

Exponent®
Engineering & Scientific Consulting

Nichole Breeland, Ph.D.

Managing Scientist | User Sciences
Phoenix
+1-623-587-6766 | nbreeland@exponent.com

Professional Profile

Dr. Nichole Breeland is a developmental psychologist specializing in user experience (UX) research for consumer products for children and adults, software, and medical devices. She leverages her expertise in human factors to help companies design intuitive, safe, and developmentally-appropriate products that align with regulatory standards and accommodate a wide range of user abilities and needs. By integrating human factors principals with UX strategy, Dr. Breeland helps companies develop user-centered products that enhance safety, usability, and market readiness.

Dr. Breeland collaborates with tech companies, medical device manufacturers, and other consumer product organizations to optimize user experiences and ensure product performance. She leads UX research, health and safety evaluations, and design assessments, focusing on how various user populations, such as children, parents, patients, and healthcare providers, interact with extended-reality (XR) technologies, digital interfaces, educational tools, and medical technologies. Using mixed-methods approaches, Dr. Breeland delivers actionable insights that enhance product usability, engagement, and compliance. She also supports regulatory submissions, conducting formative research and summative validation testing for FDA pathways such as 510(k) and De Novo applications for medical devices. Dr. Breeland's research has contributed to industry best practices by examining how design influences patient preferences, usability, and adherence in medical devices.

Dr. Breeland completed her Ph.D. in Developmental Psychology at the University of Auckland in New Zealand where she investigated children's social-cognitive development and cooperation. Her broader contributions to developmental psychology include investigating parent-child interactions, children's reliance on adults for health concept information, and the cognitive foundations of social behavior.

Academic Credentials & Professional Honors

Ph.D., Psychology, University of Auckland, 2021

B.A., Psychology, Pacific Lutheran University, 2017

University of Auckland Doctoral Academic Scholarship, 2017 – 2021

Pacific Lutheran University Academic Scholarship, 2014 – 2017

Psi Chi International Honor Society in Psychology, 2016 - Present

Licenses and Certifications

Certified Playground Safety Inspector (CPSI)

© 2026 Exponent, Inc. All Rights Reserved

Academic Appointments

Graduate Teaching Assistant, Psychology, The University of Auckland, 2018 - 2021

Prior Experience

Graduate Research Assistant, The Early Learning Lab, University of Auckland, 2017 – 2021

Research Assistant, Child Development Lab, Pacific Lutheran University, 2016

Publications

Breeland, N., Whritner, J.A., Yu, C.S.P., Ahuja, A., Kelly, R.L. (2026). Putting the User First: A User-Centered Approach to AI System Evaluation. In: Stephanidis, C., Margetis, G., Ntoa, S., Antona, M., Salvendy, G. (eds) HCI International 2026 Posters. HCII 2026. Communications in Computer and Information Science, vol 3047. Springer, Cham. https://doi.org/10.1007/978-3-032-30552-7_31

Silva, K., Breeland, N., Clark, A., Oztekin, I., & Kelly, R. (2025). Effects of Virtual Reality Use in Children 10-12-Years-Old. Frontiers in Virtual Reality, 6, 1547198.

Egeth, M., Cherne, N., Breeland, N., Sye, S., Soosaar, J., Seifer, F., & Glezer, S. (2025). Is your medical device “easy to use”? Supplemental oxygen patients’ experiences and tradeoffs around portable oxygen concentrators and tanks. Human Factors in Healthcare, 7, 100090.

Breeland, N., Henderson, A. M., & Low, R. (2022). Initial interactions matter: Warm-up play affects 2-year-olds’ cooperative ability with an unfamiliar same-aged peer. Journal of Experimental Child Psychology, 218, 105328. https://doi.org/10.1016/j.jecp.2021.105328

Project Experience

Managed a longitudinal study of over 500 participants designed to investigate factors that shape the development of prosocial behavior across infancy into childhood. Responsible for participant recruitment, study design, data collection, data acquisition and analysis, and publication.

Peer Reviews

Child Development

Human Factors in Healthcare