

Rice University
Department of Psychological Sciences, MS-25
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EMPLOYMENT

Rice University July 2023 – Present
Assistant Professor
Department of Psychological Sciences

University of California San Diego (UCSD) August 2018 – June 2023
Postdoctoral Fellow
Department of Psychology & Institute for Neural Computation
Advisor: John Serences

EDUCATION

University of Chicago Doctor of Philosophy, June 2018
Transferred into Ph.D. program Fall 2015
Area: Cognition, Advisor: Edward Vogel

University of Oregon Master of Science, April 2014
Admitted to Ph.D. program Fall 2012
Area: Cognitive Neuroscience, Advisor: Edward Vogel

University of Notre Dame (ND) Bachelor of Science, May 2012
Major: Biological Sciences Honors: *cum laude*
Minors: Art History; Glynn Family Honors Program
Thesis Advisor: Bradley Gibson

HONORS AND FUNDING AWARDED

Fellowship Funding

NSF Social, Behavioral, & Economic Sciences (SBE) Postdoctoral Research Fellowship	2021-23
NEI Postdoctoral T32 Training Fellowship, Salk Institute for Biological Studies (UCSD)	2020-21
NIMH Postdoctoral T32 Training Fellowship, Institute for Neural Computation (UCSD)	2018-20
UROP Summer Funding: Joint College of Arts & Letters and College of Science Grant (ND)	2011
Alumni Internship Assistance Program, awarded for summer undergraduate research (ND)	2010

Honors

Glushko Dissertation Prize from the Cognitive Science Society (1 of 5 recipients)	2019
Starkey Duncan Award for Excellence in Undergraduate Teaching (U. Chicago)	2016
U.S. Presidential Scholar (1 of 2 from state)	2008

Travel Funding

The Vision Sciences Society National Eye Institute Postdoctoral Travel Grant	2019
The Vision Sciences Society Elsevier/Vision Research Travel Award (1 of 20 recipients)	2018
Graduate Council Travel Fund (U. Chicago)	2017

The Psychonomic Society Graduate Travel Award (1 of 15 recipients)	2016
Graduate Education Committee Conference Travel Grant (U. Oregon)	2013, 2014
Undergraduate Research Opportunity Program (UROP) Conference Travel Grant (ND)	2011
DeCenzo Grant for the Study of Art History in Italy (ND)	2010

PRE-PRINTS

1. **Adam, K.C.S.**, Yang, Z., & Serences, J.T. (pre-print). First encounters: Estimating the initial magnitude of attentional capture. <https://psyarxiv.com/47aj2>
2. **Adam, K.C.S.**, Zhao, C., & Vogel, E.K. (pre-print). Behavioral signatures of the rapid recruitment of long-term memory to overcome working memory capacity limits. <https://psyarxiv.com/2h5pf/>

PUBLICATIONS

Data from published articles are available on Open Science Framework: <https://osf.io/2ktjd>

* denotes that authors contributed equally to the work

1. 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*. [10.3758/s13414-022-02631-y](https://doi.org/10.3758/s13414-022-02631-y)
2. **Adam, K.C.S.**, Rademaker, R.L., & Serences, J.T. (2022). Dynamics are the only constant in working memory. *Journal of Cognitive Neuroscience*, 35(1), 24-26. Special Focus issue on the work of Mark Stokes. [10.1162/jocn_a_01941](https://doi.org/10.1162/jocn_a_01941)
3. Thyer, W., **Adam, K.C.S.**, Diaz, G.K., Velázquez Sánchez, I.N., Vogel, E.K. & Awh, E. (2022). Storage in visual working memory recruits a content-independent pointer system. *Psychological Science*, 33(10), 1680-1694. [10.1177/09567976221090923](https://doi.org/10.1177/09567976221090923)
4. **Adam, K.C.S.**, Rademaker, R.L. & Serences, J.T. (2022). Evidence for, and challenges to, sensory recruitment models of visual working memory. In T.F. Brady & W.A. Bainbridge (Eds.), *Visual Memory* (pp. 5-25). Routledge. [10.4324/9781003158134-2](https://doi.org/10.4324/9781003158134-2)
5. **Adam, K.C.S.** & Serences, J.T. (2021). History modulates early sensory processing of salient distractors. *Journal of Neuroscience*, 41(38), 8007-8022. [10.1523/JNEUROSCI.3099-20.2021](https://doi.org/10.1523/JNEUROSCI.3099-20.2021)
6. **Adam, K.C.S.**, Patel, T., Rangan, N. & Serences, J.T. (2021). Classic visual search effects in an additional singleton task: An open dataset. *Journal of Cognition*, 4(1), 34. [10.5334/joc.182](https://doi.org/10.5334/joc.182)
7. 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*, e13791. [10.1111/psyp.13791](https://doi.org/10.1111/psyp.13791)
8. **Adam, K.C.S.**, Chang, L., Rangan, N., & Serences, J.T. (2021). Steady-state visually evoked potentials and feature-based attention: Pre-registered null results and a focused review of methodological considerations. *Journal of Cognitive Neuroscience*, 33(4), 695-724. [10.1162/jocn_a_01665](https://doi.org/10.1162/jocn_a_01665)
9. **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (2020). Multivariate analysis reveals a generalizable human electrophysiological signature of working memory load. *Psychophysiology*, 57(12), e13691. [10.1111/psyp.13691](https://doi.org/10.1111/psyp.13691)

10. Quirk, C., **Adam, K.C.S.** & Vogel, E.K. (2020). No evidence for an object working memory capacity benefit with extended viewing time. *eNeuro*, 7(5), ENEURO.0150-20.2020. [10.1523/ENEURO.0150-20.2020](https://doi.org/10.1523/ENEURO.0150-20.2020)
11. **Adam, K.C.S.**, Doss, M.K., Pabon, E., Vogel, E.K., & de Wit, H. (2020). Δ 9-Tetrahydrocannabinol impairs visual working memory performance: A randomized crossover trial. *Neuropsychopharmacology*, 45, 1807-1816. [10.1038/s41386-020-0690-3](https://doi.org/10.1038/s41386-020-0690-3)
12. Barbosa, J., Stein, H., Martinez, R., Galan, A., **Adam, K.C.S.**, Li, S., Valls-Solé, J., Constantinidis, C., & Compte, A. (2020). The interplay between persistent activity and activity-silent dynamics in PFC underlies serial dependence in working memory. *Nature Neuroscience*, 23, 1016-1024. [10.1038/s41593-020-0644-4](https://doi.org/10.1038/s41593-020-0644-4)
13. Kardan, O., **Adam, K.C.S.**, Mance, I., Churchill, N.W., Vogel, E.K., & Berman, M.G. (2020). Distinguishing cognitive effort and working memory load using scale-invariance and alpha suppression in EEG. *NeuroImage*, 211(1), 116622. [10.1016/j.neuroimage.2020.116622](https://doi.org/10.1016/j.neuroimage.2020.116622)
14. **Adam, K.C.S.** & Serences, J.T. (2019). Working memory: flexible but finite. *Neuron*, 103(2), 184-185. [10.1016/j.neuron.2019.06.025](https://doi.org/10.1016/j.neuron.2019.06.025)
Invited commentary on Bouchacourt & Buschman (2019) Neuron.
15. **Adam, K.C.S.*** & deBettencourt, M.T.* (2019). Fluctuations of attention and working memory. *Journal of Cognition*, 2(1), 33. [10.5334/joc.70](https://doi.org/10.5334/joc.70)
Invited commentary on Oberauer (2019) J Cognition.
16. Sutterer, D.W.*, Foster, J.J.*, **Adam, K.C.S.**, Vogel, E.K., & Awh, E. (2019). Item-specific delay activity demonstrates concurrent storage of multiple items in working memory. *PLoS Biology*, 17(4), e3000239. [10.1371/journal.pbio.3000239](https://doi.org/10.1371/journal.pbio.3000239)
17. Hakim, N., **Adam, K.C.S.**, Gunseli, E., Awh, E., & Vogel, E.K. (2019). Dissecting the neural focus of attention reveals distinct processes for spatial attention and object-based storage in visual working memory. *Psychological Science*, 30(4), 526-540. [10.1177/0956797619830384](https://doi.org/10.1177/0956797619830384)
18. **Adam, K.C.S.** & Vogel, E.K. (2018). Improvements to visual working memory performance with practice and feedback. *PLoS ONE*, 13(8), e0203279. [10.1371/journal.pone.0203279](https://doi.org/10.1371/journal.pone.0203279)
19. Sprague, T.C., **Adam, K.C.S.***, Foster, J.J.*, Rahmati, M.*, Sutterer, D.W.*, & Vo, V.A.* (2018). Inverted encoding models assay population-level stimulus representations, not single-unit neural tuning. *eNeuro*, ENEUR.0098-18.2018. [10.1523/ENEURO.0098-18.2018](https://doi.org/10.1523/ENEURO.0098-18.2018)
Commentary on Liu, Cable, & Gardner (2018) J Neuro.
20. **Adam, K.C.S.**, Robison, M.K., & Vogel, E.K. (2018). Contralateral delay activity tracks fluctuations in working memory performance. *Journal of Cognitive Neuroscience*, 30(9), 1229-1240. [10.1162/jocn_a_01233](https://doi.org/10.1162/jocn_a_01233)
21. Xu, Z.*, **Adam, K.C.S.***, & Fang, X., & Vogel, E.K. (2018). The reliability and stability of visual working memory capacity. *Behavior Research Methods*, 50(2), 576-588. [10.3758/s13428-017-0886-6](https://doi.org/10.3758/s13428-017-0886-6)
22. **Adam, K.C.S.**, Vogel, E.K., & Awh, E. (2017). Clear evidence for item limits in visual working memory. *Cognitive Psychology*, 97, 79-97. [10.1016/j.cogpsych.2017.07.001](https://doi.org/10.1016/j.cogpsych.2017.07.001)
23. **Adam, K.C.S.** & Vogel, E.K. (2017). Confident failures: Lapses of working memory reveal a metacognitive blind spot. *Attention, Perception & Psychophysics*, 79(5), 1506-1523. [10.3758/s13414-017-1331-8](https://doi.org/10.3758/s13414-017-1331-8)
24. **Adam, K.C.S.** & Vogel, E.K. (2016). Reducing failures of working memory with performance feedback. *Psychonomic Bulletin & Review*, 23(5), 1520-1527. [10.3758/s13423-016-1019-4](https://doi.org/10.3758/s13423-016-1019-4)

25. **Adam, K.C.S.** & Vogel, E.K. (2016). Tuning in by tuning out distractions. *Proceedings of the National Academy of Sciences*, 113(13), 3422-3423. [10.1073/pnas.1602037113](https://doi.org/10.1073/pnas.1602037113)
Invited commentary on Gaspar et al. (2016) PNAS.
26. **Adam, K.C.S.***, Mance, I.*, Fukuda, K., & Vogel, E. K. (2015). The contribution of attentional lapses to individual differences in visual working memory capacity. *Journal of Cognitive Neuroscience*, 27(8), 1601–1616. [10.1162/jocn_a_00811](https://doi.org/10.1162/jocn_a_00811)
27. Foster, J.J.* & **Adam, K.C.S.*** (2014). Is feature-based attention spatially global during visual search? *Journal of Neuroscience*, 34(26), 8862-8864. [10.1523/JNEUROSCI.1616-14.2014](https://doi.org/10.1523/JNEUROSCI.1616-14.2014)
Commentary on Painter et al. (2014) J Neuro.

INVITED TALKS

1. “Faces of the Future” flash talk series. *Annual Meeting of the Society for Psychophysiological Research*, Vancouver, BC, Canada. 30 September 2022.
2. Trial-by-trial dynamics of attention and working memory. *Department of Ergonomics Colloquium Series, Leibniz Research Centre for Working Environment and Human Factors*, Dortmund, Germany. Talk given online, 25 January 2022.
3. Contralateral Delay Activity: Measurement and applications. *Invited guest lecture given to Dr. Sebastiaan Mathôt’s course using my open data for hands-on learning, University of Groningen*, Groningen, the Netherlands. Talk given online, 19 October 2021.
4. Visual working memory capacity limits and multi-faceted neural codes. *Psychonomic Society Leading Edge Workshop: Advancing cognition through adversarial collaborations*, Edinburgh, Scotland. Talk given online, 14 September 2021.
5. Trial-by-trial dynamics of attention and working memory. *Department of Psychology Vision Group, University of Iowa*, Iowa City, IA. Talk given online, 30 April 2021.
6. Trial-by-trial dynamics of attention and working memory. *Cognitive & Brain Sciences Early Career Seminar Series, University of Nevada Reno*, Reno, NV. Talk given online, 25 March 2021.
7. Trial-by-trial dynamics of attention and working memory. *Cognitive Colloquium, Purdue University*, West Lafayette, IN. Talk given online, 24 March 2021.
8. History-driven modulations of population codes during visual search. *Department of Psychology Colloquium Series, Vrije Universiteit*, Amsterdam, the Netherlands. Talk given online, 9 October 2020.
9. Contralateral Delay Activity: Measurement and applications. *Invited guest lecture given to Dr. Sebastiaan Mathôt’s course using my open data for hands-on learning, University of Groningen*, Groningen, the Netherlands. Talk given online, 5 October 2020.
10. New approaches for tracking working memory load with EEG. *University of California Santa Barbara*, Santa Barbara, CA, 11 October 2019
11. Failures and limits of visual working memory. *Glushko dissertation prize talk given at the 41st Annual Meeting of the Cognitive Science Society*, Montreal, Canada, 25 July 2019.
12. New approaches for tracking working memory load with EEG. *Royal Netherlands Academy of Arts and Sciences (KNAW), “New perspectives on visual working memory colloquium”*. Amsterdam, the Netherlands, 27 June 2019.

13. Failures of attention and working memory performance. *The Cognition, Brain, and Behavior group at the University of Notre Dame*, Notre Dame, IN, 14 November 2016.

CONFERENCE TALKS

1. **Adam, K.C.S.**, Awh, E.A., & Serences, J.T. Univariate and multivariate load-dependent signals in human cortex. *52nd Annual Meeting of the Society for Neuroscience*, San Diego, CA, 13 November 2022.
2. Ngiam, W.X.Q., Foster, J.J., **Adam, K.C.S.**, & Awh, E. A signature of guessing supports an item limit in visual working memory. *3rd Annual Working Memory Symposium*. Held online, 23 June 2022.
3. Ngiam, W.X.Q., **Adam, K.C.S.**, Quirk, C., Vogel, E.K., & Awh, E. Estimating the statistical power to detect set-size effects in the contralateral delay activity. *28th Annual Object Perception, Attention, & Memory (OPAM) Meeting*. Held online, 19 November 2020.
4. **Adam, K.C.S.**, Doss, M.K., Pabon, E., Vogel, E.K., & de Wit, H. Δ 9-Tetrahydrocannabinol impairs visual working memory performance. *Virtual Working Memory Symposium 2020*. Held online, 3 June 2020.
5. Ngiam, W.X.Q., **Adam, K.C.S.**, Quirk, C., Vogel, E.K., & Awh, E. Power for detecting the presence of set size differences in the contralateral delay activity. *Virtual Working Memory Symposium 2020*. Held online, 3 June 2020.
6. Quirk, C., **Adam, K.C.S.**, & Vogel, E.K. Pre-existing spatial biases influence the encoding of information in visual working memory. *Virtual Working Memory Symposium 2020*. Held online, 4 June 2020.
7. Kardan, O., **Adam, K.C.S.**, Mance, I., Churchill, N.W., Vogel, E.K., & Berman, M.G. Distinguishing cognitive effort and working memory load. *49th Annual Meeting of the Society for Neuroscience*, Chicago, IL, 22 October, 2019.
8. Quirk, C., **Adam, K.C.S.**, & Vogel, E.K. Preexisting spatial biases influence the encoding of information into visual working memory. *18th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL, 22 March 2018.
9. **Adam, K.C.S.**, Vogel, E.K., & Awh, E. Decoding the limits of simultaneous storage in working memory. *18th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL, 20 March 2018.
10. Awh, E., Foster, J.J., Sutterer, D., **Adam, K.C.S.** & Vogel, E.K. Spatially selective alpha-band activity degrades with increasing working memory load. *58th Annual Meeting of the Psychonomic Society*, Vancouver, Canada, 9 November 2017.
11. **Adam, K.C.S.** & Vogel, E.K. Attentional lapses drive individual differences in working memory capacity. *24th Annual Meeting of the Cognitive Neuroscience Society*, San Francisco, CA, 28 March 2017.
12. Awh, E., **Adam, K.C.S.**, & Vogel, E.K. Clear evidence for item limits in visual working memory. *57th Annual Meeting of the Psychonomic Society*, Boston, MA, 19 November 2016.
13. Vogel, E.K., & **Adam, K.C.S.** Lapses in attentional control drive individual differences in working memory capacity. *56th Annual Meeting of the Psychonomic Society*, Chicago, IL, 20 November 2015.
14. **Adam, K.C.S.**, & Vogel, E.K. Pretrial neural indicators of lapses in working memory performance. *44th Annual Meeting of the Society for Neuroscience*, Washington, D.C., 16 November 2014.
15. Gibson, B.S., **Adam, K.C.S.**, & Davis G. Symbolic control of spatial attention: Knowing direction is better than knowing distance. *53rd Annual Meeting of the Psychonomic Society*, Seattle, WA, 18 November 2012.

RECENT POSTERS Full list available upon request.

1. **Adam, K.C.S.** & Serences, J.T. (2023) Univariate and multivariate load-dependent signals in human cortex. *23rd Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
2. Kular, H., **Adam, K.C.S.**, & Serences, J.T. (2023) Working memory is robust to distractors but not sensory uncertainty. *23rd Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
3. **Adam, K.C.S.** & Serences, J.T. (2022) Interactions of sustained attention and visual search. *22nd Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
4. Wennberg, J.W., **Adam, K.C.S.** & Serences, J.T. (2022) Inter-item interference in visual working memory occurs jointly in feature-specific and feature-general codes. *22nd Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
5. **Adam, K.C.S.** & Serences, J.T. (2020) Evidence for suppression of irrelevant distractors in early visual cortex. *20th Annual Meeting of the Vision Sciences Society*, held online.
6. Thyer, W., **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (2020) Multivariate EEG evidence for feature-independent storage in visual working memory. *20th Annual Meeting of the Vision Sciences Society*, held online.
7. Thyer, W., **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (2019) Multivariate decoding of visual working memory load from the human EEG signal. *27th Annual Object Perception, Attention, & Memory (OPAM) Meeting*, Montreal, QC, Canada.
8. Thyer, W., **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (2019) Multivariate decoding of visual working memory load from the human EEG signal. *48th Annual Meeting of the Society for Neuroscience*, Chicago, IL.
9. **Adam, K.C.S.**, Vogel, E.K., & Awh (2019) Classification of load in visual working memory using single-trial EEG. *19th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.

TEACHING

Instructor

Attention and Perception (Rice University, PSYC 575)

Fall 2023

Pedagogical Training

Pathways to Scientific Teaching (UCSD, 9 week course, Dr. Diane Ebert-May)

2019

Teaching Assistant

Cognitive Psychology (U. Chicago, PSYC 20400)

2017

Sensation and Perception (U. Chicago, PSYC 20700)

2016

Psychological Research Methods (U. Chicago, PSYC 20200)

2016

EDITING

Consulting Editor, *Attention, Perception & Psychophysics*, April 2021 – present.

REVIEWING – GRANTS

Austrian Science Fund (FWF), ad hoc reviewer

European Research Council (ERC), Panel SH4, ad hoc reviewer

National Science Foundation (NSF), Perception, Action & Cognition program, ad hoc reviewer

REVIEWING – JOURNALS

Acta Psychologica

Attention, Perception, & Psychophysics

Behavior Research Methods
 Brain Research
 Cerebral Cortex
 Cognition
 Cognitive, Affective & Behavioral Neuroscience
 Cognitive Psychology
 Collabra: Psychology
 Consciousness and Cognition
 Current Biology
 eNeuro
 Experimental Psychology
 Human Brain Mapping
 International Journal of Human-Computer Interaction
 Journal of Applied Research in Memory and Cognition
 Journal of Cognition
 Journal of Cognitive Neuroscience
 Journal of Cognitive Psychology
 Journal of Experimental Psychology: General
 Journal of Experimental Psychology: Human
 Perception and Performance
 Journal of Experimental Psychology: Learning,
 Memory, and Cognition
 Journal of Neurophysiology
 Journal of Vision

Memory
 Memory & Cognition
 Nature Neuroscience
 Nature Reviews Neuroscience
 NeuroImage
 Neuron
 Neuropsychologia
 PLOS Biology
 PLOS ONE
 Proceedings of the National Academy of Sciences
 Psychiatry Research
 Psychological Bulletin
 Psychological Research
 Psychological Review
 Psychological Science
 Psychonomic Bulletin & Review
 Psychoneuroendocrinology
 Psychopharmacology
 Psychophysiology
 Quarterly Journal of Experimental Psychology
 Science Advances
 Scientific Data
 Scientific Reports
 Visual Cognition

MENTORSHIP ¹Supervised honors thesis/capstone paper ²Independent research project ³Paper co-author

Doctoral

Olga Kozlova, Rice University, 2023 - Present

Post-baccalaureate

Lillian Chang, UCSD, 2018 – 2019³

Undergraduate

Titiksha Patel, UCSD, 2019 – 2022³

Nicole Rangan, UCSD, 2019 – 2022³

Shruti Nishith, UCSD, 2021

Emma Sargsian, UCSD, 2020 – 2021¹

Zi Yang, UCSD, 2019 – 2020^{2,3}

Mengfan Tian, UCSD, 2019 – 2020)

Matteo D'Amico, UCSD, 2018 – 2019¹

Rebecca Kuang, U. Chicago, 2017 – 2018^{1,2}

Murtala (Murrie) Affini, U. Chicago, 2016 – 2017²

Emily Talbot, U. Oregon, 2014 – 2015

William (Will) McGuirk, U. Oregon, 2013 – 2015

Service on Thesis Committees

Fernanda Morales Calva, Department of Psychological Sciences, Rice University (2023 – Present)

Harun Yörük, Department of Psychology, University of Houston (2023 – Present)

SERVICE

Co-organizer for the Working Memory Symposium

5/2021 – Present

Department of Psychology Climate/Diversity Committee, Postdoc Member (UCSD)

11/2020 – 4/2023

Panel discussion, "Living with grace and integrity in science" (UCSD)

9/2019

Co-organizer for Cognition Workshop meetings (U. Chicago)

9/2017 – 6/2018

Travel and Research Award Committee (U. Chicago)

10/2015 – 6/2018

PROFESSIONAL AFFILIATIONS

Member

Cognitive Neuroscience Society

Society for Neuroscience

Vision Sciences Society

Fellow

The Psychonomic Society