

Exponent®
Engineering & Scientific Consulting

Emma Murrugarra, Ph.D.

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Professional Profile

Dr. Emma Murrugarra is a cognitive psychologist specializing in human behavior, attention, and perception across the lifespan. She examines how context and experience shape perception, embodiment, and information processing by using advanced methods such as behavioral observations, eye-tracking, wearable sensors, and Virtual Reality (VR) simulations. She applies her expertise to identify the cognitive mechanisms that drive real-world performance and safety-critical decision making.

Dr. Murrugarra has 10 years of experience designing, directing, analyzing, and communicating research in cognitive science. Her recent work includes examining how the demands of parental caregiving shape embodied hazard perception and attention allocation. She takes an ecological approach to the development of research designs, focusing on how unique population experiences, motivational states, and environmental factors influence human behavior. Her findings are used to support improvements to environmental layout, risk mitigation, and product design analysis across a range of transportation, occupational, consumer, and healthcare contexts.

Prior to joining Exponent, Dr. Murrugarra worked as an Instructor of Record and Graduate Research Assistant at Cornell University. There she taught courses in developmental psychology, research methods, and embodied cognition. Dr. Murrugarra has also served as a researcher and project coordinator for the Center for Humanities in Extended Reality at the New Jersey Institute of Technology, where she leveraged her expertise in data analysis, grant writing, and research communication to help develop and launch a VR-based research tool for analyzing human behavior and perception.

Academic Credentials & Professional Honors

Ph.D., Developmental Psychology, Cornell University, 2024

M.A., Human Development, Cornell University, 2021

B.A., Human Biology, University of Kansas, 2018

B.A., Psychology, University of Kansas, 2018

B.A., Philosophy, University of Kansas, 2018

Center for Social Sciences Grant, Cornell University, 2023

ISDP Travel Award, International Society for Developmental Psychobiology, 2022

Cognitive Science Research Grant, Cornell University, 2022

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Human Development Fellowship, Cornell University 2021

Dean's Excellence Fellowship, Cornell University, 2018

Ronald E. McNair Challenger Award, University of Kansas, 2018

Society for Advancement of Chicanos and Native Americans in Science, 2017

Robert Tweed Hersh Award in Human Biology, University of Kansas, 2017

Academic Appointments

Instructor, Psychology and Human Development, Cornell University, 2021-2024

Prior Experience

Researcher, New Jersey Institute of Technology, 2025

Professional Affiliations

Human Factors and Ergonomics Society (HFES)

International Society for Developmental Psychobiology (ISDP)

International Society of Ecological Psychology (ISEP)

Society for Research in Child Development (SRCD)

Publications

Murrugarra E, Ramesh MO, Ozludil Altin B, Hamilton LI, Vinnikov M. Impact of virtual reality on perception of sacred spaces: case study of Grotta Pinta Madonna. HCI International 2026 Conference Proceedings, Montreal, Canada, 2026.

Murrugarra E, Goldstein M. The dynamics of perception in caregiving: how infants change the way we see the world. Child Development 2025; 96(6):2189–2200.

Murrugarra E, Goldstein MH. The influence of infantile cues on motivated perception of threats among caregivers. Acta Psychologica 2025; 254:104779.

Murrugarra E, Goldstein MH. How we perceive the world around babies: arousal moderates information-processing of infantile cues. 2024 IEEE International Conference on Development and Learning (ICDL), Austin, TX, USA, 2024.

Venditti JA, **Murrugarra E**, McLean CR, Goldstein MH. Curiosity constructs communicative competence through social feedback loops. Advances in child development and behavior 2023; 65:99–134.

Presentations

Gomez A., **Murrugarra E**, Look A, Goldstein M. How do babies teach parents to parent? Studying caregiving using a virtual environment. Poster presentation, International Congress of Infant Studies, Panama City, Panama, 2026.

Murrugarra E, Goldstein MH. How infant locomotor maturity influences parental perception of environmental threat. Poster presentation, International Society for Developmental Psychobiology, San

Diego, CA, 2022.

Murrugarra E, Goldstein MH. The influence of infant locomotor skill on parental attention to environmental threats, Poster presentation, International Conference for Infant Studies, Ottawa, Canada, 2022.

Murrugarra E, Goldstein MH. The parental umwelt: how infants shape their parent's perception of threat affordances, Poster presentation, International Society of Ecological Psychology, University of Southern Mississippi, Hattiesburg, MS, 2022.

Murrugarra E. Perceiving objects in context: replicating the framed line task. Oral presentation, Human Development Research Presentations, Cornell University, Ithaca, NY, 2020.

Murrugarra E, Atchley R. Embodiment in sign language: what ASL can teach us about emotion and metaphor in language. Oral presentation, Undergraduate Research Symposium, University of Kansas, Lawrence, KS, 2018.

Murrugarra E. Minding evolution: the role of emergentism in defining what it means to have a mind. Paper presentation, Minorities in Philosophy Conference, University of Kansas, Lawrence, KS, 2018.

Murrugarra E, Atchley R. The role of menstrual hormone regulation: a longitudinal study using amazon mechanical Turk. Poster presentation, Society for the Advancement of Chicanos and Native Americans in Science Conference, Salt Lake City, UT, 2017.

Peer Reviews

Parenting: Science and Practice