

Education

University of California, Berkeley Ph.D., Neuroscience	2007 – 2012
University of Chicago B.A., Psychology and English Language & Literature (Phi Beta Kappa)	2003 – 2007

Academic Appointments

University of California, Berkeley <i>Herbert Wertheim School of Optometry & Vision Science, Helen Wills Neuroscience Institute</i> Associate Professor (with tenure) Assistant Professor	2024 – now 2018 – 2024
Dartmouth College Assistant Research Professor, Psychological and Brain Sciences Adjunct Assistant Professor, Computer Science	2015 – 2018 2016 – 2018
Stanford University Postdoctoral Research Scholar, Psychology	2013 – 2015

Other Roles

University of California, Berkeley Vision Science Graduate Program, Chair Vision Science Program, Student Outreach Faculty Liaison Center for Innovation in Vision and Optics, Co-Director & Outreach Coordinator Vision Science Graduate Program, Faculty Advisor for Postdoctoral Affairs Helen Wills Neuroscience Institute, NIH/UNR ENDURE Program Faculty Facilitator	2025 – now 2019 – now 2018 – now 2021 – 2024 2021 – 2024
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External

Google, Visiting Faculty Researcher	2025 – now
Community Resources for Science, Board of Directors	2024 – now
University of Vermont, Visiting Scholar	2024 – now
Cold Spring Harbor Lab, Computational Neuroscience: Vision, Course Organizer/Instructor	2022 – now

Research Funding

External Grants

Active

Alcon, Development of a vision simulator (co-PI)	2023 – 2025
National Science Foundation, CAREER: Smartglasses for all (PI)	2021 – 2026
National Institute of Health, Neural codes underlying visual segmentation (co-I, PI Huang)	2020 – 2025

Completed

Meta Reality Labs, Perceptual distortions produced by spectacle magnification (PI)	2022 – 2023
Facebook Reality Labs, Adaptation to minification caused by spectacles (PI)	2020 – 2021
Human Frontier Science Program, Visual circuit adaptations in zebrafish & cichlids (co-PI)	2018 – 2021
Google, Characterizing the perceptual eyebox (PI)	2019

Samsung, Global Research Outreach, Monovision and focus-tunable displays (co-I, PI Wetzstein) 2016 – 2017

Internal Grants

Completed

Hellman Fellows Fund (UC Berkeley), A Bayesian model of visual impairment (PI) 2022 – 2024
CITRIS Seed Funding (UC-wide), Enhancing obstacle visibility using a vision aid (co-PI) 2020
Neukom Institute (Dartmouth College), Biologically-plausible model of associative learning (co-PI) 2017

Unrestricted Gifts

Meta Reality Labs 2023
Samsung 2023
Facebook Reality Labs 2018
Intel Light Field Display ISRA Program 2017
Oculus 2017
Microsoft Hololens Research Program 2015

Awards and Fellowships

Simons Conference Award, CSHL Computational Neuroscience: Vision 2024
Berkeley Optometry, 40 under 40 Award 2023
National Eye Institute, Early Career Scientist Travel Grant 2019
NVIDIA, Academic GPU Award 2016
Stanford University, Henzl-Gabor Young Women in Science Travel Award 2013
ARVO, Vision Sciences Society Student Travel Award 2012
National Science Foundation, Graduate Research Fellowship 2011 – 2012
Department of Defense, National Defense Science & Engineering Graduate Fellowship 2009 – 2011
UC Berkeley, Outstanding Graduate Student Teaching Award 2009
Howard Hughes Medical Institute, Undergraduate Research Fellowship 2006

Scholarly Articles ([Google scholar here](#))

J.W. Charles, S.K. Moriarty, D.I. Fournier, N.E. Winterbauer, E.A. Cooper and T.P. Todd. **Robust Renewal After Extinction of Remotely Acquired Pavlovian Conditioning.** Learning & Memory, in press

S. Barrington, E.A. Cooper and H Farid. **People are Poorly Equipped to Detect AI-powered Voice Clones.** Scientific Reports, 15:11004, 2025

R. Wexler, S. Barrington, E.A. Cooper and H Farid. **AI-Generated Voice Evidence Poses Dangers in Court.** [Commentary] Lawfare Media, March 10, 2025

I.R. McLean, I.M. Erkelens and E.A. Cooper. **How Small Changes to One Eye's Retinal Image Can Transform the Perceived Shape of a Very Familiar Object.** Proceedings of the National Academy of Sciences, 121(17):e2400086121, 2024

T.S. Manning, E. Alexander, B.G. Cumming, G.C. DeAngelis, X. Huang and E.A. Cooper. **Transformations of Sensory Information in the Brain Suggest Changing Criteria for Optimality.** PLOS Computational Biology, 20(1):e1011783, 2024

M. Wang, E.A. Cooper, L. Moro, B.A. Narasimhan and H. Chen. **A Model for the Appearance of Interocular Colorimetric Differences in Binocular XR Displays.** [Conference Paper] SID Symposium Digest of Technical Papers, 55, 177-181, 2024

- E.F. Sherbak, I.R. McLean, I.M. Erkelens, L.T. Mikkelsen, R. Sharma and E.A. Cooper. **The Initial Progression of Physical and Perceptual Symptoms Associated with Aniseikonia.** *Translational Vision Science & Technology*, 13(11):30, 2024
- B.M. Chin, M. Wang, L.T. Mikkelsen, C.T. Friedman, C.J. Ng, M.A. Chu and E.A. Cooper. **A Paradigm for Characterizing Motion Misperception in People with Typical Vision and Low Vision.** *Optometry & Vision Science*, 101(5), 252-262, 2024
- M. Wang, J. Ding, D.M. Levi and E.A. Cooper. **The Effect of Interocular Contrast Differences on the Appearance of Augmented Reality Imagery.** *ACM Transactions on Applied Perception*, 21(1):1, 2023
- E.A. Cooper, R. Casati, H. Farid and P. Cavanagh. **The Art of the Float.** *Journal of Vision*, 23(8):13, 2023
- I.R. McLean, I.M. Erkelens, E.F. Sherbak, L.T. Mikkelsen, R. Sharma and E.A. Cooper. **The Contribution of Image Minification to Discomfort Experienced in Wearable Optics.** *Journal of Vision*, 23(8):10, 2023
- L.T. Cai, V.S. Krishna, T.C. Hladnik, N.C. Guilbeault, C. Vijayakumar, M. Arunachalam, S.A. Juntti, A.B. Arrenberg, T.R. Thiele and E.A. Cooper. **Spatiotemporal Visual Statistics of Aquatic Environments in the Natural Habitats of Zebrafish.** *Scientific Reports*, 13:12028, 2023
- E.A. Cooper. **The Perceptual Science of Augmented Reality.** [Review Article] *Annual Review of Vision Science*, 9(1), 455-478, 2023
- J.S. Tsay, S. Tan, M.A. Chu, R.B. Ivry and E.A. Cooper. **Low Vision Impairs Implicit Sensorimotor Adaptation in Response to Small Errors, but not Large Errors.** *Journal of Cognitive Neuroscience*, 35(4): 736-748, 2023
- D.R. Fox, A. Ahmadzadeh, C.T. Wang, S. Azenkot, M. Chu, R. Manduchi and E.A. Cooper. **Using Augmented Reality to Cue Obstacles for People with Low Vision.** *Optics Express*, 31(4): 6827-6848, 2023
- T.S. Manning, B. Naecker, I.R. McLean, J. Pillow, B. Rokers and E.A. Cooper. **A General Framework for Inferring Bayesian Ideal Observer Models from Psychophysical Data.** *eNeuro*, 10(1): ENEURO.0144-22.2022 1-17, 2023
- E. Alexander, L.T. Cai, S. Fuchs, T.C. Hladnik, Y. Zhang, V. Subramanian, N.C. Guilbeault, C. Vijayakumar, M. Arunachalam, S.A. Juntti, T.R. Thiele, A.B. Arrenberg, and E.A. Cooper. **Optic Flow in the Natural Habitats of Zebrafish Supports Spatial Biases in Visual Self-Motion Estimation.** *Current Biology*, 32, 1-14, 2022
- S. Reeves, E.A. Cooper, R. Rodriguez and J. Otero-Millan. **Head Orientation Influences Saccade Directions During Free Viewing.** *eNeuro*, 9(6): ENEURO.0273-22.2022 1-12, 2022
- M. Wang, J. Ding, D.M. Levi and E.A. Cooper. **The Effect of Spatial Structure on Binocular Contrast Perception.** *Journal of Vision*, 22(12):7, 2022
- J.D. Nguyen, S. Tan, S. Azenkot, M.A. Chu and E.A. Cooper. **Longitudinal Trends in Case Histories and Rehabilitative Device Assessments at Low Vision Exams.** *Optometry & Vision Science*, 99(11), 817-829, 2022
- M. Wang and E.A. Cooper. **Perceptual Guidelines for Optimizing Field of View in Stereoscopic Augmented Reality Displays.** *ACM Transactions on Applied Perception*, 19(4):19, 2022
- A.L. Boroshok, A.T. Park, P. Fotiadis, G.H. Velasquez, U.A. Tooley, K.R. Simon, J.C.P. Forde, L. Delgado Reyes, M.D. Tisdall, D.S. Bassett, E.A. Cooper and A.P. Mackey. **Individual Differences in Frontoparietal Plasticity in Humans.** *npj Science of Learning*, 7:14, 2022

- I.R. McLean, T.S. Manning and E.A. Cooper. **Perceptual Adaptation to Continuous Versus Intermittent Exposure to Spatial Distortions.** Investigative Ophthalmology and Visual Science, 63(5):29, 2022
- M. Kinader and E.A. Cooper. **Assessing Effects of Reduced Vision on Spatial Orientation Ability Using Virtual Reality.** [Conference Paper] Conference Proceedings of Spatial Cognition, BJMC, 9(3), 243-259, 2021
- M. Wang and E.A. Cooper. **A Re-Examination of Dichoptic Tone Mapping.** ACM Transactions on Graphics, 40(2):13, 2021
- S.A. Cholewiak, Z. Basgoze, O. Cakmakci, D.M. Hoffman and E.A. Cooper. **A Perceptual Eyebow for Near-Eye Displays.** Optics Express, 28(25), 38008-38028, 2020
- T.E. Yerxa, E. Kee, M.R. DeWeese and E.A. Cooper. **Efficient Sensory Coding of Multidimensional Stimuli.** PLOS Computational Biology, 16(9):e1008146, 2020
- Z. Basgoze, D.N. White, J. Burge and E.A. Cooper. **Natural Image Statistics at Depth Edges Modulate Perceptual Stability.** Journal of Vision, 20(8):10, 2020
- Z. Basgoze, J. Gualtieri, M.T. Sachs and E.A. Cooper. **Navigational Aid Use by Individuals with Visual Impairments.** [Conference Paper] Journal on Technology & Persons with Disabilities, 8, 22-39, 2020
- T. Tadros, N.C. Cullen, M.R. Greene and E.A. Cooper. **Assessing Neural Network Scene Classification from Degraded Images.** ACM Transactions on Applied Perception, 16(4):21, 2019
- J. Huang, M. Kinader, M.J. Dunn, W. Jarosz, X. Yang and E.A. Cooper. **An Augmented Reality Sign-reading Assistant for Users with Reduced Vision.** PLOS One, 14(1):e0210630, 2019
- Z. Basgoze, A.P. Mackey and E.A. Cooper. **Plasticity and Adaptation in Adult Binocular Vision.** [Review Article] Current Biology, 28(24), R1406-R1413, 2018
- M. Kinader, J. Gualtieri, M.J. Dunn, W. Jarosz, X. Yang and E.A. Cooper. **Using an Augmented Reality Device as a Distance-Based Vision Aid – Promise and Limitations.** Optometry & Vision Science, 95(9), 727-737, 2018
- B. Rokers, J.M. Fulvio, J. Pillow, and E.A. Cooper. **Systematic Misperceptions of 3D Motion Explained by Bayesian Inference.** Journal of Vision, 18(3):23, 2018
- E.A. Cooper and M.S. Banks. **Perceived Facial Distortions in Selfies are Explained by Viewing Habits.** [Commentary] JAMA Facial Plastic Surgery, 20(5), 431, 2018
- R. Konrad, N. Padmanaban, K. Molner, E.A. Cooper, and G. Wetzstein. **Accommodation-invariant Computational Near-eye Displays.** ACM Transactions on Graphics (SIGGRAPH Conference Proceedings), 36(4):88, 2017
- N. Padmanaban, R. Konrad, T. Stramer, E.A. Cooper, and G. Wetzstein. **Optimizing Virtual Reality for All Users Through Gaze Contingent and Adaptive Focus Displays.** Proceedings of the National Academy of Sciences, 114(9), 2183- 2188, 2017
- E.A. Cooper, M. van Ginkel, and B. Rokers. **Sensitivity and Bias in the Discrimination of 2D and 3D Motion Direction.** Journal of Vision, 16(10):5, 2016
- W.W. Sprague, E.A. Cooper, S. Reissier, B. Yellapragada, and M.S. Banks. **The Natural Statistics of Blur.** Journal of Vision, 16(10):23, 2016

- E.A. Cooper and A.P. Mackey. **Sensory and Cognitive Plasticity: Implications for Academic Interventions.** [Review Article] *Current Opinion in Behavioral Sciences*, 10, 21-27, 2016
- E.A. Cooper. **A Normalized Contrast-encoding Model Exhibits Bright/dark Asymmetries Similar to Early Visual Neurons.** *Physiological Reports*, 4(7):e12746, 2016
- R. Konrad, E.A. Cooper, and G. Wetzstein. **Novel Optical Configurations for Virtual Reality: Evaluating User Preference and Performance with Focus-tunable and Monovision Near-eye Displays.** *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI)*, 2016
- E.A. Cooper and A. Radonjic. **Gender Representation in the Vision Sciences: a Longitudinal Study.** *Journal of Vision*, 16(1):17, 2016
- E.A. Cooper and H. Farid. **Does the Sun Revolve Around the Earth? A Comparison between the General Public and On-line Survey Respondents in Basic Scientific Knowledge.** *Public Understanding of Science*, 25(2), 146-153, 2016
- W.W. Sprague*, E.A. Cooper*, I. Tomic and M.S. Banks. **Stereopsis is Adaptive for the Natural Environment.** *Science Advances*, 1(4):e1400254, 2015 *Author order determined by coin toss
- E.A. Cooper and A.M. Norcia. **Predicting Cortical Dark/Bright Asymmetries from Natural Image Statistics and Early Visual Transforms.** *PLOS Computational Biology*, 11(5):e1004268, 2015
- D.E. Jacobs, O. Gallo, E.A. Cooper, K. Pulli, and M. Levoy. **Simulating the Visual Experience of Very Bright and Very Dark Scenes.** *ACM Transactions on Graphics*, 34(3):25, 2015
- E.A. Cooper and A.M. Norcia. **Perceived Depth in Natural Images Reflects Encoding of Low-level Luminance Statistics.** *Journal of Neuroscience*, 34(35), 11761-8, 2014
- M.S. Banks, E.A. Cooper, and E.A. Piazza. **Camera Focal Length and the Perception of Pictures.** *Ecological Psychology*, 26(1-2), 30-46, 2014
- E.A. Cooper, H. Jiang, V. Vildavski, J.E. Farrell, and A.M. Norcia. **Assessment of OLED Displays for Vision Research.** *Journal of Vision*, 13(12):16, 2013
- P. Vangorp, C. Richardt, E.A. Cooper, G. Chaurasia, M.S. Banks, and G. Drettakis. **Perception of Perspective Distortions in Image-Based Rendering.** *ACM Transactions on Graphics (SIGGRAPH Conference Proceedings)*, 32(4):58, 2013
- E.A. Cooper, E.A. Piazza, and M.S. Banks. **The Perceptual Basis of Common Photographic Practice.** *Journal of Vision*, 12(5):8, 2012
- R.T. Held, E.A. Cooper, and M.S. Banks. **Blur and Disparity are Complementary Cues to Depth.** *Current Biology*, 22(5), 426-31, 2012
- E.A. Cooper, J. Burge, and M.S. Banks. **The Vertical Horopter is not Adaptable, but It may be Adaptive.** *Journal of Vision*, 11(3):20, 2011
- E.A. Cooper, U. Hasson, and S.L. Small. **Interpretation-Mediated Changes in Neural Activity During Language Comprehension.** *NeuroImage*, 55(3), 1314-23, 2011

R.T. Held, E.A. Cooper, J. O'Brien, and M.S. Banks. **Using Blur to Affect Perceived Distance and Size.** ACM Transactions on Graphics, 29(2):19, 2010

Conference Abstracts

M.D. Anderson, J. Otero-Millan and E.A. Cooper. **Eye Movements Affect Heading Perception from Optic Flow.** Journal of Vision, 2025

B.M. Chin, M.S. Banks, D. Nankivil, A. Roorda and E.A. Cooper. **Determining Wavelength-in-focus for Polychromatic Visual Stimuli.** Journal of Vision, 2025

J.W. Charles, S.K. Moriarity, D.I. Fournier, N.E. Winterbauer, E.A. Cooper, and T.P. Todd. **Robust Renewal After Extinction of Remotely Acquired Pavlovian Conditioning.** Neuroscience, Behavior and Health Forum, 2025

M.D. Anderson, J. Otero-Millan and E.A. Cooper. **Tracking Visual Targets During Simulated Self Motion.** Journal of Vision, 24:729, 2024

B.M. Chin, M.S. Banks, D. Nankivil, A. Roorda and E.A. Cooper. **Bringing Color into Focus: Accommodative State Varies Systematically with the Spectral Content of Light.** Journal of Vision, 24:1452, 2024

B.M. Chin, M.S. Banks, D. Nankivil, A. Roorda and E.A. Cooper. **Bringing Color into Focus: Dynamic Accommodation Responses to Polychromatic Stimuli.** Optica Fall Vision Meeting, 2023

I.R. McLean, E.F. Sherbak, L.T. Mikkelsen, I.M. Erkelens, R. Sharma and E.A. Cooper. **The Effects of Monocular and Binocular Retinal Image Minification on Eyestrain.** Optica Fall Vision Meeting, 2023

I.R. McLean, I.M. Erkelens, E.F. Sherbak, L.T. Mikkelsen, R. Sharma and E.A. Cooper. **The Effects of Monocular and Binocular Retinal Image Minification During Natural Tasks.** Journal of Vision, 23:4700, 2023

C.T. Friedman*, M. Wang, X. Huang and E.A. Cooper. **Natural Scene Statistics of Figure-Ground Motion in MT Receptive Fields.** Journal of Vision, 23:4934, 2023 *Author name originally published as C.T. Wang

M. Wang, J. Ding, D. Levi and E.A. Cooper. **The Multifaceted Appearance of Dichoptic Gratings and Noise Stimuli.** Journal of Vision, 22:3730, 2022

T.S. Manning, J.W. Pillow, B. Rokors and E.A. Cooper. **Humans Make Non-ideal Inferences about World Motion.** Journal of Vision, 22:4054, 2022

I.R. McLean, I.M. Erkelens and E.A. Cooper. **Binocular Perceptual Distortions Produced by Retinal Image Magnification.** Journal of Vision, 22:3292, 2022

T.C. Hladnik, E. Alexander, L.T. Cai, Sabrina Fuchs, V. Krishna S., T. Thiele, E.A. Cooper and A. Arrenberg. **A Spherical Arena for Visual Surround Stimulation and Calcium Imaging in Zebrafish.** Imaging Structure and Function of the Zebrafish Brain Conference, 2022

I.R. McLean, T.S. Manning and E.A. Cooper. **Perceptual Adaptation to Continuous Versus Intermittent Spatial Distortions.** Society for Neuroscience, 2021

T.S. Manning, E. Alexander, G.C. DeAngelis, X. Huang and E.A. Cooper. **Role of MT Disparity Tuning Biases in Figure-Ground Segregation.** Society for Neuroscience, 2021

- S.M. Reeves, E.A. Cooper, R. Rodriguez and J. Otero-Millan. **Head Tilt Influences Saccade Directions During Free Viewing.** Society for Neuroscience, 2021
- T.S. Manning, I.R. McLean, B. Naecker, J. Pillow, B. Rokers and E.A. Cooper. **Estimating Perceptual Priors with Finite Experiments.** Journal of Vision, 21:2215, 2021
- M. Wang, J. Ding, D.M. Levi and E.A. Cooper. **Binocular Contrast Perception of Gratings, Noise, and Natural Images.** Journal of Vision, 21:2181, 2021
- E. Alexander, V. Krishna S., T.C. Hladnik, N.C. Guilbeault, L.T. Cai, T.R. Thiele, A.B. Arrenberg and Emily A. Cooper. **Self-motion Cues in the Natural Habitats of Zebrafish Support Lower Visual Field Bias.** Journal of Vision, 2021
- M. Wang and E.A. Cooper. **A Re-examination of Dichoptic Tone Mapping Methods.** Journal of Vision, 20:887, 2020
- L.T. Cai, V. Krishna, T. Hladnik, N. Guilbeault, S. Juntti, T. Thiele, A. Arrenberg and E.A. Cooper. **Visual Statistics of Aquatic Environments in the Natural Habitats of Zebrafish.** Journal of Vision, 20:433, 2020
- T. Thiele, S. Juntti, K. Wang, L. Cai, T. Hladnik, R. Meier, F. Dehmelt, J. Hinz, V. Subramanian, N. Guilbeault, E.A. Cooper and A. Arrenberg. **Investigation of Visual Circuit Adaptations to Natural Environmental Motion in Zebrafish and Cichlids.** Zebrafish Neural Circuits and Behavior, 2019
- Z. Basgoze, D. White, J. Burge and E.A. Cooper. **Effects of Context on the Visual Stability of Depth Edges in Natural Scenes.** Journal of Vision, 19:223a, 2019
- X. Huang, C. Wang, B. Arseneau, T.E. Yerxa and E.A. Cooper. **Natural Scene Statistics of Depth and Motion Pertinent to Figure-ground Segregation.** Society for Neuroscience, 2019
- A. Boroshok, G. Velasquez, A. Park, K. Simon, J. Forde, E.A. Cooper and A.P. Mackey. **Individual Differences in Human Frontoparietal Plasticity.** Flux Congress, 2019
- M. Kinader and E.A. Cooper. **Using Visual Snapshots to Estimate Egocentric Orientation in Natural Environments.** Journal of Vision, 18:513, 2018
- M. Kinader, T. Pfaff, and E.A. Cooper. **The Visual Features of Smoke.** Journal of Vision, 17(10):415, 2017
- S. Finocchetti, E.A. Cooper, and M. Gori. **Visual Experience and Spatial Reference Frames for Sound Localization.** International Multisensory Research Forum, 2017
- N. Padmanaban, R. Konrad, E.A. Cooper, and G. Wetzstein. **Optimizing Virtual Reality for All Users Through Adaptive Focus Displays.** SIGGRAPH, 2017
- R. Konrad, N. Padmanaban, E.A. Cooper, and G. Wetzstein. **Computational Focus-Tunable Near-Eye Displays.** SIGGRAPH Emerging Technologies, 3, 2016
- M.S. Banks, W.W. Sprague, E.A. Cooper, and S. Reissier. **How Natural Distributions of Blur Affect 3D Percepts.** Journal of Vision, 16(12):195, 2016
- E.A. Cooper and A.M. Norcia. **What are the Natural Scene Statistics of Cortical Input?** Journal of Vision, 15(12):1287, 2015

W.W. Sprague, E.A. Cooper and M.S Banks. **Statistics of Retinal Image Blur During Natural Viewing.** Journal of Vision, 15(12):766, 2015

E.A. Cooper and A.M. Norcia. **Perceived Depth in Natural Images Reflects Encoding of Low-Level Luminance Statistics.** Journal of Vision, 14(10):1112, 2014

W.W. Sprague, E.A. Cooper, J.-B. Durand, and M.S. Banks. **Disparity Preferences in V1 Reflect the Statistics of Disparity in Natural Viewing.** Journal of Vision, 14(10):1111, 2014

A.M. Norcia, J.M. Ales, E.A. Cooper, and T. Weigand. **Measuring Perceptual Differences between Compressed and Uncompressed Video Sequences using the Swept-Parameter Visual Evoked Potential.** Journal of Vision, 14(10):649, 2014

J. Yang, M. Andric, S. Duncan, A. Holt, U. Hasson, E.A. Cooper, and S.L. Small. **Top-Down Modulation of Brain Networks During Discourse Comprehension.** Society for the Neurobiology of Language, San Diego, CA, 2013

E.A. Cooper, W.W. Sprague, I. Tomic, and M.S. Banks. **Is Stereopsis Optimized for the Natural Environment?** Journal of Vision, 13(9):612, 2013

J. Yang, U. Hasson, E.A. Cooper, and S.L. Small. **Influence of Selective Attention on Story Comprehension.** Cognitive Neuroscience Society Annual Meeting, San Francisco, CA, 2013

E.A. Cooper and M.S. Banks. **Perception of Depth in Pictures when Viewing from the Wrong Distance.** Journal of Vision, 12(9):896, 2012

E.A. Cooper, E.A. Piazza, and M.S. Banks. **Depth Compression and Expansion in Photographs.** Journal of Vision, 11(11):65, 2011

E.A. Cooper, J. Burge, and M.S. Banks. **Do People of Different Heights Have Different Horopters?** Journal of Vision, 10(7):372, 2010

R.T. Held, E.A. Cooper, and M.S. Banks. **Blur and Disparity Provide Complementary Distance Information for Human Vision.** Journal of Vision, 10(7):57, 2010

R.T. Held, E.A. Cooper, J. O'Brien, and M.S. Banks. **Making Big Things Look Small: Blur Combined With Other Depth Cues Affects Perceived Size and Distance.** Journal of Vision, 9(8):959, 2009

E.A. Cooper, U. Hasson, and S.L. Small. **Dimensions of Discourse: Brain Activation During the Processing of Temporal, Spatial, and Actional Information in Narrative.** Cognitive Neuroscience Society Annual Meeting, New York, NY, 2007

Research Talks

External (Invited)

Perceptual Science for Augmented Reality Systems, Display Week (Keynote)	2025
Perceptual Science for Augmented Reality Systems, Dartmouth College	2025
A Transformation of Sensory Information in the Brain, Dartmouth College	2025
Why Do Faces Look Wrong in Selfies? Sonoma State University	2025
A Transformation of Sensory Information in the Brain, Flatiron Institute/NYU	2024
Binocular Vision in Real and Unreal Worlds, University of Vermont	2024
A Real World Visual Illusion, Indiana University	2024
A Real World Visual Illusion, Smith Kettlewell Eye Research Institute	2024

Improving Augmented Reality Through Perceptual Science, Optica Fall Vision Meeting	2023
3D Vision, Cold Spring harbor Laboratory: Vision Course	2023
Improving Augmented Reality Through Perceptual Science, Northwestern University	2022
Taking a Binocular View of Augmented Reality System Design, Stanford University	2022
Perceptual Guidelines for Optimizing Field of View in Augmented Reality, Optica Virtual Panel	2022
The Potential to Improve Vision with Augmented Reality, SPIE AR VR MR Conference	2022
Perceptual Science for Augmented Reality, Cardiff University	2021
A Perceptual Eyebow for Augmented Reality, Stanford University	2021
Perceptual Science for Augmented Reality, Brown University	2021
Perceptual Science for Augmented Reality, Northwestern University	2020
Perceptual Science for Augmented Reality, Smith Kettlewell	2020
A Perceptual Eyebow for Augmented Reality, SNAP	2020
Natural and Virtual 3D Vision, UNR Big Data Summer School	2020
Understanding Visual Demands for Aquatic Animals used in Neuroscience Research, Sussex Visions	2020
A Perceptual Eyebow for Augmented Reality, Google	2019
3D Vision, Cold Spring Harbor Laboratory: Vision Course	2019
Considering Individual Differences in Vision for AR/VR, Magic Leap	2019
3D Vision in Natural Environments, SUNY Optometry	2019
Insights Across Animal Models, Computational Models, & Humans, Computational Cognitive Neuro	2018
Using AR/VR to Better Understand Individual Differences in Vision, Oculus	2018
The Potential for Improving Impaired Vision with Augmented Reality, OSA Frontiers in Optics	2017
What 3D Scene Statistics Tell Us About 3D Vision, Harvard Medical School	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, VSS Symposia	2017
What More can Natural Images Tell Us About ON and OFF Pathways? Cosyne Workshop	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, Google	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, Stanford SCIEN	2017
What 3D Scene Statistics Tell Us About 3D Vision, University of Pennsylvania	2016
What 3D Scene Statistics Tell Us About 3D Vision, Rochester Institute of Technology	2016
What 3D Scene Statistics Tell Us About 3D Vision, UW Madison	2016
What 3D Scene Statistics Tell Us About 3D Vision, UT Austin NETI Workshop	2016
The Computational Demands of Biological Stereovision, Massachusetts Institute of Technology	2015
The Visual Representation of Brights and Darks, Italian Institute of Technology	2015
The Computational Demands of Biological Stereovision, Middlebury College	2015
Creating Illusions of Depth, Google	2014
Is Stereopsis Optimized for Our Natural Environment? Bay Area Vision Research Day	2013
Is 3D Vision Optimized for Our Natural Environment? Dartmouth College	2013
Is Stereopsis Optimized for Our Natural Environment? Bay Area Society for Information Display	2012
The Perceptual Basis of Common Photographic Techniques, Stanford University	2012

Internal (UC Berkeley)

The Potential to Enhance Vision Care with Augmented Reality, Silver Bear Society Dinner	2023
3D Vision in Natural Environments, UC Berkeley Neuroscience Bootcamp	2021
The Potential for Improving Impaired Vision with Augmented Reality, UCB Learning in Retirement	2020
Perceptual Science for Augmented Reality, UC Berkeley Institute of Cognitive and Brain Sciences	2020
A Perceptual Eyebow for Augmented Reality, CIVO Annual Meeting	2019
A Perceptual Eyebow for Augmented Reality, UC Berkeley Vive Center	2019
3D Vision in Natural Environments, UC Berkeley Neuroscience Bootcamp	2019
3D Vision in Natural Environments, UC Berkeley Institute of Cognitive and Brain Sciences	2019
The Potential to Improve Spatial Vision with Augmented Reality, CIVO Launch Meeting	2018
Lab Research Overview, UC Berkeley Redwood Center	2018
3D Vision in Natural Environments, Bay Area Vision Research Day	2018

Teaching

UC Berkeley

VS 260D Seeing in Time, Space, and Color	Spring 2025
VS 219 Binocular Vision and Space Perception	Spring 2025
VS 260D Seeing in Time, Space, and Color	Spring 2024
VS 219 Binocular Vision and Space Perception	Spring 2024
Neurosci 290A Neuroscience Research Design & Analysis (guest lecturer)	Fall 2023
VS 260D Seeing in Time, Space, and Color	Spring 2023
VS 219 Binocular Vision and Space Perception	Spring 2023
Neurosci 290A Neuroscience Research Design & Analysis (guest lecturer)	Fall 2022
VS 260D Seeing in Time, Space, and Color	Spring 2022
VS 219 Binocular Vision and Space Perception	Spring 2022
Neurosci 290A Neuroscience Research Design & Analysis (guest lecturer)	Fall 2021
VS 260D Seeing in Time, Space, and Color	Spring 2021
VS 217 Oculomotor Function & Neurology	Spring 2021
Neurosci 290A Neuroscience Research Design & Analysis (guest lecturer)	Fall 2020
VS 260D Seeing in Time, Space, and Color	Spring 2020
VS 217 Oculomotor Function & Neurology	Spring 2020
Neurosci 290A Neuroscience Research Design & Analysis (guest lecturer)	Fall 2019
VS 260D Seeing in Time, Space, and Color (guest lecturer)	Spring 2019

Dartmouth College

Functional Neuroanatomy	Spring 2018
Technology, Psychology & Neuroscience	Spring 2017
Functional Neuroanatomy	Spring 2016

UC Berkeley - Graduate Student Instructor

MCB 61 Brain, Mind & Behavior	Spring 2010
MCB 163 Mammalian Neuroanatomy	Fall 2008

Student and Postdoctoral Research Advisees

Undergraduate

Betsy-Jane Paul-Odionhin	2025 – now
Aakarsh Gopisetty, Cognitive Science	2024 – now
Kensal Coudriet, Neuroscience	2023
Terrie Joo, Cognitive Science	2022 – 2023
Alexander Ladd, Data Science	2019 – 2020
Thomas Yerxa, Physics (Senior Thesis)	2018 – 2019
Irene Feng, Computer Science (Senior Thesis)	2016 – 2017
Jonathan Huang, Computer Science (Senior Thesis)	2015 – 2017
Tim Tadros, Computer Science (Senior Thesis)	2015 – 2017

Graduate

Ph.D.

Iona McLean, Vision Science	2019 – 2024
Minqi Wang, Vision Science	2018 – 2023

O.D.

Clara Friedman, (Honors Thesis)	2021 – now
Muhammad Muhanna	2023 – 2025
Ester Sherbak (Honors Thesis)	2021 – 2024

Loganne Mikkelsen	2021 – 2024
Ahmad Ahmadzada	2021 – 2023
Zita Alamparambil (NIH T35 Program)	2020 – 2020
Jacqueline Nguyen (Honors Thesis)	2019 – 2021
Phoebe Lo	2019 – 2021
Steven Tan	2019 – 2021
Melody To	2019 – 2020
Madi Sachs (NIH T35 Program)	2019 – 2019

Postdoctoral

Matt Anderson	2023 – now
Benjamin Chin	2023 – now
Angie Godinez	2024 – 2025
Emma Alexander	2020 – 2022
Tyler Manning	2019 – 2022
Tianhao Cai	2018 – 2020
Zeynep Basgoze	2017 – 2020
Max Kinateder	2016 – 2018

Other Activities

UC Berkeley

Fiat Lux Scholarship Program, Faculty Interviewer/Mentor	2020 – now
Cognitive Science Major, Affiliated Faculty	2019 – now
Institute of Cognitive and Brain Sciences, Faculty Member	2018 – now
School of Optometry, Mentorship Pilot Program Faculty Mentor	2021 – 2022

UC Berkeley – Committees

Vision Science Graduate Program, Training Grant Internal Advisory Council	2024 – now
School of Optometry, ACOE Accreditation Committee	2024
Vision Science Graduate Program, Admissions Committee (Chair)	2023 – 2024
School of Optometry, Faculty Hiring Planning Committee	2022 – 2023
School of Optometry, O.D. Admissions Committee	2021 – 2024
School of Optometry, PCO Faculty Search Committee	2021 – 2021
Helen Wills Neuroscience Institute, Graduate Admissions Committee	2020 – 2021
Vision Science Graduate Program, Admissions Committee	2019 – 2022
Helen Wills Neuroscience Institute, Graduate Admissions Committee	2010 – 2011
Helen Wills Neuroscience Institute, Speaker Series Committee	2008 – 2010

External

Females of Vision et al., Advisory Board Member	2018 – now
Eurographics, State-of-the-art Reports Program Committee Member	2022 – 2023
National Science Foundation, Panel and Ad Hoc Grant Proposal Reviewer	2021 – 2025
Society for Information Display Applied Vision Subcommittee Member	2020 – 2021
Mind & Brain Night, After School Activity Night Coordinator	2008 – 2012
Community Resources for Science, Middle School Classroom Volunteer	2008 – 2012