

Kimberly Stowers, M.S.

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Professional Profile

- Multidisciplinary researcher with experience in a broad spectrum of research, including human-computer interaction, interface design, and human performance measurement
- Experience working with engineers to design and implement technical systems
- Innovative teacher dedicated to immersive and interactive learning
- Have mentored 10 undergraduate students on various research projects
- Track record of publishing papers as first author
- Assisted in acquisition of a \$1.2 million grant

Education

University of Central Florida, Orlando, FL Ph.D., Applied Experimental Human Factors Psychology Adviser: Peter A. Hancock, Ph.D.	Expected May 2017
University of Central Florida, Orlando, FL M.S., Modeling and Simulation Adviser: Eduardo Salas, Ph.D.	Aug. 2015
University of Central Florida, Orlando, FL B.S., Honors in Psychology Thesis: Stress and performance in uncertainty-avoiding individuals: An introductory literature review Adviser: Eduardo Salas, Ph.D.	May 2013

Teaching Experience

University of Central Florida Instructor of Record <ul style="list-style-type: none">• Teach junior and senior level undergraduate courses	Orlando, FL Aug. 2015 – May 2016
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Courses Taught

Instructor (2015, Fall): History and Systems of Psychology (3 credit hours; 12 students)
Instructor (2016, Spring): Cognitive Psychology (4 credit hours; 26 students)

Research Experience

Institute for Simulation and Training Graduate Research Assistant	Orlando, FL Feb. 2015 – Current
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Supervisors: Jessie Chen, Ph.D., and Daniel Barber, Ph.D.

- Leading a project examining transparency displays
- Working with engineers to design and implement interface

Institute for Simulation and Training

Orlando, FL

Graduate Research Assistant

May 2013 – May 2015

Supervisors: Eduardo Salas, Ph.D., and C. Shawn Burke, Ph.D.

- Assisted and lead multiple research grant proposals
- Lead a the development of a theoretical framework
- Assisted with meta-analyses, including data coding

Institute for Simulation and Training

Orlando, FL

Undergraduate Research Assistant

May 2012 – May 2013

Supervisor: Eduardo Salas, Ph.D., and C. Shawn Burke, Ph.D.

- Assisted with logistics and running experiments

Journal Manuscripts Accepted

Stowers, K., Leyva, K., Hancock, G., Hancock, P.A. (2016). Life or death by robot?
Ergonomics in Design.

Stowers, K., Oglesby, J.M., Sonesh, S.C., Leyva, K., Iwig, C. & Salas, E. (Accepted). An updated framework for the development of metrics in human-automation systems. Submitted to *Human Factors.*

Journal Manuscripts in Preparation

Oglesby, J.M., **Stowers, K.**, Leyva, K., Iwig, C., Shimono, M., Sonesh, S., Hughes, A.M., and Salas, E. (In progress). Human automation systems integration measurement: A state of the science. To be submitted to *Human Factors.*

Sonesh, S.C., Iwig, C., **Stowers, K.**, Salas, E. (In progress). Quantifying safety in human automation systems: A theoretical model of precursors to safety in spaceflight.

Sonesh, S.C., Iwig, C., **Stowers, K.**, Salas, E., (In progress). Selecting Metrics that Capture Human Automation System Performance in Spaceflight.

Proceedings Manuscripts (Peer-reviewed)

Hughes, A. M., Volante, W. G., **Stowers, K.**, Leyva, K., Oglesby, J. M., Bisbey, T., Salas, E., Knott, B.A., & Vidulich, M. A. (2014, September). Cognition and Physiological Response: Towards a Model of Validated Physiological Measurement. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting 58*, 1009-1013.

- Oglesby, J.M., **Stowers, K.**, Leyva, K., Dietz, A., Sonesh, S., Burke, S. Salas, E. (2014, September). Assessing human-automation system safety, efficiency, and performance: Developing a metrics framework. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting 58*, 1149-1153.
- Iwig, C., Oglesby, J.M., **Stowers, K.**, Leyva, K., Shimono, M., Salas, E. (2015). Spaceflight Task Contexts for Long Duration Exploration Missions: Application to Measurement of Human Automation Interaction. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 59*, 941-945.
- Sanders, T.L., Volante, W., **Stowers, K.**, Kessler, T., Gabracht, K., Harpold, B., Oppold, P., Hancock, P.A. (2015). The influence of robot form on trust. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 59*, 1510-1514.
- Stowers, K.** (2015). Communication between Human Factors Psychologists and Engineers: Challenges and Solutions. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 59*, 1732-1735.
- Chen, J.Y.C., Barnes, M.J., Selkowitz, A., **Stowers, K.**, Lakhmani, S., Kasdaglis, N. (2016). Human-autonomy teaming and agent transparency. *Proceedings of the 21st International conference on Intelligent User Interfaces*.
- Kasdaglis, N., **Stowers, K.** (In press). Human centered design: Bridging the gap between human factors and system engineering. *Proceedings of the 18th International Conference on Human Computer Interaction*.
- Barnes, M., Chen, J., Wright, J., & **Stowers, K.** (In press). Human-agent teaming for effective multirobot management: Effects of agent transparency. *Proceedings of the 18th International Conference on Human Computer Interaction*.
- Stowers, K.**, Kasdaglis, N., Rupp, M., Chen, J.Y.C., Barber, D., Barnes, M.J. (In press). Insights into Human-agent teaming: Intelligent agent transparency and uncertainty. *Proceedings of the 7th International Conference on Applied Human Factors and Ergonomics*.
- MacArthur, K. R., **Stowers, K.**, & Hancock, P. A. (In press). Human-robot interaction: Proximity and speed – Slowly back away from the robot! *Proceedings of the 7th International Conference on Applied Human Factors and Ergonomics*.
- Stowers, K.**, Kasdaglis, N., Newton, O., Lakhmani, S., Wohleber, R., Chen, J.Y.C. (In press). Intelligent agent transparency: The design and evaluation of an interface to facilitate

human and artificial agent collaboration. *Proceedings of Human Factors and Ergonomics Society*.

Schroeder, B.L., Leyva, K., **Stowers, K.**, Lewis, J.E., Sims, V.K. (In press). Investigating Usability, User Preferences, Ergonomics, and Player Performance in StarCraft II. . *Proceedings of Human Factors and Ergonomics Society*.

Volante, W.G., Merz, M., **Stowers, K.**, Hancock, P.A. (In press). Sleep, workload and boredom: subject matter expert insights. *Proceedings of Human Factors and Ergonomics Society*.

Chen, J.Y.C., Barnes, M., Selkowitz, A., **Stowers, K.** (In press). Effects of agent transparency on human-autonomy teaming effectiveness. Submitted to *Annual Conference of IEEE Systems, Men, and Cybernetics Society*.

Hancock, P.A., **Stowers, K.L.**, Kessler, T.T. (In press). Can we trust autonomous systems? Submitted to *1st International Neuroergonomics Conference*.

Presentations (Peer-reviewed)

Stowers, K., Oglesby, J.M., Leyva, K., Dietz, A.S., Burke, C.S., Salas, E. (2014, February). Evidence-based metric toolkit for measuring safety and efficiency in human-automation systems. *NASA Human Research Program Investigators' Workshop*. Galveston, TX.

Savage, N., **Stowers, K.**, Kramer, W., Shuffler, M, Salas, E. (2014, July). Team training design and evaluation features: An updated review. (2014, July). *Interdisciplinary Network for Group Research*. Raleigh, NC.

Oglesby, J.M., **Stowers, K.**, Leyva, K., Dietz, A.S., Burke, S. & Salas, E. (2014, October). Assessing human-automation system safety and efficiency: Development of a metrics framework. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.

Hughes, A.M., Volante, W.G., **Stowers, K.**, Leyva, K. Oglesby, J.M., Bisbey, T. & Salas, E. (2014, October). Understanding measurement: A framework toward validating physiological measurement of cognitive performance. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.

Oglesby, J.M., **Stowers, K.**, Leyva, K., Sonesh, S.C., Hughes, A.M., Iwig, C., Shimono, M., & Salas, E. (2015, January). A review and summary of methods for assessing human-automation system safety and performance. *NASA Human Research Program Investigators' Workshop*. Galveston, TX.

- Stowers, K.**, Dodge, D., (2015, April). Bridging the gap between psychology and engineering through the use of Unified Modeling Language. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Stowers, K.** (2015, April). Communication between Human Factors Psychologists and Engineers: Challenges and Solutions. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Iwig, C., Oglesby, J.M., Leyva, K., Shimono, M., **Stowers, K.**, Sonesh, S.C., Salas, E. (2015, April). Human automation systems in spaceflight: The what, when, and how of measurement. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Hancock, P.A., Sanders, T., Kessler, T., **Stowers, K.**, (2015, May). Examinations of interpersonal distance and trust in human-robot interaction. *Robotics Collaborative Technology Alliance Program Review Meeting*. Philadelphia, PA.
- Iwig, C., Leyva, K., **Stowers, K.**, Oglesby, J.M., Sonesh, S.C., Hughes, A.M., Shimono, M., Salas, E. (2015, May). Human automation systems interaction measurement: A state of the science. *Houston Human Factors and Ergonomics Symposium*. Houston, TX.
- Dodge, D.M., **Stowers, K.** (2016, April). Building modular robots for use in HRI research. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Golden, K.E., **Stowers, K.** (2016, April). Equality and hierarchy in human-robot interaction. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Leibowitz, N.M., **Stowers, K.** (2016, April). Building a trustworthy robot-robot color and perceived trust. *Human Factors Applied Psychology Conference*. Daytona Beach, FL.
- Stowers, K.**, Hancock, P.A., Volante W.G. (2016, May). Human perception of robot appearance. *Robotics Collaborative Technology Alliance Program Review Meeting*. Philadelphia, PA.

Invited Presentations

- Stowers, K.** (2014, February). *What is Human Factors?* Psychology Department, University of Central Florida. Orlando, FL.
- Stowers, K.** (2015, February). *What Can I Do With a Degree in Human Factors?* Psychology Department, University of Central Florida. Orlando, FL.

Stowers, K. (2015, October). *Communication between Psychologists, Engineers, and Designers*. Human-Centered Design Institute, Florida Institute of Technology. Melbourne, FL.

Funded Grants (Assisting Author)

Dynamic Team Role Allocation in Long Duration, Exploration Missions: Identification of Roles, Triggers, and Measurement Tools

- **Amount: \$1,200,000**
- Funded by the **National Aeronautics and Space Administration**
- Funded for July 2014 – July 2017
- Principal Investigator: **Eduardo Salas, Ph.D.**
- My contribution: Assisted with technical statement and theoretical foundation

Relevant Research Projects

Workload and Sleep Scheduling Tools for Long Duration Missions

- Apr. 2015 – Current
- Funded by the National Aeronautics and Space Administration
- Principal Investigator: Peter Hancock, Ph.D.
- **My role:** Assisting with project management and technical writing

Intelligent Multi-UxV Planner with Adaptive Collaborative/Control Technologies

- Feb. 2015 – Current
- Funded by the Autonomy Research Pilot Initiative
- Investigator, ARL/HRED: Jessie Chen, Ph.D.
- **My role: Team leader.** Developing and testing a transparency interface.

Empirical Investigation of Social Dynamics and Trust in Soldier-Robot Teams

- Feb. 2015 – June 2016
- Funded by the Army Research Laboratory
- Investigators: Stephen Fiore, Ph.D., Peter Hancock, Ph.D.
- **My role: Team leader.** Designing and implementing a trust in robots experiment

Towards a Scientifically Rooted Design Architecture of Team Process & Performance Modeling in Adaptive, Team-Based Intelligent Tutoring System

- Jan. 2013 – May 2015
- Funded by the US Army RDECOM
- Principal Investigator: Eduardo Salas, Ph.D.
- **My role:** Served as human factors liaison between psychologists and engineers.

Evidenced-Based Metrics Toolkit for Measuring Safety and Efficiency in Human-Automation Systems

- Oct. 2013 – May 2015

- Funded by the National Aeronautics and Space Administration
- Principal Investigator: Eduardo Salas, Ph.D.
- **My role: Team leader.** Developed of a theoretical framework and qualitative review.

Moving Beyond Virtuality and Distribution to Build Capacity in Virtual Organizations

- May 2013 – Sept. 2013
- Funded by the National Science Foundation
- Principal Investigator: C. Shawn Burke, Ph.D.
- **My role:** Assisted in a historiometric analysis of leadership in disaster management.

University Service

University of Central Florida Human Factors and Ergonomics Society Student Chapter President	Orlando, FL Jan. 2016 – Present
University of Central Florida Human Factors and Ergonomics Society Student Chapter Vice President	Orlando, FL Jan. 2015 – Dec. 2015
University of Central Florida Student Professionals in Industrial/Organizational Psychology Human Factors Liaison	Orlando, FL Jan. 2014 – Present
University of Central Florida Human Factors and Ergonomics Society Student Chapter Outreach Officer	Orlando, FL Jan. 2013 – Dec. 2014

Professional Service

Journal of Aviation Technology and Engineering (Reviewer)

Professional Affiliations

Human Factors and Ergonomics Society, Student Member, 2014 – present
 Association for Psychological Science, Student Member, 2013 – 2014
 National Society of Collegiate Scholars, Member, 2013 – present

Certificates

Collaborative Institutional Training Initiative (CITI)
 Online Course Development Certification (UCF – ADL 5000)
 Graduate Grantsmanship Certificate Series

Technical Skills

Creating wireframes and mockups
Conducting data analysis (LISREL, AMOS, SPSS)
Using basic programming (HTML, CSS, and Python)
Using basic modeling techniques (GOMS)

Security Clearance

OPM Secret (NACLIC) - August 2015

References

Peter A. Hancock, D.Sc., Ph.D., Pegasus Professor, Provost's Distinguished Researcher

- Email: Peter.Hancock@ucf.edu
- Website: <https://www.peterhancock.ucf.edu/>

Eduardo Salas, Ph.D., Allyn R. & Gladys M. Cline Chair

- Email: Eduardo.Salas@rice.edu
- Website: <https://psychology.rice.edu/Content.aspx?id=4294967302>

C. Shawn Burke, Ph.D., Research Scientist

- Email: sburke@ist.ucf.edu
- Website: <http://www.ist.ucf.edu/people/burkes/burkes.htm>

More References available upon request.