

University of California San Diego
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EDUCATION

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

University of Oregon (UO) 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

EMPLOYMENT

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

HONORS AND FUNDING AWARDED

Research Funding

NEI Postdoctoral T32 Training Fellowship, Salk Institute for Biological Studies (UCSD) 2020-21
NIMH Postdoctoral T32 Training Fellowship, Institute for Neural Computation (UCSD) 2018-19, 2019-20
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

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 (UO) 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.** & Serences, J.T. (pre-print, under review). History-driven modulations of population codes in early visual cortex during visual search.
Pre-print: <https://www.biorxiv.org/content/10.1101/2020.09.30.321729v1>
2. **Adam, K.C.S.**, Chang, L., Rangan, N., & Serences, J.T. (pre-print, under review). Steady-state visually evoked potentials and feature-based attention: Pre-registered null results and a focused review of methodological considerations.
Pre-print: <https://www.biorxiv.org/content/10.1101/2020.08.31.275602v1>

PUBLICATIONS

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

* denotes that authors contributed equally to the work

1. **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (in press) Multivariate analysis reveals a generalizable human electrophysiological signature of working memory load. *Psychophysiology*.
Pre-print: <https://www.biorxiv.org/content/10.1101/2020.06.04.135053v2>
2. Quirk, C., **Adam, K.C.S.** & Vogel, E.K. (in press) No evidence for an object working memory capacity benefit with extended viewing time. *eNeuro*. Pre-print: <https://osf.io/pzy5q/>
3. **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)
4. 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)
5. 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)
6. **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*.
7. **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*.
8. 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)
9. 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)
10. **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)
11. 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*.

12. **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)
13. 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)
14. **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)
15. **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)
16. **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)
17. **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.
18. **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)
19. 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. 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.
2. Contralateral Delay Activity: Measurement and applications. *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.
3. New approaches for tracking working memory load with EEG. *University of California Santa Barbara*, Santa Barbara, CA, 11 October 2019
4. 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 .
5. 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.
6. 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.
7. Measuring within- and between-trial variability in the precision of visual working memory. *Internal presentation for the Cognitive Brown Bag at University of Chicago*, Chicago, IL, 29 October 2015.

CONFERENCE TALKS

1. **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.
2. Ngiam, W., **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.
3. 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.
4. Kardan, O., **Adam, K.C.S.**, Mance, I., Churchill, N.W., Vogel, E.K., & Berman, M.G. Distinguishing cognitive effort and working memory load. *48th Annual Meeting of the Society for Neuroscience*, Chicago, IL, 22 October, 2019.
5. 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.
6. **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.
7. 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.
8. **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.
9. 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.
10. 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.
11. **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.
12. 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.

POSTERS

1. **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.
2. 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.
3. Thyer, W., **Adam, K.C.S.**, Vogel, E.K. & Awh, E. (2019) Multivariate decoding of visual working memory load from the human EEG signal. *19th Annual Object Perception, Attention, & Memory (OPAM) Meeting*, Montreal, QC, Canada.
4. 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.

5. **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.
6. **Adam, K.C.S.**, Vogel, E.K., & Awh, E. (2017) Decoding the limits of simultaneous storage in working memory. *47th Annual Meeting of the Society for Neuroscience*, Washington, D.C.
7. Foster, J., Sutterer, D., **Adam, K.C.S.**, Vogel, E.K., & Awh, E. (2017) Alpha-band activity reveals concurrent storage of independent locations in spatial working memory. *47th Annual Meeting of the Society for Neuroscience*, Washington, D.C.
8. **Adam, K.C.S.**, Foster, J., Sutterer, D., Vogel, E.K., & Awh, E. (2017) Topography of alpha-band power tracks improvement in working memory precision with repeated encoding. *17th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
9. Hakim, N., **Adam, K.C.S.**, Gunseli, E., & Vogel, E.K. (2017) Sustained spatial attention is not sufficient to elicit the contralateral delay activity. *17th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
10. Sutterer, D., Foster, J., **Adam, K.C.S.**, Vogel, E.K., & Awh, E. (2017) Spatial selectivity of alpha band activity declines with increasing visual working memory load. *17th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
11. **Adam, K.C.S.**, Fang, X., Vogel, E.K., & Xu, Z. (2016) The reliability and stability of change detection capacity estimates. *57th Annual Meeting of the Psychonomic Society*, Boston, MA.
12. **Adam, K.C.S.** & Vogel, E.K. (2016). Working memory capacity predicts the efficiency of transfer into long-term memory. *16th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
13. **Adam, K.C.S.** & Vogel, E.K. (2015). Metaknowledge of working memory performance. *56th Annual Meeting of the Psychonomic Society*, Chicago, IL.
14. Foster, J.F., **Adam, K.C.S.**, Rouder, J.N., & Awh, E. (2015). Distinguishing between low precision and guessing in visual working memory. *56th Annual Meeting of the Psychonomic Society*, Chicago, IL.
15. **Adam, K.C.S.** & Vogel, E.K. (2015). Contralateral delay activity tracks fluctuations in working memory success. *45th Annual Meeting of the Society for Neuroscience*, Chicago, IL.
16. **Adam, K.C.S.** & Vogel, E.K. (2015). Trial feedback and incentive structures decrease failures of working memory. *15th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
17. **Adam, K.C.S.**, Mance, I., Awh, E., & Vogel, E.K. (2014). Whole-report procedures reveal trial-by-trial variability in capacity and precision of visual working memory. *International Conference on Working Memory*, Cambridge, England.
18. Mance, I., **Adam, K.C.S.**, Fukuda, K., & Vogel, E.K. (2014). The contribution of attentional lapses to estimates of working memory capacity. *14th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
19. **Adam, K.C.S.**, Mance, I., Fukuda, K., & Vogel, E.K. (2014). Trial-by-trial fluctuations in working memory performance predict individual differences in working memory capacity. *14th Annual Meeting of the Vision Sciences Society*, St Pete Beach, FL.
20. **Adam, K.C.S.**, Mance, I., Awh, E., & Vogel, E.K. (2013). Whole-report procedures reveal bimodal distribution of visual memory precision within a single array. *54th Annual Meeting of the Psychonomic Society*, Toronto, ON, Canada.

21. **Adam, K.C.S.**, Mance, I., Awh, E., & Vogel, E.K. (2013). Whole-report procedures reveal bimodal distribution of visual memory precision within a single array. *13th Annual Meeting of the Vision Sciences Society*, Naples, FL.
22. **Adam, K.C.S.**, Bryant, T.A., & Gibson, B.S. (2011). Cuing with color: The cost of binding space to color for visual selection. *19th Annual Object Perception, Attention, & Memory Conference*, Seattle, WA.

TEACHING

- Pedagogical Training: Pathways to Scientific Teaching (UCSD) 2019
- A 9-week course for postdoctoral scholars on developing learner-centered instructional materials and teaching strategies (instructor: Dr. Diane Ebert-May).
- Teaching Assistant: Cognitive Psychology (U. Chicago, PSYC 20400) 2017
- Ran a weekly discussion section (26 students); guest lecture, "Perception"
- Teaching Assistant: Sensation and Perception (U. Chicago, PSYC 20700) 2016
- Teaching Assistant: Psychological Research Methods (U. Chicago, PSYC 20200) 2016
- Taught a weekly lab section (21 students); guest lecture, "Measuring change over time"; received the Starkey Duncan Award for Excellence in Undergraduate Teaching

AD HOC REVIEWING

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| Acta Psychologica | Journal of Experimental Psychology: Learning, Memory, and Cognition |
| Attention, Perception, & Psychophysics | Journal of Vision |
| Austrian Science Fund (FWF) grant review | Nature Neuroscience |
| Behavior Research Methods | NeuroImage |
| Brain Research | Neuron |
| Cerebral Cortex | Neuropsychologia |
| Cognition | PLOS ONE |
| Cognitive Psychology | Proceedings of the National Academy of Sciences |
| Consciousness and Cognition | Psychiatry Research |
| eNeuro | Psychological Bulletin |
| Journal of Applied Research in Memory and Cognition | Psychological Science |
| Journal of Cognition | Psychonomic Bulletin & Review |
| Journal of Cognitive Neuroscience | Psychopharmacology |
| Journal of Cognitive Psychology | Psychophysiology |
| Journal of Experimental Psychology: General | Science Advances |
| Journal of Experimental Psychology: Human Perception and Performance | Scientific Reports |
| | Visual Cognition |

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

- Emma Sargsian (UCSD, undergraduate researcher, Fall 2020 – present)¹
- Titiksha Patel (UCSD, undergraduate researcher, Fall 2019 – present)
- Nicole Rangan (UCSD, undergraduate researcher, Winter 2019 – present)³
- Zi Yang (UCSD, undergraduate researcher, Spring 2019 – Spring 2020)²
- Mengfan Tian (UCSD, undergraduate researcher, Fall 2019 – Winter 2020)
- Matteo D'Amico (UCSD, undergraduate researcher, Fall 2018 – Spring 2019)¹
- Lillian Chang (UCSD, post-baccalaureate researcher, Fall 2018 – Spring 2019)³
- Rebecca Kuang (U. Chicago, undergraduate researcher, Fall 2017 – Spring 2018)^{1,2}
- Murtala (Murrie) Affini (U. Chicago, undergraduate researcher, Spring 2016 – Winter 2017)²
- Emily Talbot (UO, undergraduate researcher, Fall 2014 – Summer 2015)
- William (Will) McGuirk (UO, undergraduate researcher, Fall 2013 – Summer 2015)

DEPARTMENT SERVICE

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

Cognitive Neuroscience Society

Society for Neuroscience

Cognitive Science Society

Vision Sciences Society

The Psychonomic Society