

Kassandra R. Lee, Ph.D.

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ACADEMIC TRAINING

University of Colorado Boulder

2024-2025

- Research Scientist/Postdoctoral Research Fellow
- Primary research: Eye selective voxels in early visual cortex

University of Nevada, Reno

2018-2024

- Ph.D Integrative Neuroscience
- Dissertation: *Individual differences in face perception*

Illinois State University

2014-2016

- M.S. Cognitive and Behavioral Sciences
- Thesis: *Ensemble Coding of Semantic Information: Are Numerical Averages Generated in Parallel?*

Lycoming College

2010-2014

- B.A. Psychology, with Honors, Dean's List, Biology Minor
- Thesis: *Alcohol Consumption and College Adjustment among College Students by Generational Status*

PUBLICATIONS AND PROCEEDINGS

1. **Lee, K.R.**, Seemiller, Eric S., Marc Winterbottom (2025). Modeling Color Vision Deficiency with Cone Contrast Triplets: Direct Scaling vs. Heuristic Remapping. *In progress*.
2. Crognale, M. A., **Lee, K.R.**, Richardson, A., Webster, M.A. (2023). The physiology and management of individual differences in color vision. *Color and Colorimetry Multidisciplinary Contributions*, GDC/AIC.
3. Richardson, A. J., **Lee, K. R.**, Crognale, M. A., & Webster, M. A. (2022). Using equiluminance settings to determine the cardinal chromatic directions for individuals. *Journal of the Optical Society of America A*, Special Issue
4. Ilic, I., **Lee, K.R.**, Mizokami, Y., Whitehead, L., & Webster, M.A. (2022). Adapting to an enhanced color gamut- implications for color vision and color deficiencies. *Optics Express*, 30(12).
5. **Lee, K.R.**, Groesbeck, E., Gwinn, O.S., Webster, M.A., & Jiang, F. (2021). Enhanced Peripheral face processing in deaf individuals. *Journal of Perceptual Imaging*, Special Issue.
6. **Lee, K.R.**, Dague, T. D., Sobel, K.V., Paternoster, N.J., & Puri, A.P. (2021). Set size and ensemble perception of numerical value. *Journal of Attention, Perception, & Psychophysics*, Special Issue.
7. **Lee, K. R.**, Webster, M.A. (2020). Environmental influences on color vision. *Encyclopedia of Color Science and Technology*, Overview Essay.
8. **Lee, K. R.**, Richardson, A. J., Walowit, E., Crognale, M. A., & Webster, M. A. (2020). Predicting color matches from luminance matches. *Journal of the Optical Society of America A*, Special Issue.

9. Qiu, C.*, **Lee, K. R.***, Goldstein, R., Jung, J. H., & Peli, E. (2018). De-cluttering using motion parallax improves recognition of new objects in simulated prosthetic vision. *Translational Vision Science and Technology*. *equal contribution first author
10. **Lee, K. R.**, Sobel, K.V., York, A.K., & Puri, A. M. (2018). Dissociating parallel and serial processing of numerical value. *Journal of Numerical Cognition*, Special Issue.
11. Han, S., Qiu, C., **Lee, K. R.**, Jung, J. H., & Peli, E. (2018). Word recognition: Re-thinking prosthetic vision evaluation. *Journal of Neural Engineering*, Special Issue. doi: 10.1088/1741-2552/aac663
12. Gilbertson, R., Norton, T. R., Beery, S., & **Lee, K. R.** (2018). Web-based alcohol intervention in first-year college students: Efficacy of full-program administration prior to second semester. *Substance Use and Misuse*, doi: 10.1080/10826084.2017.1392979

IN PREPARATION

1. **Lee, K.R.**, Webster, M. A. (2024). *Color Vision*. Elsevier Handbook of Clinical Neurology.

RESEARCH EXPERIENCE

<i>Color Vision Scientist—Operational Based Vision Assessment Laboratory</i> KBR, Inc.	May 2025-present
<i>Research Scientist—Comp. Memory and Perception, Cognitive Models and Neuro Labs</i> University of Colorado, Boulder; Advisers: Drs. Rosie Cowell and David Huber	July 2024-July 2025
<i>Vision Scientist Intern—Snap Inc.</i> Snap Inc. Boulder, Colorado; Adviser: Dr. Katie Tregillus	June 2023-Sept. 2023
<i>Graduate Research Assistant/PhD Candidate—Visual Perception Lab</i> University of Nevada, Reno; PI: Michael A. Webster, Ph.D	July 2018-May 2024
<i>Graduate Research Assistant—Plasticity Lab</i> University of Nevada, Reno; PI: Fang Jiang, Ph.D	July 2018-Oct. 2019
<i>Research Assistant- Active Confocal Imaging for Visual Prostheses</i> Schepens Eye Research Institute, Mass Eye and Ear, Harvard Medical School; PIs: Eli Peli, M.Sc., O.D., Jae-Hyun Jung, Ph.D	May 2016- May 2018
<i>Graduate Research Assistant – Understanding Suspicion in Cyber Environments</i> Illinois State University funded by Air Force Research Laboratory; PI: Eric Wesselmann, Ph.D	Sept. 2015- May 2016
<i>Graduate Research Assistant – Cognitive and Perceptual Neuroscience Lab</i> Illinois State University; PI: Amrita Puri, Ph.D	Aug. 2014- May 2016
<i>Graduate Research Assistant – Production is Prediction Study</i> Illinois State University, Psycholinguistics Lab; PI: John Cooper Cutting, Ph.D	Aug. 2014- Dec. 2014
<i>Project Coordinator – Health Behavior Research</i> Lycoming College Psychology Department; PIs: Rebecca Gilbertson, Ph.D; Tina Norton, Ph.D	Aug. 2011-Apr. 2014

INVITED TALKS

1. **Lee, K.R.**, Individual differences in color and face perception (2025). *CU Boulder, Cognitive Group Brownbag*
2. **Lee, K.R.**, Using individual differences to optimize and understand visual processing (2024). *Rochester Institute for Technology*
3. **Lee, K.R.**, Improving recognition of cluttered objects using motion parallax in simulated prosthetic vision (2023). *Smith-Kettlewell Eye Research Institute*
4. **Lee, K.R.**, Predicting color matches from luminance matches (2020). *University of Central Arkansas Neural Network*
5. **Lee, K.R.**, Predicting color vision from luminance matches (2020). *Virtual OSA Vision and Color Data Blitz: New findings in Color Perception The Optical Society*
6. **Lee, K.R.** Does Holistic Crowding of Faces Depend on Task Demands? (2016). *Schepens Eye Research Institute, Mass Eye and Ear, Harvard Medical School*

RESEARCH PRESENTATIONS

Lee, K.R. Human Image Understanding. (July 2024). Dagstuhl Seminar on Art, Illusions, and Data Visualization, [Illusion demo/talk].

Lee, K.R., Webster, M.A. Individual differences in judging facial categories. (May 2023). *Vision Sciences Society*, [Poster].

Parthasarathy, M.K., **Lee, K.R.**, Abbey, C. K., Webster, M.A. A direct measure of adaptation and visual salience. (Oct. 2022) *Optica Fall Vision Meeting*, [Poster].

Crognale, M. A., Richardson, A., **Lee, K.R.**, Webster, M.A. Using equiluminance to characterize individual differences in color vision. (July 2022). *International Color Vision Society*, [Poster].

Lee, K.R., Meza, R., Webster, M.A. Color similarities assessed by phase matching. (May 2021). *Vision Sciences Society (V-VSS)*, [Virtual Poster].

Richardson, A., **Lee, K.R.**, Webster, M.A., Crognale, M. A. Can variations in luminance sensitivity predict variations in the cardinal color directions? (May 2021). *Vision Sciences Society (V-VSS)*, [Virtual Poster].

Lee, K.R., Nakamura, K., Nakashima, Y., Yamaguchi, M. Y., Watanabe, K., Webster, M.A. Individual and population differences in face categories. (May 2020). *Vision Sciences Society (V-VSS)*, [Virtual Poster].

Richardson, A., **Lee, K.R.**, Crognale, M.A., Webster, M.A. How to find a tritan line, without actually trying. (May 2020). *Vision Sciences Society (V-VSS)*, [Virtual Poster].

Lee, K.R., Richardson, A., Walowit, E., Crognale, M.A., Webster, M.A. Predicting color matches from luminance matches. (July 2019). *International Color Vision Society*, [Poster].

Lee, K.R., Groesbeck, E., Gwinn, O. S., Jiang, F. Deaf individuals show enhanced face processing in the periphery. (May 2019). *Vision Sciences Society*, [Poster].

Richardson, A., **Lee, K.R.**, Walowit, E., Crognale, M.A., Webster, M.A. Minimum (motion) measurements of human color matching functions. (May 2019). *Vision Sciences Society*, [Poster].

Lee, K.R., Qiu, C., Jung, J.H., & Peli, E. Motion parallax improves recognition of new objects presented in clutter in simulated prosthetic vision. (Sept. 2018). *OSA Vision Meeting*, [Poster].

Lee, K.R., Sobel, K. V., York, A., K., & Puri, A. M. Parallel and serial processing of numerical value in digit ensembles. (May 2018). *Vision Sciences Society*, [Poster].

Lee, K.R., Qiu, C., Jung, J.H., & Peli, E. Motion parallax improves recognition of stabilized object with cluttered background in simulated prosthetic vision. (May 2018). *The Association for Research in Vision and Ophthalmology (ARVO)*, [Poster].

Puri, A., & **Lee, K.R.** Estimating Numerical Averages: Ensemble Coding at the Semantic Level. (March 2017). *Southwestern Psychological Association*, [Conference Talk].

Lee, K.R., Sobel, K., Cody, O., Puri, A. Ensemble Representations of Semantic Meaning: Are Numerical Averages Generated in Parallel? (Nov. 2016). *OPAM*, [Poster].

Dayer, A., * **Lee, K.R.**, * Chow, S., Flynn, E., & Puri, A. Does holistic face crowding depend on task demands? (May 2016). *Vision Sciences Society*, [Poster].

*equal contribution first author and co-presenter

Puri, A., Halladay, T., **Lee, K.R.**, Romager, J. & Caselman, E. Anxiety and Accuracy of Ensemble Representations of Emotion in a Crowd. (Nov. 2015). *Psychonomic Society's Annual Meeting*, [Poster].

Lee, K.R., & Puri, A. Characteristics of Visual Crowding of Faces versus Non-Face Objects. (May 2015). *Association for Psychological Science Convention*, [Poster].

Gilbertson, R., Norton, T., **Lee, K.R.**, Watsula, A., & Beery, S. The Effectiveness of Personalized Web-Based Alcohol Prevention: A Longitudinal Perspective. (June 2013). *Research Society on Alcoholism National Conference*, [Poster].

Zaman, A., **Lee, K.R.**, & Gilbertson, R. Predictors of At-Risk Drinking. (April 2012). *Eastern Colleges Science Conference*, [Poster].

PROFESSIONAL DEVELOPMENT

<i>Guest Editor</i>	Jan. 2025-present
Journal of Perceptual Imaging Special Issue	
<i>Reviewer</i>	Aug. 2024-present
Journal of Perceptual Imaging	
<i>Reviewer</i>	July 2022-present
Optics Express	
<i>Nevada Bioinformatics Center's Machine Learning Bootcamp</i>	Jan. 2023
Covering fundamentals of Python for data science and supervised learning	
University of Nevada, Reno	
<i>Neuroscience Student Committee</i>	Aug. 2019-Aug. 2020
University of Nevada, Reno	

<i>Planning Committee Integrative Neuro Symposium</i> University of Nevada, Reno	March 2019
<i>Planning Committee OSA Fall Vision Meeting</i> University of Nevada, Reno	Sept. 2018
<i>Frontiers for Young Minds Review Editor</i> University of Nevada, Reno	Oct. 2018-2020
<i>Workshop in EEG Frequency-tagging in Visual Neuroscience</i> University of Nevada, Reno	Sept. 24-27, 2018
<i>International Colour Vision Society Summer School 2018</i> Pembroke College, Oxford, UK	July 30-Aug. 3, 2018

TEACHING EXPERIENCE

Teacher PSY/NS Perception 405 University of Nevada, Reno	July-Aug. 2020
Teaching Assistant PSY/NS Perception 405 University of Nevada, Reno	Aug. 2019-present
Research Mentor PSY 395 University of Nevada, Reno	Jan. 2019-May 2023
Teacher PSY 392 Senior Seminar Illinois State University	Jan. 2016-May 2016
1. Topic: Unique psychological disorders: Ramachandran's <i>Phantoms in the Brain</i> 2. Topic: Perception of morality in media: Marvel's <i>Civil War</i> , Sebald's <i>The Rings of Saturn</i>	
Teaching Assistant PSY 331 Research Methods Illinois State University	Jan. 2015- May 2016
Teaching Assistant PSY 101 intro Lycoming College	Aug. 2011-Apr. 2014

TECHNICAL PROFICIENCY

<i>Programming</i>	Matlab, Python, R, Overleaf
<i>fMRI</i>	Siemens Prismafit 3 Tesla MR scanner
<i>EEG</i>	Biosemi activeTwo, BrainVision actiCHamp
<i>Psychophysics</i>	Psychophysical methodology
<i>Virtual Reality</i>	Oculus Rift
<i>Eye Tracking</i>	Eyelink 1,000, Tobii

<i>Camera Systems</i>	Lytro Illum Light Field, Wicab's BrainPort V100, V200, VisionPro, and Workstation Systems
<i>Survey design</i>	Qualtrics, SurveyMonkey

LEADERSHIP AND SCHOLASTIC HONORS

Rick M. Gardner Scholarship University of Nevada, Reno Psychology Department	2021
Elsevier/Vision Research Virtual Travel Award for VSS Vision Sciences Society	2021
Big sister volunteer Big Brothers Big Sisters of Northern Nevada	2019-2022
ICVS Student Travel Award International Colour Vision Society	2019
Graduate Dean's Merit Scholarship University of Nevada, Reno	2018-2019
Massachusetts State Science Olympiad Framingham State University	2017, 2018
J. Milton Skeath Award in Psychology Lycoming College	2014

REFERENCES

Michael A. Webster, Ph.D.

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Psychology Department
1664 N. Virginia St (0296), Reno, NV 89557, USA
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Eli Peli, MSc, OD

Professor of Ophthalmology
Mass Eye and Ear, Schepens Eye Research Institute
Ophthalmology Department
20 Staniford Street, Boston, MA 02114, USA
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