

Exponent®
Engineering & Scientific Consulting

Sara Troutman, Ph.D.

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Professional Profile

Dr. Sara Troutman is a cognitive psychologist with experience in lifespan human cognition including, perception, attention, memory, learning, and language. Her work focuses on how these cognitive abilities relate to behavior in young, middle-aged, and older adults.

Dr. Troutman's expertise enables her to analyze human factors issues in a wide variety of contexts including product warnings and safety information, motor vehicle accidents, slips, trips, and falls, and failures involving decision making. Dr. Troutman is also involved in proactive research, bringing her expertise to literature reviews, surveys, and user studies which seek to understand how humans across the lifespan interact with novel technologies and products.

Prior to joining Exponent, Dr. Troutman completed a Ph.D. in psychology at The Pennsylvania State University and has published works on the neurobiological factors contributing to language ability and the link between physical and cognitive performance. Her dissertation work on the link between neural structural connections and language earned her the prestigious Research and Graduate Student Office (RGSO) Dissertation Award. Dr. Troutman also completed a two-year training fellowship from the National Institutes of Aging (NIA-T32) during which time she studied the relationship between cognition and everyday function, driving, and wellbeing.

Academic Credentials & Professional Honors

Ph.D., Psychology, Penn State University, 2021

M.S., Psychology, Penn State University, 2018

B.S., Psychology, University of Pittsburgh, 2015

Appointed Member, Working Group to Address Applied Practice Issues in the APA Model Licensing Act, American Psychological Association, 2025.Appointed by APA Board of Directors to provide recommendations on applied practice policy.

RGSO Dissertation Award, The Pennsylvania State University, 2020

NIA Pathways (T32) Training Program Fellow, The Pennsylvania State University, 2017-2019

Distinguished Scholar Award (Top 2% of class), University of Pittsburgh, 2015

Licenses and Certifications

Certified XL Tribometrist (CXLT)

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Professional Affiliations

2026-Present American Psychological Association

2022-Present Human Factors and Ergonomics Society (HFES)

2019-Present Women in Cognitive Science

2016-Present Center for Language Science, Pennsylvania State University

2018-2021 Gerontological Society of America

2017-2021 Society for Neurobiology of Language

Languages

German

Publications

Walters, K., Nakamura, M. S., Cosgrove, A. L., Zhang, H., Troutman, S. B., Gertel, V. H., & Diaz, M. T. (2026). Age and Discourse Task Independently Influence Disfluency Production. Journal of Speech, Language, and Hearing Research, 1-19.

Troutman, S. B., Madden, D. J., & Diaz, M. T. (2022). Cerebral White Matter Mediation of Age-Related Differences in Picture Naming Across Adulthood. *Neurobiology of Language*, 1-34.

Diaz, M. T., Zhang, H., Cosgrove, A. L., Gertel, V. H., Troutman, S. B., & Karimi, H. (2022). Neural sensitivity to semantic neighbors is stable across the adult lifespan. *Neuropsychologia*, 171, 108237.

Diaz, M.T., Karimi, H., Troutman, S.B.W., Gertel, V.H., Cosgrove, A.L., & Zhang, H. (2020). Neural sensitivity to phonological characteristics is stable across the lifespan. Neuroimage.

Troutman, S.B.W., Erickson, K.I., Grove, G., Weinstein, A.M. (2020). Sedentary time is associated with Worse Attention in Parkinson's disease: A pilot study. Journal of Movement Disorders.

Troutman, S.B.W., Diaz, M.T. (2019). White matter disconnection is related to age-related phonological deficits. Brain Imaging and Behavior, 1-11. doi: 10.1007/s11682-019-00086-8

Presentations

Troutman, S.B.W. (2025) Applied Psychology of Language. Invited Talk at Brown University. Providence, Rhode Island.

Troutman, S.B.W. (2021). The White Matter Link Between Semantic Language Ability and Language Production Across The Lifespan. Poster Presentation at the Pennsylvania State University Graduate School Exhibition. State College, PA.

Troutman, S.B.W., Henderson, M., & Diaz, M.T. (2020). White Matter Independently Mediates Age-Related Production Deficits. Poster presentation at the 12th meeting of the Society for the Neurobiology of Language, Virtual Conference.

Diaz, M.T., Zhang, H., Cosgrove, A., Gertel, V.H., Karimi, H., Troutman, S.B.W., Barnum, O., Eads, A., Henderson, M., & Lebkeucher, A. (2020). Neural sensitivity to close phonological neighbors is consistent across the lifespan. Poster presentation at the 12th meeting of the Society for the Neurobiology of

Language, Virtual Conference.

Troutman, S. B. W., Sandberg C., Diaz, M.T. (2019). Priming Overt Production: The Role of Relationship Type and Selection Demands. Poster presentation at the Psychonomic Society conference, Montreal, Quebec, CA, November 14-16, 2019.

Diaz, M.T., Gertel, V.H., Karimi, H., Troutman, S.B.W., Cosgrove, A., Zhang, H., & Fernandez, C.F. (2019). How aging affects the neural basis of phonological and semantic neighborhood density. Poster presentation at the 11th meeting of the Society for the Neurobiology of Language, Helsinki, Finland.

Troutman, S.B.W. (February 2019). Sedentary time is associated with task-switching costs Parkinson's disease. Pathways to Healthy Aging Colloquium, Pennsylvania State University, State College, PA.

Troutman, S.B.W., Stavrinos, D., Ross, L.A. (2018). Better expectations of aging predict less subjective cognitive decline in older adults. Poster presentation at the 2018 meeting of the Gerontological Society of America, Boston, MA.

Diaz, M.T., Eppes, A., Gertel, V., Karimi, H., Winter, S.B., & Hu, B. (2018). The neural basis of phonological and semantic neighborhood density. Poster presentation at the 10th annual Society for the Neurobiology of Language Conference, Quebec City, Quebec.

Winter, S.B. (October 2017). White Matter Integrity and Language Production in Aging. Pathways to Healthy Aging Colloquium, Pennsylvania State University, State College, PA.

Winter, S.B., Rizio, A.A., Dempsey, J., Oktar, K., Diaz, M.T. (2017). White matter integrity and language production in aging. Presentation at the 2017 meeting of the Society for the Neurobiology of Language, Baltimore, M.D.

Peer Reviews

Journal of Experimental Psychology

Neurobiology of Aging

Aging and Mental Health