Ryan Wohleber

CURRICULUM VITAE, 5/2016 (abridged)

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Education

2016	University of Central Florida – Ph.D. Modeling & Simulation (3.9 GPA)
2015	University of Central Florida – M.S. in Modeling & Simulation (3.9 GPA)
2012	University of Cincinnati – M.A. in Experimental Psychology (3.9 GPA)
2009	University of Cincinnati – B.S. in Industrial Design, Transportation Track (3.6 GPA)

Research Experience

12/15 – present **Army Research Laboratory (HRED)**, *Orlando, FL*

- Support a project focusing on human interaction with intelligent agents which are designed to improve management of multiple UAV systems
- Assist with data processing and analysis as well as study design; one of my primary responsibilities is the testing and development of eye tracking metrics for interface assessment
- Provide critical review of outgoing journal article, chapter, proceedings, technical report, poster, and presentation submissions

8/13 – present **Institute for Simulation and Training @ University of Central Florida**, *Orlando, FL*

- Manage or coordinate day to day operations of multiple projects in collaboration with government, industry, and partner universities including researcher and participant scheduling, IRB approval and modification, set-up, materials generation, and troubleshooting
- Train, manage, and mentor a team of 7-10 RAs
- Support data collection, processing, and analysis efforts which utilize a variety of psychophysiological measures including Electroencephalogram, electrocardiogram, ultrasonography, functional near-infrared spectroscopy, galvanic skin response, eye tracking, and postural recording (Kinect-based)
- Develop new metrics including an on-line objective metric for detection of fatigue and reliance on automation using eye tracking
- Derive analysis techniques including a heuristic-based method for determining appropriate squad-level commands for human-robot interaction
- Generate research designs including a design for testing the effectiveness of a new deception detection training tool
- Refine research designs and protocols based on pilot study outcomes to provide effective manipulations including the tweaking of task parameters to induce a larger workload manipulation
- Work with various simulations of multi-UAS control, including ALOA, MIX, and RESCHU.
- Am actively involved in several internal projects, which the lab undertakes to build its knowledge base and refine its analysis techniques including use of baselines.
- Assist with grant and white paper efforts.

7/10 – 7/11 **General Electric Appliances & Lighting,** *Louisville, KY*

- Performed heuristic evaluations for internal design review and competitive benchmarking.
- Conducted usability testing to support user manual and product interface development.
- Supported new method development for design and marketing research.
- Developed research designs to support product design and cost-out.

- Developed study designs to address specific questions from marketers, engineers, industrial designers, and interaction designers to support product design and cost-out.
- Managed personal development to support several efforts involving various aspects of visual, auditory, and tactile perception, as well as attitudes, learning, and cognitive modeling.
- My work required making a strong case for the validity of the designs we employed and the outcomes they produced, often to collaborators without a cognitive or inferential statistics background.

3/09 – 8/13 **Stress and Cognition Laboratory @ University of Cincinnati**, *Cincinnati, OH*

- Developed an implicit measure for measuring preference of product design
- Assisted in the training and management of 5 lab RAs and managed a team of 2 RAs on later projects
- Supported data collection, piloting, and/or project management efforts in various areas of human factors psychology including personality, emotion, emotional intelligence, and decision-making
- Lead, assisted, or consulted on new research design development
- Ordered lab space to optimize space and resource use with an aim to enhance productivity

Journal Articles

Matthews, G., Neubauer, C., Saxby, D. J., & **Wohleber, R. W.** (in press - 2016). Fatigue and stress in the automated vehicle: Strategies for maintaining safety. *International Journal of Safety Across High-Consequence Industries*.

Wohleber, R. W. & Matthews, G. (submitted - 2016). Multiple facets of overconfidence: Implications for driving safety.

Fallon, C. K., Panganiban, A. R., **Wohleber, R. W.**, Matthews, G., Kustubayeva, A. M., & Roberts, R. (2014). Emotional intelligence, cognitive ability and information search in tactical decision-making. *Personality and Individual Differences, 65*, 24-29.

Chapters

Parchment, A., **Wohleber, R. W.**, & Reinerman-Jones, L. E. (in press - 2016) Physiological baseline methods and usage.

Wohleber, R. W., Matthews, G., Funke, G. J., & Lin, J. (in press - 2016) Considerations in physiological metric selection for online detection of operator state: A case study.

Matthews, G., Reinerman-Jones, L. E., **Wohleber, R. W.**, Lin, J., Mercado, J., & Abich, J. (2015). Workload is multidimensional, not unitary: What now? In D. D. Schmorrow & C. M. Fidopiastis (Eds.), *Foundations of Augmented Cognition* (pp. 44-55). Springer International Publishing.

Barber, D., **Wohleber, R. W.**, Parchment, A., Jentsch, F., & Elliott, L. (2014). Development of a squad level vocabulary for human-robot interaction. In R. Shumaker & S. Lackey (Eds.), *Virtual, Augmented and Mixed Reality. Designing and Developing Virtual and Augmented Environments* (pp. 139-148). Springer International Publishing.

Conference Proceedings

Lin, J., Matthews, G., **Wohleber, R. W.**, Chiu, C.-Y. P., Calhoun, G. L., Funke, G. J., & Ruff, H. (accepted - 2016). Contextual factors in multi-UAV operator selection: Gender and automation reliability. In *Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting.* Washington, DC: Human Factors and Ergonomics Society.

Parchment, A., **Wohleber, R. W.**, Reinerman-Jones, L. E. (accepted – 2016). The importance of strong methodology when choosing baselines for physiological assessment. In *Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting.* Washington, DC: Human Factors and Ergonomics Society.

Stowers, K., Kasdaglis, N., Newton, O., Lakhmani, S., **Wohleber, R. W.**, Chen, J.Y.C. (accepted – 2016). Intelligent agent transparency: The design and evaluation of an interface to facilitate human and artificial agent collaboration. In *Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting.* Washington, DC: Human Factors and Ergonomics Society.

Teo, G., **Wohleber, R. W.**, Lin, J., & Reinerman-Jones, L. E. (in press - 2016). The relevance of theory to human robot teaming research and development. AFHE.

Wohleber, R. W., Calhoun, G. L., Funke, G. J., Ruff, H., Chiu, C.-Y. P., Lin, J., & Matthews. (accepted - 2016). The impact of automation reliability on performance and reliance changes with operator fatigue. In *Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting.* Washington, DC: Human Factors and Ergonomics Society.

Lin, J., **Wohleber, R.**, Matthews, G., Chiu, P., Calhoun, G., Ruff, H., & Funke, G. (2015). Video game experience and gender as predictors of performance and stress during supervisory control of multiple unmanned aerial vehicles. In *Proceedings of the Human Factors and Ergonomics Society 59th Annual Meeting*, pp. 746-750. Los Angeles, CA: Human Factors and Ergonomics Society.

Wohleber, R. W., Matthews, G., Reinerman-Jones, L. E., Panganiban, A. R., & Scribner, D. (2015). Individual differences in affective response during simulated UAV operation. In *Proceedings of the Human Factors and Ergonomics Society 59th Annual Meeting*, pp. 751-755. Los Angeles, CA: Human Factors and Ergonomics Society.

Wohleber, R. W. & Matthews, G., (2014). Individual differences in driver over-confidence implications for stress, error and managing impairments. In *Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting*, pp. 999-1003. Chicago, IL: Human Factors and Ergonomics Society.

Fallon, C.K., Matthews, G., Panganiban, A.R., **Wohleber, R.**, & Roberts, R.D. (2013). Emotional intelligence and decision making under stress. In *Proceedings of the Human Factors and Ergonomics Society 57th Annual Meeting*, pp. 873-877. Santa Monica, CA: Human Factors and Ergonomics Society.

Wohleber, R., & Matthews, G. (2012). Implicit attitudes in consumer purchase intent. In *Proceedings of the Human Factors and Ergonomics Society 56th Annual Meeting*, pp. 1982-1986. Boston, MA: Human Factors and Ergonomics Society.

Poster Presentations

Tolston, M., Funke, G., Matthews, G., **Wohleber, R.**, Lin, J., Calhoun, G., Ruff, H. (accepted – 2016). Effects of automation reliability on structure of gaze patterns over time.

Wohleber, R. W. (2010). Mitigating driver distraction through usability: The role of aesthetics. *2010 Cognition, Action, and Perception Conference*, Cincinnati, May, 2010.

- Awarded "Excellent Presentation"

Wohleber, R. W., Choto, M., Gillespie, M. (2010). Cognition, action, and perception in design. *2010 Cognition, Action, and Perception Conference,* Cincinnati, May, 2010.

Published Abstract

Matthews, G. Fallon, C. K., Panganiban, A. R., **Wohleber, R. W.**, Roberts, R. D. (2014). Emotional intelligence, information search and decision-making under stress. *Personality and Individual Differences, 60,* S22.

Works in Progress Nearing Completion

Wohleber, R. W. & Matthews, G. Implicit measures for the assessment of attitudes toward similar product stimuli. (journal submission)

Wohleber, R. W. et al. The Impact of automation reliability and fatigue on reliance. (journal submission)

Wohleber, R. W. et al. Resilience. (journal submission)

Oral Paper Presentations and Invited Addresses

Matthews, G., **Wohleber, R. W.**, Lin, J., Calhoun, G., & Funke, G. (2016). Tracking fatigue and reliance on automation in multi-UAV operation. Technical Interchange Meeting, Dayton, April 2016.

Chen, J., Stowers, K., Newton, O., **Wohleber, R. W.**, Barnes, M., Harris, J., & Barber, D. (2016). Exploring transparency in UxV management. Technical Interchange Meeting, Dayton, April 2016.

Matthews, G., Lin, J., **Wohleber, R. W.**, & Reinerman-Jones, L. E. (2015). Individual differences in unmanned vehicle operation: Performance, stress and trust. 2015 International Society for the Study of Individual Differences Conference, London, July 2015.

Matthews, G., Lin, J., **Wohleber, R. W.,** Reinerman-Jones, L. E., Chiu, C.-Y. P., Calhoun, G., & Funke, G. (2015). Individual differences in performance, trust, and stress during multi-UAV operation. Department of Defense Human Factors and Ergonomics Technical Advisory Group, Orlando, May 2015.

Matthews, G., **Wohleber, R. W.**, Zaromb, F., Rhodes, R., Gertner, A., & Roberts, R. D. (2015). Base rate neglect – or base rate misuse? Paper presented at the11th Biennial Meeting of the Society of Applied Research in Memory and Cognition, Victoria, BC, Canada.

Matthews, G., **Wohleber, R. W.**, Lin, J., Weinstein, Y., & Jacoby, L. (2014). Confirmation bias: Ubiquitous in experiments, elusive in correlations. 2014 Association for Psychological Science Convention, San Francisco, May 2014.

Wohleber, R. W. & Matthews, G. (2014). Individual differences in over-confidence in managing driver impairments. 28th International Conference of Applied Psychology. Paris, July, 2014.

Matthews, G, Fallon, C.K., Panganiban, A.R., **Wohleber, R.W.**, & Roberts, R.D. (2013). Emotional intelligence, information search and decision-making under stress. Sixteenth Meeting of the International Society for the Study of Individual Differences, Barcelona, July 2013.

Fallon, C.K., Matthews, G. Panganiban, A.R., **Wohleber, R.W.**, & Roberts, R.D. (2012). Decision making under stress: Assessing the role of emotional intelligence. Society for Judgment and Decision Making Annual Conference, Minneapolis, November 2012.

Teaching Experience

Fall 2011 **Research Methods (281)** – role: instructor
- Lectured and facilitated hands on learning of applied statistics and research design
- Trained students in APA Style and manuscript writing

Winter 2012 **Conflict Resolution (365)** – role: instructor
- Developed a command of an unfamiliar subject in order to serve as instructor for this course
- Fashioned a course that emphasized examples, simulations, and group work

Spring 2012 **Research Methods (281)** – role: instructor
- Built on Fall 2011 curriculum by creating new assignments designed to walk students through research design process and facilitate student comprehension of material
- Learned and taught a statistics program (R) that I had not previously used

Summer 2013 **Research Methods: Human Factors (460)** – role: TA (to Gregory Funke, Ph.D.)
- Graded research presentation and homework assignments
- Taught several classes in instructor's absence

6/12 – 8/13 **Graduate Association for Teaching Excellence, University of Cincinnati**
Member
- Collaborated with a committee of graduate students dedicated to providing information and resources for enhancing teaching effectiveness
- Leveraged my experience to improve my teaching methods

Thesis Consulting

I have helped advise research design, statistics, and results interpretation for the following Master in Design Studies projects:

Islas Munoz, J. A. (2013). *Automotive design aesthetics: Harmony and its influence in semantic perception*. M.D.E.S. thesis: University of Cincinnati.

Leyva, C. (2013). *Empathy in design.* M.D.E.S. thesis: University of Cincinnati.

Graduate Assistantship

9/09 – 6/10 **Center for Cognition, Action, and Perception, University of Cincinnati**
Designer / Graduate Assistant; Guy Van Orden, PhD.,
- Developed website for the Center for Cognition, Action, and Perception
- Served on the Center for Cognition, Action, and Perception Conference Committee
- Served as a reviewer for CAP Conference submissions

University Service

6/11 **Ethnic Minority Enrichment in Research and Graduate Education (EMERGE), University of Cincinnati**
Mentor for UC undergraduate program; Bridgette Peteet, Ph.D. (Program Coordinator)
- Mentored minority undergraduate student including university involvement, CV, and personal statement advising

4/13 – 6/13 **Center for First Year Experience & Learning Communities, University of Cincinnati**
Mentor for UC undergraduate program; Bee Nash, M.A.,
- Mentored undergraduate student including university involvement, CV, and personal statement advising
- Served as a panelist for the hiring and advising of student leaders

Professional Memberships

- Human Computer Interaction International (HCII)
  - **Parallel Session Co-Chair**
- Journal of Personality and Individual Differences (PAID)
  - **Reviewer**
- Human Factors and Ergonomics Society (HFES)
  - Augmented Cognition Technical Group Officer: **Webmaster, Resource Manager, Newsletter Editor**
- Modeling and Simulation Knights (MaSK)
  - **Vice President | Treasurer**
- The Society for Modeling & Simulation International (SCS)
- IEEE Robotics and Automation Society
- American Institute of Aeronautics and Astronautics (AIAA)
- Industrial Design Society of America (IDSA) – past & future member
- Interaction Design Foundation (IDF)
- Alpha Lambda Delta Honors Fraternity (ALD)

Industry Work Experience

9/09 – 10/09 **Biopack / University of Kentucky Collaboration – Cincinnati, Ohio**
Freelance Industrial Designer, Supervisor: Craig Vogel, Associate Dean, Research and Graduate Studies, DAAP, University of Cincinnati
- Part of a larger collaborative effort between University of Kentucky and Biopack
- Generated several designs and applications for new wearable technology
- Presented design and other materials to assist client in selling innovation to investors

6/08 – 11/08 **LiveWell Collaborative – Cincinnati, Ohio**
6/09 – 9/09 *Industrial Designer, Supervisor: Ralf Schneider, Project Manager*
- Generated strategies for extending a product line to a new user demographic
- Rendered and presented designs and story boards to clients
- Conducted consumer interviews and events to evaluate products and generate new ideas and direction
- Designed qualitative research methods for evaluating human factors issues of common products
- Handled industrial design duties on a multidisciplinary team of marketers, graphic designers, and fashion designers

1/08 – 3/08 **REDgroup – Minneapolis, Minnesota**
Industrial Designer, Supervisor: Rich Thompson, Senior Industrial Designer
- Generated solutions to design challenges in the medical field
- Refined and developed medical innovations from companies and private inventors
- Worked with a team of industrial designers and mechanical and electrical engineers

9/06 – 12/06 **Zukun – Columbus, Ohio**
3/07 – 6/07 *Industrial Designer, Supervisor: Shawn Whetstone, Lead Industrial Designer*
- Generated concepts, modeled concept proposals in 3D for presentation
- Worked with a wide range of products in a number of areas including water coolers, high end speakers, furniture, and user interfaces
- Worked with a team of industrial designers and mechanical engineers

4/06 – 6/06 **Alliance (Rock Tenn) – Baltimore, Maryland**
Industrial Designer, Supervisor: Robert Pinkerton, Senior Designer
- Provided highly accurate 3D product models to test and portray new product displays
- Designed pack-outs, and engineered display designs using Artios CAD

5/05 – 9/05 **Invisible Service Technicians – Milford, Ohio**
Designer, Supervisor: Michael Duty, President
- Developed artwork for proposals, ad materials, briefs, presentations and website

Select Software Experience

Statistics & Research
SPSS, Minitab, R, Direct RT, ExpertFit, Stat::Fit

Simulation
Simio, Presagis Terra Vista/Stage/Flight Sim

Design
Autodesk Alias/Showtime, Rhino, V-Ray, Adobe Photoshop/Illustrator

Office
Word/Excel/PowerPoint/Access

Programming Languages
HTML, CSS, XML

Scholarships, Awards, Academic Involvement, Volunteering, and Employment

Scholarships

- Student Government Association: Conference Presentation Grant (2014&2015)~ $250
- Graduate Student Association: Conference Presentation Grant (2014&2015)~ $500
- Choose Ohio First (2009-2013)~ $3,000/year
- Graduate School Presenter Grant (2012)~ $500
- Palmer (2005)~ $1000
- Cincinnatus (2004-2009)~ $2000/year

Recognition

- Excellent Presentation | 2010 CAP Conference
- Lotus Prize Merit Awards (2) | 2008 "Lotus Cup" International Industrial Design Competition
- Winning Design Team | 2006 National PACE Console Competition

Volunteering

- Knox Presbyterian Youth Advisor (3 years)
- Interface Hospitality Network (2 projects)
- Habitat for Humanity (2 projects)
- YMCA Adaptive Swimming (Autism; 2 years)
- Ronald McDonald House (1 project)