

Avi M. Aizenman, PhD

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EDUCATION

PhD	University of California, Berkeley Vision Science, December 2021 Advisor: Dennis Levi <i>Eye movements in Amblyopia and the (un)natural statistics of eye movements and binocular disparities in VR</i>
BA	Brandeis University Psychology, May 2013

RESEARCH EXPERIENCE

Postdoctoral Researcher – University of Giessen (JLU) PI: Karl Gegenfurtner	January 2022-present
Research Assistant/ Lab Manager – Brigham and Women’s Hospital PI: Jeremy Wolfe	2013-2016
Research Assistant– Brandeis University PI: Robert Sekuler	2011-2013

FUNDING

Alexander von Humboldt Research Fellowship	2022-2024
NEI Early Career Scientist Travel Grant	2022
FoVea Travel and Networking Award	2022
Berkeley Center for Innovation in Vision and Optics Fellow	2019-2021
Berkeley Fellowship for Graduate Study	2016-2018

HONORS/AWARDS

Best Presentation Award, the Intramural Color Club	2023
Lindau Nobel meeting Participant	2023
UC Berkeley Outstanding Graduate Student Instructor Award	2019
Graduate Student Instructor of the year, Berkeley Vision Science	2019
Elliot Aronson ’54 Prize for Excellence in Psychological Research	2013
Phi Beta Kappa	2013

TEACHING EXPERIENCE

Guest lecturer Color science: Theory and practice University of Giessen	2023 - present
Graduate Student instructor Physiology and Anatomy of the Eye and Visual System UC Berkeley’s Optometry School	2017-2019
Teaching Assistant	2010

PUBLICATIONS:

1. **Aizenman, A.**, Gegenfurtner, K.R., Goettker, A.(in press). Oculomotor routines for perceptual judgements. *Journal of Vision*.
2. Diaz-Barrances, F., Gil Rodriguez, R., Bayer, F.S., **Aizenman, A.**, Gegenfurtner, K.R. (in press). High-fidelity color characterization in virtual reality across head mounted displays, game engines, and materials. *Optics Express*.
3. **Aizenman, A.**, Koulrieris, G., Gibaldi, A., Sehgal, V., Levi, D., Banks, M. (2023). The statistics of eye movements and binocular disparities in VR gaming headsets should drive headset design. *TOG*.
4. **Aizenman, A.**, Ehinger, K., Wick, F., Micheletto, R., Park, J., Jurgensen, L., Wolfe, J. (2022). Hiding the rabbit: Using a genetic algorithm to investigate shape guidance in visual search. *Journal of Vision*.
5. **Aizenman, A.**, Levi, D.M. (2021). Fixational stability as a measure for the recovery of visual function in amblyopia. *ACM symposium on Eye Tracking Research and Applications*
6. Wolfe, J.M., Cain, M.S., **Aizenman, A.** (2019). Guidance and selection history in hybrid foraging visual search. *Attention, Perception and Psychophysics*.
7. **Aizenman, A.**, Drew, T., Ehinger, K.A., Georgian-Smith, D., Wolfe, J.M. (2017). Comparing search patterns in digital breast tomosynthesis and full-field digital mammography: An eye tracking study. *Journal of Medical Imaging*.
8. Kok, E.M., **Aizenman, A.**, Vo, M., Wolfe, J.M. (2017). Even if I showed you where you looked, remembering where you just looked is hard. *Journal of Vision*.
9. **Aizenman, A.**, Gold, J.M. Sekuler, R. (2017). Multisensory integration in short-term memory: Musicians do rock. *Neuroscience*.
10. Vo, M.L.H., **Aizenman, A.**, Wolfe, J.M. (2016). You think you know where you looked? You better look again. *Journal of Experimental Psychology: Human Perception and Performance*. 42(10).
11. Wolfe, J.M., **Aizenman, A.**, Sage E.P. Boettcher, Cain, M.S. (2016). Hybrid foraging search: Searching for multiple instances of multiple types of target. *Vision Research*. 119.
12. Wen, G., **Aizenman, A.**, Drew, T., Wolfe, J.M., Markey, M.M., Haygood, T.M. (2016). Computational assessments of visual search strategies in volumetric medical images. *Journal of Medical Imaging*, 3(1).
13. Wolfe, J.M., Evans, K.K., Drew, T., **Aizenman, A.**, Josephs, E. (2016). How do radiologists use the human search engine? *Radiation Protection Dosimetry*. doi: 10.1093/rpd/ncv501.
14. Drew, T., **Aizenman, A.**, Thompson, M., Kovacs, M.D., Trambert, M., Reicher, M., Wolfe, J.M. (2016). Image toggling saves time in mammography. *Journal of Medical Imaging*, 3(1), doi:10.1117/1.JMI.3.1.011003.
15. Gold, J.M., **Aizenman, A.**, Bond, S., Sekuler, R. (2013), Memory and incidental learning for visual frozen noise sequences. *Vision Research*, 99, 19–36.
16. Cassidy, B.S., Leshikar, E.D., Shih, J.Y., **Aizenman, A.**, Gutchess, A.H. (2013). Valence-based age differences in medial prefrontal activity during impression formation. *Social Neuroscience*. 8(5), 462-473.

UNDER REVIEW

1. Diaz-Barrancas, D., Gil Rodriguez R., **Aizenman, A.**, Bayer, F.S., Gegenfurtner, K.R. (under review) High-fidelity color characterization in virtual reality across head mounted displays, game engines, and materials

IN PREP

1. Gibaldi, A., **Aizenman, A.**, Levi, D.M., Banks, M.S. (in prep) Binocular coordination in Amblyopia
2. **Aizenman, A.**, Gegenfurtner, K.R. (in prep) Swiping colors in virtual reality: Color categories in action

CONFERENCE TALKS

1. **Aizenman, A.**, Koulrieris, G., Gibaldi, A., Sehgal, V., Levi, D., Banks, M. (2023). The statistics of eye movements and binocular disparities in VR gaming headsets should drive headset design. Talk presented at the SIGGRAPH meeting in Los Angeles, CA.
2. **Aizenman, A.**, Goll, Z., Gegenfurtner, K. (2023). Swiping colors in virtual reality: How stable are category borders? Talk presented at the ECVF meeting in Paphos, Cyprus.
3. **Aizenman, A.**, Koulrieris, G., Gibaldi, A., Sehgal, V., Levi, D., Banks, M. (2022, May). Discomfort associated with the (Un)natural statistics of VR gaming headsets. Talk presented at the Vision Sciences Society meeting in Naples, FL.
4. **Aizenman, A.**, Kok, E.M., Vo, M.L.H. Wolfe, J.M (2017, May). If I showed you where you looked, you still wouldn't remember. Talk presented at the Vision Sciences Society meeting in St. Pete Beach, FL.
<https://jov.arvojournals.org/article.aspx?articleid=2651103>
5. Wolfe, J. M., **Aizenman, A.**, Park, J., Jurgensen, L., Ehinger, K. A. (2016, May). How did you hide my bunny? Using a genetic algorithm to investigate the preattentive processing of shape in visual search. Talk presented at Vision Sciences Society in Naples, FL.
<http://jov.arvojournals.org/article.aspx?articleid=2550729&resultClick=1>
6. **Aizenman, A.**, Thompson, M.B., Ehinger, K.A., Wolfe, J.M. (2015, May). Visual Search Through a 3D Volume: Studying Novices in Order to Help Radiologists. Talk presented at the Vision Sciences Society in Naples, FL. <http://jov.arvojournals.org/article.aspx?articleid=2434217&resultClick=1>
7. **Aizenman, A.**, Gold, J., Keller, A., Sekuler, R. (2014, May), Individual Differences in Short-Term Memory and Multisensory Integration: *Musicianship Matters*. Talk presented at the Individual Differences Satellite Symposium at the Vision Sciences Society in Naples, FL.

INVITED TALKS

1. **Giessen University**. SFB grant retreat (2023). Eye movements in Naturalistic sequential behavior.
2. **Giessen University**. Color perception workshop (2023). Swiping colors in virtual reality: How stable are category borders?
3. **Alexander von Humboldt Foundation**. Network meeting (2022). *The complex motor routines executed during unexpected events in virtual reality*.
4. **Durham University**. Center for Vision and Visual Cognition (2021). *The un(natural) statistics of eye movements and binocular disparities in VR gaming headsets*.
5. **Rutgers University**. Psychology Department (2021). *Hiding the rabbit: Using a genetic algorithm to investigate shape guidance in visual search*.

CONFERENCE POSTERS

1. **Aizenman, A.**, Gegenfurtner, K. (2024, May). Swiping colors in virtual reality: Color categories in action. Poster to be presented at the VSS meeting in St. Pete Beach, FL.
2. **Aizenman, A.**, Goettker A., Gegenfurtner, K. (2023, May). The influence of eye movements during perceptual judgements. Poster presented at the Vision Sciences Society in St. Pete Beach, FL.

3. **Aizenman, A.**, Goettker A., Gegenfurtner, K. (2022, August). Oculomotor routines for perceptual judgements. Poster presented at the ECVF meeting in Nijmegen, Netherlands.
4. Kwon, S., **Aizenman, A.**, Levi, D. (2022, May). Fixational eye movements affect visually guided behaviors in complex visual search tasks. Poster presented at the Vision Sciences Society in St. Pete Beach, FL.
5. **Aizenman, A.**, Levi, D.M. (2020, June) Eye on the prize: Fixational stability as a metric for the recovery of visual function in amblyopia. Poster presented at the Virtual Vision Sciences Society meeting.
6. Gibaldi, A., **Aizenman, A.**, Levi, D.M., Banks, M.S. (2020, June) Binocular coordination and interocular balance in Amblyopia. Poster presented at the Virtual Vision Sciences Society meeting.
7. **Aizenman, A.**, Levi, D.M., Verghese, P., Agaoglu, S. (2018, May) Optimal integration of retinal and extra-retinal information is contingent upon trans-saccadic discontinuity. Poster presented at the Vision Sciences Society in St. Pete Beach, FL.
8. Agaoglu, S., **Aizenman, A.**, Verghese, P., Levi, D.M. (2018, April) Similar multiplicative improvements in fixation stability in normal vision and amblyopia. Poster presented at the Association for Research in Vision and Ophthalmology in Honolulu, HI.
9. **Aizenman, A.**, Drew, T., Georgian-Smith, D., Wolfe, J.M. (2016, November) Patterns of eye movements in breast tomosynthesis and full field digital mammography: an eye tracking study. Poster presented at the Radiological Society of North America conference in Chicago, IL.
10. **Aizenman, A.**, L.H., Vo, Wolfe, J.M. (2016, May) Losing Track of Your Eyes While Trying to Find Waldo. Poster presented at the Vision Sciences Society in St. Pete Beach, FL.
11. **Aizenman, A.**, Drew, T., Georgian-Smith, D., Wolfe, J.M. (2014, May). Comparing Search strategy in breast tomosynthesis and 2D mammogram: an eye tracking study. Poster presented at the Vision Sciences Society in St. Pete Beach, FL.
12. **Aizenman, A.**, Jason, G., Sekuler, R. (2013, May). Multisensory Integration in Visual Pattern Recognition: Music Training Matters. Poster presented at the Vision Sciences Society in Naples, FL.
13. **Aizenman, A.**, Bond, S., Jason, G., Sekuler, R. (2012, May). Implicit Learning and Memory for Random Visual Noise. Poster presented at the Vision Sciences Society in Naples, FL.
14. Cassidy, B., **Aizenman, A.**, Gutchess, A. (2012, April). Amygdala and Ventromedial Prefrontal Cortex Integrity Predict Memory for Impressions in Older Adults. Poster presented at the Social and Affective Neuroscience Conference in New York, NY.
15. **Aizenman, A.**, Pruitt, E.R. (2011, May). Intersectional Invisibility: Societal Perceptions of Individuals with Two Subordinate Identities. Poster presented at the Association for Psychological Sciences Conference, Washington, D.C.

COMMUNITY OUTREACH

Student/Postdoc Advisory Committee , Vision Sciences Society, USA	2023 – present
Acted as a liaison and advisor for the Vision Sciences Society Board to target the needs of trainees in the society.	
Bay Area Scientists in Schools (BASIS) , UC Berkeley & Giessen, Germany	2016 – present
Developed and taught hands-on and virtual lessons to 1 st and 4 th graders about the importance of vision.	
Street of Experiments (organizing committee) , Giessen, Germany	2023 – present
Help organize hands on perception demonstrations for children and adults to teach about science.	
Women's career day (invited speaker) , Virtual	3/8/2023
Presented my career as a scientist to 1 st and 2 nd grade classes, as well as presenting my research.	
Chair for the Student Invited Speaker Series (SISS) , UC Berkeley	2018-2022

Facilitated the coordination of a student nominated and invited speaker.

Vice president (Vision Science student government), UC Berkeley

2019-2020

Implement academic and mental health events for students.

Acted as liaison for students and faculty during shelter in place, and kept meeting records.

National Student Leadership Conference, UC Berkeley

2017 – 2020

Presented information about the Vision Science program at UC Berkeley as well as the visual system to visiting high school students.

Co-chair Bay Area Vision Research Day (BAVRD), UC Berkeley

2016-2017

Organized a one-day conference featuring Bay Area vision science researchers

Project Success, Harvard Medical School

Summer 2014 and 2015

Mentor for one to two high school students from underrepresented minority groups.

Mentored each student in experiment development, implementation, and analysis.

Research Scientist Institute, Massachusetts Institute of Technology

Summer 2014 and 2015

Mentor for a high achieving high school student interested in the sciences.

Helped student in programming experiments, analyzing results and presenting findings.