

## **Anna Kosovicheva**

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

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### **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**

#### **Funded:**

- 2021 Bridge funding program, Office of the Vice-Principal, Research, University of Toronto Mississauga, \$25,000
- 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

#### **Funding applications under review:**

- 2021 Natural Sciences and Engineering Research Council (NSERC) Discovery Grant – Individual  
“Mechanisms of spatial localization in human vision”

## AWARDS AND HONORS

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 Papers** (underlined names denote students mentored):

1. **Kosovicheva, A.**, & Bex, P. J. (2021). Gravitational effects of scene information in object localization. *Scientific Reports*, 11, 11520, 1-14.
2. 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.
3. **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.
4. **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.
5. **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.
6. **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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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)
12. **Kosovicheva, A.**, & Whitney, D. (2017). Stable individual signatures in object localization. *Current Biology*, 27(14), R700-R701.

13. 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*.
14. Yamanashi Leib, A., **Kosovicheva, A.**, & Whitney, D. (2016). Fast ensemble representations for abstract visual impressions. *Nature Communications*, 7, 13186.
15. 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.
16. 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.
17. **Kosovicheva, A. A.**, Wolfe, B. A., & Whitney, D. (2014). Visual motion shifts saccade targets. *Attention, Perception, & Psychophysics*, 76(6), 1778-1788.
18. **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.
19. **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.
20. **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.

#### Manuscripts Submitted & In Revision:

21. Wolfe, B., **Kosovicheva, A.**, Stent, S., Rosenholtz, R. (In Revision). Effects of Temporal and Spatiotemporal Cues on Detection of Dynamic Road Hazards.
22. **Kosovicheva, A.**, Wolfe, J. M., Wolfe, B. (Submitted). Taking prevalence effects on the road: Rare hazards are often missed.

#### CONFERENCE PRESENTATIONS (underlined names denote students mentored):

1. **Kosovicheva, A.**, Kanda, S., Wolfe, J. M., Wolfe, B. (2021) Taking prevalence effects on the road: Rare hazards are often missed. *Abstract submitted to the Psychonomic Society Annual Meeting*.
2. 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).
3. 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*.
4. **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*.

5. 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.*
6. **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.*
7. 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.*
8. **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.*
9. **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.*
10. 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.*
11. **Kosovicheva, A.**, Hawlder, O., Bex, P. J. (2018). Localization errors following saccadic adaptation to a dichoptic step. *Poster presented at the VSS Annual Meeting.*
12. 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.*
13. 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)
14. 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.*
15. **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.*
16. Ferreira, A., **Kosovicheva, A.**, Bex, P. J., Vera-Diaz, F. A. (2017). Temporal contrast sensitivity in myopia. *Poster presented at the ARVO Annual Meeting.*
17. 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.*
18. **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.*
19. 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.*

20. 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.*
21. **Kosovicheva, A.**, & Bex, P. (2016). Reading rainbows: Measuring the dynamics of word processing. *Talk presented at the VSS Annual Meeting.*
22. 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.*
23. **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.*
24. 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.*
25. 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.*
26. **Kosovicheva, A. A.** & Whitney, D. (2014). Stable individual distortions in the perceived locations of static stimuli. *Poster presented at the VSS Annual Meeting.*
27. 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.*
28. Liberman, A., **Kosovicheva, A. A.**, & Whitney, D. (2014). Serial dependence of position perception. *Poster presented at the VSS Annual Meeting.*
29. 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.*
30. **Kosovicheva, A. A.**, & Whitney, D. (2013). A meridional anisotropy of the flash-drag effect. *Poster presented at the VSS Annual Meeting.*
31. 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.*
32. **Kosovicheva, A. A.**, Wolfe, B., & Whitney, D. (2012). Effects of motion-induced mislocalizations on saccade landing position. *Talk presented at the VSS Annual Meeting.*
33. **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.*
34. Silver, M.A., **Kosovicheva, A. A.**, & Landau, A. N. (2011). ERP correlates of orientation-specific surround suppression. *Poster presented at the VSS Annual Meeting.*
35. **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.*

36. **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.*
37. **Kosovicheva, A. A.**, Fortenbaugh, F. C., & Robertson, L. C. (2010). Spatial properties of the attentional repulsion effect. *Poster presented at the VSS Annual Meeting.*
38. 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**

- 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 & March 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:

- 2021 Human Neuropsychology (Online Delivery)  
Psychology Department, University of Toronto Mississauga  
Semesters: Summer 2021, Fall 2021 (In Progress)  
Composite evaluation score (Summer 2021): 4.5/5
- 2017 Sensation & Perception  
Psychology Department, Northeastern University (Fall 2017 Semester)  
Instructor effectiveness rating: 4.45 / 5

### 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: 6.33 / 7

## STUDENTS MENTORED

### Undergraduates

- 2021 - Mia Romano – Research Opportunities Program (ROP), University of Toronto Mississauga
- 2021 - Chandandeep Ghuman – Research Opportunities Program (ROP), University of Toronto Mississauga
- 2021 - Zainab Haseeb – Honors thesis (in progress), University of Toronto Mississauga
- 2021 - Silvia Guidi – Research Opportunities Program (ROP), University of Toronto Mississauga
- 2021 Simran Kanda – University of Toronto Mississauga
- 2020 Leah Brodie – Directed Study, Northeastern University
- 2018 Kelly Choi – Directed Study, Northeastern University
- 2016 - 2018 Jungyeon Park – Directed Study, Harvard University
- 2015 Katja Kelleher – Northeastern University, Directed Study  
Faculty Scholar Award, Psychology Department
- 2013 - 2015 Katherine Wood – UC Berkeley, Directed Study  
Honors thesis completed in 2015; Warner Brown Memorial Prize, Psychology Department
- 2011 - 2013 Valentina Volk – UC Berkeley Undergraduate Research Apprentice Program  
Honors thesis completed in 2013
- 2011 Andrew Chang – Undergraduate Research Apprentice Program, UC Berkeley

### High school students

- 2019 Koushik Sridhar – Research Science Institute (RSI) summer enrichment program
- 2017 Erin Smith – RSI summer program
- 2017 Oishi Hawlader – RSI summer program  
Best Paper Award in Women in Engineering, NECEC Conference
- 2016 Joseph Feffer – RSI summer program

## MANUSCRIPT REVIEW

*Attention, Perception, & Psychophysics*

*Cognitive Science*

*eLife*

*Eye and Vision*

*Frontiers in Medicine*

*IEEE Information Visualization Conference (InfoVis)*

*Journal of Vision*

*Optometry and Vision Science*

*Perception / i-Perception*

*PLOS One*

*PNAS*

*Quarterly Journal of Experimental Psychology*

*Vision*

*Vision Research*

## 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)