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# William Xiang Quan Ngiam

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## Academic Employment

2024 – present **Lecturer**
School of Psychology, University of Adelaide

## Education and Training

2019 – 2024 **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

2024 – present **Open Practices Editor** of *Attention, Perception, & Psychophysics.*

2023, 2024 **Organizer** of the Pre-data Poster Session at the *Vision Sciences Society* meeting.

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

2020 – 2024 **Founder and Organizer** of University of Chicago *ReproducibiliTea*

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

2022 – 2024 **Editor-in-Chief** of the *Journal for Reproducibility in Neuroscience*

## Honours and Awards

2023 **Rigor Champions Prize** – *NINDS // 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. *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. (under review.). Learning new symbolic representations of number.

## Selected Conference Presentations

### *Talks*

**Associative learning changes multivariate neural signatures of visual working memory** (2024). *Vision Sciences Society*.

**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***

**Associative learning changes multivariate neural signatures of working memory load.** (2023) *Object, Perception, Attention and Memory*, San Francisco, United States.

**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.

***Panels***

**Doing our part to change the culture of science: Becoming a champion for rigor.** (2023). *Society for Neuroscience*.

**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*