



Exponent[®]
Engineering & Scientific Consulting

Liona Scully, Ph.D., CXLT

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Professional Profile

Dr. Scully is a human factors scientist with over 15 years of experience. She has expertise in human performance, vehicle operator behavior, auditory and visual perception, attention and distraction, stress and fatigue, perception response time, human memory and experience, and information processing. Dr. Scully applies this expertise to the investigation of human factors in transportation accidents, slips, trips, and falls, compliance with safety information and warnings, and the use and understanding of in-vehicle technologies such as Advanced Driver Assistance Systems (ADAS) and Automated Driving Systems (ADS).

Since joining Exponent, Dr. Scully has investigated driver and pedestrian behavior across a variety of transportation contexts including with respect to light-duty vehicles, commercial vehicles, bicycles, and motorcycles. Dr. Scully has also performed evaluations of consumer product safety information, including warnings and instructions, across a wide variety of products including kitchen appliances, outdoor appliances and equipment, and vehicles. Dr. Scully has performed analyses of injury data (e.g., the Consumer Product Safety Commission's National Electronic Injury Surveillance System) and has experience in the design, implementation, execution, and analysis of human subjects research evaluating how users understand and use consumer products. Additionally, Dr. Scully has evaluated the reliability of eyewitness testimony as it relates to transportation, product use, and criminal proceedings.

Prior to joining Exponent, Dr. Scully's graduate work focused on understanding the various factors that can affect memory and recall, including examining how memory modification techniques can be used to update attitudes toward others. Additionally, Dr. Scully has also examined the impact of collaborative remembering and the strength of memory reactivation on long term memory change. Dr. Scully has expertise in several statistical and research methodologies including quantitative data analysis, meta-analysis, and electrodermal activity (EDA) data collection and analysis.

Academic Credentials & Professional Honors

Ph.D., Psychology, Lehigh University, 2019

M.A., Psychology, Towson University, 2014

B.S., Psychology, Elmira College, 2011

Graduate Student Life Leadership Award, Lehigh University, 2019

College of Arts and Sciences Graduate Student Research Grant, Lehigh University, 2018

College of Arts and Sciences Leadership and Service Award, Lehigh University, 2018

Distinguished Graduate Student Award, Towson University, 2014

Cowles Honor Scholar, Elmira College, 2007-2011

Presidential Honor Scholarship, Elmira College, 2007-2011

Licenses and Certifications

Certified English XL Tribometrist (CXLT)

Prior Experience

Adjunct Professor, Statistical Analysis of Behavior, Lehigh University, 2017

Research Assistant, Lehigh University Language and Thought Lab, 2016-2017

Adjunct Professor, Cognitive Psychology, Lehigh University, 2015

Statistical Consultant, Dr. Susan Sperry, 2013

Professional Affiliations

Human Factors and Ergonomics Society, 2019-Present

- Surface Transportation Technical Group

SAE International 2022-Present

- Voting member of Lane Departure Warning and Lane Keeping Assist Task Forces 2022-2024

Association for Women in Science, 2017-Present

Psychonomics Society, 2014-2019

Association for Psychological Science, 2010-Present

National Association for Graduate and Professional Students, 2018-2019

Cognitive Science Society, 2016-2017

Publications

Aldugom M., Izen SC, Scully ID, Hoyos C, Cades DM. How does adaptive cruise control use impact driver behaviors, mental models, and trust and perception in the system? *Advances in Human Factors of Transportation*, 2025; 186:351-360.

Scully ID, Shlanta P. Human Factors: Driver Response. In: *Truck Accident Litigation*. Fourth Edition.

Baker AN, Young III DJ (ed), ABA Book Publishing, 2025.

Scully ID, Davis, SJ, Shlanta, P., Yanes, J.A., Michaelis, K., Cades, D.M. Looking back on forward collision warnings: A review of perception response time from empirical studies. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. 2024; 68(1):1627-1633.

Lennox KP, Scully ID, Yanes JA, Cades DM. Assessing the impact of driver assistance technology: A review of non-crash and crash studies. Advances in Human Factors of Transportation, 2024; 148:323-330.

Coelho CJ, Garets SB, Bailey JD, Frank TA, Scully ID, Cades DM. Human factors issues of advanced rider assistance systems. Human Factors in Transportation, 2023; 95:292-303

Palac D, Scully ID, Jonas RK, Campbell JL, Young D, Cades DM. Advanced Driver Assistance Systems (ADAS): Who's Driving What and What's Driving Use? Proceedings of the Human Factors and Ergonomics Society Annual Meeting. 2021; 65(1):1220-1224.

Scully ID, Hubbach A. Directed forgetting affects how we remember and judge other people. Journal of Applied Research in Memory and Cognition, 2020; 9(3):336-344.

Scully ID, Hubbach A. Different reactivation procedures enable or prevent episodic memory updating. Hippocampus 2019; 30(8):806-814.

Scully ID, Napper LE, Hubbach A. Does reactivation trigger episodic memory change? A meta-analysis. Neurobiology of Learning and Memory 2017; 142(A):99-107.

Sperry SD, Scully ID, Gramzow RH, Jorgensen RS. Sleep duration and waist circumference in adults: a meta-analysis. Sleep 2015; 38 (8):1269-1276.

Scully I.D, Terry CP. Self-referential memory for the Big-Five personality traits. Psi Chi Journal of Undergraduate Research 2011; 16(3):123-128.

Presentations

Scully, ID, Como, S. Safety and Automation: Hazard Response at Different Levels of Automation. Presented at the 2025 meeting of the AAA Safe Mobility Conference, Madison, WI. 2025.

Lennox KP, Scully ID, Yanes JA, Cades DM. Assessing the impact of driver assistance technology: A review of non-crash and crash studies. Paper presented at the 2024 International Conference on Applied Human Factors and Ergonomics, Nice, France, 2024.

Scully ID, Napper LE, Hubbach A. Does Reactivation Trigger Episodic Memory Change? A Meta-Analysis. Poster presented at the International Conference on Psychological Science, Paris, France, 2019.

Malt BC, Scully ID, Lebkuecher A, Joseph J. Dynamic updating of native language constructions. Paper presented at the 2018 meeting of the Psychonomics Society, New Orleans, LA, 2018.

Hubbach A, Scully ID. Modifying human episodic memories: reactivation as a precondition for change. Paper Presented at the 2018 International Conference of Behavioral Neuroscience, Boca Raton, FL., 2018.

Hubbach A, Scully ID. Is Reactivation a Precondition for Episodic Memory Change? Paper presented at the 2018 meeting of the International Conference on Learning and Memory, Huntington Beach, CA., 2018.

Scully ID, Hubbach A. How reactivation strength affects memory updating. Poster presented at the 2017 meeting of the Cognitive Science Society, London, UK, 2017.

Scully ID, Napper LE, Hubbach A. Does Reactivation Trigger Episodic Memory Change? A Meta-Analysis. Poster presented at the 2017 Interdisciplinary Neuroscience Symposium, Bethlehem, PA, 2017.

Scully ID, Hubbach A. Memory Reconsolidation: Strength of Reactivation Modulates the Impact of New Learning on Reactivated Memories. Paper presented at the 2016 meeting of International Conference on Memory, Budapest, Hungary, 2016.

Scully I.D., Hubbach A. Does Reactivation Trigger Episodic Memory Change? A Meta-Analysis. Poster presented at the 2016 meeting of the Psychonomics Society, Boston, MA, 2017.

Scully ID, Hubbach A. Memory Reconsolidation: Strength of Reactivation Modulates the Impact of New Learning on Reactivated Memories. Paper presented at the 2016 meeting of the Eastern Psychological Association, New York, NY, 2016.

Scully ID, Hubbach A. Memory Reconsolidation: Strength of Reactivation Modulates the Impact of New Learning on Reactivated Memories. Poster presented at the 2015 meeting of the Psychonomics Society, Chicago, IL, 2015.

Scully ID, Goodwin KA, Pararas B. Preventing the disruption: Does previous collaborative recall cancel out reconsolidation disruption? Poster presented at the 2014 meeting of the Psychonomics Society, Long Beach, CA, 2014.

Scully ID, Terry CP. Self-Referential Memory for the Big-Five Personality Traits. Poster presented at the Elmira College 2010-2011 Student Research Poster Session, Elmira, NY, 2011.

Scully ID, Terry C. Self-Referential Memory for the Big-Five Personality Traits. Poster presented at the 2011 Eastern Psychological Association Annual Conference, Cambridge, MA, 2011.

Scully ID. Does semantic priming cause the isolation effect? Poster presented at the Elmira College 2010 Parents Weekend Student Research Poster Session, Elmira, NY, 2010.

Scully ID. Does semantic priming cause the isolation effect? Poster presented at the Elmira College 2009-2010 Student Research Poster Session, Elmira, NY, 2010.

Scully ID, Lovett BJ. ADHD and extra time on tests. Poster presented at 25th Annual University of Scranton Psychology Conference, Scranton, PA, 2010.

Scully ID, Kilgour M. Words remembered using visual, auditory, and rote memorization techniques. Poster presented at Elmira College Student Research Poster Session, Elmira, NY, 2009.

Other Articles

Coelho CJ, Bailey JD, Frank TA, Scully ID, Cades DM. Motorcycle Safety and Advanced Rider Assistance Systems (ARAS). Article in Themis Advocates Group Latest News, February 2023

Scully ID, Scally S, Clark R, Carey MR, Cades DM, Harrington R. Safety and Regulatory Considerations of Advanced Driver Assistance Systems (ADAS). Article in American Bar Association Tort Trial and Insurance Practice Section's Committee News; Fall 2020.

Peer Reviews

Neurobiology of Learning and Memory

Journal of Applied Research in Memory and Cognition

Proceedings of the Human Factors and Ergonomics Society Annual Meeting

SAE International World Congress Experience (WCX)