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Department of Psychological and Brain
Sciences

The George Washington University

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Professional Appointments

2020 – The George Washington University, U.S.
Post-Doctoral Scientist
PI: Dr. Sarah Shomstein

May – July 2020 The Ohio State University, U.S.
Post Doctoral Scholar
PI: Dr. Julie D. Golomb

Education

2014 – 2020 The Ohio State University, U.S.
2016, M.A. in Cognitive Psychology
2020, Ph.D. in Cognitive Psychology
Advisor: Dr. Julie D. Golomb

2009 – 2013 Tsinghua University, China
B.S. in Psychology
Advisor: Dr. Meihong Zheng

Aug. 2010 Tsinghua-Berkeley Psychology Department Summer Exchange
Program, University of California-Berkeley, U.S.
Academic Advisor: Dr. Kaiping Peng

Awards and Fellowships

June 2019 Summer 2019 Graduate Student Interdisciplinary Research Award at
Psychology Department, The Ohio State University

June 2017 Summer 2017 Graduate Excellence Award at Psychology
Department, The Ohio State University

May 2016 College of Social and Behavioral Sciences (SBS) Fellowship at The
Ohio State University

Feb. 2016 H. Dean and Susan Regis Gibson Research Award from Center for
Cognitive Behavioral Brain Imaging (\$2500), The Ohio State
University

2014 - 2015 University Fellowship at The Ohio State University

Jun. 2011 3rd Prize of the 6th “Challenge Cup” Capital Undergraduate
Curriculum Academic Science and Technology Works Competition,
Tsinghua University

Dec. 2010 Zheng Geru Scholarship at Tsinghua University

Apr. 2010 3rd Prize of the 28th “Challenge Cup” Undergraduate Curriculum Academic Science and Technology Competition, Tsinghua University

Manuscripts and Publications

Shomstein, S., Zhang, X., & Dubbelde, D. (2022). Attention and platypuses. *WIREs Cognitive Science*, e1600.

<https://doi.org/10.1002/wcs.1600>

Zhang, X., Jones, C.M., & Golomb, J.D. (under revision). Decoding 3D spatial location across saccades in human visual cortex.

Preprint: <https://doi.org/10.1101/2020.07.05.188458>

Zhang, X., & Golomb, J.D. (2021). Neural representations of covert attention across saccades: comparing pattern similarity to shifting and holding attention during fixation. *eNeuro*, 8(2).

<https://doi.org/10.1523/ENEURO.0186-20.2021>

Zhang, X., & Golomb, J.D. (2018). Target localization after saccades and at fixation: Nontargets both facilitate and bias responses. *Visual Cognition*, 26(9), 734–752.

<https://doi.org/10.1080/13506285.2018.1553810>

Finlayson, N.J., Zhang, X., and Golomb, J.D. (2017). Differential patterns of 2D location versus depth decoding along the visual hierarchy. *NeuroImage*, 147, 507-516.

<https://doi.org/10.1016/j.neuroimage.2016.12.039>

Conference Proceedings

Finlayson, N.J., Zhang, X., and Golomb, J.D. (2015). Object Perception, Attention, and Memory (OPAM) 2015 Conference Report 23rd Annual Meeting: The representation and perception of 3D space: Interactions between 2D location and depth. *Visual Cognition*, 23(7), 832-836.

<https://doi.org/10.1080/13506285.2015.1093239>

Conference Presentations

Zhang, X., Jones, C.M., & Golomb, J.D. (June 2020). Decoding 3D spatial location across saccades in human visual cortex. Talk presented at Annual Meeting of the Vision Science Society, Virtual Conference.

Zhang, X., Jones, C.M., & Golomb, J.D. (Oct 2019). Decoding 3D spatial location across saccades in human visual cortex. Poster presented at Society for Neuroscience, Chicago, IL.

Zhang, X. & Golomb, J.D. (May 2019). Neural representations of attention across saccades: More similar to shifting or to holding covert attention? Poster presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.

Zhang, X. & Golomb, J.D. (May 2018). Localizing visual targets across saccades: Do nontarget landmarks really help? Poster presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.

Zhang, X. & Golomb, J.D. (Nov 2017). Independent and overlapping neural representations of saccades, attention shifts, and reference frames. Poster presented at Society for Neuroscience, Washington, DC.

Chen, J., Zhang, X., & Golomb, J.D. (Nov 2017). Dynamically tracking the neural signatures of visual attention across a saccade. Poster presented at Society for Neuroscience, Washington, DC.

Zhang, X. & Golomb, J.D. (July 2017). Independent and overlapping neural representations of saccades, attention shifts, and reference frames. Poster presented at Gordon Research Seminar and Gordon Research Conference, Lewiston, ME.

Chen, J., Zhang, X., & Golomb, J.D. (July 2017). Dynamically tracking the neural signatures of visual attention across a saccade. Poster presented at Gordon Research Seminar and Gordon Research Conference, Lewiston, ME.

- Zhang, X. & Golomb, J.D. (May 2017). Independent and overlapping neural representations of saccades, attention shifts, and reference frames. Poster presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.
- Chen, J., Zhang, X., & Golomb, J.D. (May 2017). Dynamically tracking the neural signatures of visual attention across a saccade. Poster presented at Annual Meeting of the Vision Sciences Society, St. Pete's Beach, FL.
- Zhang, X. & Golomb, J.D. (May 2016). Visual stability across saccades: Do the number and spatial location of non-targets influence target location processing? Poster presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.
- Barboza, M., Finlayson, N.J., Zhang, X. & Golomb, J.D. (May 2016). Feature-location binding, the “spatial congruency bias”, and object-based attention. Poster presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.
- Zhang, X. & Golomb, J.D. (Nov 2015). Detecting target displacements across eye movements: How can non-targets work as “landmarks”? Poster presented at Annual Workshop on Object Perception, Attention, and Memory, Chicago, IL.
- Finlayson, N.J., Zhang, X. & Golomb, J.D. (Nov 2015). The Representation and Perception of 3D Space: Interactions Between 2D Location and Depth. Talk presented at Annual Workshop on Object Perception, Attention, and Memory, Chicago, IL.
- Finlayson, N.J., Zhang, X. & Golomb, J.D. (May 2015). Human visual cortex gradually transitions from 2D to 3D spatial representations. Talk presented at Annual Meeting of the Vision Science Society, St. Pete Beach, FL.

Invited Talks

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| Oct. 2022 | Center for Cognitive and Behavioral Brain Imaging (CCBBI) Student Group,
The Ohio State University |
| Oct. 2019 | Department of Psychological and Brain Sciences, The George Washington
University |

Research Projects

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| Feb 2022 – | Behavioral measure of task-irrelevant color processing with spatial uncertainty |
| July 2020 – | The effect of task-irrelevant semantic information on attention |
| July 2020 – | Neural representation of objects with spatial uncertainty |
| Sept. 2018 – | Neural representation of 3D spatial location across saccades |
| May 2018 – July 2020 | Representation of learned visual categories in human cortex |
| Feb. 2016 – Feb. 2021 | Neural representations of saccades, attention shifts, and reference frames |
| Sept. 2014 – Nov. 2018 | Landmarks and visual stability across eye movements |
| Nov. 2015 – Dec. 2016 | Decoding 2D location vs position-in-depth in visual cortex |
| Jan. 2013 – Jun. 2013 | How does working memory capacity change under psychosocial stress: is there stress adaptation? |
| Mar. 2011 – Jul. 2011 | The influence of top-down and bottom-up processes on object-based and space-based visual attention |

Academic Affiliations

- 2021 – 2022 Organizer, Object Perception, Attention and Memory conference (OPAM)
- 2020 – Member, Psychonomic Society
- 2014 – Member, Vision Science Society
- 2017, 2019, 2021 Student/Post-doc member, Society for Neuroscience
- 2014 – 2020 Member, Center for Cognitive and Brain Sciences, The Ohio State University
- 2012 – 2013 Student trainee, “Spark” Innovative Talent Cultivation Program for Students of Tsinghua University
- 2009 – 2012 Student member, Student Academic Center, School of Humanities and Social Sciences, Tsinghua University

Ad-hoc Reviewing

Journals: *Scientific Report; Attention, Perception, & Psychophysics; Journal of Experimental Psychology: Human Perception and Performance*

Grant Agencies: *National Science Foundation (NSF)*

Undergraduate Research Mentoring

- Dec., 2015 – Aug., 2016 Marina Barboza, undergraduate researcher in Golomb Lab, The Ohio State University
Research project: Feature-location binding, the “spatial congruency bias”, and object-based attention

Teaching

Instructor: *(The Ohio State University)*

Introduction to Psychology: Fall 2017; Spring 2018; Fall 2019

Teaching Assistant: *(The Ohio State University)*

Perception and Language: Spring 2017
Theories of Personality: Fall 2016
Introduction to Social Psychology: Fall 2016
Research Methods: Fall 2016
Memory and Cognition: Spring 2016; Spring 2017
Cognitive Neuroscience: Fall 2015
Introduction to Behavioral Neuroscience: Fall 2015
Introduction to Psychology: Fall 2015; Fall 2016

Volunteering and Outreach

- Apr. 2021, Apr. 2022 Judge. GW Research Showcase at the George Washington University, US.
- Dec. 2019 Volunteer. The CCBBI Research Day at The Ohio State University, US.
- May 2019 Volunteer. The COSI Science Festival at Columbus OH, US.
- June 2017 Panelist. Meeting with visiting prospective graduate students from the TRIO McNair Program at the University of Illinois Urbana-Champaign, at The Ohio State University, US.
- Apr. 2017 Judge. Oral poster presentation sessions for Cognitive Psychology Research Course at The Ohio State University, US.

- July 2012 Volunteer as teacher. College Student Teaching Support Program to Gansu province, at Tsinghua University, China
- 2011 – 2012 Volunteer as telephone operator. Peter KK Lee “Care for Life” hotline for college students, at Tsinghua University, China
- 2011 – 2012 Treasurer. Student Interest Groups in Science and Technology Center at Tsinghua University, China
- July 2011 Volunteer. Group Counseling Program for teachers hired by Fu Hui Education Foundation in Sichuan Province for underprivileged children. Program held by Psychology Department of Tsinghua University and Hong Kong University, China
- Aug 2010 Leader. Summer social practice at Tsinghua University: college students’ teaching support for poverty-stricken area in Henan Province, China