

## POSITIONS

<b>University of California, Berkeley</b>	<b>2018 – present</b>
Assistant Professor Herbert Wertheim School of Optometry & Vision Science Helen Wills Neuroscience Institute	
<b>Dartmouth College</b>	<b>2015 – 2018</b>
Assistant Research Professor, Psychological and Brain Sciences	2015 – 2018
Adjunct Assistant Professor, Computer Science	2016 – 2018
<b>Stanford University</b>	<b>2013 – 2015</b>
Postdoctoral Research Scholar, Psychology	

## EDUCATION

<b>University of California, Berkeley</b>	<b>2007 – 2012</b>
<i>Ph.D., Neuroscience</i> Dissertation: Perception of Depth in Real and Pictured Environments (Advisor: Martin Banks)	
<b>University of Chicago</b>	<b>2003 – 2007</b>
<i>B.A., Psychology and English Language &amp; Literature (Phi Beta Kappa)</i>	

## FELLOWSHIPS

National Science Foundation, <i>Graduate Research Fellowship</i>	2011
Department of Defense, <i>National Defense Science &amp; Engineering Graduate Fellowship</i>	2009
Howard Hughes Medical Institute, <i>Undergraduate Research Fellowship</i>	2006

## RESEARCH FUNDING

**External Grants**Active

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

Completed

Meta Reality Labs, <i>Perceptual distortions produced by spectacle magnification</i> (PI)	2022 – 2023
Facebook Reality Labs, <i>Adaptation to minification caused by spectacles</i> (PI)	2020 – 2021
Human Frontier Science Program, <i>Visual circuit adaptations in zebrafish &amp; cichlids</i> (co-I)	2018 – 2021
Google, <i>Characterizing the perceptual eyebox</i> (PI)	2019 – 2019
Samsung, <i>Global Research Outreach, Monovision and focus-tunable near-eye displays</i> (co-I, PI Wetzstein)	2016 – 2017

**Internal Grants**Active

Hellman Fellows Fund (UC Berkeley), <i>A Bayesian model of visual impairment</i> (PI)	2022 – 2024
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Completed

CITRIS Core Seed Funding (UC-wide), <i>Enhancing obstacle visibility using a head-mounted vision aid</i> (co-PI)	2020 – 2020
Neukom Institute (Dartmouth College), <i>Biologically-plausible model of associative learning</i> (co-PI)	2017 – 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

Simons Collaboration on the Global Brain Conference Award, <i>CSHL Computational Neuroscience: Vision</i>	2024
Berkeley Optometry, <i>40 under 40 Award</i>	2023
National Eye Institute, <i>Early Career Scientist Travel Grant</i>	2019
NVIDIA, <i>Academic GPU Award</i>	2016
Stanford University, <i>Henzl-Gabor Young Women in Science Travel Award</i>	2013
ARVO, <i>Vision Sciences Society Student Travel Award</i>	2012
UC Berkeley, <i>Outstanding Graduate Student Teaching Award</i>	2009

## ARTICLES

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*, in press

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] *Society for Information Display International Digest of Technical Papers*, in press

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, 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. Ahmadzade, 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. Rokors 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. Başgöze, 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. Başgöze, 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. Başgöze, 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. Başgöze, 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

#### ABSTRACTS

M.D. Anderson, J. Otero-Millan and **E.A. Cooper**. Tracking visual targets during simulated self motion. *Journal of Vision*, in press

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*, in press

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. Rokers 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. Baggöze, 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 Action Information in Narrative. *Cognitive Neuroscience Society Annual Meeting*, New York, NY, 2007

## RESEARCH TALKS

### External (Invited)

A Real World Visual Illusion, <i>Indiana University</i>	2024
A Real World Visual Illusion, <i>Smith Kettlewell Eye Research Institute</i>	2024
Improving Augmented Reality Through Perceptual Science, <i>Optica Fall Vision Meeting</i>	2023
3D Vision, <i>Cold Spring harbor Laboratory: Vision Course</i>	2023
Improving Augmented Reality Through Perceptual Science, <i>Northwestern University</i>	2022
Taking a Binocular View of Augmented Reality System Design, <i>Stanford University</i>	2022
Perceptual Guidelines for Optimizing Field of View in Stereoscopic Augmented Reality, <i>Optica Virtual Panel</i>	2022
The Potential to Improve Vision with Augmented Reality, <i>SPIE AR VR MR Conference</i>	2022
Perceptual Science for Augmented Reality, <i>Cardiff University</i>	2021
A Perceptual Eyebox for Augmented Reality, <i>Stanford University</i>	2021
Perceptual Science for Augmented Reality, <i>Brown University</i>	2021
Perceptual Science for Augmented Reality, <i>Northwestern University</i>	2020
Perceptual Science for Augmented Reality, <i>Smith Kettlewell</i>	2020
A Perceptual Eyebox for Augmented Reality, <i>SNAP</i>	2020
Natural and Virtual 3D Vision, <i>UNR Big Data Summer School</i>	2020
Understanding Visual Demands for Aquatic Animals used in Neuroscience Research, <i>Sussex Visions</i>	2020
A Perceptual Eyebox for Augmented Reality, <i>Google</i>	2019
3D Vision, <i>Cold Spring Harbor Laboratory: Vision Course</i>	2019
Considering Individual Differences in Vision for AR/VR, <i>Magic Leap</i>	2019
3D Vision in Natural Environments, <i>SUNY Optometry</i>	2019
Insights Across Animal Models, Computational Models, & Humans, <i>Computational Cognitive Neuroscience</i>	2018
Using AR/VR to Better Understand Individual Differences in Vision, <i>Oculus</i>	2018
The Potential for Improving Impaired Vision with Augmented Reality, <i>OSA Frontiers in Optics</i>	2017
What 3D Scene Statistics Tell Us About 3D Vision, <i>Harvard Medical School</i>	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, <i>VSS Symposia</i>	2017
What More can Natural Images Tell Us About ON and OFF Pathways? <i>Cosyne Workshop</i>	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, <i>Google</i>	2017
Designing and Assessing VR/AR Displays to Increase User Inclusivity, <i>Stanford SCIEN</i>	2017
What 3D Scene Statistics Tell Us About 3D Vision, <i>University of Pennsylvania</i>	2016

What 3D Scene Statistics Tell Us About 3D Vision, <i>Rochester Institute of Technology</i>	2016
What 3D Scene Statistics Tell Us About 3D Vision, <i>UW Madison</i>	2016
What 3D Scene Statistics Tell Us About 3D Vision, <i>UT Austin NETI Workshop</i>	2016
The Computational Demands of Biological Stereovision, <i>Massachusetts Institute of Technology</i>	2015
The Visual Representation of Brights and Darks, <i>Italian Institute of Technology</i>	2015
The Computational Demands of Biological Stereovision, <i>Middlebury College</i>	2015
Creating Illusions of Depth, <i>Google</i>	2014
Is Stereopsis Optimized for Our Natural Environment? <i>Bay Area Vision Research Day</i>	2013
Is 3D Vision Optimized for Our Natural Environment? <i>Dartmouth College</i>	2013
Is Stereopsis Optimized for Our Natural Environment? <i>Bay Area Society for Information Display</i>	2012
The Perceptual Basis of Common Photographic Techniques, <i>Stanford University</i>	2012

### Internal (UC Berkeley)

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

### TEACHING

#### UC Berkeley

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

Kensal Coudriet, Undergraduate Researcher (Neuroscience)	2023 – 2023
Terrie Joo, Undergraduate Researcher (Cognitive Science)	2022 – 2023
Alexander Ladd, Undergraduate Researcher (Data Science)	2019 – 2020
Thomas Yerxa, Undergraduate Senior Thesis Student (Physics)	2018 – 2019
Irene Feng, Undergraduate Senior Thesis Student (Computer Science)	2016 – 2017
Jonathan Huang, Undergraduate Senior Thesis Student (Computer Science)	2015 – 2017
Tim Tadros, Undergraduate Senior Thesis Student (Computer Science)	2015 – 2017

## Graduate

### Ph.D.

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

### O.D.

Muhammad Muhanna, Student Researcher	2023 –
Clara Friedman, Honors Thesis Student	2021 –
Ester Sherbak, Honors Thesis Student	2021 – 2024
Loganne Mikkelsen, Student Researcher	2021 – 2024
Ahmad Ahmadzada, Student Researcher	2021 – 2023
Zita Alamparambil, Student Researcher	2020 – 2020
Jacqueline Nguyen, Honors Thesis Student	2019 – 2021
Phoebe Lo, Student Researcher	2019 – 2021
Steven Tan, Student Researcher	2019 – 2021
Melody To, Student Researcher	2019 – 2020
Madi Sachs, Student Researcher	2019 – 2019

## Postdoctoral

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

## OTHER ACTIVITIES

### UC Berkeley

Vision Science Program, Faculty Advisor for Postdoctoral Affairs	2021 –
Center for Innovation in Vision and Optics Outreach Program, Coordinator	2020 –
Fiat Lux Scholarship Program, Faculty Interviewer/Mentor	2020 –
Cognitive Science Major, Affiliated Faculty	2019 –
Vision Science Program, Student Outreach Faculty Liaison	2019 –
Institute of Cognitive and Brain Sciences, Faculty Member	2018 –
Center for Innovation in Vision and Optics, Co-Director	2018 –
Helen Wills Neuroscience Institute, NIH/UNR ENDURE Program Faculty Facilitator	2021 – 2024
School of Optometry, Mentorship Pilot Program Faculty Mentor	2021 – 2022

### UC Berkeley – Committees

School of Optometry, ACOE Accreditation Committee Member	2024 –
Vision Science Graduate Program, Admissions Committee Chair	2023 – 2024

School of Optometry, Faculty Hiring Planning Committee Member	2022 – 2023
School of Optometry, O.D. Admissions Committee Member	2021 – 2024
School of Optometry, PCO Faculty Search Committee Member	2021 – 2021
Helen Wills Neuroscience Institute, Graduate Admissions Committee Member	2020 – 2021
Vision Science Graduate Program, Admissions Committee Member	2019 – 2022
Helen Wills Neuroscience Institute, Graduate Admissions Committee Member	2010 – 2011
Helen Wills Neuroscience Institute, Speaker Series Committee Member	2008 – 2010

### **External**

Community Resources for Science, Board of Directors Member	2024 –
Cold Spring Harbor Lab, Computational Neuroscience: Vision, Course Organizer/Instructor	2022 –
Females of Vision et al., Advisory Board Member	2018 –
Eurographics, State-of-the-art Reports Program Committee Member	2022 – 2023
National Science Foundation, Panel and Ad Hoc Grant Proposal Reviewer	2021 – 2023
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