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Engineering & Scientific Consulting

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Professional Profile

Dr. Barakat has over 10 years of research experience in the behavioral sciences, specifically in the areas of perception, cognition, and human factors. Currently, he applies his knowledge in the domain of user research, by designing and conducting user experience (UX) studies, product usability testing, and health and safety research. Dr. Barakat has employed a wide range of methodological approaches, including but not limited to eye tracking, A/B testing, "think aloud" protocol, user interviews, large-scale surveys, storyboards, psychophysical methods, brain imaging, and various tests of attention, memory, hand-eye coordination, reaction time, and sensory processing. With his sophisticated understanding of experimental design, research methodologies, and data analysis techniques, Dr. Barakat has managed and executed research projects for a wide variety of industries and products, such as virtual reality products, user interfaces, mobile devices, automotive technologies, home appliances, and other consumer products.

As a human factors consultant at Exponent, Dr. Barakat has been afforded the opportunity to engage in large projects that require collaborations with multidisciplinary teams of engineers, designers, technicians, medical doctors, and legal professionals. Furthermore, his work has resulted in several technical reports, peer-reviewed publications, in-depth literature reviews, and presentations to both lay and technical audiences. Prior to joining Exponent, Dr. Barakat studied psychology at UCLA, where he earned his Ph.D., with an emphasis in cognitive neuroscience. During this time, his research focused on human perception, including visual, auditory, and tactile perception, as well as human cognition, including learning, memory, and age-related changes in cognition.

Academic Credentials & Professional Honors

Ph.D., Psychology, University of California, Los Angeles (UCLA), 2014

M.A., Psychology, California State University, Fullerton, 2009

B.A., Psychology, California State University, Fullerton, 2007

UCLA Department of Psychology Dissertation Year Fellowship, 2013-2014

UCLA Brain Research Institute Neuroscience Graduate Travel Award, 2013

UCLA Department of Psychology Conference Travel Grant, 2012

UCLA Graduate Summer Research Mentorship, 2011

UCLA Graduate Summer Research Mentorship, 2010

UCLA Distinguished University Fellowship, 2009-2010

CSUF Undergraduate Conference Travel Award, 2007

CSUF FDC Faculty-Student Research Grant, 2006

Professional Affiliations

Vision Sciences Society

Human Factors and Ergonomics Society

Publications

Silva AE, Barakat BK, Jimenez LO, Shams L. Multisensory congruency enhances explicit awareness in a sequence learning task. *Multisensory Research* 2017; 30(7-8):681-689.

Barakat B, Seitz AR, Shams L. Visual rhythm perception improves through auditory but not visual training. *Current Biology* 2015; 25(2):R60-R61.

Barakat B, Crump C, Cades D, Rauschenberger R, Schwark J, Hildebrand E, Young D. Eye tracking evaluation of driver visual behavior with a Forward Collision Warning and Mitigation system. *Proceedings, Human Factors and Ergonomics Society Annual Meeting 2015*; 59(1):1321-1325.

Todd JJ, Barakat B, Tavassoli A, Krauss DA. The moon's contribution to nighttime illuminance in different environments. *Proceedings, 59th Annual Meeting of the Human Factors and Ergonomics Society, Los Angeles, CA, 2015*; 59:1056-1060.

Crump C, Cades D, Rauschenberger R, Hildebrand E, Schwark J, Barakat B, Young D. Driver reactions in a vehicle with collision warning and mitigation technology. *SAE Technical Paper 2015-01-1411, 2015*. doi:10.4271/2015-01-1411.

Patel UJ, Barakat BK, Romero R, Apodaca D, Hellige JB, Cherry BJ. Interhemispheric collaboration during digit and dot number-matching in younger and older adults. *Neuropsychology* 2014; 28(6):894-904.

Barakat BK, Seitz AR, Shams L. The effect of statistical learning on internal stimulus representations: Predictable items are enhanced even when not predicted. *Cognition* 2013; 129:205-211.

Cherry BJ, Weiss, J., Barakat BK, Rutledge DN, Jones CJ. Physical performance as a predictor of attention and processing speed in fibromyalgia. *Archives of Physical Medicine and Rehabilitation* 2009; 90:2066-2073.

Conference Presentations

Silva A, Barakat BK, Jimenez L, Shams, L. Audiovisual congruency increases explicit learning in a serial reaction time task. Poster presented at 16th International Multisensory Research Forum, Pisa, Italy, June 2015.

Barakat BK, Seitz AR, Shams L. Visual rhythm perception improves through multisensory (but not unisensory) training. Poster presented at 43rd Annual Meeting of the Society for Neuroscience, San Diego, CA, November 2013.

Barakat BK, Seitz AR, Shams L. There is more to statistical learning than associative learning: Predictable items are enhanced even when not predicted. Poster presented at Vision Sciences Society 12th Annual Meeting, Naples, FL, May 2012.

Vardanyan T, Brookhart S, Apodaca D, Barakat BK, Romero R, Goode T, Patel UJ, Hellige JB, Cherry BJ. Aging and interhemispheric collaboration: Digits and Dots. Poster presented at Cognitive Aging Conference, Atlanta, GA, April 2008.

Miyahara E, Lopez C, Barakat BK, Martin B, Seal S. The effect of hearing behaviors on auditory thresholds. Poster presented at the 88th Annual Convention of the Western Psychological Association, Irvine, CA, April 2008.

Barakat BK, Norga V, Christian T, Miyahara E. Hearing behavior and auditory thresholds. Poster presented at the 19th Annual Convention of the Association for Psychological Science, Washington, DC, May 2007.

Peer Reviewer

Visual Cognition

Human Factors and Ergonomics Society Conference (Virtual Environments Technical Group)

Current Biology

Psychonomic Bulletin & Review

Quarterly Journal of Experimental Psychology