a virtual operating room. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Pedada, R., and Shen, Y. (2007). Procedural modeling of wound textures. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Tierney, N.W., Crouch, J., Garcia, H., Walker, M., Van Lunen, B., DeLeo, G., Maihafer, G., & Ringleb, S. (2007). Virtual reality in gait rehabilitation. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Yan, Z., Cuper, T., & McKenzie, F. (2007). An approach to identifying the biomechanical differences between intercostal cartilage in subjects with pectus excavatum and normals in vivo: reconstruction and CT registration. In Proceedings of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA.
- Combs, C.D. and Walia, M. (2007). Assessing emerging technologies in medicine and health. Proceedings of the VIPSI 2007 - Amalfi Conference. Belgrade, Serbia: IPSI Academic Mind.
- Van Dongen, H.P., Mott, C.G., Huang, J., Mollicone, D.J., McKenzie, F.D., & Dinges, D.F. Biomathematical Fatigue Modeling: Individualized Prediction of Cognitive Performance. (2007). *SLEEP 2007: The 21st Annual Meeting of the Associated Professional Sleep Societies (APSS)*. Extended Abstract. SLEEP v30 Abstract supplement, Minneapolis, Minnesota, June 9-14, p. A149.
- Crouch, J.R. & Cherry, A. (2007). Parametric eye models. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 15*, (91-93). Amsterdam: IOS Press.
- Schmidt, E.A., Scerbo, M.W., Kapur, G., & Heyl, A.R. (2007). Task sequencing effects for open and closed loop laparoscopic skills. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 15*, (412-417). Amsterdam: IOS Press.

- Sun, B., McKenzie, F.D., Garcia, H.M., Hubbard, T.M., Ullian, J.A. & Gliva, G.A. (2007). Medical student evaluation using augmented standardized patients: new development and results. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 15*, (454-456). Amsterdam: IOS Press.
- Hussein, R. and McKenzie, F.D. Automatic identification of ambiguous prostate capsule boundary lines using shape information and least squares curve fitting technique. In *Eurographics: 15th international conference in central Europe on computer graphics, visualization and computer vision (WSCG 2007)*, January 19-February 1, 2007, Plzen, Czech Republic, pp. 199-204.
- Belfore, II, L.A., Crouch, J.R., Shen, Y., Girtleschmid, S., & Baydogan, E. (2006). A software framework for surgical simulation virtual environments. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 14*, (46-48). Amsterdam: IOS Press.
- Combs, C.D., Friend, K., Mannion, M. & Alpino, R.J. (2006). Simulating the domain of medical modeling and simulation: The medical modeling and simulation database. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 14*, (105-107). Amsterdam: IOS Press.
- Kady, R., Davis, J., & Blackburn, T. (2006). Improving occupant characteristics in performance-based evacuation modeling. *Proceedings of the Human Factors and Ergonomics Society, 50th Annual Meeting*. San Francisco, CA.
- McKenzie, F.D., Hubbard, T.W., Ullian, J.A., Garcia, H.M., Castelino, R.J., & Gliva, G.A. (2006). Medical student evaluation using augmented standardized patients: Preliminary results. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 14*, (379-384). Amsterdam: IOS Press.
- Scerbo, M.W., Belfore, L.A., Garcia, H.M., Weireter, L.J., Jackson, M., Nalu, A., & Baydogan, E. (2006). The virtual operating room. *Proceedings of the Interservice/Industry Training, Simulation and Education Conference*. Arlington, VA: National Training and Simulation Association.
- Schmidt, E.A., Scerbo, M.W., Bliss, J.P., Hanner-Bailey, H.S., Garcia, H.M., & Weireter, L.J. (2006). Surgical skill performance under combat conditions in a virtual environment. *Proceedings of the Human Factors and Ergonomics Society 50th Annual Meeting*, (pp. 2697-2701). Santa Monica, CA: Human Factors & Ergonomics Society.
- Seevinck, J. A., Scerbo, M. W., Belfore, L.A., Weireter, L. J., Crouch, J. R., Shen, Y., McKenzie, F. D., Garcia, H. M., Girtelschmid, S., Baydogan, E., & Schmidt, E. A. (2006). A simulation-based training system for surgical wound debridement. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 14*, (491-496). Amsterdam: IOS Press.
- Shen, Y., Seevinck, J., & Baydogan, E. (2006). Realistic irrigation visualization in a surgical wound debridement simulator. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 14*, (512-514). Amsterdam: IOS Press.
- Sokolowski, J.A. & Snyder, D. Combining sensors and simulation for real-time decision support. In *Proceedings of the 2006 Interservice/Industry Training, Simulation and Education Conference*. December 4-7, 2006. Orlando, FL.
- Scerbo, M.W., (Oct., 2006). The role of human factors in medical simulation and patient safety (and errors). The Human Factors in Healthcare: Practical Applications to Improve Patient Safety course. The Mayo Clinic, Rochester, MN.

- Scerbo, M.W. (Sept., 2006). The virtual operating room for team training. In *Proceedings of the 11th American Institute of Aeronautics and Astronautics (AIAA) / ISSMO Multidisciplinary Analysis and Optimization Conference*, September 6-8, 2006, Portsmouth, VA.
- Sun, B., and McKenzie, F.D. (Sept., 2006). An augmented reality system for expanding abnormalities of standardized patients. In *Proceedings of the 11th American Institute of Aeronautics and Astronautics (AIAA) / ISSMO Multidisciplinary Analysis and Optimization Conference*, September 6-8, 2006, Portsmouth, VA.
- Verna, T. & Sokolowski, J.A. (2006). Computational modeling of a multilevel team decision making theory. In *Proceedings of the 15th Conference on Behavioral Representation in Modeling and Simulation (BRIMS)*. May 15-18, 2006. Baltimore, MD, pp. 87-98.
- Combs, C.D. (November, 2005). Forging interdisciplinary collaboration: The medical modeling and simulation database. Proceedings of the VIPSI 2005 - Venice Conference. Belgrade, Serbia: IPSI Academic Mind.
- Combs, C.D., Friend, K. (2005). Tracking the domain: The medical modeling and simulation database. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality*, 13, (90-93). Amsterdam: IOS Press.
- Combs, C.D. & Friend, K. (2005). The medical modeling and simulation database. Proceedings of the Western Simulation Multiconference 2005. In J.G. Anderson & M. Katzper (Eds.), *Health sciences simulation 2005*, (51-54). San Diego, CA: The Society for Modeling and Simulation International (SCS).
- Scerbo, M. W., Bliss, J. P., Schmidt, E. A., Hanner-Bailey, H. & Weireter, L. J. (2005). Assessing surgical skill training under hazardous conditions in a virtual environment. In J. D. Westwood et al. (Eds.), *Medicine meets virtual reality*, 13, (436-442). Amsterdam: IOS Press.
- Bliss, J. P., Hanner-Bailey, H. S., & Scerbo, M. W. (2005). Determining the efficacy of an immersive trainer for arthroscopy skills. In J. D. Westwood et al. (Eds.), *Medicine meets virtual reality*, 13, (54-56). Amsterdam: IOS Press.
- Bowyer, M.W., Pimentel, E.A., Fellows, J.B., Scofield, R.L., Ackerman, V.L., Horne, P.E., Liu, A.V., Schwartz, G.R., & Scerbo, M.W. (2005). Teaching intravenous cannulation to medical students: Comparative analysis of two simulators and two traditional educational approaches. In J. D. Westwood et al. (Eds.), *Medicine meets virtual reality*, 13, (57-63). Amsterdam: IOS Press.
- Scerbo, M.W. (2005). Some new virtual environment training applications for dangerous duty. *Proceedings of the 11th International Conference on Human-Computer Interaction*. Mahwah, NJ: Erlbaum.
- Scerbo, M. W. (2005). The future of medical training and the need for human factors. *Proceedings of the Human Factors & Ergonomics Society 49th Annual Meeting* (pp. 969-973). Santa Monica, CA: Human Factors & Ergonomics Society.
- McKenzie, F.D., Schellhammer, P., Diaz, J., & Chaganty, N.R. (2005). Prostatectomy evaluation using 3D visualization and quantitation. In *Proceedings of the 27th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBS 2005)*. Shanghai, China. September 1-4, pp. 5153-5156.

- Sokolowski, J.A., et al. (2005). Designing an agent-based population model to support mass casualty planning. In *Proceedings of the 2005 Spring Simulation Multiconference (SMC '05)*. April 3-7, 2005. San Diego, CA, pp. 224-227.
- McKenzie, F.D., Garcia, H.M., Castelino, R.J., Hubbard, T.W., Ullian, J.A., & Gliva, G.A. (2004). Augmented standardized patients now virtually a reality. *Proceedings of the Third IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR '04)* (pp. 270-271). Arlington, VA
- Scerbo, M.W., Bliss, J.P., Schmidt, E.A., Thompson, S.N., Cox, T.D. & Poland, H.J. (2004). A comparison of the CathSim™ system and simulated limbs for teaching intravenous cannulation. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 12*, (340-346). Amsterdam: IOS Press.
- Hussein, R., McKenzie, F.D., Schellhammer, P., Diaz, J. (2004). Quantitation of extra-capsular prostate tissue from reconstructed tissue images. In *Proceedings of the Fourth IEEE Symposium on Bioinformatics and BioEngineering (IEEE BIBE 2004)*. May 19-21, Taichung, Taiwan, pp. 191-198.
- Hussein, R., McKenzie, F.D., & Joshi, R. (2004). Automating prostate capsule contour estimation for 3D model reconstruction using shape and histological features. In *Proceedings of the international society for optical engineering (SPIE) international symposium on Medical Imaging*, February 14-19, San Diego, California, Volume 5367, pp. 790-798.
- Combs, C.D. (2003). Analyzing the MMVR research space: Past emphases, future directions. In J.D. Westwood et al. (Eds.), *Medicine meets virtual reality, 11*, (36-41). Amsterdam: IOS Press.
- McKenzie, F.D., Diaz, J., Schellhammer, P., & Hussein, R. (2003). Towards statistical inferences of successful prostate surgery. In *Proceedings of the 25th annual international conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBS 2003)*. Cancun, Mexico. Volume 1, September 17-21, 2003, pp. 572-575.
- Sokolowski, J.A. (2003). Representing knowledge and experience in RPDAgent. In *Proceedings of the 12th Conference on Behavioral Representation in Modeling and Simulation (BRIMS)*. May 12-15, 2003. Scottsdale, AZ, pp. 419-422.
- McKenzie, F.D., Hussein, R., Seevinck, J. Schellhammer, P., & Diaz, J. Prostate gland and extra-capsular tissue 3D reconstruction and measurement. In *Proceedings of the third IEEE symposium on bioinformatics and bioengineering (IEEE BIBE 2003)*. Washington, DC, March 10-12, 2003, pp. 246-250.

BOOK REVIEWS, ABSTRACTS, AND OTHER PUBLICATIONS

- Scerbo, M.W. (2012). A review of *Behind Human Error, 2nd Ed. Ergonomics in Design*, 20, 27.
- Scerbo, M.W. (2012). A review of *Fundamentals of Surgical Simulation: Principles and Practices. Simulation in Healthcare*, 7, 133.
- Scerbo, M.W. (2012). Health-Care Simulation Training Systems: A Special Designer's Session. *Human Factors & Ergonomics Society Bulletin*, 55 (9).

- Combs, C.D. Manuscript reviewer for “Using modeling and simulation to examine the benefits of medical technology in a simulated combat environment,” in *JDMS: Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*; in press.
- Combs, C.D. Abstract entitled “An analysis of trends in the medical modeling and simulation research literature” with W. Cole Combs. In *Minimally Invasive Therapy and Allied Technologies*, 17(4), 230-231, Tübingen, Germany, 2008.
- Basu, G., Jing, Y., Schwegler, E.E., Chen, N., Gravenstein, S., Deng, Y. and Drake, R.R. Serum and plasma protein biomarkers of influenza vaccine response in the elderly and young adults. *Options for the Control of Influenza VI*, Toronto, Canada; June 2007
- Gould, D., Patel, A., Becker, G., Connors, B., Cardella, J., Dawson, S., Glaiberman, C., Kessel, D., Lee, M., Lewandowski, W., Phillips, R., Reekers, J., Sacks, D., Sapoval, M.K., & Scerbo, M.W. (2007). SIR/RSNA/CIRSE Joint Medical Simulation Task Force Strategic Plan Executive Summary *Journal of Vascular and Interventional Radiology*, 18, 953-955.
- Sun, B., McKenzie, F.D., Garcia, H.M., Hubbard, T., Ullian, J., & Gliva, G. Medical student evaluation using augmented standardized patients. *The Journal of the Society for Simulation in Healthcare (SSH)*. Special issue of Simulation in Healthcare selected papers from the Computer Simulation in Medicine (CompMed) Symposium, co-supported by the Society for Simulation in Healthcare. Extended Abstract, Vol. 2, No.2, Summer 2007, p. 143.
- Sun, B. & McKenzie, F.D. Prostate cancer tool kit and data repository. *The Journal of the Society for Simulation in Healthcare (SSH)*. Special issue of Simulation in Healthcare selected papers from the Computer Simulation in Medicine (CompMed) Symposium, co-supported by the Society for Simulation in Healthcare. Extended Abstract, Vol. 2, No. 2, Summer 2007, p. 156.
- Scerbo, M.W. (2007). New legislation gives national mandate to modeling and simulation field. *Human Factors and Ergonomics Society Bulletin*, 50 (9), 1-2.
- Scerbo, M. W. (2005). Medical virtual reality simulators: Have we missed an opportunity? *Human Factors and Ergonomics Society Bulletin*, 48 (5), 1-3.

UNPUBLISHED MANUSCRIPTS

- Scerbo, M.W. (2006) Transfer of training measures. 3 pages.
- Scerbo, M.W., Garcia, H.M., Nalu, A., & Baydogan, E. (2006) Virtual reality chain saw safety trainer. 7 pages.
- Sokolowski, J.A., Manepalli, S., Manepalli, G. & Davis, M. (2004). Designing an agent-based population model to support mass casualty planning.
- Vickers, R.R. (2004). Patterns of disease in the U.S. military: Looking back, thinking ahead.

Mendoza, K. (2003). Procedural skills for undergraduate medical education (UME).

Mendoza, K. (2003). Current and proposed simulation training for medical students, surgical assistant students, physician assistant students, general surgery residents, pediatric residents, Ob-Gyn residents, vascular surgery fellows, urology residents, head and neck surgery residents and emergency medicine residents.

Mendoza, K. (2003). Three-year illustration of courses at proposed EVMS minimally invasive surgical simulation center.

Mendoza, K., & Britt, L.D. (2002). Minimally invasive surgical simulation training center.

CONFERENCES AND SYMPOSIA

Drake, R.R. (2008, March) Dr. Drake served as a panel moderator for the panel session “New Pathogen Discovery” at the International Conference on Emerging Infectious Diseases, Atlanta, GA, in March 2008.

Semmes, O.J. (2007) Dr. Semmes was an invited participant in the Early [Cancer] Detection Research Network – WHI Proteomic Interest Group meeting in Bethesda, MD.

Combs, C.D. (2007, Sept.) Dr. Combs served as the Chair of the Medical Track of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA. In addition, Dr. Combs served as a panel moderator for five panels at the conference.

Scerbo, M.W. (2007, Sept.) Dr. Scerbo served as Co-Chair of the Medical Track of the MODSIM World 2007 Conference and Exposition, September 11-13, 2007, Virginia Beach, VA. In addition, Dr. Scerbo served as a panel moderator for two panels at the conference.

Semmes, O.J., (2007). Dr. Semmes was an invited participant in the National Cancer Institute Animal Models in Research meeting in Bethesda, MD.

Scerbo, M.W. (2006, Jan.). Patient safety and medical simulation: Issues, challenges and opportunities. A panel presented at Medicine Meets Virtual Reality, 14, Long Beach, CA.

Scerbo, M.W. (2005, Jan.). Emerging trends in medical simulation: Identifying the needs of the medical community and methods to address them. A panel presented at Medicine Meets Virtual Reality, 13, Long Beach, CA.

Scerbo, M.W. (2004, Sept.). Virtual reality simulators in medicine: Current and future concerns. A panel presented at the 48th Annual Meeting of the Human Factors & Ergonomics Society, New Orleans, LA.

SELECTED PROFESSIONAL PRESENTATIONS, DEMONSTRATIONS and INTERVIEWS

Scerbo, M.W., Britt, R.C., Davis, S.S., & Stefanidis, D. (2012, September). A new spatial task for measuring skill in laparoscopic surgery. The 2012 Agency for Healthcare Research & Quality Annual Conference, Bethesda, MD.

- Combs, C.D. (2012, May). Medical simulation center cost effectiveness model. Presented at the Medical Technology, Training and Treatment Conference (MT3), Orlando, FL.
- Sokolowski, J.A. (2012, April). Physician training in patient blood management. Presented at the 13th Annual Network for Advancement of Transfusion Alternatives, Copenhagen, Denmark.
- Anderson, B.L., Kennedy, R.A., Scerbo, M.W., Belfore, L.A., Abuhamad, A.Z., Davis, S.S., & Chaudan, S.P. (2012, March). A simulator for fetal heart rate monitoring. The 2012 Symposium on Human Factors and Ergonomics in Health Care: Bridging the Gap, Baltimore, MD.
- Prytz, E.G., Montano, M., Kennedy, R.A., & Scerbo, M.W. (2012, March). A secondary task for measuring mental workload in laparoscopy. The 2012 Symposium on Human Factors and Ergonomics in Health Care : Bridging the Gap, Baltimore, MD.
- Scerbo, M.W., Turner, T.R., Gliva-McConvey, G., & Walker, P. (2012, March). Addressing conflicts among healthcare professionals through simulation with standardized healthcare professionals. The 2012 Symposium on Human Factors and Ergonomics in Health Care: Bridging the Gap, Baltimore, MD.
- Anderson, B.L., Scerbo, M.W., Kennedy, R., Belfore, L., Abuhamad, A., Davis, S., & Chauhan, S. (2012, January). Critical signal detection during multiple patient monitoring of fetal heart rate tracings. The 12th International Meeting on Simulation in Healthcare, San Diego, CA.
- Hui, J., Scerbo, M.W., & Park, C. (2012, January). Guidelines for conducting rigorous simulation-based research and innovation. The 12th International Meeting on Simulation in Healthcare, San Diego, CA.
- Kennedy, R.A., & Scerbo, M.W. (2012, January). Initial laparoscopic performance: Impoverished visual-spatial cues compromise movements in the depth plane. The 12th International Meeting on Simulation in Healthcare, San Diego, CA. (*4th Place for Outstanding Research Abstract*)
- Kron, F., Feters, M., Scerbo, M., Campbell, T., & White, C. (2012, January). Interactive virtual human patient software utility for competency assessment in breaking bad news to a cancer patient. The 12th International Meeting on Simulation in Healthcare, San Diego, CA.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2012, January). Measuring the effects of improvisations, portrayal, and assessment on the standardized patients' mental workload. The 12th International Meeting on Simulation in Healthcare, San Diego, CA.
- Scerbo, M.W., Turner, R., Padilla, M., Gliva-McConvey, G., & Walker, P. (2012, January). Teaching communication skills using standardized patients in a team scenario: A G theory analysis. The 12th International Meeting on Simulation in Healthcare, San Diego, CA. (*2nd Place for Outstanding Technology and Program Innovation Abstract*)
- Scerbo, M.W. (2012, January). Training the exceptional surgeon. The 12th International Meeting on Simulation in Healthcare, San Diego, CA.
- Combs, C.D. (2011, December). Thoughts on medical modeling and simulation and health professions education. Presented at the Lockheed Martin Corporation's Healthcare Campaign of Collaboration Healthcare Summit: Engaging the Challenges of Our Nation's Health System at the Lockheed Martin Corporation Center for Innovation, Suffolk, VA.

- Sokolowski, J.A. (2011, November). Hampton Roads – A hotbed of modeling and simulation activity. Presented at the TSET Event, Bristol, United Kingdom.
- Combs, C.D. (2011, October). Educating health professionals in the early 21st century-the basic driving forces and the role of medical simulation. Presented at the 2011 4th International Conference on Biomedical Engineering and Informatics, Shanghai, China.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2011, September). Attentional and mental workload demands in nonverbal communication. The 55th Annual Meeting of the Human Factors & Ergonomics Society, Las Vegas, NV.
- Prytz, E., Scerbo, M.W., & Kennedy, R. (2011, September). Spatial judgments from different vantage points: A different perspective. Attentional and mental workload demands in nonverbal communication. The 55th Annual Meeting of the Human Factors & Ergonomics Society, Las Vegas, NV.
- Scerbo, M.W. (2011, September). The Role of simulation in teaching medical teamwork. The 55th Annual Meeting of the Human Factors & Ergonomics Society, Las Vegas, NV.
- Combs, C.D. (2011, July). Designing and testing simulations to improve the practice of medicine. Presented at the U.S. Department of Education Stakeholders Meeting on Modeling and Simulation, Office of Postsecondary Education, Fund for the Improvement of Postsecondary Education (FIPSE), Washington, DC.
- Sokolowski, J.A. (2011, July). A history of modeling and simulation and current state-of-the-art. Presented at the U.S. Department of Education Stakeholders Meeting on Modeling and Simulation, Office of Postsecondary Education, Fund for the Improvement of Postsecondary Education (FIPSE), Washington, DC.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2011, June). The impact of improvised responses on the ability to portray and observe. The 10th Annual Association of Standardized Patient Educators Conference, Nashville, TN. (*2nd Place for Most Outstanding Poster*)
- Combs, C.D. (2011, May). Medical modeling and simulation and health professions education. Presented to the Executive Committee of the Hampton Roads Economic Development Alliance, Norfolk, VA.
- Combs, C.D. (2011, February). Medical simulation's evolving role in education. Presented at the Association of Academic Health Centers International 2nd Asia-Pacific Meeting, Sydney, Australia.
- Combs, C.D. (2011, January). Thoughts about the future challenges of medical simulation. Presented at the International Meeting on Simulation in Healthcare (IMSH), New Orleans, LA.
- Scerbo, M.W., Kennedy, R.A., & Anderson, B.L. (2011, January). Evaluation of a secondary task for laparoscopy. The 11th International Meeting on Simulation in Healthcare, New Orleans, LA.
- Scerbo, M.W., Turner, T.R., Newlin-Canzone, E. Kennedy, R., Meglan, D., Waddington, R., King, D. & Champion, H. (2011, January). Evaluation of a craniotomy burr hole drilling simulator. The 11th International Meeting on Simulation in Healthcare, New Orleans, LA.
- Sokolowski, J.A. (2011, January). Modeling and simulation in healthcare. Presented at the International Meeting on Simulation in Healthcare (IMSH), New Orleans, LA.

- Combs, C.D. (2010, November). How things are changing in health professions education. Presented at the Industry Member Meeting of the Virginia Modeling, Analysis and Simulation Center, Suffolk, VA.
- Sokolowski, J.A. (2010, November). Modeling and simulation: A tool for innovation. Presented at Minnesota State University, Mankato, MN.
- Combs, C.D. (2010, October). Thoughts on medical modeling and simulation and health professions education. Presented as part of the TEDx Salon Event at the MODSIM World Conference and Exposition, Hampton, VA.
- Scerbo, M.W., Turner, T.R., Newlin-Canzone, E., Meglan, D., Waddington, R., King, D., & Champion, H. (2010, October). A preliminary evaluation of a burr hole drilling simulator for craniotomy. The 54th Annual Meeting of the Human Factors & Ergonomics Society, San Francisco, CA.
- Combs, C.D. (2010, June). Medical simulators: Current status and future needs. Presented at the 1st IEEE International Workshop on Collaborative Modeling and Simulation – CoMetS '10, Larissa, Greece.
- Combs, C.D., and Sokolowski, J.A. (2010, June). Medical modeling and simulation at Eastern Virginia Medical School and Old Dominion University. Presented to the eastern Virginia Congressional delegation, Washington, DC.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2010, June). The role of human factors in SP training. The 9th Annual Association of Standardized Patient Educators Conference, Baltimore, MD.
- Scerbo, M.W. (2010, June). Medical simulator training systems for maternal-fetal health and surgery. Southeastern Virginia Biomedical Technology Partnership Forum, Newport News, VA.
- Sokolowski, J.A. (2010, June). Modeling and simulation, a discipline, a technology, an opportunity. Keynote speech presented at the MODSIM World Canada Conference, Montreal, Canada.
- Stefanidis, D., Acker, C., Montero, P., Prabhu, A., Smith, W., & Scerbo, M.W. (2010, April). Simulator training to automaticity leads to improved skill transfer compared to traditional proficiency-based training. 2010 Surgical Education Week, San Antonio, TX.
- Stefanidis, D., & Scerbo, M.W. (2010, March). Proving the importance of secondary task metrics for performance assessment on surgical simulators. The 2010 Annual ACS Educational Institute Consortium Meeting, Chicago, IL.
- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2010, January). When is a deceleration perceived as a late deceleration? The 10th International Meeting on Simulation in Healthcare, Phoenix, AZ.
- Newlin-Canzone, E.T., Scerbo, M.W., Gliva-McConvey, G., & Wallace, A.M. (2010, January). Inside the standardized patient's mind: Understanding the cognitive challenges. The 10th International Meeting on Simulation in Healthcare, Phoenix, AZ.
- Scerbo, M.W. (2010, January). Simulation: Fidelity, realism and surrealism. The 10th International Meeting on Simulation in Healthcare, Phoenix, AZ.

- Combs, C.D. (2010, January). The challenges of simulation and other emerging technologies for medical and surgical education. Presented at Eastern Virginia Medical School Department of Surgery Grand Rounds, Norfolk, VA.
- Combs, C.D. (2009, October). Modeling and simulation in health and medicine. Presented as a member of a modeling and simulation in health and medicine expert panel at the Virginia Summit on Modeling and Simulation sponsored by U.S. Senator Mark R. Warner, Virginia Beach, VA.
- Combs, C.D. and Lauber, M.C. (2009, October). Benchmark your plans for leading-edge medical education facilities. Presented at the TRADELINE, Inc. 2009 Academic Medical & Health Science Centers Conference, Boston, MA.
- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2009, October). Detecting critical patterns in maternal-fetal heart rate tracings over time. The 53rd Annual Meeting of the Human Factors & Ergonomics Society, San Antonio, TX.
- Scerbo, M.W., Turner, T.R., Meglan, D.A., & Waddington, R. (2009, October). Evaluating visual and haptic feedback on a virtual reality simulator for orthopedic bone pinning. The 53rd Annual Meeting of the Human Factors & Ergonomics Society, San Antonio, TX.
- Liu, M., Belfore, L.A., Shen, Y., & Scerbo, M.W. (2009, October). Uterine contraction modeling and simulation. 2008 MODSIM World Conference & Exposition, Virginia Beach, VA.
- Combs, C.D. (2009, July). Imperatives in the development of medical simulations. Presented at the Grand Challenges in Modeling and Simulation 2009 (GCMS '09), International Summer Simulation Multi-conference, Istanbul, Turkey.
- Combs, C.D. (2009, June). Telemedicine in the acute care setting: Is it ready for prime time? Presented at the Trauma, Critical Care and Acute Care Surgery 2009-Point/Counterpoint XXVIII conference of the American College of Surgeons Committee on Trauma, Baltimore, MD.
- Combs, C.D. (2009, February). The emergence of simulation in medical education. Presented at the Association of Academic Health Centers Inaugural Asia-Pacific Meeting: Developing International Partnerships in Academic Medicine, Singapore.
- Combs, C.D. (2009, January). The evolution of medical simulators. Presented at the 2009 Medicine Meets Virtual Reality annual conference, Long Beach, CA.
- Scerbo, M.W., Turner, T.R., Meglan, D.A., & Waddington, R. (2009, January). A comparison of visual and haptic feedback on a simulated bone pinning task. The 9th International Meeting on Simulation in Healthcare, Orlando, FL.
- Scerbo, M.W., Garcia, H.M., Belfore II, L.A., Weireter Jr., L.J., Rushing, G.D., Jackson, M.W., Baydogan, E., Nalu, A., & Newlin, E.T. (2009, January). A virtual operating room for surgical teams. The 9th International Meeting on Simulation in Healthcare, Orlando, FL.
- Anderson, B.L., Scerbo, M.W., Belfore, L.A., & Abuhamad, A. (2008, September). Detecting critical patterns in maternal-fetal heart rate signals. The 52nd Annual Meeting of the Human Factors & Ergonomics Society, New York, NY.

- Combs, C.D., & Alpino, R.J. (2008, Sept. 18). The evolution of medical modeling and simulation. Presented [by Robert J. Alpino] at the MODSIM World 2008 Conference and Exposition, Virginia Beach, VA.
- Scerbo, M.W. (2008, September). Fidelity issues in medical simulation. Presented at the MODSIM World 2008 Conference and Exposition, Virginia Beach, VA.
- Weireter Jr., L.J. (2008, Sept. 11). Virtual reality surgical scenario training: an initial experience. Presented at the Halstead Society meeting in Asheville, NC.
- Ringleb, S.I. (2008, September). Medical M&S without computers: the use of cadavers to simulate injuries, pathologies, and treatment. Presented at the MODSIM World 2008 Conference and Exposition, Virginia Beach, VA.
- Combs, C.D. & Combs, W.C. (2008, Aug.28). The paper “An analysis of trends in the medical modeling and simulation research literature” was presented at the 20th International Conference of the Society for Medical Innovation and Technology (SMIT) in Vienna, Austria.
- Walker, M.L., Ringleb, S.I., Maihafer, G, et al. (2008, August). Virtual reality in stroke rehabilitation. Presented at the North American Congress of Biomechanics Meeting, Ann Arbor, MI.
- Drake, R.R. (2008, July). Beyond serum proteomics, application of MALDI MS imaging, glycoproteomic and quantitative proteomic methodologies to tissues and proximal prostatic fluids for prostate cancer biomarkers. Presented at the Clinical Proteomics in Oncology Meeting, Dijon, France.
- Combs, C.D. (2008, June 18). The evolution of medical modeling and simulation. With W. Cole Combs. Presented at the International Summer Simulation Multi-Conference 2008 in Edinburgh, Scotland.
- Drake, R.R. (2008, June). Large-scale MALDI MS imaging of prostatic tissues for clinical diagnostics. Presented at the Bruker Daltonic User Meeting, 56th Annual American Society of Mass Spectrometry Meeting, Denver, CO.
- Scerbo, M.W. (2008, June). Some thoughts on assessing surgical skills. The 5th Innovations in the Surgical Environment Conference, Baltimore, MD.
- Kott, K., De Leo, G., Leshner, K., Brivio, E., & Morrison, S. (2008, June). Virtual reality gaming for treadmill training: improving functional ambulation in children with cerebral palsy. Presented at Cybertherapy 2008, San Diego, CA.
- Gaff, H.D. (2008, May). Modeling the emergence and transmission of Rift Valley Fever. Presented at the 42nd Annual U.S.-Japan Cooperative Medical Sciences Program in Virology, Global Warming, the Environment, and the Emergence of Viral Diseases Satellite Symposium, Nagasaki, Japan.
- Gaff, H.D. (2008, May). Ticks, Mosquitoes, Diseases and Mathematics. Plenary speech presented at the Northeastern Section, Mathematics Association of America, Spring 2008 Meeting, St. Michael's College, Colchester, VT.
- Scerbo, M.W. (2008, May). The health care quality crisis, medical simulation, and the need for human factors psychology. Presented at the Science and Applications of Perception Psychology Conference, Cincinnati, OH.

- Mielke, R.R., Scerbo, M.W., Gaubatz, K.T., & Watson, G.S. (2008, April). A multidisciplinary model for modeling and simulation graduate education. Presented at the 2008 Spring Simulation Multiconference, Ottawa, Canada.
- Baydogan, E., Mazumdar, S., & Belfore, II, L.A. (2008, April). Simulation architecture for virtual operating room training simulations. Presented at the Old Dominion University Modeling and Simulation Capstone Conference, Norfolk, VA.
- Liu, M., Shen, Y., & Scerbo, M.W. (2008, April). A survey of computerized fetal heart rate monitoring and interpretation techniques. Presented at the 2008 Old Dominion University Modeling and Simulation Capstone Conference, Norfolk, VA.
- Shen, Y., Li, J., Shen, Y., & Wang, J. (2008, April). MRI brain tumor segmentation using a region growing method based on adaptive thresholds. Presented at the 2008 Old Dominion University Modeling and Simulation Capstone Conference, Norfolk, VA.
- Drake, R.R. (2008, March). Proteomic characterizations of emerging pathogens, vaccine responses, and host response proteins in clinical fluids. Presented at the International Conference on Emerging Infectious Diseases, Atlanta, GA.
- Shen, Y., Li, J., & Shen, Y. (2008, March). MRI brain tumor segmentation using a region growing method based on adaptive thresholds. Presented at the Old Dominion University Annual Research Exposition, Norfolk, VA.
- Combs, C.D. & Walia, M.L. (2008, January). Visualizing the medical modeling and simulation database: a comprehensive analysis of trends in the research literature. A poster presented [by Combs, C.D.] at the 2008 Medicine Meets Virtual Reality XVI, Long Beach, CA.
- Scerbo, M.W., Anderson, B.L., Belfore, L.A., & Abuhamad, A.Z. (2008, January). Monitoring simulated maternal-fetal heart rate signals. Presented [by Anderson, B.L.] at Medicine Meets Virtual Reality XVI, Long Beach, CA
- Scerbo, M.W. (2008, January). Can principles of user interface design improve the next generation of medical simulators? Presented at Medicine Meets Virtual Reality XVI, Long Beach, CA.
- Scerbo, M.W. (2008, January). VR Simulators: Why high fidelity is not always better. Presented at the 8th International Meeting on Simulation in Healthcare, San Diego, CA.
- Scerbo, M.W. (2008, January). Human factors in medical simulation. Presented at the 8th International Meeting on Simulation in Healthcare, San Diego, CA.
- Cazares, L.H., Shaub, N., Mendrinis, S., Lance, R., Clements, M.A., Drake, R.R., and Semmes, O.J. MALDI mass spectrometry imaging discriminates malignant and nonmalignant disease of the prostate and identifies specific protein markers. To be presented at the Delaware Valley Mass Spectrometry (MS) Discussion Group Meeting, Villanova University, Villanova, PA on November 12, 2007.
- Drake, R.R. (2007, October). Improved technologies for early cancer biomarker discovery in clinical fluids. Presented at the 3rd Haifa Cancer Prevention Workshop, Haifa, Israel.
- Walker, M., Maihafer, G., Crouch, J., Tierney, N., Ringleb, S., Van Lunen, B., Zirges, S., De Leo, G., Shelton, J., Garcia, H. Virtual reality in stroke rehabilitation. Presented at the Virginia Physical Therapy Association Annual Meeting, Roanoke, VA.

- Scerbo, M.W., Belfore, II, L.A., Garcia, H.M., Weireter, Jr., L.J., Jackson, M.W., Nalu, A., Baydogan, E., Bliss, J.P., & Seevinck, J.A. Virtual operating room for context-relevant training. Presented at the 51st Annual Meeting of the Human Factors & Ergonomics Society, October 1-5, 2007, Baltimore, MD.
- Belfore, II, L.A. (September 13, 2007). A fetal heart rate monitor. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Cuper, T.T. (September 13, 2007). Registration of 3D CT model of the pectus excavatum chest to subject: methodologies utilizing 3D laser surface scanning. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Baydogan, E. (September 12, 2007). Decoupled agent architecture for virtual operating room training simulations. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Nalu, A.T. (September 12, 2007). Individual personality characteristics for virtual agents in a virtual operating room. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Scerbo, M.W. (September 12, 2007). Medical errors and the need for simulation. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Tierney, N.W. (September 12, 2007). Virtual reality in gait rehabilitation. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Anderson, B.L. (September 11, 2007). Stress and workload associated with monitoring simulated maternal-fetal heart rate signals. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Britt, L.D. (September 11, 2007). Simulation and graduate medical education: a 2007 update. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Combs, C.D. (September 11, 2007). The emerging imperative for medical simulation. Presented at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Heyl, A.R. & Schmidt-Panos, E.A. (September 11, 2007). Improving residency training in ob-gyn emergencies utilizing simulated team drills. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Jackson, M.W., Kelly, A., Newlin, E.T., & Scerbo, M.W. (September 11, 2007). Evaluation of a procedural checklist for anesthesia pre-induction and induction. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Mazumdar, S. (September 11, 2007). OntoVOR: the design of a knowledge-base for a virtual operating room. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Pedada, R. (September 11, 2007). Procedural modeling of wound textures. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.

- Yan, Z. (September 11, 2007). An approach to identifying the biomechanical differences between intercostal cartilage in subjects with pectus excavatum and normals in vivo: reconstruction and CT registration. A poster presentation at the MODSIM World 2007 Conference and Exposition, Virginia Beach, VA.
- Drake, R.R. (August 24, 2007). Clinical proteomics approaches to infectious disease related biomarkers. Presented at the Southwest Foundation for Biomedical Research, San Antonio, TX.
- Drake, R.R. (2007, July). Serum protein biomarkers for Barrett's Esophagus. Presented at the University of Michigan, Ann Arbor, MI.
- Gliva-McConvey, G.A. (June 19, 2007). How to give your standardized patient's (SP's) new diseases-adding abnormal physical findings and visual presentations. Presented at the annual conference of the Association of Standardized Patient Educators (ASPE), Toronto, Ontario, Canada.
- Alpino, R.J. (June 1, 2007). Presentation on VIMSIM Medical Projects Underway and Under Development to the Virginia Economic Development Partnership marketing staff, Richmond, VA.
- Cazares, L.H., Schaub, N., Mendrinos, S., Lance, R., Clements, M.A., Drake, R.R., and Semmes, O.J. (June 2007). Comparison of MALDI-MS imaging with laser capture microdissected tissue confirms the expression of specific proteins in prostate cancer cells. 55th ASMS Conference on Mass Spectrometry, Indianapolis, IN.
- Combs, C.D. (May 22, 2007). Presentation on VIMSIM Medical Projects Underway and Under Development to the Senior Leadership for Joint Medical Education & Training Transformation, U.S. Armed Forces, Norfolk, VA.
- Scerbo, M.W., McKenzie, F.D., Garcia, H.M., Gliva-McConvey, G.A., Walker, P.W. & Alpino, R.J. (May 9, 2007). Demonstration of augmented standardized patient technology at the 4th Annual Advanced Initiatives in Medical Simulation (AIMS) Conference and Exhibition held for the U.S. Congress in the Rayburn Office Building on Capitol Hill in Washington, D.C.
- Combs, C.D., (April 19, 2007). The emerging importance of using medical simulation in resident education. Eastern Virginia Medical School Faculty Development Grand Rounds simulcast over the Eastern Virginia Telemedicine Network.
- Stefanidis, D., Scerbo, M.W., Sechrist, C., Mostafavi, A., & Heniford, B.T., (Apr. 2007). Can novices achieve automaticity during simulator training? The Association for Surgical Education, Washington, DC.
- Cazares, L.H., Schaub, N., Mendrinos, S., Lance, R., Clements, M.A., Drake, R.R., and Semmes, O.J. (April 2007). Emerging technologies in mass spectrometry: MALDI mass spectrometry imaging for protein expression profiling. Old Dominion University-EVMS-NSU Research Exposition, Norfolk, VA.
- Combs, C.D. (March 23, 2007). Assessing emerging technologies in medicine and health. International VIPSI Conference. Amalfi, Italy.
- Schmidt, E.A., Scerbo, M.W., Kapur, G., & Heyl, A. (Feb., 2007). Task sequencing effects for open and closed loop laparoscopic skills. Presented [by Schmidt, E.A.] at Medicine Meets Virtual Reality XV. Long Beach, CA
- Scerbo, M.W., Belfore, L.A., Garcia, H.M., Weireter, L.J., Jackson, M., Nalu, A., & Baydogan, E. (Dec., 2006). The virtual operating room. Interservice/Industry Training, Simulation and Education Conference. Orlando, FL.
- Scerbo, M.W. (Nov., 2006). The future of medical simulation and the need for human factors. Presentation for the Forum on Research in Science and Technology Education: Accelerating U.S. Competitiveness. Sponsored by

the Federation of Behavioral, Psychological, and Cognitive Sciences and the Human Factors & Ergonomics Society. Washington, DC.

- Scerbo, M.W. (Nov., 2006). Interviewed by Alan Brown for Virtual OR in *Mechanical Engineering*.
- Sokolowski, J.A. (Nov., 2006). Modeling the human decision process. Presented at George Mason University, Arlington, VA.
- Schmidt, E.A., Scerbo, M.W., Bliss, J.P., Hanner-Bailey, H.S., Garcia, H.M., & Weireter, L.J. (Oct., 2006). Surgical skill performance under combat conditions in a virtual environment. Presented [by Schmidt, E.A.] at the 50th Annual Meeting of the Human Factors & Ergonomics Society. San Francisco, CA.
- Scerbo, M.W. (Oct., 2006). The role of human factors in medical simulation and patient safety (and errors). The Human Factors in Healthcare: Practical Applications to Improve Patient Safety Course. The Mayo Clinic, Rochester, MN.
- Scerbo, M.W. (Sep., 2006). The role of medical simulation in training and patient safety. Newport News Medical Society. Newport News, VA.
- Scerbo, M.W. (Sep., 2006). The virtual operating room for team training. The 11th American Institute of Aeronautics and Astronautics Multidisciplinary Analysis and Optimization Conference. Portsmouth, VA.
- Sokolowski, J.A. (Sep., 2006). Medical mass casualty model for homeland security. Presented at the 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, VA.
- Hubbard, T.W., Gliva, G.A., Ullian, J.A., McKenzie, F.D., Garcia, H.M., & Castelino, R.J. (Aug., 2006). Pilot test of an augmented standardized patient system for auscultation. Presented [by Lyman, M.L.] at the annual conference of the Association of Standardized Patient Educators. Tucson, AZ.
- Scerbo, M.W., (June, 2006). Enhancing simulation-based training in medicine through virtual environments. Fourth Annual Safar Symposium. University of Pittsburgh, Pittsburgh, PA.
- Hubbard, T.W., Ullian, J.A., Gliva, G.A., McKenzie, F.D., Garcia, H.M., & Castelino, R.J. (May, 2006). Clinical skills assessment using augmented standardized patients. Poster presented [by Ullian, J.A.] at the annual meeting of the Southern Group on Educational Affairs of the Association of American Medical Colleges. Galveston, TX.
- Hubbard, T.W., Ullian, J.A., McKenzie, F.D., Garcia, H.M., & Sun, B. (May, 2006) Augmenting standardized patients for teaching and assessment. Demonstration at the annual meeting of the Southern Group on Educational Affairs of the Association of American Medical Colleges. Galveston, TX.
- Alpino, R.J. & Garcia, H.M. (May 2006). Wound debridement simulation. Demonstration at the 2006 EVMS/ODU/NSU Research Exposition. Norfolk, VA.
- Friend, K.E. & Combs, C.D. (May 2006). Medical modeling and simulation database. Demonstration at the 2006 EVMS/ODU/NSU Research Exposition. Norfolk, VA.
- Scerbo, M.W. (May, 2006). Science and medical simulation. Third Annual Advanced Initiatives in Medical Simulation Meeting. Washington, DC.

- Heyl, A.R., Schmidt, E.A. & Scerbo, M.W. (April, 2006). LapSim Gyn for ectopic pregnancy removal simulation. Demonstration at the 2006 EVMS/ODU/NSU Research Exposition. Norfolk, VA
- Stefanidis, D., Scerbo, M.W., Korndorffer, Jr., J.R., & Scott, D.J. (Mar., 2006). Redefining simulator proficiency using automaticity theory. Association for Surgical Education. Tucson, AZ.
- Scerbo, M.W., (Feb., 2006). The future of medical simulation and the need for human factors. National Academy of Sciences Committee on Human Factors. Washington, DC.
- Tracy, E., Chen, H., Malyarenko, D., Tracy, M., Wei, L., Trossett, M., Bunai, T., Manos, D., Sasinowski, M., Drake, R., Cazares, L., Semmes, O.J. and Cooke, W. (Feb., 2006). Pattern detection and cancer diagnosis in adult T-cell leukemia patients. Early Detection Research Network Meeting, Philadelphia, PA
- Belfore II, L.A. (Jan., 2006). A software framework for surgical simulation virtual environments. Medicine Meets Virtual Reality XIV. Long Beach, CA.
- Combs, C.D. (Jan., 2006). Simulating the domain of medical modeling and simulation: the medical modeling and simulation database. Presented at Medicine Meets Virtual Reality XIV. Long Beach, CA.
- McKenzie, F.D. (Jan., 2006). Medical student evaluation using augmented standardized patients: preliminary results. Medicine Meets Virtual Reality XIV. Long Beach, CA
- Seevinck, J.A., Scerbo, M.W., Belfore, L.A., Weireter, L.J., Crouch, J.R., Shen, Y., McKenzie, F.D., Garcia, H.M., Girtleschmid, S., Baydogan, E., & Schmidt, E.A. (Jan., 2006). A simulation-based training system for surgical wound debridement. Medicine Meets Virtual Reality XIV. Long Beach, CA.
- Scerbo, M.W. (Jan., 2006). A human factors perspective on systems, patient safety, and simulation. Medicine Meets Virtual Reality XIV. Long Beach, CA.
- Shen, Y. (Jan., 2006). Realistic irrigation visualization in a surgical wound debridement simulator. Medicine Meets Virtual Reality XIV. Long Beach, CA.
- Combs, C.D. (Dec., 2005). Interview on television show "On the Record with Joel Rubin" aired on December 11, 2005 discussing the National Center for Collaboration in Medical Modeling and Simulation and medical modeling and simulation activity in Hampton Roads.
- McKenzie, F.D., Shen, Y., and Sun, B. (Nov.-Dec., 2005). Augmenting standardized patients for teaching and assessment. Demonstration at the Interservice/Industry Training, Simulation and Education Conference (IITSEC). Orlando, FL.
- Combs, C.D. (Nov., 2005). Forging interdisciplinary collaboration: the medical modeling and simulation database. International VIPSI Conference. Venice, Italy.
- Combs, C.D. and Scerbo, M.W. (Nov., 2005) Hosted an international media delegation in Norfolk on November 8, 2005 as part of the Virginia Modeling and Simulation Media Tour organized by the Virginia Economic Development Partnership to discuss medical modeling and simulation and to demonstrate ongoing EVMS/ODU projects in this field. Norfolk, VA.

- Belfore, II, L.A., Garcia, H.M., and Alpino, R.J. (Aug., 2005). The surgical wound debridement simulation-based training system. Demonstrated at the Advanced Technology Applications for Combat Casualty Care 2005 (ATACCC 2005) conference. St. Pete Beach, FL.
- Combs, C.D. (July, 2005). Interview on medical modeling and simulation aired on the WHRV-FM radio show "HearSay with Cathy Lewis" on July 21, 2005. Norfolk, VA
- Combs, C.D. (Jan., 2005). The medical modeling and simulation database. 2005 Western Simulation Multiconference. New Orleans, LA.
- Scoville, S.A. & Buskirk, T.D. (Apr., 2005). Experimental comparison of two instructional methods: Traditional microscopy and virtual microscopy. Presented at the American Association of Anatomists 2005 Annual Meeting. San Diego, CA.
- Scerbo, W. W. (Jan., 2005). Human factors and medical simulation. *Medicine Meets Virtual Reality XIII*. Long Beach, CA.
- Scerbo, M. W., Bliss, J. P., Schmidt, E. A., Hanner, H. & Weireter, L. J. (Jan., 2005). Assessing surgical skill training under hazardous conditions in a virtual environment. *Medicine Meets Virtual Reality XIII*. Long Beach, CA.
- Bliss, J. P., Hanner, H. S., & Scerbo, M. W. (Jan., 2005). Determining the efficacy of an immersive trainer for arthroscopy skills. *Medicine Meets Virtual Reality XIII*. Long Beach, CA.
- Bowyer, M.W., Pimentel, E.A., Fellows, J.B., Scofield, R.L., Ackerman, V.L., Horne, P.E., Liu, A.V., Schwartz, G.R., & Scerbo, M.W. (Jan., 2005). Teaching intravenous cannulation to medical students: Comparative analysis of two simulators and two traditional educational approaches. *Medicine Meets Virtual Reality XIII*. Long Beach, CA.
- Scerbo, M.W. (Jul., 2005). Some new virtual environment training applications for dangerous duty. The First International VR Conference/HCI International 2005, Las Vegas, NV.
- Scerbo, M. W. (Sep., 2005). The future of medical training and the need for human factors. The 49th Annual Meeting of the Human Factors & Ergonomics Society, Orlando, FL.
- Scerbo, M.W. Interviewed by Pamela Maddox for Simulation Technology at ODU to Help Medics at War in *The Mace & Crown*, Dec. 1, 2004.
- McKenzie, F.D., Garcia, H.M., Castelino, R.J., Hubbard, T.W., Ullian, J.A. & Gliva, G.A. (Nov., 2004). Augmented standardized patients now virtually a reality. Poster presented at the Third IEEE and AIM International Symposium on Mixed and Augmented Reality, Arlington, VA.
- Scerbo, M.W. (Nov., 2004) Interview by Philip Walzer for Simulation Helps Keep Doctors Cool Under Fire in *The Virginian-Pilot*, Aug. 2, 2004.
- Sokolowski, J.A. (Sept., 2004). Using a multiagent system simulation for decision modeling. Presented at Mitre Corporation, Suffolk, VA.
- Scerbo, M.W. Interview by Tracey Moynihan about surgical skills under simulated combat for WAVY-TV10 News aired Aug. 4, 2004.

Scerbo, M.W., Weireter, L.J, Bliss, J.P., Schmidt, E.A., & Hanner, H. (Aug., 2004). An examination of surgical skill performance under combat conditions using a mannequin-based simulator in a virtual environment. Presented at the NATO RTO Human Factors in Medicine. St Pete Beach, FL.

Schmidt, E.A., Scerbo, M.W., Bliss, J.P., and Thompson, S.N. (March, 2004). Skill acquisition with a VR simulator for phlebotomy. Presented at the Second Conference on Human Performance, Situation Awareness, and Automation, Daytona Beach, FL.

Scerbo, M.W., Bliss, J.P., Schmidt, E.A., Thompson, S.N., Cox, T.D., & Poland, H.J. (Jan., 2004). A comparison of the CathSim™ system and simulated limbs for teaching intravenous cannulation. Presented at Medicine Meets Virtual Reality XII. Newport Beach, CA.

INVITED PRESENTATIONS

Combs, C.D. (2012, October). Modeling drift in the OR: A conceptual framework for research. The 2012 Conference on Education and Training Modeling and Simulation (ETMS12) of the 2012 Autumn Simulation Multi-Conference, San Diego, CA.

Combs, C.D. (2012, September). The future of modeling and simulation: Things we should be thinking about. Keynote speech for 2012 MODSIM World Conference, Suffolk, VA.

Scerbo, M.W. (2012, August). The importance of human factors psychology in healthcare simulation. Presidential Program – Case Study: Human Factors Psychology. The 120th Annual Convention of the American Psychological Association, Orlando, FL.

Combs, C.D. (2012, July). Activities at the National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain.

Combs, C.D. (2012, May). EVMS' Sentara Center for Simulation and Immersive Learning as a Cost-Effective Medical Simulation Center. MT3 (Medical Technology, Training & Treatment) 2012 Conference, Orlando, FL.

Scerbo, M.W. (2012, April). Human factors psychology and healthcare simulation: A prescription for patient safety. The Tidewater Chapter of Sigma Xi, Suffolk, VA.

Combs, C.D. (2012, January). Shaping the Future of Medical Education Through Simulation. Keynote Speech: The 9th Annual Asia Pacific Medical Education Conference (APMEC), Singapore.

Combs, C.D. (2012, January). Simulation As An Assessment Tool. Pre-Conference Workshop: The 9th Annual Asia Pacific Medical Education Conference (APMEC), Singapore.

Scerbo, M.W. (2012, January). Human Factors and Simulation: Limiting Iatrogenic Harm. Plenary Presentation: The 12th International Meeting on Simulation in Healthcare, San Diego, CA.

Scerbo, M.W. (2010, November). Simulation-based training in healthcare and the need for human factors. Department of Industrial Economics, Clemson University, Clemson, SC.

- Scerbo, M.W. (2010, June). A human factors perspective on medical simulation and standardized patients. Plenary Presentation: The 9th Annual Association of Standardized Patient Educators Conference, Baltimore, MD.
- Scerbo, M.W. (2009, April). The role of human factors and the future of surgical simulation. The Society of American Gastrointestinal and Endoscopic Surgeons Annual Meeting, Phoenix, AZ.
- Scerbo, M.W. (2008, June). Some thoughts on assessing surgical skills. The 5th Innovations in the Surgical Environment Conference, Baltimore, MD.
- Scerbo, M.W. (2008, April). Virtual environments in medical modeling and simulation. U.S. Navy, Naval Research Laboratory, Washington, DC.
- Scerbo, M.W. (2007, November). Developments in medical modeling and simulation. Department of System Engineering, University of Virginia, Charlottesville, VA.
- Scerbo, M.W. (2006, November). The Future of Medical Simulation and the Need for Human Factors. Presentation for the *Forum on Research in Science and Technology Education: Accelerating U.S. Competitiveness*, sponsored by the Federation of Behavioral, Psychological, and Cognitive Sciences and the Human Factors & Ergonomics Society, Washington, DC.
- Scerbo, M.W. (2006, October). The role of human factors in medical simulation and patient safety (and errors). *The Human Factors in Healthcare: Practical Applications to Improve Patient Safety* Course, The Mayo Clinic, Rochester, MN.
- Scerbo, M.W. (2006, September). The role of medical simulation in training and patient safety. Newport News Medical Society, Newport News, VA.
- Scerbo, M.W. (2006, June). Enhancing simulation-based training in medicine through virtual environments. Fourth Annual Safar Symposium, Pittsburgh, PA.
- Scerbo, M.W. (2006, May). Science and medical simulation. Third Annual Advanced Initiatives in Medical Simulation Meeting, Washington, DC.
- Scerbo, M.W. (2006, February). The future of medical simulation and the need for human factors. National Academy of Sciences Committee on Human Factors, Washington, DC.
- Scerbo, M.W. (2005, November). Medical simulators and the need for human factors. Carolina Chapter of the Human Factors and Ergonomics Society, Cary, NC.

INVITED PANEL PARTICIPATION

- Combs, C.D. *Advancing Education through New Media*. (2012, September). Association of Academic Health Centers 2012 Annual Meeting, San Francisco, CA.
- Combs, C.D. *Education Simulation and Innovation*. (2012, March). Association of Academic Health Centers 2012 International Forum, Washington, DC.
- Scerbo, M.W., *The Scholarship of Quality and Patient Safety*. (2010, August). Ninth National Quality Colloquium on the Campus of Harvard University, Boston, MA.

Scerbo, M.W., *The Scholarship of Quality and Patient Safety*. (2009, August). Eighth National Quality Colloquium on the Campus of Harvard University, Boston, MA.

TECHNICAL PANEL PARTICIPATION

Combs, C.D., Innovative Collaborations in Simulation-based Education and Research, 12th International Meeting on Simulation in Healthcare (IMSH), January, 2012.

Scerbo, M.W., Simulation Expert Meeting. Society of Interventional Radiology, May, 2009.

Scerbo, M.W., The 2009 Healthcare Team Coordination Program's (HCTCP) Technical Expert Panel, Washington, DC, May, 2009.

SELECTED GRANTS AND AWARDS

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). U.S. Department of Defense, 2012, \$600,000.

Miller, G.T. (Project Director). Automated Intelligent Mentoring System (AIMS). Center for Innovative Technology, FY2012 Commonwealth Research Commercialization Fund, 2012, \$244,441.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2012, \$406,406.

Parodi, A. (Principal Investigator), Diallo, S., Scerbo, M.W., & Papelis, Y.). LIVES and SIM Lab (Laboratory of Investigation, Validation and Verification of Emerging Simulators). Eastern Virginia Medical School, 2012-present, \$50,000.

Scerbo, M.W. (Project Director), Britt, R., & Stefanidis, D. A Secondary Task for Measuring Laparoscopic Skill. U.S. Agency for Healthcare Research and Quality, 2011 – present, \$656,873.

Combs, C.D. (Project Director). Medical Modeling and Simulation Database Enhancement. Old Dominion Research Foundation, 2011, \$31,290.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2011, \$406,406.

Scerbo, M.W. (Principal Investigator). Suturing Simulator Evaluation. SimQuest, LLC, 2010-present, \$22,346.

Scerbo, M.W. (Principal Investigator). Standardized Patients: Selection Refinement, Cognitive Challenges, and Expanded Roles. Eastern Virginia Medical School, 2010-present, \$149,052.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2010, \$406,406.

Scerbo, M.W. (Principal Investigator). Evaluation of Simulation Training on Hospital Team Performance. TRICAREE Management Activity/Axiom Resource Management, Inc., 2009-present, \$15,152.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation

(NCCMMS). Commonwealth of Virginia, 2009, \$562,500.

Scerbo, M.W. (Principal Investigator), & McKenzie, F.D. Modeling and Simulation Solutions for Standardized Patients: Selection, Refinement, and Augmentation. Eastern Virginia Medical School, 2009-2010, \$130,000.

McKenzie, R. (Principal Investigator), Scerbo, M.W., & Colberg-Ochs, S. Health iManage (HIM): Incentivized Type 2 Diabetes Management Using i-Phone Technology. Old Dominion University Research Foundation, 2009, \$26,962.

Scerbo, M.W. (Principal Investigator). Craniotomy Burr Hole Drilling Simulator Evaluation. SimQuest, LLC, 2008-2009, \$25,320.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2008, \$562,500.

Scerbo, M.W. (Principal Investigator). Applying Automaticity Theory to Simulator Training to Enhance Operative Performance. Association for Surgical Education through Carolinas Medical Center, Charlotte, NC, 2007-2008, \$2,500.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2007, \$1,500,000.

Combs, C.D. (Project Director). National Center for Collaboration in Medical Modeling and Simulation (NCCMMS). Commonwealth of Virginia, 2006, \$1,500,000.

DISSERTATIONS

Hope S. Hanner-Bailey – (Mark W. Scerbo, Chair, James P. Bliss, Kathryn A. Mendoza, Robert M. McIntyre and Leonard J. Weireter, Jr., Members) Understanding the nature of surgical excellence using a competency modeling approach (2004-December, 2006). Industrial/Organizational Psychology, Old Dominion University, 147 pp.

PUBLIC SERVICE

Mark W. Scerbo, Ph.D., and Robert Alpino served as members of the Advanced Initiatives in Medical Simulation delegation to the U.S. Capitol, Washington, D.C. (May, 2004, 2005, 2006, 2007, 2008). Facilitated demonstrations of medical simulation technology designed to promote patient safety in the Dirksen Senate Office Bldg.