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Chia-Chien Wu, Ph.D.

Curriculum Vitae

Harvard Medical School / Brigham and Women's Hospital
Visual Attention Lab, Department of Radiology
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EDUCATION

Rutgers University, New Brunswick, NJ 2012
Ph.D. in Cognitive Psychology and Interdisciplinary Perceptual Science
Advisor: Dr. Eileen Kowler

National Taiwan University (NTU), Taiwan 2005
B.S. in Psychology

RESEARCH EXPERIENCE

Research Fellow 2015 -
Harvard Medical School / Brigham and Women's Hospital
Advisor: Dr. Jeremy M. Wolfe

Post-Doctoral Research Fellow 2014- 2015
Boston University, Center for Computational Neuroscience & Neural Technology (CompNet)
Advisor: Dr. Arash Yazdanbakhsh

Post-Doctoral Research Fellow 2012 - 2014
University of Massachusetts Boston, Department of Computer Science
Advisor: Dr. Marc Pomplun

RESEARCH INTERESTS

Attention; Visual Search; Visual Perception, Eye movements, Scene perception, Object Tracking, Medical Image perception

TEACHING EXPERIENCE

RUTGERS UNIVERSITY, NEW BRUNSWICK
Instructor of Sensation and Perception Lab at Department of Psychology 2010 - 2011
Instructor of Cognition Lab at Department of Psychology 2009 - 2010

Grant/Award

Center for Computational Neuroscience & Neural Technology (CompNet) Travel Award 2015
Rutgers University Graduate Fellowship 2011 - 2012
Rutgers University Conference Travel Award 2009

PUBLICATIONS

Peer Reviewed Journal Article:

1. **Wu, C.-C.**, D'Ardenne, N. M., Nishikawa, R. M., & Wolfe, J. M. (2019). Gist processing in digital breast tomosynthesis," *Journal of Medical Imaging.* **7**(2), 022403, doi: 10.1117/1.JMI.7.2.022403.
2. **Wu, C.-C.** & Wolfe, J.M. (2019). Eye Movements in Medical Image Perception: A Selective Review of Past, Present and Future. *Vision*, *3*, 32.

3. **Wu, C.-C.**, & Wolfe, J. M. (2018). A new Multiple Object Awareness paradigm shows that imperfect knowledge of object location is still knowledge. *Current Biology*. DOI: https://doi.org/10.1016/j.cub.2018.08.042
4. **Wu, C.-C.**, Cao, B., Dali, V., Gagliardi, C., Barthelemy, O., Salazar, R., Pomplun, M., Cronin-Golomb, A. & Yazdanbakhsh, A. (2018). Eye movement control during visual pursuit in Parkinson's disease*. PeerJ*, *6*, e5442.
5. **Wu, C.-C.**, Alaoui Soce, A. & Wolfe, J. M. (2018) Event Monitoring: Can we detect more than one event at a time? *Vision Research, 145, 49-55.*
6. **Wu, C.-C.,** & Wolfe, J. M. (2018). Comparing eye movements during position tracking and identity tracking: No evidence for separate systems. *Attention, Perception, & Psychophysics*, *80*(2), 453-460.
7. **Wu, C.-C.**, & Wolfe, J. M. (2016). Multiple event monitoring. *Cognitive Research: Principles and Implications, 1(1),* 21.
8. Pantelis, P. C., Gerstner, T., Sanik, K., Weinstein, A., Cholewiak, S. A., Kharkwal, G., **Wu, C.-C.**, & Feldman, J. (2016). Agency and rationality: Adopting the intentional stance toward evolved virtual agents. *Decision, 3(1),* 40-53.
9. **Wu, C.-C.**, Wang, H.-C., Pomplun, M. (2014). The Roles of Scene Gist and Spatial Dependency among Objects in the Semantic Guidance of Attention in Real-World Scenes. *Vision Research, 105,* 10-20.
10. **Wu, C.-C.**, Wick, F., Pomplun, M. (2014). Guidance of Visual Attention by Semantic Information in Real-World Scenes. *Frontiers in Psychology, 5*, 54.
11. Pantelis, P. C., Baker, C. L., Cholewiak, S. A., Sanik, K., Weinstein, A., **Wu, C.-C.,** Tenenbaum, J. B., & Feldman, J. (2014). Inferring the intentional states of autonomous virtual agents. *Cognition, 104(3)*, 360-379.
12. **Wu, C.-C.**, & Kowler, E. (2013). Timing of saccadic eye movements during visual search for multiple targets. *Journal of Vision, 13(11):11*, 1-21
13. **Wu, C.-C.**, Kwon, O.-S., Kowler, E. (2010). Fitts's Law and speed/accuracy trade-offs during sequences of saccades: Implications for strategies of saccadic planning. *Vision Research, 50,* 2142-2157.
14. **Wu, C.-C.**, Attar, N., & Pomplun, M. (submitted). Involuntary semantic bias in search for words and word pairs.
15. Wolfe, J. M., **Wu, C.-C.,** Li, J. & Suresh, S. (submitted). What do experts look at and what do experts find when reading mammograms?

Peer Reviewed Proceeding Article:

16. Raj, S., **Wu, C.-C.**, Raj, S., & Attar, N. (2019). Understanding the relationship between microsaccades and pupil dilation. In *Proceedings of the 11th ACM Symposium on Eye Tracking Research & Applications* (p. 67). ACM.
17. D'Ardenne, N. M., Nishikawa, R.M., **Wu, C.-C**. & Wolfe, J.M. Occulomotor Behavior of Radiologists Reading Digital Breast Tomosynthesis (DBT). In Proceedings of the SPIE Medical Imaging, San Diego, CA, USA, 6-21 February 2019
18. Attar N, **Wu, C.-C.**, Sia DE, Pomplun M. (2016). A deeper understanding of optimal viewing position using eye fixations and character recognition on text-viewing and reading tasks Eye Tracking Research and Applications Symposium (Etra). 14: 209-212.

19. Attar, N., **Wu, C.-C.**, Pomplun, M. (2014). The Effect of Immediate Accuracy Feedback in a Multiple-Target Visual Search Task. Annual Meeting of the Cognitive Science Society (CogSci 2014), Quebec City, Canada.
20. **Wu, C.-C.,** Wang, H.-C., Pomplun, M. (2013). The Role of Scene Gist and Spatial Dependency among Objects in the Semantic Guidance of Attention. Annual Meeting of the Cognitive Science Society (CogSci 2013), Berlin, Germany.
21. Pantelis, P.C., Cholewiak, S. A., Ringstad, P., Sanik, K., Weinstein, A., **Wu. C.-C.**, & Feldman, J. (2011). Perception of intentions and mental states in autonomous virtual agents. In L. Carlson, C. Hölscher & T. Shipley (Eds.), Proceedings of the 33rd Annual Conference of the Cognitive Science Society (pp. 1990-1995). Austin, TX: Cognitive Science Society.

Conference presentation:

1. **Wu, C.-C.**, Kumle, L., Nartker, M. & Wolfe, J. M. (2020). What you don't see can help you: Image triage in human-AI interactions. Vision Science Society, 20th Annual Meeting.
2. Sneha, S., **Wu, C.-C.**, & Wolfe, J. M. (2020). Multiple Functional Visual Fields (FVFs) surround the same fixation point during visual search. Vision Science Society, 20th Annual Meeting.
3. Wick, F., **Wu, C.-C.**, Lyer, D. & Wolfe, J. M. (2020). Training Multiple Object Awareness (MOA). Vision Science Society, 20th Annual Meeting.
4. **Wu, C.-C.**, & Wolfe, J. M. (2019). Useful Field of View shows why we miss the search target when we "look at " it. Vision Science Society, 19th Annual Meeting. St. Pete Beach, Florida.
5. **Wu, C.-C.**, & Wolfe, J. M. (2018). Your hidden capacity revealed! The Multiple Object Awareness (MOA) paradigm. Vision Science Society, 18th Annual Meeting. St. Pete Beach, Florida.
6. **Wu, C.-C.**, & Wolfe, J. M. (2017). Detecting more than one event at a time in multiple event tracking. Vision Science Society, 17th Annual Meeting. St. Pete Beach, Florida.
7. **Wu, C.-C**., Alaui Soce, A. & Wolfe, J. M. (2016) If you see something, say something: Event monitoring capacity is low. Vision Science Society, 16th Annual Meeting. St. Pete Beach, Florida.
8. Yazdanbakhsh, A., **Wu, C.-C.**, Cao, B., Dali, V., Gagliardi, C., Pomplun, M., & Cronin-Golomb, A. (2016). Involuntary saccades and binocular coordination during visual pursuit in Parkinson's disease. Vision Science Society, 16th Annual Meeting. St. Pete Beach, Florida.
9. **Wu, C.-C.**, Attar, N., & Pomplun, M. (2015). Involuntary semantic bias during search for words and word pairs. Vision Science Society, 15th Annual Meeting. St. Pete Beach, Florida.
10. **Wu, C.-C**., Wang, H.-C., & Pomplun, M. (2014). Spatial dependency of objects, but not scene gist contributes semantic guidance of attention. Vision Science Society, 14th Annual Meeting. St. Pete Beach, Florida.
11. Attar, N., **Wu, C.-C.**, Pomplun, M. (2014). Immediate Feedback During Multiple-Target Visual Search Improves Accuracy. Vision Science Society, 14th Annual Meeting. St. Pete Beach, Florida.
12. Wick, F.A., Saura, L., **Wu, C.-C**. & Pomplun, M. (2014). Semantic bias in visual working memory. *Vision Sciences Society* 14th Annual Meeting. St. Pete Beach, Florida.
13. **Wu, C.-C.,** Wang, H. C., & Pomplun, M. (2013). The contribution of scene gist and spatial dependency of objects to semantic guidance of attention. Vision Science Society, 13th Annual Meeting. Naples, Florida.
14. **Wu, C.-C**. & Kowler, E. (2012). Timing of saccadic eye movements during an accumulative visual search task. Vision Science Society, 12th Annual Meeting. Naples, Florida.
15. **Wu, C.-C**. & Kowler, E. (2011). Selecting the targets for saccadic eye movements during a statistical estimation task. Vision Science Society, 11th Annual Meeting. Naples, Florida.

16. Pantelis, P. C., Cholewiak, S. A., Ringstad, P., Sanik, K., Weinstein, A., **Wu. C.-C.**, and Feldman, J. (2011). Perception of intentions and mental states in autonomous virtual agents.
17. Pantelis, P. C., Cholewiak, S., Sanik, K., Weinstein, A., **Wu, C.-C.**., and Feldman, J. (2011) Perceiving intentions and goals within virtual worlds. 11th Annual Meeting of Vision Sciences Society, Naples, FL; NSF IGERT 2011 Online Poster Contest.
18. Cholewiak, S., Pantelis, P. C., Ringstad, P., Sanik, K., Weinstein, A., **Wu, C.-C.**, and Feldman, J. (2010) Living within a virtual environment populated by intelligent autonomous agents. NSF IGERT 2010 Project Meeting, Washington, DC.
19. Cholewiak, S.A., Pantelis, P., Ringstad, P., Sanik, K., Weinstein, A., **Wu, C.-C.**, & Feldman, J. (2010, May). within a virtual environment populated by intelligent autonomous agents. Poster session presented at the 4th Annual Rutgers Perceptual Science Forum, New Brunswick, NJ.
20. **Wu, C.-C**., Schnitzer, B., Kowler, E., Pizlo, Z., Singh, M. (2009). Latency/accuracy trade-offs during sequences of saccades. Vision Science Society, 9th Annual Meeting. Naples, Florida.
21. **Wu, C.-C**., Schnitzer, B., Kowler, E., & Pizlo, Z. (2008). Fitts's Law and the planning of sequences of saccades. The 31th European Conference on Visual Perception. Utrecht, Netherlands.
22. **Wu, C.-C.**, Schnitzer, B., Kowler, E., & Pizlo, Z. (2008). Fitts's Law and the optimal planning of sequences of saccades. Vision Science Society, 8th Annual Meeting. Naples, Florida.
23. Lin, S.-Y., **Wu, C.-C**., Su, Y.-j., & Yeh, S.-L. (2007). Action, but not perception, relies on continuous presentation of external objects. Journal of Vision, 7, 133c. Vision Science Society, 7th Annual Meeting. Sarasota, Florida.
24. Liao, H.-I., Yeh, S.-L., & **Wu, C.-C**. (2005). Asymmetry of stimulus-driven attentional capture by non-contingent onsets and color distractors. The 28th European Conference on Visual Perception. A Coruna, Spain. Perception (suppl.), 34, 96b.

Guest Lecture and Invited Talks

University of Toronto Interdisciplinary Symposium on the Mind (UTism), Keynote Speaker	2020
Research Institute of Electrical Communication, Tohoku University, Japan. Panel Speaker	2020
Visual Attention Lab Seminar Series, Harvard Medical School	2015
Perception and Action seminar, Brown University	2013
Talks in Cognitive Science (TICS), University of Massachusetts Boston	2012
Guest Instructor, Sensation and Perception, Rutgers University	2010

Professional Activities

Ad Hoc Reviewer:
Psychological Review
Cognition
Visual Cognition
Attention, Perception, & Psychophysics
Journal of Vision
Visual Research
Cognitive Research, Principles and Implications

Students Mentored:

2019	Sarosh Nagar; Devrath Iyer High school student, Research Science Institute (RSI) summer enrichment program, MIT
2018	Gar Wai Mai Project Success for high school student at Harvard Medical School

2017 Michael Yen
High school student, Research Science Institute (RSI) summer enrichment program, MIT

2016 Nnamdi Okwerekwu
Project Success for high school student at Harvard Medical School

Membership Held:
Vision Science Society

Skills

Software: MATLAB, Python, HTML, R, SPSS, PRISM, MS Office, Illustrator, IMAGE J

Languages: English (Fluent), Mandarin (Native).

REFERENCES

Jeremy Wolfe, Ph.D.
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Harvard Medical School, Brigham and Women's Hospital.
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