



**Exponent**<sup>®</sup>  
Engineering & Scientific Consulting

## Phillip Jasper, Ph.D.

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### Professional Profile

Dr. Jasper is a human factors psychologist whose expertise lies in the research and development of consumer products with an emphasis on product design, user testing, and health and safety. He has extensive knowledge of user experience research methodologies and human factors principles, with applications in domains such as the design of wearable health and activity monitors, head mounted displays, and autonomous vehicles.

Dr. Jasper received a Ph.D. in Human Factors Psychology and a M.S. in Applied Psychology from Clemson University. Through his research he has garnered considerable experience conducting both small-scale usability testing and large-scale investigations of device use and adoption. In his work, Dr. Jasper has utilized psychophysiological recordings to monitor workload of unmanned aerial vehicle operators to inform the design of command and control stations, evaluated the effectiveness of a wearable energy intake monitor to promote healthy eating behaviors, and worked with various clients on the redesign of user interfaces, such as on websites and in mobile device and virtual reality applications.

### Academic Credentials & Professional Honors

Ph.D., Human Factors Psychology, Clemson University, 2017

M.S., Applied Psychology, Clemson University, 2014

B.A., Psychology, Clemson University, 2012

### Academic Appointments

Graduate Instructor of Record, Psychology, Clemson University, 2012-2014

### Prior Experience

Graduate Research Assistant, Clemson University, 2012-2017

### Professional Affiliations

Human Factors Ergonomics Society

## Publications

Jasper, P. W., James, M. T., Hoover, A. W., & Muth, E. R. (2015). Effects of bite count feedback from a wearable device and goal setting on consumption in young adults. *Journal of the Academy of Nutrition and Dietetics*. Vol. 116, 1785-1793.

Sharma, S., Jasper, P., Muth, E., & Hoover, A. (2016). Automatic detection of periods of eating using wrist motion tracking. *IEEE First Conference on Connected Health: Applications, Systems and Engineering Technologies*.

Sibley, C. M., Coyne, J. T., Doddi, A., & Jasper, P. W. (2015). Pupillary response as an indicator of processing demands within a supervisory control simulation environment. *Proceedings of the 18th International Symposium on Aviation Psychology*, Dayton, OH.

Jasper, P. W., Hoover, A., & Muth, E. R. (2015). Determining the utility of a laboratory eating paradigm to explore social eating. *Proceedings of the Human Factors Ergonomics Society*, Los Angeles, CA.

Jasper, P. W., Sibley, C. M., & Coyne, J. T. (2015). Using heart rate variability to assess operator mental workload in a command and control simulation of multiple unmanned aerial vehicles. *Proceedings of the Human Factors Ergonomics Society*, Los Angeles, CA.

## Presentations

An Evaluation of a Wrist Motion Tracking Algorithm to Detect Eating Activities on 408 People. Poster presentation, *IEEE International Conference on Biomedical and Health Informatics*, 2018.

Using Heart Rate Variability to Assess Operator Mental Workload in a Command and Control Simulation of Multiple Unmanned Aerial Vehicles. Poster presentation, *Human Factors and Ergonomics Society*, Los Angeles, 2015.

Determining the Utility of a Laboratory Eating Paradigm to Explore Social Eating. Post presentation, *Human Factors and Ergonomics Society*, Los Angeles, 2015.

Exploration into Human Factors. Invited Speaker, Dr. Gilles O. Einstein, *Furman University*, Greenville, SC, 2015.

Invited Presenter, *Clemson Biomedical Design Expo*, Greenville, SC, 2015.

The Effect of Target Bite Count and Plate Size on Food Intake. Poster presentation, *Psychosomatic Society*, Savannah, GA, 2015.

Using the Bite Counter to Overcome the Effect of Plate Size on Food Intake. Poster presentation, *The Obesity Society*, Boston, MA, 2014.

Compliance with Wearing and Using a Wrist Worn Eating Activity Monitor during a Twelve Week Study. Poster presentation, *The Obesity Society*, Atlanta, GA, 2013.

Using the Bite Counter Device to Measure Energy Intake in Overweight African Americans. Poster presentation, *American College of Sports Medicine Conference*, San Francisco, CA, 2012.

## Project Experience

Designed and executed multiple studies examining the usability and user experience of virtual reality systems. Collected quantitative and qualitative data and provided findings and design considerations to

clients.

Designed and executed a multiphase study of fire extinguisher usage. Collected biometric and naturalistic behavioral data to inform the design of future products with the aim of leveraging users' physical capabilities while mitigating costly, unnecessary behaviors.

Designed and built a command and control platform for unmanned aerial vehicles to assess operator performance during a supervisory control task. Analyzed performance outcomes and physiological data (heart rate variability, pupillary response, and respiration) and presented findings to commanding officers and program managers at Department of Defense (DoD).

Lead study designer and coordinator for multiple eHealth and mHealth projects, including a National Institutes of Health (NIH) funded study of 500 free-living humans wearing activity monitors to create an algorithm for automated detection of eating activity to be used in a wearable energy intake monitor. Responsible for each phase of applied research including literature reviews, institutional review board application, study design, data acquisition, analysis, and write-up and publication.

Lead user experience (UX) designer for a start-up company. Responsible for mission development and market identification. Identified needs via user interviews. Led product design and ideation sessions. Conducted focus groups and user testing sessions. Continually presented findings and design recommendations to founding partners.

## Peer Reviews

Perception and Performance Technical Group, Human Factors Ergonomics Society Conference