

BRANDEN KOLARIK

PhD

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HUMAN FACTORS

EDUCATION

UNIVERSITY OF CALIFORNIA, DAVIS

PhD Perception, Cognition, and Cognitive Neuroscience 2017

SAN FRANCISCO STATE UNIVERSITY

MA Psychological Research 2011

UNIVERSITY OF WISCONSIN, MILWAUKEE

BA Psychology 2006

AFFILIATIONS

Human Factors and Ergonomics Society

SAE International

Vision Sciences Society

PROFESSIONAL PROFILE

Dr. Branden Kolarik has expertise in perception, cognition, cognitive neuroscience, human behavior, spatial navigation, and age-related cognitive impairments along with extensive experience in experimental design and data analysis. He uses his knowledge of cognition and behavior to assess human factors involved in a wide range of scenarios included automobile, motorcycle, bicycle, pedestrian, and trucking accidents; warnings and product liability; industrial/occupational accidents, and trip-and-fall incidents. Dr. Kolarik also uses his expertise in experimental design and data analysis to design and conduct research aimed at furthering our understanding of human behavior in real-world situations.

AREAS OF EXPERTISE

Human Factors and Performance
Visual Perception and Conspicuity
Driver Behavior
Pedestrian and Cyclist Behavior
Memory and Attention
Spatial Cognition
Data Analysis

PhD

EXPERIENCE

Explico

2026 - Present *Managing Scientist*
2023 - 2025 *Senior Scientist*
2022 - 2023 *Scientist*

Exponent

2019 - 2022 *Scientist*

ACADEMIC APPOINTMENTS

University of California, Irvine

Postdoctoral Fellow — 2017-2019

RESEARCH GRANTS

NIA Neurobiology of Aging Training Grant T32.

PEER REVIEWER

Human Factors and Ergonomics Society

Neuropsychologia

Journal of Neuroscience

Nature Communications

Learning and Memory

PUBLICATIONS

Phillips, K.B., Byrne, K.N., Kolarik, B.S., Krake, A.K., Bui, Y.C., & Krauss, D.A. (2021). Impacts of social distancing on pedestrian behavior and risk perception. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. 65(1).

Kolarik, B., Phillips, K., Zimmermann, J., & Krauss, D.(2021). Driver stopping behavior at stop-controlled intersections with sightline limitations. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. 64(1), 1471-1475.

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Kolarik, B., Stark, S., & Stark, C.E.L. (2020). Enriching hippocampal memory function in older adults through real-world exploration. *Frontiers in Aging Neuroscience*, 12, 1-8.

Starrett, M.J., McAvan, A.S., Huffman, D.J., et al. (2020). Landmarks: A solution for spatial navigation and memory experiments in virtual reality. *Behavioral Research and Methods*, 1-14.

Hodgetts, C., Stefani, M., William, A., Kolarik, B., Yonelinas, A., Ekstrom, A., Lawrence, A., Zhang, Jianxiang, and Graham, K. (2020). The role of the fornix in human navigational learning. *Cortex*, 124, 97110.

Kolarik, B., Baer, T., Shahlaie, K., Yonelinas, A., and Ekstrom, AD. (2017). Close but no cigar: Spatial precision deficits following medial temporal lobe lesions provide novel insight into theoretical models of navigation and memory. *Hippocampus*, 28, 31-41.

Kolarik, B., Shahlie, K., Hassan, A., Borders, A., Kaufman, K., Gurkoff, G., Yonelinas, A., and Ekstrom, A. (2016). Impairments in precision, rather than spatial strategy, characterize performance in the human analogue of the virtual Morris Water Maze: A Case Study. *Neuropsychologia*, 80, 90-101.

Kolarik, B. & Ekstrom, AD. (2015). The neural underpinnings of spatial memory and navigation. In Toga, A. & Poldrack, R. (Eds.) *Brain Mapping: An Encyclopedic Reference*. Oxford, UK: Elsevier.

SELECTED PRESENTATIONS

Kolarik, B., Phillips, K., Zimmermann, J., & Krauss, D. (2021). Driver stopping behavior at stop-controlled intersections with sightline limitations. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*.

Kolarik, B., Stark, S.M., & Stark, C.E.L. (2019, April). Age-related impairments for memory updating in healthy older adults. *Cognitive Neuroscience Society Annual Meeting, San Francisco, CA*.

Kolarik, B., Rutledge, S.M., Stark, S.M., & Stark, C.E.L. (2018, October). Memory benefits in older adults following real-world environmental enrichment training. *Society for Neuroscience Annual Meeting, San Diego, CA*.

Kolarik, B., Stark, S.M., & Stark, C.E.L. (2018, April). Investigating the effects of real-world exploration as environmental enrichment in older adults. *Learning and Memory, Huntington Beach, CA*.

Kolarik, B., Baer, T., Shahlaie, K., Gurkoff, G., Yonelinas, A., Ekstrom, A. (2016, November). Patients with hippocampal damage demonstrate impairments in spatiotemporal binding and precision but not spatial strategy. *Society for Neuroscience Annual Meeting, San Diego, CA*.

Kolarik, B., Baer, T., Shahlaie, K., Gurkoff, G., Farias, S., Yonelinas, A., Ekstrom, A. (2016, August). Patients with hippocampal damage demonstrate impairments in spatiotemporal binding and precision but not spatial strategy. *Spatial Cognition Annual Meeting, Philadelphia, PA*.

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Kolarik, B., Shahlaie, K., Hassan, A., Borders, A., Kaufman, K., Gurkoff, G., Yonelinas, A., Erksstrom, A. (2015, October). Damage to the medial temporal lobes impairs spatial precision and spatiotemporal binding while sparing allocentric memory. Society for Neuroscience Annual Meeting, Chicago, IL.

INVITED TALKS

Kolarik, B. (2025). Human Factors Analysis of Motorcycle Collisions. Talk presented at The Motorcycle Accident Summit, Orlando, FL.

Kolarik, B. (2024). Human Factors: From Brain to Behavior. Webinar presented at Explico. Virtual.

Kolarik, B. (2024). Human Factors Analysis of Pedestrian Visibility. Talk presented at Lewis Brisbois Bisgaard & Smith, LLC, Seattle, WA.

Kolarik, B. (2023). Forensic Human Factors. Guest lecture at Lawrence Technological University, Southfield, MI.

Kolarik, B. (2019). Hippocampally-dependent memory impairments in normal healthy aging. Talk presented at University of Arizona.

Kolarik, B. (2019). Memory benefits in older adults following real-world environmental enrichment training. Talk presented at the REMIND Symposium, University of California Irvine.

Kolarik, B. (2016). Patients with hippocampal damage demonstrate impairments in spatio-temporal binding and precision but not spatial strategy. Talk presented at the UC Neurotrama Symposium, Sonoma, CA.

Kolarik, B. (2015). Damage to the medial temporal lobes impairs spatial precision and spatiotemporal binding while sparing allocentric memory. Talk presented at the Bay Area Memory Meeting, University of California, Davis.