Paulina Silva, Ph.D.

Dr. Paulina Silva is a human factors consultant who joined Huntley-Fenner Advisors in 2023. Dr. Silva's unique combination of statistical skills and experience in science communication have made her a valuable contributor to a variety of human factors projects. Dr. Silva conducts comprehensive risk analyses for a wide variety of product types and assists in matters relating to risk perception, hazard communications, safety and human development, human perception-response time and decision making.

Dr. Silva uses her expertise in statistics and cognitive science research to understand trends in federal standards and national injury databases and to apply findings from cognitive psychology and related fields to real-world situations. Dr. Silva's recent consulting and forensic projects have involved diverse products such as consumer electronics, professional products, and heavy machinery. She has conducted investigations into human behavior in workplace, public roadway, and railway settings.

Prior to joining Huntley-Fenner Advisors, Dr. Silva earned her Ph.D. in Cognitive Sciences at the University of California, Irvine in 2023. Her doctoral research focused on how people change their beliefs in response to committing errors. She also studied why people often struggle to understand statistical information. Dr. Silva co-led a graduate seminar focusing on science communication, which gave her extensive experience in communicating complex scientific topics to broad audiences.

Academic Credentials and Honors

- Ph.D., Cognitive Science, University of California-Irvine (UCI), 2023
- MSc, Cognitive Science, University of California-Irvine (UCI), 2021
- BA, Psychology (statistics and economics integration), University of Redlands, 2017
- Phi Beta Kappa

Publications

Peer-Reviewed Publications

Coon. J., Silva, P. N., Etz, A., & Sarnecka, B.W. (2024). Bayesian Tools of the Trade for Developmental Psychologists, *Journal of Cognition and Development.* Article in press.

Silva, P. N. & Liljeholm, M. (2023). Inverse hypercorrection of metacognitive errors. *Proceedings of the Annual Meeting of the Cognitive Science Society, 45.*

Sarnecka, B. W., Silva, P. N., Coon, J., Vickers, D. C., Goldstein, R. B., & Rouder, J. N. (2021). Doctoral writing workshops: A randomized controlled trial. Innovative Higher Education, 47, 155-174. https://doi.org/10.1007/s10755-021-09574-6

Silva, F. J., Silva, P. N., & Silva, K. M. (2021). Judging numbers: Global and local contextual effects in individual and group data. The Psychological Record, 72(2), 285-304. https://doi.org/10.1007/s40732-021-00467-w

Peer-Reviewed Published Abstracts

Silva, P. N. & Liljeholm, M. (2023). Inverse hypercorrection of metacognitive errors. *Proceedings of the Annual Meeting of the Cognitive Science Society, 45*

Silva, P. N., Liljeholm, M., & Sarnecka, B. W. What statistics instructors think students should know. Electronic Conference on Teaching Statistics. May 23-26, 2022. https://www.causeweb.org/cause/ecots/ecots22/program/posters/th-01

Silva, P. N. Using interleaved practice to teach statistics [Conference presentation]. United States Conference on Teaching Statistics, Virtual Conference. June 28-July1, 2021. https://causeweb.org/cause/uscots/uscots21/we-20-using-interleaved-practice-teach-statistics

Selected Other Publications

Silva, P. N. Confidence, Correcting Metacognitive Errors, and Applications in Higher Education [Dissertation].

Selected Presentations
Invited Colloquia and Seminars
Silva, P. N. The writing workshop: Tips, tricks and tools. Writing Tips and Support for Graduate Scholars hosted by UCI Graduate Division, Irvine, CA. February 24, 2022.

Research Presentations
Silva, P. N., Liljeholm, M., & Sarnecka, B. W. What statistics instructors think students should know. Electronic Conference on Teaching Statistics. May 23-26, 2022.
https://www.youtube.com/watch?v=HybndWHwXNA

Silva, P. N. Using interleaved practice to teach statistics [Conference presentation]. United States Conference on Teaching Statistics, Virtual Conference. June 28-July1, 2021.
https://youtu.be/FlDXxXVWwao

Silva, P. N. Using interleaved practice to teach statistics [Symposium presentation]. Associated Graduate Students UCI Virtual Symposium. April 24, 2021.

Workshops
Silva, P. N. The writing workshop: Tips, tricks and tools. Writing Tips and Support for Graduate Scholars hosted by UCI Graduate Division, Irvine, CA. February 24, 2022

Silva, P. N. Using interleaved practice to teach statistics [Conference presentation]. United States Conference on Teaching Statistics, Virtual Conference. June 28-July1, 2021.
https://youtu.be/FlDXxXVWwao

Selected Data and Statistical Analysis Skills
- Statistical Analysis: R/RStudio, SPSS, Stata, and JASP statistical analysis software; management of small and large datasets; custom analysis functions; standard statistical methods (e.g., t-tests, ANOVA, regression); advanced statistical methods (e.g., Bayesian methods, model comparison, Markov processes for sequential data, Fourier transforms)
- Data Processing: R and Excel: validating data; sorting, filtering, and transforming data; aggregating and extracting subsets of data; documenting processing steps
- Designing and Conducting Behavioral Research: REDCap software; OpenSesame; SurveyMonkey; randomized controlled trials (RCTs); survey design; creating and running online studies, studies in naturalistic settings
- ArcGIS Online: Data representation and visualization; basic analyses
- Microsoft Access: Form construction; query construction
- Programming: R; Matlab; SQL; Java; Python

Selected Teaching Experience
- Cascading Mentorship Leader, UCI, 2021-2023: Mentoring two groups of 5-8 graduate students
- Instructor: *Introduction to Psychology*
- Teaching Assistant, UCI, 2018-2022: *Computer-Based Research Methods in the Social Sciences, Developmental Psychology, Probability and Statistics in Psychology III, Probability and Statistics in Psychology II, Probability and Statistics in Psychology I, Experimental Psychology II, Experimental Psychology I*

Professional Affiliations / Service
- Cognitive Science Society
- American Psychological Association
- Consortium for the Advancement of Undergraduate Statistics Education
- Minimum Continuing Legal Education (MCLE) Provider