`Weiwei Zhang

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University of California, Riverside
Department of Psychology
The Neuroscience Program
900 University Ave
Riverside, CA 92521

Professional positions

Assistant Professor	2012 – present	Department of Psychology, UC Riverside
NRSA Postdoc	2010 – 2012	Department of Psychology, UC Davis
Postdoc	2007 – 2010	Center for Mind & Brain, UC Davis
Research Assistant	2000 – 2002	Department of Psychology, Princeton University

Education

Ph.D.	2007	Psychology, University of Iowa
M.S.	2000	Psychology, Beijing University, P. R. China
B.S.	1997	Chemistry, Nankai University, P. R. China

Grants, Fellowship, and Awards

NIMH R01 MH117132-01 (PI, $1,411,0790 - total)	2018 – 2023
Omnibus Research and Travel Award, UC Riverside ($500)	2016 – 2017
fMRI seed grant, UCR Office of Research (PI, $28,800)	2013 – 2016
Ruth L. Kirschstein National Research Service Awards for Individual Postdoctoral Fellowship, NIMH ($109,536)	2010 – 2012
Social Sciences Dean's Postdoctoral Fellowship for Excellence Award, UC Davis	2010
fMRIDC Summer Workshop Fellowship, National fMRI Data Center, Dartmouth College	2001

Publications

Journal articles

A1. Xie,W., Cappiello, M., Meng, M., Rosenthal, R., **Zhang, W.** (2018). ADRA2B Deletion Variant and Enhanced Cognitive Processing of Emotional Information: A Meta-Analytical Review. Neuroscience & Biobehavioral Reviews. 92, 402–416.

A2. Xie, W. & **Zhang, W**. (2018). Mood-Dependent Retrieval in Visual Long-term Memory: Dissociable Effects on Retrieval Probability and Mnemonic Precision. Cognition & Emotion. 32(4), 674-690.

A3. Xie,W., Cappiello, M., Park, H., Deldin, P., Chan, R., **Zhang, W**. (2018). Schizotypy is Associated with Reduced Mnemonic Precision in Visual Working Memory. Schizophrenia Research. 193, 91–97.

A4. Xie, W & **Zhang, W.** (2018). Familiarity Speeds Up Visual Short-term Memory Consolidation: Electrophysiological Evidence from Contralateral Delay Activities. Journal of Cognitive Neurosceince, 30(1), 1–13.

A5. Xie, W. & **Zhang, W**. (2017). Dissociations of the Number and Precision of Visual Short-term Memory Representations in Change Detection. Memory & Cognition, 45(8), 1423–1437.

A6. Xie, Z & **Zhang, W.** (2017). Discrete Item-based and Continuous Configural Representations In Visual Short-term Memory. Visual Cognition, 25(1-3), 21–33.

A7. Xie, W. & **Zhang, W.** (2017). Negative Emotion Enhances Mnemonic Precision and Subjective Feelings of Remembering in Visual Long-term Memory. Cognition. 166,73-83

A8. Park, H., **Zhang, W.**, & Hyun, J. (2017). The Aftermath of Memory Retrieval on Recycling Visual Working Memory Representations. Attention, Perception & Psychophysics, 79(5), 1393–1407.

A9. Park, H., **Zhang, W.**, & Hyun, J. (2017). Dissociating Models of Visual Working Memory by Reaction-Time Distribution Analysis. Acta Psychologica. 173, 21-31.

A10. Xie, W. & **Zhang, W.** (2017). Familiarity Increases the Number of Retained Pokémon in Visual Short-term Memory. Memory & Cognition. 45(4), 677-689

A11. Xie, W. & **Zhang, W.** (2017). Familiarity Speeds Up Visual Short-term Memory Consolidation. Journal of Experimental Psychology-Human Perception and Performance. 43(6), 1207-1221.

A12. Xie, W. & Zhang, W. (2017). The "El Greco Fallacy" and Pupillometry: Pupillary Evidence for Top-down Effects on Perception. Behavioral and Brain Sciences. [Commentary]. 39, e263.

A13. Cappiello, M. & **Zhang, W.**(2016). A Dual-Trace Model for Iconic Memory. Journal of Experimental Psychology-Human Perception and Performance. 42(11), 1903-1922.

A14. Cappiello, M., Xie, W., David, A., Bikson, M., & **Zhang, W.** (2016). Transcranial Direct Current Stimulation Modulates Pattern Separation. NeuroReport. 27(11), 826-832.

A15. Xie, W., & **Zhang, W.** (2016). Negative Emotion Boosts Quality of Visual Working Memory Representation. Emotion, 16(5), 760-774.

A16. Lu, Z., Guo, B., Boguslavsky, A., Cappiello, M., **Zhang, W.**, & Meng, M. (2015). Distinct effects of contrast and color on subjective rating of fearfulness. Frontiers in Psychology, 6, 1521–1521.

A17. He, X., **Zhang, W.**, Li, C., & Guo, C. (2015). Precision requirements do not affect the allocation of visual working memory capacity. Brain Research, 1602(C), 136–143.

A18. Xie, W., & **Zhang, W.** (2015). The influence of emotion on face processing. Cognition and Emotion. 30(2), 245–257.

A19. **Zhang, W.**, & Luck, S. J. (2015). Opposite effects of capacity load and resolution load on distractor processing. Journal of Experimental Psychology-Human Perception and Performance, 41(1), 22–27.

A20. Xie, W., & **Zhang, W.** (2014). Contributions of cognitive factors in conceptual metaphors. Metaphor and Symbol, 29(3), 171-184.
---------- joined UCR faculty in 2012----------
A21. **Zhang, W.** & Luck, S. J. (2011). The Number and Quality of Representations in Working Memory. Psychological Science, 22(11), 1434 - 1441.
A22. Gold, J. M., Hahn, B., **Zhang, W.**, Robinson, B. M., Kappenman, E. S., Beck, V. M., et al. (2010). Reduced capacity but spared precision and maintenance of working memory representations in schizophrenia. Archives of General Psychiatry. 67(6), 570-577.
A23. **Zhang, W.**, & Luck, S. J. (2009). Sudden Death and Gradual Decay in Visual Working Memory. Psychological Science, 20(4), 423-428.
A24. **Zhang, W.**, & Luck, S. J. (2009). Feature-Based Attention Modulates Feedforward Visual Processing. Nature Neuroscience, 12(1):24-25.
A25. **Zhang, W.**, & Luck, S. J. (2008). Discrete Fixed-Resolution Representations in Visual Working Memory. Nature, 453(7192), 233-235.
A26. Treisman, A., & **Zhang, W.** (2006). Location and binding in visual working memory. *Mem Cognit, 34*(8), 1704-1719.
A27. Hollingworth, A., Hyun, J. S., & **Zhang, W.** (2005). The role of visual short-term memory in empty cell localization. *Percept Psychophys, 67*(8), 1332-1343
A28. Shen, Z., **Zhang, W.** , & Chen, Y. (2002). The hole precedence in face but not figure discrimination and its neuronal correlates. *Vision Res, 42*(7), 873-882.
A29. Chen, Y., **Zhang, W.**, & Shen, Z. (2002). Shape predominant effect in pattern recognition of geometric figures of rhesus monkey. *Vision Res, 42*(7), 865-871.
A30. **Zhang, W.**, Chen, Y., & Shen, Z. (2001). Special Neural Substrate of Face Processing. *ACTA PSYCHOLOGICA SINICA, 33*(2), 182-188. (In Chinese)
A31. Chen, Y., **Zhang, W.**, & Shen, Z. Representation of similarity: a theory on visual cognition. J Shanxi Med Univ, 2000, 31(s1): 97-100. (In Chinese)

Invited chapters

1. **Zhang, W.**, Johnson, J. S., Woodman, G. F., & Luck, S. J. Features and conjunctions in visual working memory.(2012). Features and conjunctions in visual working memory. In J. Wolfe & L. Robertson (Eds.), From Perception to Consciousness: Searching with Anne Treisman. (pp. 369-377). New York: Oxford University Press.

Conference presentations

B1. Park, H., Xie, W.,Cappiello, M., Hyun, J., & **Zhang, W.** (2018). A Temporal Limit in Visual Working Memory Encoding Using Bayesian Hierarchical Models. Paper presented at the Annual Meeting of Korean Psychological Association, Seoul, South Korea (August 2018).
B2. **Zhang, W.** & Xie, W. (2018) The Effects of Prior Stimulus Familiarity on Visual Working Memory Maintenance and Retrieval. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2018).
B3. Park, H. & **Zhang, W.** (2018) The Number of Representations within the Focus of Attention in Visual Working Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2018).

B4. Azer, L. & **Zhang, W.** (2018) The Effects of Structural Regularity on Working Memory Representations. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2018).
B5. Xie, W.,Cappiello, Yassa, M., Ester, E., Gopikrishna, D., & **Zhang, W.** (2018) Decoding item-specific information in visual short-term memory from the hippocampal DG/CA3 subfield using high-resolution fMRI. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2018).
B6. Cappiello, M., Xie, W., & **Zhang, W.** (2018) The Mental Muscle: Effects of Concurrent Effortful Physical Action on Visual Working Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2018).
B7. Xie, W., Cappiello, M., Yassa, M., & **Zhang, W.** (2018). Contribution of the hippocampus to visual short-term memory (VSTM) precision. Paper presented at 2018 International Conference on Learning & Memory, Huntington Beach, CA (April 2018).
B8. Xie, W. & **Zhang, W.** (2017). The Effects of Prior Familiarity on Working Memory Representations and Processes. Paper presented at the Annual Meeting of the Psychonomic Society, Vancouver, British Columbia, Canada (November 2017).
B9. Park, H., Xie, W.,Cappiello, M., Hyun, J., & **Zhang, W.** (2017). A Test of Visual Short-term Memory Consolidation of Continuously Changing Stimuli. Paper presented at the Annual Meeting of Korean Psychological Association, Seoul, South Korea (August 2017).
B10. Park, H., Xie, W.,Cappiello, M., Hyun, J., & **Zhang, W.** (2017). Visual Short-term Memory for Dynamically Changing Stimuli. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2017).
B11. Xie, W.,Cappiello, M., Reagh, Z., Yassa, M., & **Zhang, W.** (2017). A Shared Mechanism for Mnemonic Precision in Visual Short-term Memory and Visual Long-term Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2017).
B12. **Zhang, W.**, Xie, W., & Cappiello, M. (2017). Dissociable Effects of Depressed Mood, Schizotypal Personality Disorder, and Age on the Number and Quality of Visual Working Memory Representations. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2017).
B13. Cappiello, M. & **Zhang, W.** (2017). The Functional Limit in Visual Working Memory Storage: The Tale Is In The Tail. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2017).
B14. Cappiello, M., Xie, W., David, A., Bikson, M., & **Zhang, W.** (2016). Brain Stimulation Modulates Pattern Separation. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2016).
B15. Xie, W. & **Zhang, W.** (2016). Effects of Familiarity on Visual Short-Term Memory for Pokémon. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2016).
B16. Cappiello, M. & **Zhang, W.** (2015). Enumeration and Reentrant Processes. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach,

FL (May 2015).

B17. **Zhang, W.** & Cappiello, M. (2015). Dual-trace Iconic Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2015).

B18. Xie, W. & **Zhang, W.** (2015). Emotional Context and Visual Long-Term Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2015).

B19. Xie, W., Cappiello, M., & **Zhang, W.** (2014). Effects of Emotion on Qualitative and Quantitative Aspects of Visual Long-term Memory. Paper presented at the Annual Meeting of the Psychonomic Society, Long Beach, CA (November 2014).

B20. Cappiello, M., Xie, W., Rendon, K., Yim, D., & **Zhang, W.** (2014). Dissociable Neural Mechanisms for Capacity & Resolution in Visual Working Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2014).

B21. Xie, W., Cappiello, M., & **Zhang, W.** (2014). Effects of Emotion on Visual Working Memory. Paper presented at the Annual Meeting of the Vision Sciences Society, St. Pete Beach, FL (May 2014).

B22. **Zhang, W.**, & Yonelinas, A. P. (2012a) *Capacity & Resolution of Multi-object Tracking.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2012).

B23. Yonelinas, A. P., **Zhang, W.**, & Shapiro, K. (2012). *Enhanced Familiarity with Sequential Presentations in Visual Working Memory.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2012).

B24. Luck, S. J. & **Zhang, W.** (2012). *Opposite effects of capacity load and resolution load on distractor processing.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2012).

B25. **Zhang, W.**, & Yonelinas, A. P. (2012b). *The Influence of Medial Temporal Lobe Damage on Capacity and Precision in Visual Working Memory.* Paper presented at the Annual Meeting of the the Cognitive Neuroscience Society, Chicago, IL (April 2012).

B26. **Zhang, W.**, & Yonelinas, A. P. (2011). *Recollection and Familiarity In Visual Working Memory.* Paper presented at the Annual Meeting of the Psychonomic Society, Seattle, WA (November 2011).

B27. **Zhang, W.**, & Luck, S. J. (2011a). *Capacity & Resolution Trade Off in Iconic Memory but not in Working Memory.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2011).

B28. Im, H. Y., **Zhang, W.**, & Halberda, J. (2011). *Capacity and resolution for approximate number in perception and memory.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2011).

B29. **Zhang, W.**, & Luck, S. J. (2011b*). Visual Search For Numerosity.* Paper presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA (March 20011).

B30. **Zhang, W.**, & Luck, S. J. (2010). *Can Observers Trade Resolution for Capacity in Visual Working Memory?* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2010).

B31. **Zhang, W.**, & Luck, S. J. (2009*). Visual Working Memory and Conscious*

Awareness. Paper presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA (March 2009).

B32. Hahn, B., **Zhang, W.**, Robinson, B.M., Kappenman, E.S., Beck, V.M., Luck, S.J., Gold, J.M. (2009). *Impaired capacity but preserved precision of visual short-term memory in schizophrenia.* Platform presentation, International Congress on Schizophrenia Research. Schizophrenia Bulletin 35, Suppl 1. ID: 548429

B33. **Zhang, W.**, & Luck, S. J. (2008b). *Sudden Death For Overtime Memories.* Paper presented at the Annual Meeting of the Vision Sciences Society, Naples, FL (May 2008).

B34. **Zhang, W.**, & Luck, S. J. (2008a*). Direct Evidence for Feature Binding in Visual Working Memory.* Paper presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA (April 2008).

B35. **Zhang, W.**, & Luck, S. J. (2007b). *Discrete Fixed-Resolution Representations in Visual Working Memory.* Paper presented at the Annual Meeting of the Psychonomic Society, Long Beach, CA (November 2007).

B36. **Zhang, W.**, & Luck, S. J. (2007a). *Is Visual Working Memory Consolidation a Continuous or Discrete Process?* Paper presented at the Annual Meeting of the Vision Sciences Society, Sarasota, FL (May 2007).

B37. **Zhang, W.**, & Luck, S. J. (2005). *Effects of color-based selective attention on feedforward sensory processing*. Paper presented at the Annual Meeting of the Vision Sciences Society. Sarasota, FL (May 2005).

B38. Luck, S. J., & **Zhang, W.** (2004). *Fixed resolution, slot-like representations in visual working memory.* Paper presented at the Annual Meeting of the Vision Sciences Society, Sarasota, FL (May 2004).

B39. **Zhang, W.**, & Luck, S. J. (2004b). *The time course of color-based selective attention.* Paper presented at the Annual Meeting of the Society for Neuroscience, Washington, DC (October 2004).

B40. **Zhang, W.**, & Luck, S. J. (2004a). *Do Representations Decay in Visual Working Memory?* Paper presented at the Annual Meeting of the Vision Sciences Society, Sarasota, FL (May 2005).

B41. Luck, S. J., & **Zhang, W.** (2003). *Slot-Like Versus Continuous Representations in Visual Working Memory.* Paper presented at the Annual Meeting of the Psychonomic Society, Vancouver, BC (November 2003).

B42. **Zhang, W.**, & Luck, S. J. (2003). *Slot-like versus continuous representations in visual working memory.* Paper presented at the Annual Meeting of the Vision Sciences Society, Sarasota, FL (May 2003).

B43. Shen, Z., Chen, Y., & **Zhang, W.** (2000). Distribution of the cells sensitive to local features of face draws and geometric shapes in monkey temporal cortex. International Journal of Psychology, 35(3-4), 286-286.

B44. **Zhang, W.**, Chen, Y., & Shen, Z. (1999). *Holistic Face Representation Based on Encoding of Topological Features.* Paper presented at the Congress of Chinese Society for Neuroscience, Beijing, China.

Invited talks

Peking University, China, 2008
University of South Carolina, 2011

University of Missouri – ST. Louis, 2011
Rice University, 2012
MIT, 2012
Department of Psychology, UC Riverside, 2012
Portland Workshop on Working Memory, 2012
Department of Psychology, UCLA, 2012
Neuroscience program, UC Riverside, 2012
Claremont Graduate University, 2015
Statistics Colloquium, UC Riverside, 2016
Visual Working Memory Symposium, The University of NYU, Abu Dhabi, AE, 2017
Office of Research Integrity, UC Riverside, 2017
Department of Psychology, Central China Normal University, China, 2017
Neuroscience program, Tongji Medical University, China
McGovern Institute for Brain Research, Peking University, China, 2017
Chinese Academy of Science, Institute of Psychology, China, 2017
Department of Psychology, Chinese University of Hong Kong, China, 2017
Department of Psychology, Southern China Normal University, China, 2017

Exhibition

1. **Zhang, W.**, & Shen, Z. (2000). Individual differences, education and brain science. National Science and Technology Museum of China, Beijing, China.
2. **Zhang, W.**, & Shen, Z. (1999). Seeing the Mind. National Science and Technology Museum of China, Beijing, China.

Other publications

1. **Zhang, W.** (1999). From ignorance to enlightenment: Children's developing mind. Zhengzhou: Henan Medical University Press. (Book in Chinese).

Teaching

Undergraduate Courses

PSYC 117 Cognitive Neuroscience of Memory & Consciousness
PSYC 134 Cognitive Processes
PSYC 139 Topics in Cognitive Psychology: Memory
PSYC 182F Laboratory in Psychology: Sensation and Perception

Graduate Courses

PSYC 203B Experimental Psychology: Attention & Memory (grad core)
PSYC 233 Research methods in Cognitive Science: Eye Tracking
PSYC 251 Seminar in Cognitive Neuroscience
PSYC 271 Current Issues in Cognition: Memory
PSYC 271 Current Issues in Cognition: EEG Research on Attention
PSYC 271 Current Issues in Cognition: Recognition Memory

PSYC 271 Current Issues in Cognition: Working Memory
PSYC 283 Proseminar on Current Research in Cognitive Psychology

High School Internship Supervision

Gavin Zhang, Joanna Zhao

Undergraduate Lab Supervision

Jennifer Thornton, Anisha Dhaliwal, Walena Logan, Elizabeth Ramos, Miranda Arciaga, Fabiola Ortiz, Sarah Allec, Uttara Suresh, Edward His, Irving Muglia-Arias, Jasmine Singh, Tiffany Su, Jennifer Nesta, Kristie Pan, Daniel Yim, Kristiana Rendon, Alexandra Clark, Victor Ha, Nicole Berg, Jessica Tarango, Adrian Pardo, Jonathan Caplan, Ana Martinez-Flores, Allan Vazquez, Andrea Veron, Aaron Koay, Debora Handojo, Hanna Boparai, Miriam Rizk, Julieanne Ong, Pa Kou Chang, Allyson Brousseau, Julia Kim, Richard Pham, Nhung Nguyen, JC Lynne Lu Sing, Mary Mansour, Mayowa Ogunmakinwa, Kimberly Rodriguez, Daphne Du, Asianna Khong, Jingrong Li

Undergraduate Thesis Supervision

2015-2016	Ana Martinez Flores
2017-2018	JC Lynne Lu Sing

Graduate Student Supervision

2013-2018	Zane (Weizhen) Xie, Ph.D. (Psychology), currently postdoc at NINDS
2013-	Marcus Cappiello
2016-	Hyung-Bum Park
2017	Lilian Azer

Postdoc and Visting Scholar Supervision

Azra Jahanitabesh, Jooseok Hyun, Xianfeng Ding, Zhao Fan, Xiaorong Cheng

Professional Experience

Committees and Positions

Review Committee for the Psychonomic Society (2018-2021)

Editorial Positions

Editorial board of "Neurons, Behavior, Data analysis, and Theory" (2018-)

Journal and Book Reviewing

Frequent ad hoc reviewer for many journals, including *Attention, Perception, & Psychophysics, Behavior Research Methods, Biological Psychology, British Journal of Psychology, Cerebral Cortex, Cognition, Cognitive, Affective, and Behavioral*

Neuroscience, Cortex, Current Biology, Developmental Psychology, Emotion, Frontiers in Human Neuroscience, Journal of Cognitive Enhancement, Journal of Cognitive Neuroscience, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Human Perception and Performance, Journal of Experimental Psychology: Learning, Memory, and Cognition, Journal of Neuroscience, Journal of vision, Memory & Cognition, Nature, NeuroImage, Perception, Proceedings of National Academy of Sciences, Psychology and Aging, Psychological Research, Psychological Review, Psychological Science, Psychonomic Bulletin & Review, Psychophysiology, Quarterly Journal of Experimental Psychology, Reading and Writing, Schizophrenia Bulletin, Schizophrenia Research, Science, Scientific Report, Visual Cognition, Oxford University Press, and Sinauer Associates, Inc.

Grant Reviewing

NASA Translational Research Institute for Space Health (TRISH) Human Performance Panel (September 2018)

Ad Hoc Grant Reviewer for:
Air Force Office of Scientific Research (AFOSR) (2012)
Israel Science Foundation (2015, 2017)
Swiss National Science Foundation (SNSF) (2016)

Academic service

Rosemary Schraer Memorial Fund scholarship committee (2018-), UCR
Guest speaker at UCR International Students and Scholars office J1 Scholar Orientation (2018), UCR
Undergraduate Research Symposium-Oral Presentation Moderator (2018), UCR
Undergraduate research mini grant review committee (2017-), UCR
International graduate student advisor (2017-), Dept. of Psych., UCR
Faculty Search Committee (2015), Dept. of Psych., UCR
Faculty member at UCR Highlander Day (2014 & 2016), UCR
Undergraduate education committee (2013-), Dept. of Psych., UCR
Graduate Division Workshop for Surviving the Job Market (2012), UCR Graduate Division

Professional affiliations

Vision Science Society, Member
Cognitive Neuroscience Society, Member
Psychonomic Society, Fellow