

Exponent®
Engineering & Scientific Consulting

Elizabeth Pettit, Ph.D.

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Professional Profile

Dr. Pettit has expertise in the cognitive process and environmental factors that influence decision making. She uses this knowledge to evaluate how perception, memory, reaction time and human information processing impact a variety of situations such as automotive, aviation, industrial, and occupational accidents; risk communication; individual differences in perception of dangerous situations; warning compliance; and the human factors contributing to trip-and-fall and slip-and-fall incidents.

Dr. Pettit's analysis methods have used eye tracking as a measure of attention and computer mouse/hand movements as a measure of preference, decision conflict, and differences in decision making styles. She applies this knowledge to explain how vision, conspicuity and driver behavior contribute to accidents involving pedestrians, bicycles, motorcycles, passenger vehicles, semi-trucks, trains, boats, and airplanes.

Prior to joining Exponent Dr. Pettit received her Ph.D. in Psychology at Miami University. Her dissertation was funded by the National Defense of Science and Engineering Graduate Fellowship and found evidence for gender differences on how stress impacts brain activity and behavior during risky choice. With Air Force Research Labs Dr. Pettit focused on individual differences such as personality, impulsivity, and age that impact vigilance and may be used to model fatigue and predict behavior in the real world.

Dr. Pettit's background aids in understanding how stress and fatigue impact information processing and risky decisions made by drivers on roadways with heavy traffic and distractors including mobile devices and in-vehicle GPS systems. Her familiarity with cognitive modeling allows her to assess the role of memory, learning, and saliency on warning compliance.

Academic Credentials & Professional Honors

Ph.D., Psychology, Miami University, 2023

M.A., Psychology, Miami University, 2021

B.S., Psychology, University of Wisconsin, Madison, 2017

Graduate Student Achievement Award, Miami University, 2021

National Defense of Science and Engineering Fellowship, 2020

Letter of Commendation, Department of Psychology, Miami University, 2020

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Licenses and Certifications

Certified English XL Tribometrist (CXLT)

Academic Appointments

Adjunct Professor, Psychology of Judgment and Decision Making, Montclair State University, 2022-present

Laboratory Manager, Computational Cognition Lab, Miami University, 2018-2023

Adjunct Instructor, Psychology of Judgment and Decision Making, Montclair State University, 2022

Laboratory Instructor, Introductory Psychology Statistics, Miami University, 2019-2020

Professional Affiliations

Human Factors and Ergonomics Society

Society for Automotive Engineers

Society for Judgment and Decision Making

Publications

Young, B., Pettit, E., & Krauss, D. (2026). Trucks and Large Vehicles. In Forensic aspects of driver perception and response (5th Ed., pp. 133-140). Lawyers and Judges Publishing Company, Inc.

Krauss, D., Pettit, E., Olson, P., and Farber, E. (2026). Evaluation of Visibility in the Field. In Forensic aspects of driver perception and response (5th Ed., pp. 383-403). Lawyers and Judges Publishing Company, Inc.

Presentations

Pettit, E. (2022, June). Using QTEST to identify the context effect sweet spots: a roadmap for the project ahead. Invited to virtually present at the 2022 Modeling Heterogeneity Workshop.

Pettit, E. & Regenwetter, M. (2022, May). Identifying the context effect sweet spots: using QTest to understand how the decoy impacts choice depending on attribute values. Presented at Miami University for an NSF sponsored workshop.

Pettit, E. (2021, May). Using Process Tracing and Computational Modeling to Investigate Cognition During Risky Decision Making. Remotely presented at the 2021 European Group for Process Tracing Studies Conference.

Pettit, E. (2020, August). Incorporating individual differences into a model of fatigue from sustained attention. Remotely presented at the 2020 Virtual Summer Intern Summit, hosted by Air Force Research Laboratories.

Additional Education & Training

Certificate in Applied Statistics, Miami University, 2023

Certificate in College Teaching, Miami University, 2021

Certificate in Business, University of Wisconsin, Madison, 2017