

William Xiang Quan Ngiam

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Education and Training

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

Research Experience

- 2017 **Statistical Assistant/Programmer**
University of Sydney Educational Innovation Grant; *Using interactive learning to integrate statistical theory with contemporary research practices*
- 2017 – 2018 **Research Assistant**
University of Sydney Faculty of Science Seed Funding; *The development of attentional control in children with and without anxiety*

Teaching Experience

- 2023 **Invited Lecturer** on working memory for Introduction to Learning and Memory, *University of Chicago*
- 2022 **Invited Lecturer** on the credibility revolution for Introduction to Social Psychology, *University of Chicago*
- 2018 **Lecturer (Summer School)** for Science and Statistics in Psychology - Introduction to Psychology, *University of Sydney*
- 2015 – 2018 **Tutor** for Statistics and Research Methods for Psychology (2nd year undergraduate psychology course), *University of Sydney*
- 2015, 2017 **Tutor** for Advanced Statistics for Psychology (3rd year undergraduate psychology course), *University of Sydney*
- 2016 **Tutor** for Research Methods in Honours Psychology (4th year Honours psychology course), *University of Sydney*

Service

- 2021– 2023 **Organizer** of the Working Memory Symposium conference.
- 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 (United States)*
- 2015 – 2019 **Research Training Program (RTP) Award** – *Australian Government Department of Education and Training*
- 2015 – 2019 **Academic Merit Award** – *University of Sydney*
- 2018 **School of Psychology Publication Prize** – *University of Sydney*

2017	PsychFEST Award for Excellent Presentation – 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., Loetscher, K.B., Vogel, E.K., Awh, E. (2023). Object-based encoding constrains storage in visual working memory. *Journal of Experimental Psychology: General*.

<https://doi.org/10.1037/xge0001479>

Ngiam, W.X.Q. (2023). Mapping visual working memory models to a theoretical framework. *Psychonomic Bulletin & Review*. <https://doi.org/10.3758/s13423-023-02356-5>

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. *Psychophysiology*, 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. (under review.). Learning new symbolic representations of number.

Conference Presentations

Talks

Object-based encoding in visual working memory (2022). *Object Perception, Attention and Memory 30*, satellite of the Annual Meeting of the Psychonomic Society.

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

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.

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

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.

Panels

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

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

Open Science: a vision for a fair and equitable science. (2021). Equity in Vision Science panel at Object Perception, Attention and Memory 29.

Invited Talks

Rethinking the theoretical foundation of visual working memory. (2023). Visual Cognition seminar, University of California Davis.

The whole-report on visual working memory. (2022). Department of Psychology Colloquium, University of New South Wales.

Improving your research with preregistration. (2022). ReproducibiliTea, Campus Kulmbach at the University of Bayreuth.

Give researchers the CRediT they deserve. (2022). ReproducibiliTea, University of Frankfurt.

Why Open Science should matter to every researcher today. (2021). School Research Seminar, University of Newcastle Australia.

An Introduction to Open Science. (2021). ReproducibiliTea, University of Missouri.

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; Nature Communications Psychology; Memory and Cognition; PLoS One; Psychological Research; Neuroanatomy and Behaviour; Neuroimage; eNeuro; Memory