William Xiang Quan Ngiam

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Employment

2019 – present **Postdoctoral Research Fellow**
University of Chicago (with Professors Edward Awh and Edward Vogel)

Education

2015 – 2019 **Doctor of Philosophy** in Psychology
University of Sydney (Supervised by Professor Alex Holcombe)

2011 – 2014 **Bachelor of Psychology (Honours)**
University of Sydney (Supervised by Dr Patrick Goodbourn)

Teaching and Professional Experience

Research

2017 **Statistical Assistant/Programmer** on University of Sydney Educational Innovation Grant; *Using interactive learning to integrate statistical theory with contemporary research practices*

2017 – 2018 **Research Assistant** on University of Sydney Faculty of Science Seed Funding; *The development of attentional control in children with and without anxiety*

Teaching

Summer 2018 **Lecturer** for Science and Statistics in Psychology - Introduction to Psychology (PSYC1001), *University of Sydney*

2015 – 2018 **Teaching Assistant** for Statistics and Research Methods for Psychology (2nd year undergraduate psychology course), *University of Sydney*

2015, 2017 **Teaching Assistant** for Advanced Statistics for Psychology (3rd year undergraduate psychology course), *University of Sydney*

2016 **Teaching Assistant** for Research Methods in Honours Psychology (4th year Honours psychology course), *University of Sydney*

Miscellaneous

2021 – 2023 **Organizer** of the Working Memory Symposium

2020 – present **Founder and Organizer** of the University of Chicago ReproducibiliTea Journal Club

2021 – present **Steering Committee** member of ReproducibiliTea

2022 – present **Editor-in-Chief** of the Journal for Reproducibility in Neuroscience

Honours and Awards

2022 **Research Rigor Champion** – *National Institutes of Health*
2015 – 2019 **Research Training Program (RTP)** – *Australian Government Department of Education and Training*
2015 – 2019 **Merit Award** – *University of Sydney*
2017 **PsychFEST Award** – *University of Sydney*
2016 **Endeavour Research Fellowship** – *Australian Government Department of Education and Training*
2014 **APS Prize** – *Australian Psychological Society*

Publications

Ngiam, W.X.Q. (submitted). Mapping visual working memory models to a theoretical framework. https://psyarxiv.com/g8erx

Ngiam, W.X.Q., Loetscher, K.B., Vogel, E.K., Awh, E. (submitted). Object-based encoding constrains storage in visual working memory. https://psyarxiv.com/mc5p9/

Ngiam, W.X.Q., Foster, J.J., Adam, K.C.S., Awh, E. (2022). Distinguishing guesses from fuzzy memories: Further evidence for item limits in visual working memory. *Attention, Perception, & Psychophysics.* https://doi.org/10.3758/s13414-022-02631-y

Ngiam, W.X.Q. (2021). Fully Credited: Making Publishing More Equitable. *APS Observer, 35.*

Ngiam, W.X.Q., Adam, K.C.S., Quirk, C., Vogel, E.K., Awh, E. (2021). Estimating the statistical power to detect set size effects in contralateral delay activity. *Psychophsyiology, 58:e13791.* https://doi.org/10.1111/psyp.13791

Ngiam, W.X.Q., Brissenden, J.A., Awh, E. (2019) "Memory compression" effects in visual working memory are contingent on explicit long-term memory. *Journal of Experimental Psychology: General, 148(8), 1373.* https://doi.org/10.1037/xge0000649

Ngiam, W.X.Q., Khaw, K.L.C., Holcombe, A.O., Goodbourn, P.T. (2019). Visual working memory for letters varies with familiarity but not complexity. *Journal of Experimental Psychology: Learning, Memory and Cognition, 45(10), 1761-1775.* https://doi.org/10.1037/xlm0000682

Bateman, J.E., **Ngiam, W.X.Q,** Birney, D. P. (2018). Relational encoding in visual working memory: Change detection performance is better for violations in group relations. *PLOS ONE* 13(9): e0203848. https://doi.org/10.1371/journal.pone.0203848

Goodbourn, P.T., Livesey, E.J., **Ngiam, W.X.Q.**, Holcombe, A.O., Forte, J.D. (in prep.). Learning new symbolic representations of number.

Conference and Invited Talks

Object-based encoding in visual working memory (2022). *Object Perception, Attention and Memory*, satellite of the *Annual Meeting of the Psychonomic Society*.

Why does science need immediate and substantial reform? (2022). *Brazilian Congress of Pharmacology and Experimental Therapeutics.*

A signature of guessing supports an item limit in visual working memory (2022). *Working Memory Symposium*

Best practices with preregistration (2022). *Open Science Workshop* at 22nd *Annual Meeting of the Vision Science Society,* Florida, United States.

Open Science: a vision for a fair and equitable science. (2021). *Equity in Vision Science panel* at *OPAM29*, virtual.

Power for detecting the presence of set size differences in the contralateral delay activity. (2020). *Working Memory Symposium*.

Training recognition familiarity does not improve visual working memory performance. (2018) *45th Annual Conference of the Australasian Society for Experimental Psychology,* Hobart, Australia.

Enhancing visual working memory performance using statistical regularities requires explicit awareness. (2017) *44th Annual Conference of the Australasian Society for Experimental Psychology,* Newcastle, Australia.

Conference Posters

Evidence for object-based encoding into visual working memory. (2022) *22nd Annual Meeting of the Vision Sciences Society*, Florida, United States.

Item-based storage limits revealed by whole-report for dual-feature stimuli. (2020) *61st Annual Meeting of the Psychonomic Society,* online.

Estimating the statistical power to detect set-size effects in the contralateral delay activity (2020). *Object, Perception, Attention and Memory,* online.

Object-based memories revealed by whole-report for dual-feature stimuli. (2020) *20th Annual Meeting of the Vision Sciences Society,* online.

"Memory compression" effects in visual working memory are contingent on explicit long-term memory. (2019) *60th Annual Meeting of the Psychonomic Society,* Montreal, Canada.

Examining the effects of memory compression with contralateral delay activity. (2019) *19th Annual Meeting of the Vision Sciences Society*, Florida, United States.

Training recognition familiarity is insufficient to improve visual working memory. (2018) *59th Annual Meeting of the Psychonomic Society,* New Orleans, United States.

Memory compression using statistical regularities requires explicit awareness. (2017)*17th Annual Meeting of the Vision Sciences Society*, Florida, United States.

Familiarity, but not visual complexity, affects letter encoding in visual working memory. (2016) *57th Annual Meeting of the Psychonomic Society*, Boston, United States.

Encoding and capacity limits of visual working memory are not set by stimulus complexity. (2015) *42nd Annual Conference of the Australasian Society for Experimental Psychology*, Sydney, Australia.

Journals Reviewed For

Psychological Science; Journal of Experimental Psychology: General; Journal of Experimental Psychology: Learning, Memory and Cognition; Journal of Experimental Psychology: Human Perception and Performance; Psychonomic Bulletin & Review; Attention, Perception & Psychophysics; Journal of Cognitive Neuroscience; Psychophysiology; Quarterly Journal of Experimental Psychology; Nature Scientific Reports; Memory and Cognition; PLoS One; Psychological Research; Neuroanatomy and Behaviour; Neuroimage; eNeuro; Memory