

Anna Kosovicheva
Department of Psychology
University of Toronto Mississauga
3359 Mississauga Road • Mississauga, ON, L5L 1C6
a.kosovicheva [at] utoronto.ca • applylab.org

PROFESSIONAL APPOINTMENTS

- 2021 - Assistant Professor, Department of Psychology
University of Toronto Mississauga – Mississauga, ON, Canada
Contractually Limited Term Appointment
- 2015 - 2020 Postdoctoral Researcher, Translational Vision Lab
PI: Dr. Peter Bex
Psychology Department, Northeastern University – Boston, MA

EDUCATION

- 2015 University of California, Berkeley, Ph.D., Psychology
Cognition, Brain, and Behavior Program
Advisor: Dr. David Whitney
Dissertation: *The Effects of Motion on Position Representations for Perception and Action*
- 2009 University of California, Berkeley, B.A., Psychology, Highest Honors

RESEARCH INTERESTS

Visual perception: localization, eye movements, spatial and binocular vision, translational vision science, strabismus, amblyopia

RESEARCH FUNDING

- 2022 - Natural Sciences and Engineering Research Council (NSERC) Discovery Grant – Individual
“Mechanisms of spatial localization in human vision”
\$145,000 CAD (\$29,000 CAD annually)
- 2022 Natural Sciences and Engineering Research Council (NSERC) Discovery Launch
Supplement
\$12,500 CAD
- 2022 Adobe Research Award, Virtual Reading Laboratory Project
\$94,750 CAD gift award to APPLY Lab (Co-I with Benjamin Wolfe)
- 2021 Bridge funding program, Office of the Vice-Principal, Research, University of Toronto
Mississauga, \$25,000 CAD

- 2018 - 2020 Ruth L. Kirschstein Postdoctoral Individual National Research Service Award (NRSA)
 “Oculomotor deficits and plasticity across gaze posture in strabismus”
 National Institutes of Health (F32 EY028814), \$188,579 (USD)
- 2011 - 2014 Graduate Research Fellowship
 National Science Foundation (NSF-GRFP), \$32,000 (USD) annually and tuition

AWARDS AND HONORS

- 2021 Fellow of the Psychonomic Society
 2020 Elsevier/Vision Research Travel Award, V-VSS Meeting
 2017 Travel Award, ARVO Meeting, National Eye Institute
 2015 Travel Award, Norman Henry Anderson Fund, Psychology Department, UC Berkeley
 2013, 2014 Graduate Division Travel Grant, UC Berkeley
 2012 Abigail Reynolds Hodgen Publication Fund, Social Sciences Division, UC Berkeley
 2009 Highest Distinction in General Scholarship, UC Berkeley
 2009 Highest Honors in Psychology, UC Berkeley
 2008 Katherine Craig Swan Undergraduate Research Award, UC Berkeley

PUBLICATIONS

Published & Forthcoming Papers (underlined names denote students mentored):

1. **Kosovicheva, A.**, Wolfe, J. M., & Wolfe, B. (In Press). Taking prevalence effects on the road: Rare hazards are often missed. *Psychonomic Bulletin & Review*
2. Wolfe, J. M., **Kosovicheva, A.**, & Wolfe, B. (In Press). Normal Blindness: When We Look But Fail To See. *Trends in Cognitive Sciences*, 26(9), 809-819.
3. Wolfe, B., **Kosovicheva, A.**, Stent, S., & Rosenholtz, R. (2021). Effects of temporal and spatiotemporal cues on detection of dynamic road hazards. *Cognitive Research: Principles and Implications*, 6(1), 80.
4. **Kosovicheva, A.**, & Bex, P. J. (2021). Gravitational effects of scene information in object localization. *Scientific Reports*, 11, 11520, 1-14.
5. Caoli, A., Sabatini, S., Gibaldi, A., Maiello, G., **Kosovicheva, A.**, & Bex, P. J. (2020). A dichoptic feedback-based oculomotor training method to manipulate interocular alignment. *Scientific Reports*, 10, 15634, 1-13.
6. **Kosovicheva, A.** & Bex, P. J. (2020). Perceptual effects of unequal saccadic adaptation produced by a dichoptic step. *Journal of Vision*, 20(5):7, 1-21.
7. **Kosovicheva, A.**, Alaoui-Soce, A., & Wolfe, J. M. (2020). Looking ahead: When do you find the next item in foraging visual search? *Journal of Vision*, 20(2):3, 1–24.
8. **Kosovicheva, A.**, & Bex, P. J. (2020). What color was it? A psychophysical paradigm for tracking subjective progress in continuous tasks. *Perception*, 49(1), 21–38.

9. **Kosovicheva, A.**, Ferreira, A., Vera-Diaz, F. A., & Bex, P. J. (2019). Effects of temporal frequency on binocular deficits in amblyopia. *Vision Research*, 163, 52-62.
10. Wolfe, B., Sawyer, B. D., **Kosovicheva, A.**, Reimer, B., & Rosenholtz, R. (2019). Detection of brake lights while distracted: Separating peripheral vision from cognitive load. *Attention, Perception, & Psychophysics*, 81, 2798–2813.
11. Wolfe, B., Fridman, L., **Kosovicheva, A.**, Seppelt, B., Mehler, B., Reimer, B., & Rosenholtz, R. (2019). Predicting road scenes from brief views of driving video. *Journal of Vision*, 19(5):8, 1–14.
12. Vera-Diaz, F. A., Bex, P. J., Ferreira, A., & **Kosovicheva, A.** (2018). Binocular temporal visual processing in myopia. *Journal of Vision*, 18(11), 1-12.
13. Manassi, M., Liberman, A., **Kosovicheva, A.**, Zhang, K., & Whitney, D. (2018). Serial dependence in position occurs at the time of perception. *Psychonomic Bulletin & Review*, 25(6), 2245-2253.
14. Chen, Z.* , **Kosovicheva, A.***, Wolfe, B. A., Cavanagh, P., Gorea, A., & Whitney, D. (2018). Unifying visual space across the left and right hemifields. *Psychological Science*, 29(3), 356 – 369. (*co-first authors)
15. **Kosovicheva, A.**, & Whitney, D. (2017). Stable individual signatures in object localization. *Current Biology*, 27(14), R700-R701.
16. Wolfe, B., Fridman, L., **Kosovicheva, A.**, Seppelt, B., Mehler, B., Reimer, B. (2017). Perceiving the roadway in the blink of an eye – Rapid perception of the road environment and prediction of events. *Conference Proceedings, Driving Assessment 2017*.
17. Yamanashi Leib, A., **Kosovicheva, A.**, & Whitney, D. (2016). Fast ensemble representations for abstract visual impressions. *Nature Communications*, 7, 13186.
18. Wolfe, B., Dobres, J., **Kosovicheva, A.**, Rosenholtz, R., & Reimer, B. (2016). Age-related differences in the legibility of degraded text. *Cognitive Research: Principles and Implications*, 1(1), 22.
19. Wolfe, B. A., **Kosovicheva, A. A.**, Yamanashi Leib, A., Wood, K., & Whitney, D. (2015). Foveal input is not required for perception of crowd facial expression. *Journal of Vision*, 15(4), 1-13.
20. **Kosovicheva, A. A.**, Wolfe, B. A., & Whitney, D. (2014). Visual motion shifts saccade targets. *Attention, Perception, & Psychophysics*, 76(6), 1778-1788.
21. **Kosovicheva, A. A.**, Sheremata, S. L., Rokem, A., Landau, A. N. & Silver, M. A. (2012). Cholinergic enhancement reduces orientation-specific surround suppression but not visual crowding. *Frontiers in Behavioral Neuroscience*, 6(61), 1-11.
22. **Kosovicheva, A. A.**, Maus, G. W., Anstis, S. Cavanagh, P., Tse, P. U., & Whitney, D. (2012). The motion-induced shift in the perceived location of a grating also shifts its aftereffect. *Journal of Vision*, 12(8), 1-14.
23. **Kosovicheva, A. A.**, Fortenbaugh, F. C., & Robertson, L. C. (2010). Where does attention go when it moves?: Spatial properties and locus of the attentional repulsion effect. *Journal of Vision*, 10(12), 1–13.

CONFERENCE PRESENTATIONS (underlined names denote students mentored):

1. Song, J., Kosovicheva, A., Wolfe, B. You'll still miss the moose on the road: Rare hazards are frequently missed even when they are perceived as highly dangerous. *Abstract submitted to the Object Perception Attention and Memory (OPAM) meeting.*
2. Wiecek, E., Nabasaliza, A., Ahmed, Z., Chan, K., **Kosovicheva, A.**, Kazlas, M., Hunter, D. G., Bex, P. J. (Submitted). Differences in peripheral binocular imbalance in strabismic young adults with or without amblyopia. *Abstract submitted to the American Academy of Optometry (AAO) Meeting.*
3. Haseeb, Z., Wolfe, B., & **Kosovicheva, A.** (2022). Spatial Heterogeneity in Localization Biases Predicts Crowding Performance. *Poster presented at the Vision Sciences Society (VSS) Annual Meeting.*
4. **Kosovicheva, A.**, Wolfe, J. M., & Wolfe, B. (2022). The Moose Came Out of Nowhere: Low Prevalence Effects in Road Hazard Detection. *Talk presented at the Vision Sciences Society (VSS) Annual Meeting.*
5. Guidi, S., Ghuman, C., **Kosovicheva, A.**, & Wolfe, B. (2022). Effects of Blur on Duration Thresholds for Road Hazard Detection. *Poster presented at the Vision Sciences Society (VSS) Annual Meeting.*
6. Simpson, D., Fukuda, K., & **Kosovicheva, A.** (2022) Crowding biases categorical judgments for complex stimuli. *Poster presented at the Virtual Vision Sciences Society (V-VSS) Annual Meeting (Just-in-Time Poster Session for Undergraduate Students).*
7. **Kosovicheva, A.**, Kanda, S., Wolfe, J. M., & Wolfe, B. (2021) Taking prevalence effects on the road: Rare hazards are often missed. *Poster presented at the Psychonomic Society Annual Meeting.*
8. Kanda, S., **Kosovicheva, A.**, Wolfe, B. A., & Wolfe, J. M. (2021). Prevalence effects on the road: Rare hazards are often missed. *Poster presented at the Virtual Vision Sciences Society (V-VSS) Annual Meeting (Just-in-Time Poster Session for Undergraduate Students).*
9. Wolfe, B. A., **Kosovicheva, A.**, Stent, S., & Rosenholtz, R. (2021). Attentional cueing in the world: temporal and spatiotemporal cues for road hazards. *Poster presented at the Virtual Vision Sciences Society (V-VSS) Annual Meeting.*
10. **Kosovicheva, A.**, & Bex, P. J. (2021). Microsaccades before response initiation reflect angular errors in a peripheral localization task. *Poster presented at the Virtual Vision Sciences Society (V-VSS) Annual Meeting.*
11. Wiecek, E., Nabasaliza, A., **Kosovicheva, A.**, Kazlas, M., Hunter, D. G., & Bex, P. J. (2020). Differences in contrast sensitivity and binocular imbalance across the visual field in children with strabismus and anisometropic amblyopia. *Online poster presented at the American Academy of Optometry meeting.*
12. **Kosovicheva, A.**, Wiecek, E., Kazlas, M., Hunter, D. G., & Bex, P. J. (2020). Modulation of stereopsis and sensory eye dominance by gaze direction in strabismus. *Online video presentation for the Association for Research in Vision and Ophthalmology (ARVO) Meeting.*

13. Wiecek, E., **Kosovicheva, A.**, Kazlas, M., Bex, P. J., Hunter, D. G. (2020). Decreased peripheral stereoacuity and ocular dominance in anisometropic amblyopia, strabismic, and normally-sighted young adults. *Online video presentation for the ARVO Annual Meeting.*
14. **Kosovicheva, A.**, Sridhar, K., & Bex, P. J. (2020). Image predictors of visual localization in natural scenes. *Poster presented at the Virtual Vision Sciences Society (V-VSS) Annual Meeting.*
15. **Kosovicheva, A.**, & Wolfe, J. M. (2019). When do you find the next item?: Using occluders to uncover the time course of visual foraging. *Poster presented at the VSS Annual Meeting.*
16. Alberti, C. F., **Kosovicheva, A.**, & Bex, P. J. (2019). Measuring the field of contrast sensitivity via saccadic foraging. *Poster presented at the VSS Annual Meeting.*
17. **Kosovicheva, A.**, Hawlder, O., & Bex, P. J. (2018). Localization errors following saccadic adaptation to a dichoptic step. *Poster presented at the VSS Annual Meeting.*
18. Vera-Diaz, F. A., **Kosovicheva, A.**, Maiello, G. A., Ferreira, A., Walker, L., & Bex, P. J. (2017). Binocularity in myopia. *Poster presented at the International Myopia Conference.*
19. Hawlder, O.*, Bex, P. J., & **Kosovicheva, A.** (2017). Sensory effects of dichoptic saccadic adaptation. *Paper presented at the Newfoundland Electrical and Computer Engineering Conference (NECEC).* (*Best Paper Award in Women in Engineering)
20. Rosenholtz, R., Wolfe, B., Sawyer, B., **Kosovicheva, A.**, & Reimer, B. (2017). Perceptual and attentional factors in detection of driving-relevant visual events. *Talk presented at the VSS Annual Meeting.*
21. **Kosovicheva, A.**, Kazlas, M., Hunter, D. G., & Bex, P. (2017). What can we learn about strabismus from a 90 second gaze recording?: Rapid evaluation of oculomotor deficits in strabismus. *Poster presented at the ARVO Annual Meeting.*
22. Ferreira, A., **Kosovicheva, A.**, Bex, P. J., & Vera-Diaz, F. A. (2017). Temporal contrast sensitivity in myopia. *Poster presented at the ARVO Annual Meeting.*
23. Bex, P. J., **Kosovicheva, A.**, Ferreira, A., & Vera-Diaz, F. A. (2017). Effects of temporal frequency on binocularity and contrast sensitivity in amblyopia. *Poster presented at the VSS Annual Meeting.*
24. **Kosovicheva, A.**, Feffer, J., Alaoui Soce, A., Cain, M. S., & Wolfe, J. M. (2017). When does visual search move on?: Using the color wheel to measure the dynamics of foraging search. *Poster presented at the VSS Annual Meeting.*
25. Vera-Diaz, F. A., **Kosovicheva, A.**, Ferreira, A., & Bex, P. J. (2017). Effect of temporal vision on binocularity in ametropia. *Poster presented at the ARVO Annual Meeting.*
26. Wolfe, B., Fridman, L., **Kosovicheva, A.**, Reimer, B., & Rosenholtz, R. (2017). Seeing the road in the blink of an eye: Rapid perception of the driver's visual environment. *Poster presented at the VSS Annual Meeting.*
27. **Kosovicheva, A.**, & Bex, P. (2016). Reading rainbows: Measuring the dynamics of word processing. *Talk presented at the VSS Annual Meeting.*

28. Wolfe, B., Dobres, J., **Kosovicheva, A.**, Rosenholtz, R., & Reimer, B. (2016). Reduction in legibility with degradation in older and younger observers. *Poster presented at the VSS Annual Meeting.*
29. **Kosovicheva, A. A.**, Wolfe, B. A., Cavanagh, P., Gorea, A., & Whitney, D. (2015). Dynamic recalibration of perceived space across the visual hemifields. *Poster presented at the VSS Annual Meeting.*
30. Yamanashi Leib, A., **Kosovicheva, A. A.**, & Whitney, D. (2015). Perceiving the lifelikeness of crowds: summary statistical representations of abstract visual dimensions. *Poster presented at the VSS Annual Meeting.*
31. Wood, K., Wolfe, B. A., **Kosovicheva, A. A.**, & Whitney, D. (2015). Speeded breakthrough of faces in interocular suppression requires configural information. *Poster presented at the VSS Annual Meeting.*
32. **Kosovicheva, A. A.** & Whitney, D. (2014). Stable individual distortions in the perceived locations of static stimuli. *Poster presented at the VSS Annual Meeting.*
33. Yamanashi Leib, A., Bai, Y., **Kosovicheva, A. A.**, Chang, K., Puri, A., Robertson, L., & Whitney, D. (2014). Ensemble perception of multiple crowd characteristics. *Poster presented at the VSS Annual Meeting.*
34. Liberman, A., **Kosovicheva, A. A.**, & Whitney, D. (2014). Serial dependence of position perception. *Poster presented at the VSS Annual Meeting.*
35. Wood, K., Wolfe, B. A., **Kosovicheva, A. A.**, Yamanashi Leib, A., & Whitney, D. (2014). Foveal input is not required for ensemble coding of emotional faces. *Poster presented at the VSS Annual Meeting.*
36. **Kosovicheva, A. A.**, & Whitney, D. (2013). A meridional anisotropy of the flash-drag effect. *Poster presented at the VSS Annual Meeting.*
37. Wolfe, B. A., **Kosovicheva, A. A.**, Yamanashi Leib, A., & Whitney, D. (2013). Beyond fixation: Ensemble coding and eye movements. *Poster presented at the VSS Annual Meeting.*
38. **Kosovicheva, A. A.**, Wolfe, B., & Whitney, D. (2012). Effects of motion-induced mislocalizations on saccade landing position. *Talk presented at the VSS Annual Meeting.*
39. **Kosovicheva, A. A.**, Maus, G. W., Anstis, S., Cavanagh, P., Tse, P. U., & Whitney, D. (2011). The motion-induced shift in the perceived location of a grating also shifts its aftereffect. *Poster presented at VSS and at the Bay Area Vision Research Day.*
40. Silver, M.A., **Kosovicheva, A. A.**, & Landau, A. N. (2011). ERP correlates of orientation-specific surround suppression. *Poster presented at the VSS Annual Meeting.*
41. **Kosovicheva, A. A.**, Landau, A. N., & Silver, M. A. (2010). Interactions of sustained spatial attention and surround suppression: an EEG study. *Poster presented at the Society for Neuroscience Meeting.*

42. **Kosovicheva, A. A.**, Landau, A. N., & Silver, M. A. (2010). Cholinergic modulation of EEG activity during sustained visual stimulation. *Poster presented at the UC Berkeley Annual Neuroscience Retreat.*
43. **Kosovicheva, A. A.**, Fortenbaugh, F. C., & Robertson, L. C. (2010). Spatial properties of the attentional repulsion effect. *Poster presented at the VSS Annual Meeting.*
44. Landau, A. N., **Kosovicheva, A. A.**, & Silver, M. A. (2010). Interactions of sustained spatial attention and surround suppression: an SSVEP study. *Poster presented at the VSS Annual Meeting.*

Other Academic Presentations:

Vision Sciences Society (VSS) Demo Night:

- 2014 Kosovicheva, A., Wolfe, B., Chaney, W., Yamanashi Leib, A., Liberman, A. "Strobwheel"
 2012 Kosovicheva, A., Wolfe, B. "An Aftereffect Based on Texture Element Ratios."

RESEARCH SEMINARS

- 2021 Ebbinghaus Empire Talk Series, University of Toronto (Dec 8, 2021) – *delivered remotely*
 2020 Perception Summer Seminar Series, UC Berkeley, CA (June 29, 2020) – *delivered remotely*
 2020 School of Optometry, Indiana University, Bloomington, IN (March 30, 2020) – *delivered remotely*
 2020 Department of Psychology, University of Nevada, Reno, NV (Feb 27, 2020)
 2020 Department of Psychology, Northeastern University, Boston, MA (Jan 30, 2020)
 2020 Department of Psychology, University of Central Florida, Orlando, FL (Jan 23, 2020)
 2019 Department of Psychology, North Carolina State University, Raleigh, NC (Nov 7, 2019)
 2019 Research Lecture Series, New England College of Optometry, Boston, MA (Nov 5, 2019)
 2019 Visual Attention Lab Seminar, Brigham and Women's Hospital, Boston, MA (Oct 15, 2019)
 2018 Department of Psychology, Rochester Institute of Technology, Rochester, NY (Dec 5, 2018)
 2016 Research Lecture Series, New England College of Optometry, Boston, MA (Nov 29, 2016)
 2016 Perception and Action Seminar, Brown University, Providence, RI (April 14, 2016)

GUEST LECTURES IN COURSES

- 2020 Computational Vision, Boston University, Boston, MA (Oct 7 & Oct 13, 2020) – *delivered remotely*
 2019 Undergraduate seminar in Perception, Northeastern University, Boston, MA (Nov 14, 2019)
 2019 Undergraduate seminar in Perception, Northeastern University, Boston, MA (Feb 11, 2019)
 2019 Psychology at Northeastern, Northeastern University, Boston, MA (Jan 31, 2019)
 2018 Psychology at Northeastern, Northeastern University, Boston, MA (Oct 1, 2018)
 2016 Undergraduate seminar in Perception, Northeastern University, Boston, MA (Nov 3, 2016)
 2016 Graduate seminar in Perception, Northeastern University, Boston, MA (March 1 & 15, 2016)

OTHER RESEARCH EXPERIENCE & AFFILIATIONS

- 2015 - 2020 Associated Research Personnel
 Department of Ophthalmology, Boston Children's Hospital
- 2009 - 2010 Staff Research Associate
 Silver Lab, Helen Wills Neuroscience Institute & School of Optometry, UC Berkeley

PI: Dr. Michael Silver

2008 - 2009 Research Assistant
Cognitive Neuropsychology Lab, Psychology Department, UC Berkeley
PI: Dr. Lynn Robertson

TEACHING EXPERIENCE

Instructor:

2022 Sensation & Perception (Online & Changing to in-person delivery)
Psychology Department, University of Toronto Mississauga
Winter 2022
Composite evaluation score (5 = highest; 1 = lowest): 4.6

2022 Special Topics in Cognition: Visual Cognition (Online & Changing to in-person delivery)
Psychology Department, University of Toronto Mississauga
Winter 2022
Composite evaluation score (5 = highest; 1 = lowest): 4.9

2021 Human Neuropsychology (Online Delivery)
Psychology Department, University of Toronto Mississauga
Semesters: Summer 2021, Fall 2021
Composite evaluation scores (5 = highest; 1 = lowest): Summer 2021: 4.5, Fall 2021: 4.5

2017 Sensation & Perception
Psychology Department, Northeastern University (Fall 2017 Semester)
Instructor effectiveness rating (5 = highest; 1 = lowest): 4.45

Other teaching experience:

2010, 2015 Graduate student instructor (GSI) for Perception, Psychology Department, UC Berkeley
Taught classroom discussion sections (Spring 2010 & Spring 2015 Semesters)
Instructor effectiveness rating (7 = highest; 1 = lowest): 6.33

MENTORSHIP & RESEARCH SUPERVISION

Postdoctoral Fellow

2022 - Jiali Song – University of Toronto Mississauga

Ph.D. Students

2021 - Greer Gillies, University of Toronto (External project supervisor)

Undergraduates & Recent Graduates (* denotes honors thesis supervision)

University of Toronto Mississauga:

Chandandeep Ghuman, Silvia Guidi, Zainab Haseeb*, Simran Kanda, Zoey Khaled, Meghna Patil, Sanaullah Pirzada, Mia Romano, Dyllan Simpson

Northeastern University:
Leah Brodie, Kelly Choi, Katja Kelleher

Harvard University:
Jungyeon Park

UC Berkeley:
Andrew Chang, Valentina Volk*, Katherine Wood*

High school students:

Research Science Institute (RSI) summer enrichment program:
Joseph Feffer, Oishi Hawlader, Erin Smith, Koushik Sridhar

REVIEWING EXPERIENCE

Manuscript Review (Journals):

Attention, Perception, & Psychophysics
Cognitive Science
eLife
Eye and Vision
Frontiers in Medicine
iScience
Journal of Vision

Optometry and Vision Science
Perception / i-Perception
PLOS One
PNAS
Quarterly Journal of Experimental Psychology
Vision
Vision Research

Abstract & Paper Review (Conferences):

European Conference on Visual Perception (ECVP)
IEEE Information Visualization Conference (InfoVis)

Editorial Work

Guest Editor, Special Issue of *Visual Cognition*, "Teaching Sensation & Perception"

SCIENCE COMMUNICATION & OUTREACH ACTIVITIES

- 2021 - Digital Associate Editor, Psychonomic Society
Member of the digital content team for the Psychonomic Society, which creates and produces public-facing digital content for the Society (blog posts and podcasts).
- 2010 - 2015 Whitney Lab Outreach Program
Outreach visits to underserved K-12 schools in the San Francisco Bay Area twice a year, with presentations on topics in visual perception (color, motion, faces, depth). Developed visual illusion demonstrations for students.

MEMBERSHIPS HELD

Association for Psychological Science (APS)

Association for Research in Vision and Ophthalmology (ARVO)

Psychonomic Society

Society for Neuroscience (SfN)

Vision Sciences Society (VSS)