Elizabeth Hall, PhD

bethhallphd@gmail.com www.elizabethhhall.com Last Updated: March 2026

Specialization

Skills:	multimodal generative AI, user testing, computer vision, electroacoustics, perception science, 3D geometry, machine learning, hardware and research algorithm prototypes, avatars and embodied AI, human behavior,
Programming:	Python, R, SQL, MATLAB, C++, Javascript, HTML, CSS, Bash
Tools:	pytorch, tensorflow, pandas, openCV, numpy, scipy, sklearn, fasttext, gemini, linux, docker, AWS, S3, ETL, Spark

Positions

2025	Audio Research, Meta Reality Labs, *Hardware UX Researcher*
2020 – 2024	Integrated Attention Lab, UC Davis, *Graduate Research Fellow,* PI: Joy Geng
2023	Alexa Economics & Measurement, Amazon, *Data Science Intern,* PI: Xin Tang
2019 – 2021	Project SCORE / Replicats, DARPA, *Statistical Consultant ad-hoc*
2018 – 2020	Visual Cognition Lab, UC Davis, *Graduate Research,* PI: John Henderson
2016 – 2018	Lab of Brain and Cognition, NIMH, *Intramural Research Fellow,* PI: Chris Baker
2015 – 2016	Learning and Plasticity Group, BCBL, *Masters Research*, PI: Doug Davidson

Education

2025	Ph.D. Psychology, University of California, Davis *Dissertation: Object Attention in Scene Perception and Memory*
2015 – 2016	M.Sc Cognitive Neuroscience, University of the Basque Country
2010 – 2015	B.A. Liberal Arts**,** Bennington College

Funding and Awards

Fellowships

2023 – 2024	University of California President's Dissertation Year Fellowship ($53,000)
2020 – 2023	National Defense Science and Engineering Fellowship ($180,000)
2016 – 2018	National Institutes of Health Intramural Research Training Award ($80,000)
2011 – 2015	Bennington College Brockway Faculty Scholarship ($120,000)

Awards

2023	Early Career Scientist Travel Grant, National Eye Institute ($1000)
2023	Outstanding Mentor Award, UC Davis Psychology ($75)
2021	Diverse Mentoring Award, UC Davis Psychology ($500)
2021	Travel Award, UC Davis Graduate Student Association ($500)
2021	Best Talk Award (tied for 2nd place), UC Davis Psychology ($50)
2020	Best Talk Award (tied for 1st place), UC Davis Psychology ($100)
2020	Most Creative Methodology, UC Davis Psychology ($50)

2019 Travel Award, UC Davis Graduate Student Association ($500)
2019 Professional Development Travel Award, UC Davis Psychology ($500)
2018 NeuroFest Poster Award (3rd place), UC Davis Neuroscience ($100)

Publications

***joint first-author**

1. DeVeaux, C., **Hall, E.H.,** et al. Audiovisual Realism in MR: Investigating the Effects of Room Acoustics on Co-Presence with Photorealistic Avatars. IEEE VR, Seoul, 2026.
2. **Hall, E.H.**, & Loh, Z. Objects in Focus: A New Eye-Tracking and Scene Segmentation Dataset for Computer Vision. International Computer Vision Conference, Honolulu, 2026.
3. **Hall, E.H.,*** Forloines, M.R.,* Henderson, J.M, & Geng, J.J. (*under review, Visual Cognition*). Eye gaze during route learning in a virtual task.
4. **Hall, E. H**., & Geng, J. J. (2024). Object-based attention during scene perception elicits boundary contraction in memory. Memory & Cognition, 1-13.
5. **Hall, E.H.,*** Peacock, C.E.,* & Henderson, J.M. (2023). Objects are prioritized for attention based upon meaning during passive scene viewing. Psychonomic Bulletin & Review, 1-13.
6. Richie-Halford, A., Cieslak, M., Ai, L., [et al, including **Hall, E.H.**] (2022). An analysis-ready and quality controlled resource for pediatric brain white-matter research. Scientific Data, 9(1), 616.
7. Loh, Z., **Hall, E.H.,** Cronin, D., Henderson, J.M. (2022). Working memory control predicts fixation duration in scene-viewing. Psychological Research. 1-12.
8. **Hall, E.H.,** Bainbridge, W.A., & Baker, C.I. (*2021*). Highly similar and competing visual scenes lead to diminished memory for details in memory drawings. Memory, 30(3), 279-292.
9. Bainbridge, W.A., **Hall, E.H.,** Baker, C.I. (2020). Distinct representational structure and localization for visual encoding and recall during visual imagery. Cerebral Cortex, bhaa329.
10. Cronin, D.A., **Hall, E.H.,** Goold, J., Hayes, T.H., & Henderson, J.H. (2020) Eye movements in real-world scene photographs: General characteristics and effects of viewing task. Frontiers in Psychology 10: 2915.
11. Bainbridge, W.A, **Hall, E.H.**, & Baker, C.I. (2019). Highly diagnostic and detailed content of visual memory revealed during free recall of real-world scenes. Nature Communications.

Conference Presentations

12. **Hall, E.H.** & Geng, J.J. (2023). Object-based Attention in Scene Perception. Psychonomic Society. San Francisco, CA. Talk.
13. **Hall, E.H.,** & Geng, J.J. (2023). Object-based attention during scene perception elicits boundary contraction in memory. Vision Science Society. St. Pete's Beach, FL. Talk.
14. **Hall, E.H.** & Geng, J.J. (2022). Target search leads to tunnel memory for real-world environments. National Defense Science and Engineering conference. Boston, MA. Poster.
15. **Hall, E.H.,** & Geng, J.J. (2021). Thematic object relationships are judged as stronger than taxonomic relationships in a two-alternative forced choice task. Object Perception, visual Attention, and visual Memory. Virtual conference. Poster.
16. Loh, Z., **Hall, E.H.,** Cronin, D.A, & Henderson, J.H. (2021). Assessing the influence of task and working memory capacity on eye-movement characteristics during scene-perception. Western Psychological Association. Virtual conference. Poster.

17. **Hall. E.H.,** & Geng, J.J. (2021). Co-occurrence statistics from vision and language capture thematic relationships between objects. Vision Science Society. Virtual conference. Poster.
18. Bainbridge, W.A., **Hall, E.H.,** & Baker, C.I. (2019). Differences in the neural representations of visual content between encoding and free recall across the brain. Society for Neuroscience. Chicago, IL. Poster.
19. Bainbridge, W.A., **Hall, E.H.,** & Baker, C.I. (2019). Comparing the categorical structure of perceived and recalled images in visual cortex and hippocampus. Vision Sciences Society. St. Pete Beach, FL. Poster.
20. **Hall, E.H.,** Bainbridge, W.A., & Baker, C.I. (2019). Investigating visual free recall of highly similar and competing scene stimuli. Vision Sciences Society. St. Pete Beach, FL. Poster.
21. **Hall, E.H.,** Bainbridge, W.A., & Baker, C.I. (2019). Creating false memories: Investigating visual recall of multiple exemplars in a single category. Cognitive Neuroscience Society. San Francisco, CA. Poster.
22. Bainbridge, W.A., **Hall, E.H.,** & Baker, C.I. (2018). Comparing the neural correlates of visual encoding and free recall. Organization for Human Brain Mapping. Singapore. Poster.
23. **Hall, E.H.,** Bainbridge, W.A., & Baker, C.I. (2018). Comparing memory based on visual recall, visual recognition, and verbal recall. Vision Sciences Society. St. Pete Beach, FL. Poster.
24. Bainbridge, W.A., **Hall, E.H.,** & Baker, C.I. (2018). Visual recall memory contains highly detailed and precise object and spatial information. Vision Sciences Society. St. Pete's Beach, FL. Talk.
25. Bainbridge, W.A., **Hall, E.H.,** & Baker, C.I. (2018). Visual free recall of real-world scenes reveals high capacity and exquisite detail in memory. Cognitive Neuroscience Society. Boston, MA. Poster.
26. **Hall, E.H,** Bainbridge, W.A., Baker, C.I. (2018). Investigating neural signatures of visual encoding and recall using 7T fMRI. Cognitive Neuroscience Society, Boston, MA. Poster.
27. **Hall, E. H.,** W. A. Bainbridge, C. I. Baker (2017). Quantifying the resolution and capacity of memory during free recall of real-world visual scenes. Society for Neuroscience, Washington, D.C. Poster.

Invited Talks

2024	Carnegie Mellon University, Lab in Multisensory Neuroscience
2024	Meta Reality Labs, Display Systems Team
2023	University of California, Merced, Management of Complex Systems Dept.

Teaching and Mentoring

Courses

Spring 2020	Human Memory, *Teaching Assistant,* UC Davis
Fall 2019	Perception and Sensation, *Teaching Assistant,* UC Davis
Spring 2019	Introduction to Psychology, *Teaching Assistant,* UC Davis

Mentees - Meta

2025	Sharon Wong	Meta Reality Labs
2025	Andy Shaw	Meta Reality Labs

Mentees - UC Davis

2023 – 2024	Akshit Prathipati	Neurophysiology	
2023 – 2024	Nancy Cao	Psychology	
2022 – 2023	Maya Tochimoto	Cognitive Science	
2022 – 2023	Tiffany Kim	Disease Biology	Pursuing *JD* from *USC*
2019 – 2021	Ruilin Cai	Computer Science	Pursuing *MEng* from *UCLA*
2019 – 2021	Zoe Loh	Cognitive Science	Pursuing *PhD* from *UC Merced* Provost's Research Fellow First-author pub. *Psych. Research*
2019 – 2020	Anthony Lagunda	Psychology	Provost's Research Fellow

Service

Public Engagement

2023 Panelist, 1st Annual UCD Cog. Sci. Conference, "Jobs in Cognitive Science"

2020 – 2021 Brown Bag Organizer, UCD Perception, Cognition, and Cognitive Neuroscience
- Organized grad talks and outside speakers from *Meta Reality Labs, Plos One*, *University of Chicago*, and *Columbia University*

2019 – 2022 Post-publication peer reviewer, University of Melbourne, DARPA Score program
- Reviewed credibility of published research articles in business, economics, political science, and psychology

2017 – 2018 STEM Ambassador, DC STEM Network
- Speaker at DC public schools and local STEM events about science research opportunities for high school students

Professional Memberships

Vision Science Society, Females of Vision et al (FoVea), Society for Neuroscience, Psychonomic Society, Women in Data Science

Ad-Hoc Reviewer

Memory, Psychological Research, Psychological Review, Psychonomic Bulletin & Review, Memory & Cognition, Quarterly Journal of Experimental Psychology, Journal of Experimental Psychology: General, Heliyon, Scientific Reports, Journal of Cognitive Psychology

Selected Press

December 16, 2025	AI Glasses v21 Software Update: Conversation Focus, Meta AI Improvements, & More. Meta Blog.
April 2, 2025	Research on Attention Seeks to Expand Tools to Support Children and Adults with Attention Deficits. UC Davis Letters and Science Magazine.
May 25, 2021	Our memory is even better than experts thought. Scientific American.
February 1, 2019	Remembrance of things (recently) past. Brain Waves: The NIMH Intramural Research Program Newsletter.
January 28, 2019	Drawing out the visual richness of our lives. Nature Behavioural & Social Sciences: Behind the Paper.
November 15, 2017	Drawing out visual memories. Society for Neuroscience Meeting Blog.