



MANUEL MEZA-ARROYO, Ph.D., AHFP
STAFF CONSULTANT

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Dr. Meza has significant experience in the field of industrial and human factors engineering. He specializes in human perception and cognition, the effects of lighting and aging on visual perception, and biomechanics. He also has significant experience in experimental design, and the implementation of statistical analyses and computational modeling. He has conducted and participated in investigations involving automobile and trucking accidents, nighttime vehicle-pedestrian collisions; industrial and occupational injuries; and slip-and-fall incidents.

At ESi, Dr. Meza often directs human-subject testing to assess human performance and behavior by employing tools such as motion capture technology, calibrated photography, tri-axial accelerometers, and custom programming for various applications including statistics, biomechanics, and image processing. He has presented his findings in a variety of scientific journals and international forums. Dr. Meza speaks fluent English, Spanish, and Portuguese.

Areas of Specialization

Visual Perception and Attention
Biomechanics and Human Motion Analysis
Human Factors Engineering
Experimental Design & Statistical Data Analysis

Education

Ph.D., Industrial Engineering, Texas Tech University, Lubbock, TX, 2015
M.Sc., Industrial Engineering, Texas Tech University, Lubbock, TX, 2009
B.Sc., Industrial & Systems Engineering, Tecnológico de Monterrey, México, 2007

Licensed Professional Engineer (P.E.)

Professional Industrial & Systems Engineer – SEP Cédula: 5456536, México

Professional Certification

Associate Human Factors Professional (AHFP) by the Board of Certification in Professional Ergonomics (BCPE) certification No. 1973

January 2018

Professional Affiliations/Honors

Human Factors & Ergonomics Society (HFES)

Member

Illuminating Engineering Society (IES)

Member

Society of Automotive Engineers (SAE)

Member

Alpha Pi Mu (Industrial Engineering Honor Society)

Member

Recipient of:

Raider Rojos National Alumni Scholarship (2014)

American-Mexican Waterman Friendship Scholarship (2008-2015)

MM Ayoub Ergonomic Scholarship (2009)

Synergistic Activities

Reviewer, Journal of Failure Analysis and Prevention

SAE Manuscript Reviewer

Member, HFES Performance and Perception Technical Group (PPTG)

Positions Held

Engineering Systems Inc., Ann Arbor, MI

Staff Consultant, 2016 – Present

Research Analyst, 2015 – 2016

University of Texas, Arlington, TX

Adjunct Professor Advanced Engineering Economics, Summer 2015

Texas Tech University, Lubbock, TX

Research-Teaching Assistant and Graduate Instructor, 2007-2015

ALSTOM Power, Morelia, Mich. México

Tendering Engineer (Intern), Jan 2007 – May 2007

CIETec, Tecnológico de Monterrey, Morelia, Mich. México

Researcher - Data collection and analysis, 2005-2007

Continued Education

Vehicular Crash Reconstruction Methods Seminar, Certificate of Achievement (SAE International, Troy, MI, May 2016).

Automotive Lighting: Design and Technology Seminar, Certificate of Achievement (SAE International, April 4, 2017).

Automotive Lighting: Testing and Requirements Seminar, Certificate of Achievement (SAE International, April 6, 2017).

Publications/Presentations

"What's After College?" Guest Lecturer, Tecnológico de Monterrey, IE Senior Project Course Morelia, Mich. México, 2014.

"Visual Attention Differences between Younger and Older Drivers," Seminar, Guest Lecturer, Department of Environmental and Occupational Health at Texas A&M HSC. College Station, TX, 2013.

"Continuous Response Monitoring of Relative Time-to-Contact Judgments: Does Effective Information Change During an Approach Event?" DeLucia, P. R., **Meza-Arroyo, M.**, Baurès, R., Ranjit, M., Hsiang, S., & Gorman, J. C. 2016. *Ecological Psychology*, 28(1), 1–22. <http://doi.org/10.1080/10407413.2016.1121735>.

'Analysis of Eye Movements and Collision Judgments in Younger and Older Observers for the Development of a Reinforcement Learning,' Ph.D. Dissertation, Texas Tech University, Lubbock, TX. 2015.

"The effect of music genres on oxygen uptake during a cycling exercise." Chun, Y. J. & **Meza, M.** (2011). Proceedings of 2011 Texas Regional Human Factors & Ergonomics Conference, 2011.

'Comparisons of Visual Performance and Useful Field of View among Drivers in a Simulator,' M.Sc. Thesis, Texas Tech University, Lubbock, TX. (2009)

"Useful Field of View of Aging Drivers as a Design Tool for In-Vehicle Visual Aids," **Meza, M.**, Patterson, P. & Nakayasu, H. (2009). HFES 53rd Annual Meeting, San Antonio, TX, October 2009.

"Analysis of Visual Attention and Useful Field of View among Experienced, Inexperienced and Older Drivers," **Meza, M.**, Patterson, P. & Nakayasu, H. (2009). Paper presented at the 17th World Congress on Ergonomics, IEA 2009, Beijing, China, August 2009.

"Comparing Visual Performance & Useful Field of View of Older and Younger Drivers," **Meza, M.**, Patterson, P. & Nakayasu, H. (2009). Rocky Mountain Bioengineering Symposium. 46th International ISA Biomedical Sciences Instrumentation Symposium, Milwaukee, WI. April 2009. ISA, Volume 476. pp. 83-85.

"Analysis of Visual Attention and Useful Field of View among Experienced, Inexperienced and Older Drivers," **Meza, M.**, Patterson, P. & Nakayasu, H. (2009). Instrument Society of America. Biomedical Sciences Instrumentation, 2/2009; 45: 83-88.

"Relationship between Visual Attention and the Surrounding Environment During Driving Tasks: A Cognitive Experiment," **Meza, M.** (2008). INFORMS Southwest Regional Conference, Texas A&M University. College Station, TX, April 2008.