March 4, 2026

Sean Matthew Polyn, Ph.D.
Curriculum Vitae

A. Contact information

Sean Matthew Polyn
Department of Psychology
Vanderbilt University
PMB 407817
2301 Vanderbilt Place
Nashville, TN 37240

Phone: 615-322-2536 (office)
Fax: 615-343-8449
email: sean.polyn@vanderbilt.edu
website: http://memory.psy.vanderbilt.edu

B. Degrees earned

B.A. (1995-1999)	University of Virginia, Echols Interdisciplinary Program
Ph.D. (2000-2005)	Princeton University, May 2005. Psychology and Neuroscience. Ph.D. Thesis: *Neuroimaging, behavioral, and computational investigations of memory targeting*. Jonathan D. Cohen and Kenneth A. Norman, co-advisors

C. Employment history

Post-doctoral Fellow 2005-2009	University of Pennsylvania, Department of Psychology Mentor: Michael J. Kahana
Assistant Professor 2009-2016	Vanderbilt University, Department of Psychology
Associate Professor 2016-present	Vanderbilt University, Department of Psychology Center for Integrative & Cognitive Science Vanderbilt Brain Institute Secondary Appointment, Department of Psychiatry

D. Honors and Awards

Echols Scholar, University of Virginia, 1995-1998

Bachelor of Arts with Distinction, January 1999

Departmental Teaching Prize – Princeton University Psychology Department, Academic year 2003–04

Junior Faculty Teaching Fellowship, 2010, *Center for Teaching*, Vanderbilt University.

President of Southeastern Workers in Memory (SWIM), 2013–2014.

Fellow, Association for Psychological Science, Spring 2017.

E. Research

Articles in Refereed Journals

37) Woodman, G. W., and Polyn, S. M. (2026) Visual memory. *Attention, Perception, & Psychophysics*. 88(3) 79, 1-22.

36) Lohnas, L. J., Polyn, S. M., and Kahana, M. J. (2026) Specialized recall procedures. *Psychonomic Bulletin & Review*. 33 (96) 1-26.

35) Polyn, S. M., and Woodman, G. F. (2025) Capacity not required: A long-term memory model that exhibits key signatures of working memory. *Psychological Review*.

34) Gunn, J. B., and Polyn, S. M. (2025) Bridging CRU and CMR in free and serial recall: A factorial comparison of retrieved-context models. *The American Journal of Psychology*, 138(2), 203-230.

33) Hong, M. K., Gunn, J. B., Fazio, L. K., and Polyn, S. M. (2024) The modulation and elimination of temporal organization in free recall. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 50(7), 1035-1068.

32) Diachek, E., Brown-Schmidt, S., and Polyn, S. M. (2023) Items outperform adjectives in a computational model of binary semantic classification. *Cognitive Science*, 47 (9), e13336.

31) Pathman, T., Deker, L., Parmar, P. K., Adkins, M. C., and Polyn, S. M. (2023) Children's memory "in the wild": Examining the temporal organization of free recall from a week-long camp at a local zoo. *Cognitive Research: Principles and Implications*, 8:6.

30) Sutterer, D. W., Polyn, S. M., and Woodman, G. F. (2021) α-Band activity tracks a two-dimensional spotlight of attention during spatial working memory maintenance. *Journal of Neurophysiology*, 125 (3), 957–971.

29) Hong, M. K., Polyn, S. M. and Fazio, L. K. (2019) Examining the episodic context account: Does retrieval practice enhance memory for context? *Cognitive Research: Principles and Implications*, 4: 46.

28) Cutler, R.A., Duff, M., and Polyn S.M. (2019) Searching for semantic knowledge: A vector space semantic analysis of the feature generation task. *Frontiers in Human Neuroscience*, 13:341.

27) Powell, P. S., Strunk, J., James, T., Polyn, S. M., and Duarte, A. (2018) Decoding selective attention to context memory: An aging study. *NeuroImage*, 181, 95-107.

26) Polyn, S. M., and Cutler, R. A. (2017) Retrieved-context models of memory search and the neural representation of time. *Current Opinion in Behavioral Sciences*, 17, 203-210.

25) Chan, S. C. Y., Applegate, M. C., Morton, N. W., Polyn, S. M., Norman, K. A. (2017) Lingering representations of stimuli influence recall organization. *Neuropsychologia*, 97, 72–82.

24) Morton, N. W., and Polyn, S. M. (2017) Beta band activity represents the recent past during episodic encoding. *Neuroimage*, 147, 692–702.

23) Kragel, J. E., and Polyn, S. M. (2016) Decoding episodic retrieval processes: Frontoparietal and medial temporal lobe contributions to free recall. *Journal of Cognitive Neuroscience*, 28 (1), 125–139.

22) Morton, N. W., and Polyn, S. M. (2016) A predictive framework for evaluating models of semantic organization in free recall. *Journal of Memory & Language*, 86, 119–140.

21) Polyn, S. M., McCluey, J. D., Morton, N. W., Woolard, A. A., Luksik, A. S., and Heckers, S. (2015) Memory targeting and the organizational impairment of memory search in schizophrenia. *Cognitive Neuropsychiatry,* 20 (4), 296–310.

20) Lohnas, L. J., Polyn, S. M., Kahana, M. J. (2015) Expanding the scope of memory search: Intralist and interlist effects in free recall. *Psychological Review,* 122 (2), 337–363.

19) Kragel, J. E., Morton, N. W., and Polyn, S. M. (2015) Neural activity in the medial temporal lobe reveals the fidelity of mental time travel. *Journal of Neuroscience*, 35 (7), 2914–2926.

18) Kragel, J. E., and Polyn, S. M. (2015) Functional interactions between large-scale networks during memory search. *Cerebral Cortex*, 25 (3), 667–679.

17) Polyn, S. M., and Sederberg, P. B. (2014) Brain rhythms in mental time travel. *NeuroImage*, 85, 678-684.

16) Miller, J. F., Neufang, M., Solway, A., Brandt, A., Trippel, M., Mader, I., Hefft, S., Merkow, M., Polyn, S. M., Jacobs, J., Kahana, M. J., Schulze-Bonhage, A. (2013) Neural activity in human hippocampal formation reveals the spatial context of retrieved memories. *Science*, 342, 1111-1114.

15) Morton, N. W., Kahana, M. J., Rosenberg, E. A., Baltuch, G. H., Litt, B., Sharan, A. D., Sperling, M. R., Polyn, S. M. (2013) Category-specific neural oscillations predict recall organization during memory search. *Cerebral Cortex,* 23 (10), 2407–2422.

14) Miller, J. F., Lazarus, E. M., Polyn, S. M., and Kahana, M. J. (2013) Spatial clustering during memory search. Journal of Experimental Psychology: Learning, Memory, and Cognition, 39 (3), 773–781.

13) Polyn, S. M., Kragel, J. E., Morton, N. W., McCluey, J. D., Cohen, Z. D. (2012) The neural dynamics of task context in free recall. *Neuropsychologia,* 50, 447–457.

12) Manning, J. M., Polyn, S. M., Baltuch, G., Litt, B., Kahana, M. J. (2011) Oscillatory patterns in temporal lobe reveal context reinstatement during memory search. *Proceedings of the National Academy of Sciences USA,* 108 (31), 12893–12897.

11) Sederberg, P. B., Gershman, S. J., Polyn, S. M., and Norman, K. A. (2011) Human memory reconsolidation can be explained using the Temporal Context Model. *Psychonomic Bulletin and Review,* 18 (3), 455–468.

10) Polyn, S. M., Erlikhman, G., & Kahana, M. J. (2011) Semantic cuing and the scale-invariance of recency and contiguity. *Journal of Experimental Psychology: Learning, Memory & Cognition,* 27 (3), 766–775.

9) Lohnas, L. J., Polyn, S. M., & Kahana, M. J. (2011) Contextual variability in free recall. *Journal of Memory and Language,* 64, 249–255.

8) Polyn, S. M., Norman, K. A., & Kahana, M. J. (2009) Task context and organization in free recall. *Neuropsychologia*, 47 (11), 2158-2163.

7) Polyn, S. M., Norman, K. A., & Kahana, M. J. (2009) A context maintenance and retrieval model of organizational processes in free recall. *Psychological Review*, 116 (1), 129-156.

6) Polyn, S. M. & Kahana, M. J. (2008) Memory search and the neural representation of context. *Trends in Cognitive Science,* 12 (1), 24-30.

5) Norman, K. A., Polyn, S. M., Detre, G. J., and Haxby, J. V. (2006) Beyond mind reading: Multi-voxel pattern analysis of fMRI data. *Trends in Cognitive Science*, 10 (9), 424-430.

4) Norman, K. A., Newman, E., Detre, G., and Polyn, S. M. (2006) How inhibitory oscillations can train neural networks and punish competitors. *Neural Computation*, 18, 1577-1610.

3) Polyn, S. M., Natu, V. S., Cohen, J. D., and Norman, K. A. (2005) Category-specific cortical activity precedes retrieval during memory search. *Science*, 310, 1963-1966.

2) Polyn S., Levy W.B. (2001) Dynamic control of inhibition improves performance of a hippocampal model. *Neurocomputing*, 38-40, 823-829.

1) Polyn S., Wu X.B., Levy W.B. (2000) Entorhinal / dentate excitation of CA3: A critical variable in hippocampal models. *Neurocomputing*, 32-33, 493-499.

Preprints

2) Hong, M.K., Janson, A., Koirala, P., Fotidzis, T., Polyn, S. M., Aboud, K. (2024) Naturalistic language comprehension engages a cascade of widespread brain networks in the one second following comprehension. *bioRxiv*, 2024.12.17.629054.

1) Polyn, S. M., Kragel, J., McCluey, J. D., & Burke, J. F. (2019). Altering the flow of mental time: A test of retrieved-context theory. *PsyArXiv*. https://doi.org/10.31234/osf.io/kerx3

Book chapters

5) Polyn, S. M. (2023) Assessing neurocognitive hypotheses in a likelihood-based model of the free-recall task. In Forstmann, B. U. and Turner, B. (Eds.) Introduction to Model-Based Cognitive Neuroscience (2nd edition). Springer, New York.

4) Polyn, S. M. (2023) Attribute theories of memory. In Wagner, A. D. and Kahana, M. J. (Eds.), Oxford Handbook of Human Memory. Oxford University Press.

3) Pachur, T., Raaijmakers, J. G. W., Davelaar, E. J., Daw, N. D., Dougherty, M. R., Hommel, B., Lee, M. D., Polyn, S. M., Ridderinkhof, K. R., Todd, P. M., and Wolfe, J. M. (2012). Unpacking cognitive search: mechanisms and processes. In P. M. Todd, T. T. Hills, and T. W. Robbins (Eds.), *Cognitive Search: Evolution, Algorithms, and the Brain.* (pp. 237-254). Cambridge, MA: MIT Press.

2) Kahana, M. J., Howard, M. W., & Polyn, S. M. Associative Processes in Episodic Memory. In H. L. Roediger, III, editor, *Cognitive psychology of memory. Vol. 2 of Learning and memory: A comprehensive reference, 4 vols. (J. Byrne, Editor).* Elsevier, Oxford, 2008.

1) Norman, K. A., Detre, G. J., and Polyn, S. M. Computational models of episodic memory. In R. Sun, editor, *The Cambridge Handbook of Computational Psychology*. Cambridge University Press, Cambridge, 2008.

Submitted

1) Woodman, G. W., and Polyn, S. M. (submitted) The brain streams to disk: Working memory follows long-term memory. *Trends in Cognitive Sciences*.

Research grants received

National Science Foundation research grant. Project title: Neural Mechanisms of Semantic and Episodic Memory (Proposal #1736467). Period of award: 2/15/2018–1/30/2022. Direct costs: $409,294. Indirect costs: $232,920. Principal Investigator: Sean M. Polyn.

National Science Foundation research grant. Project title: Neural Mechanisms of Memory Targeting (Proposal #1157432). Period of award: 5/1/2012–4/30/2015. Direct costs: $266,609. Indirect costs: $142,010. Principal Investigator: Sean M. Polyn.

Vanderbilt University Discovery Grant. Project title: Using an integrative model of human memory to understand schizophrenia. Period of award: 5/11/2012–6/30/2014. Total funding: $100,000. Principal Investigator: Sean M. Polyn; with Co-PIs Sohee Park and Stephan Heckers.

Postdoctoral National Research Service Award. Prefrontal and medial temporal contributions to memory. National Institute of Mental Health (F32 MH078513). Award dates: 07/01/2006–06/30/2009. Funded.

Predoctoral National Research Service Award. Prefrontal and medial temporal contributions to memory. National Institute of Mental Health (F31 MH070177). Award dates: 09/29/2003–05/31/2005. Funded.

National Science Foundation Graduate Research Fellowship, 2000-2003. NSF Fellowship grant. Funded.

Research grants currently under review

Using human behavior and electrophysiology to test a contextual model of visual working memory. National Institutes of Health R01 proposal. Proposed dates: 07/01/2026-06/30/2031. PI: Sean Polyn, PhD, MPI: Geoffrey Woodman, PhD.

Invited presentations

Center for Functional Neuroimaging, University of Pennsylvania School of Medicine, "Tracking memory search and retrieval in an fMRI study of free recall." Philadelphia, PA, Feb. 2006.

Pattern classification minisymposium at Vision Science Society conference, "Tracking category-specific stimulus representations during memory search." Sarasota, FL, May, 2007.

Spatial Cognition workshop, "Mental travel through space and time: Spatial organization in free recall." Freiburg, Germany, Sept., 2008. All costs covered.

Memory Disorders Research Society meeting, "Models of context and memory." Chapel Hill, NC, Sept., 2009. Invited presentation, prior to being inducted into society.

Winter Conference on the Neurobiology of Learning and Memory, "Memory search and the neural representation of context." Park City, UT, Jan., 2011.

Duke University Institute for Brain Sciences, invited colloquium speaker, "Neural signals revealing the organization of memory." Durham, NC, Nov., 2012.

Miami University of Ohio, invited colloquium speaker, "Neural signals revealing the organization of memory." Oxford, OH, Apr., 2013.

Medical Research Council, Cognition and Brain Sciences Unit, invited speaker, Memory & Perception group, "Neural signals revealing the organization of memory." Cambridge, UK, May 2013.

Vanderbilt Memory and Alzheimer's Center, Works in Progress meeting, Vanderbilt University, "The Vanderbilt Computational Memory Lab." Nashville, TN, July 2013.

Southeastern Workers in Memory meeting, upon assuming presidency of group "Neural signals revealing the organization of memory." Nashville, Tennessee, March, 2014.

University of Pennsylvania, invited colloquium speaker, "Neural signals revealing the organization of memory." Philadelphia, PA, May 2014.

Washington University in St. Louis, invited colloquium speaker, "Neural signals revealing the organization of memory." St. Louis, MO, October 2014.

University of Memphis Institute for Intelligent Systems, invited colloquium speaker, "Neural signals revealing the organization of memory." Memphis, TN, November 2015.

Rotman Research Institute, invited speaker for Rotman Rounds, "The neural dynamics of mental time travel." Toronto, ON, March 2017.

The University of the South, keynote speaker for Brain Awareness Week, "The neural dynamics of mental time travel." Sewanee, TN, March 2017.

University of Texas, Austin, invited colloquium speaker, "Neural signals revealing the organization of memory." Austin, TX, Feb. 2017.

Ohio State University, invited speaker at the OSU Neuro-Cognitive Modeling Workshop, "Linking neural signals to processes and representations in a model of memory search." Columbus, OH, May 2019.

Rotman Research Institute, invited speaker for Rotman Rounds, "The interaction of time and meaning in human memory." Toronto, ON, August 2019.

University of Virginia, invited colloquium speaker, "The modulation and elimination of temporal organization in free recall." Charlottesville, VA, Sept. 2022

Conference presentations

Polyn, S., Wu, X. B., Levy, W. B. (1999, July) Entorhinal / dentate excitation of CA3: A critical variable in hippocampal models. Eighth Annual Computational Neuroscience Meeting.

Polyn S., Levy W. B. (2000, July) Dynamic control of inhibition improves performance of a hippocampal model. Ninth Annual Computational Neuroscience Meeting.

Polyn, S. M., Norman, K. A., Cohen, J. D. (2002, November) Connectionist modeling of source memory phenomena. Society for Neuroscience 32nd Annual Meeting.

Polyn, S. M., Norman, K. A. & Cohen, J. D. (2003, March) Modeling prefrontal and medial temporal contributions to episodic memory. Tenth Annual Meeting of the Cognitive Neuroscience Society.

Polyn, S. M. (2003, November) Neural correlates of memory targeting in free recall. Context and Episodic Memory Symposium, New Orleans, LA.

Polyn, S. M., Nystrom, L. E., Norman, K. A., Haxby, J. V., Gobbini, M. I. & Cohen, J. D. (2004). Using neural network algorithms to investigate distributed patterns of brain activity in fMRI. Human Brain Mapping conference, Budapest, Hungary.

Polyn, S. M., Cohen, J. D. & Norman, K. A. (2004) Detecting distributed patterns in an fMRI study of free recall. Society for Neuroscience conference, San Diego, CA.

Norman, K. A., Newman, E. L., Detre, G. J. & Polyn, S. M. (2004). How theta oscillations can train neural networks and punish competitors. Cognitive Neuroscience conference, San Francisco, CA.

Norman, K. A., Newman, E. L., Detre, G. J. & Polyn SM (2004). How inhibitory oscillations can train neural networks and punish competitors. Computational and Systems Neuroscience conference, Cold Spring Harbor, NY.

Lenartowicz, A., Detre, G. J., Polyn, S. M., Chein, J., Yeung, N., Nystrom, L. E., Norman, K. A. & Cohen, J. D. (2005) Characterization of brain states during task-switching using a neural network classifier. Cognitive Neuroscience Society conference, New York, NY.

Polyn, S. M. (2005, March) Memory targeting in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn, S. M., Detre, G. J., Takerkart, S., Natu, V., Benharrosh, M., Singer, B., Cohen, J. D., Haxby, J. V. & Norman, K. A. (June, 2005) A Matlab-based toolbox to facilitate multi-voxel pattern classification of fMRI data. Annual Meeting of the Organization of Human Brain Mapping, Toronto, Canada.

Polyn, S. M., Norman, K. A., & Kahana, M. J. (Nov., 2006) Tracking the stimulus representation in an fMRI study of free recall. Society for Neuroscience conference, Atlanta, GA.

Polyn, S. M., Morton, N. W., Kogen, D. K., Norman, K. A., & Kahana, M. J. (Nov., 2006) Task effects on memory accessibility in free recall. Psychonomic Society annual meeting, Houston, TX.

Polyn, S. M., Norman, K. A., & Kahana M. J. (July, 2006) Context and episode in a model of human memory. Society for Mathematical Psychology meeting, Vancouver, BC.

Polyn, S. M., Morton, N. W., Kogen, D., Norman, K. A., & Kahana, M. J. (May., 2007) Task context and memory accessibility in free recall. Cognitive Neuroscience conference, New York, NY.

Polyn S. M., & Kahana M. J. (2007) The interaction of task context and temporal context in memory search. Society for Mathematical Psychology conference, Irvine, CA.

Miller J. F., Polyn S. M., & Kahana M. J. (2007) Clustering by spatial proximity during memory search. Society for Mathematical Psychology conference, Irvine, CA.

Polyn, S. M., Koshkin, V. S., Morton, N. W & Kahana, M. J. (2007) Tracking category-related neural patterns during free recall using scalp EEG. Society for Neuroscience conference, San Diego, CA.

Morton, N. W, Polyn, S. M. & Kahana, M. J. (2007) Tracking encoding task context during free recall using scalp EEG. Society for Neuroscience conference, San Diego, CA.

Polyn, S. M. (2008, January) The interaction of task context and temporal context in free recall. Context and Episodic Memory Symposium, Tampa, FL.

Polyn S. M., Norman K. A., & Kahana M. J. (2008) Context maintenance and retrieval: A model of episodic and semantic organization in free recall. Society for Mathematical Psychology meeting, Washington, DC.

Morton, N. W, Burke, J. F., Hollidge, B. S., Polyn, S. M., Kahana, M. J. (Jul., 2008) Recency and contiguity in a temporal-context model of paired-associate learning. Society for Mathematical Psychology meeting, Washington DC.

Polyn, S. M., & Kahana, M. J. (Nov., 2008) Bridging cognitive and neural theories of memory search with the Context Maintenance and Retrieval model. Society for Neuroscience conference, Washington, DC.

Polyn, S. M., Morton, N. W, & Kahana, M. J. (Oct., 2009) Unraveling subsequent memory: Tracking category-specific and category-general neural patterns using scalp EEG. Society for Neuroscience conference, Chicago, IL.

Polyn, S. M., Erlikhman, G. & Kahana, M. J. (Nov., 2009) The persistence of recency: Extending context-based models of free recall. Psychonomic Society annual meeting, Boston, MA.

Lohnas, L. J., Polyn, S. M. & Kahana, M. J. (Nov., 2009) Encoding variability revisited in the spacing and lag effects of free recall. Psychonomic Society annual meeting, Boston, MA.

Polyn, S. M. (Apr., 2010) Extending the context maintenance and retrieval model of free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Lohnas, L. J., Polyn, S. M. & Kahana, M. J. (Apr., 2010) A computational model of interlist effects in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Morton, N. W & Polyn, S. M. (Apr., 2010) Illuminating the dynamics of memory search: Tracking category-related oscillations during free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Morton, N. W & Polyn, S. M. (Nov., 2010) Illuminating the dynamics of memory search: Tracking category-related oscillations during free recall. Society for Neuroscience meeting, San Diego, CA.

Cohen, Z. D., Morton, N. W & Polyn, S. M. (Nov., 2010) Using the context maintenance and retrieval model to interpret task-related neural activity in free recall. Society for Neuroscience meeting, San Diego, CA.

Manning, J. R., Polyn, S. M. & Kahana, M. J. (Nov., 2010) A neural signature of mental time travel. Society for Neuroscience meeting, San Diego, CA.

Polyn, S. M., Morton, N. W & Kahana, M. J. (Nov., 2010) Using intracranial oscillatory patterns to bridge cognitive and neural theories of memory search. Society for Neuroscience meeting, San Diego, CA.

Polyn, S. M. (May, 2011) Neural correlates of organization and distinctiveness. Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn, S. M. (Sept., 2011) Neural signals revealing the organization of memory. Memory Disorders Research Society meeting, Barcelona, Spain.

Polyn, S. M., Kragel, J. E., McCabe, K. E., McCluey, J. D. & Morton, N. W. (Nov. 2011) Neural and cognitive dynamics of source context in memory search and task switching. Psychonomic Society Annual Meeting, Seattle, WA.

Polyn, S. M., Morton, N. W., & Kahana, M. J. (Mar., 2012) Category-specific neural oscillations predict recall organization during memory search. Cognitive Neuroscience Society Annual Meeting, Chicago, IL.

Polyn, S. M. (July, 2012) Using the Context Maintenance and Retrieval model to interpret the neural phenomena of memory search. Society for Mathematical Psychology Annual Meeting, Columbus, OH.

Polyn, S. M. (Sept., 2012) Competition, contiguity, and context: Multivariate techniques revealing the dynamics of memory search. Memory Disorders Research Society meeting, Davis, CA.

Polyn, S. M., McCluey, J. D., Geoghegan, M. F., Bullard, Z. R., Woolard, A. A., Luksik, A. S. & Heckers, S. (Oct., 2012) Organizational impairment of memory search in schizophrenia. Society for Neuroscience annual meeting, New Orleans, LA.

Morton, N. W, Polyn, S. M. (Nov., 2012) Manipulating the forward asymmetry of the contiguity effect with categorized stimuli. Psychonomic Society annual meeting, Minneapolis, MN.

Chan, S. C. Y., Applegate, M. C., Morton, N. W, Polyn, S. M., Norman, K. A. (May 2013) Recall order is predicted by category-specific neural activity of preceding items at study. Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn, S. M. (May, 2013) Incorporating neural signals into computational models of memory search. Context and Episodic Memory Symposium, Philadelphia, PA.

Morton, N. W, and Polyn, S. M. (May 2013) A neurally constrained model of category clustering in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn, S. M. (Oct., 2013) Incorporating multivariate neural signal into computational models of memory search. Memory Disorders Research Society meeting, Toronto, Ontario.

Polyn, S. M., Kragel, J. E., Morton, N. W (Nov. 2013) Incorporating neural signals into computational models of memory search. Society for Neuroscience annual meeting, San Diego, CA.

Morton, N. W, and Polyn, S. M. (Nov. 2013) Inter-item distraction dissociates temporal and semantic organization in free recall. Society for Neuroscience annual meeting, San Diego, CA.

Kragel, J. E., and Polyn, S. M. (Nov. 2013) Representation of item and context specific information during memory retrieval in the human brain. Society for Neuroscience annual meeting, San Diego, CA.

Miller, J. F., Neufang, M., Solway, A., Brandt, A., Hefft, S., Trippel, M., Mader, I., Polyn, S. M., Jacobs, J., Schulze-Bonhage, A., Kahana, M. J. (Nov. 2013) Reinstatement of place-responsive cell activity during episodic memory retrieval. Society for Neuroscience annual meeting, San Diego, CA.

Chan, S. C. Y., Applegate, M. C., Manning, J. R., Morton, N. W, Polyn, S. M., Norman, K. A. (Nov. 2013) Recall order is predicted by category-specific neural activity of preceding items at study. Society for Neuroscience annual meeting, San Diego, CA.

Polyn, S. M. (May 2014) A neuro-computational model of free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

McCluey, J. D., Stein E. M., and Polyn, S. M. (May 2014) Oscillatory correlates of primacy effects following perceptual shifts. Context and Episodic Memory Symposium, Philadelphia, PA.

Morton, N. W, and Polyn, S. M. (May 2014) Oscillatory neural correlates of semantic organization in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Kragel, J. E., and Polyn, S. M. (May 2014) Activity within the default mode network predicts the organization of human memory. Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn, S. M. (Sept. 2014) Neural activity in the medial temporal lobe revealing the fidelity of mental time travel. Memory Disorders Research Society meeting, Austin, TX.

Polyn, S. M., Kragel, J. E., and Morton, N. W (Nov. 2014) Medial temporal lobe activity reflecting the precision of mental time travel. Psychonomic Society annual meeting, Long Beach, CA.

Morton, N. W, and Polyn, S. M. (Nov. 2014) Neural correlates of temporal context evolution in free recall. Psychonomic Society annual meeting, Long Beach, CA.

Kragel, J. E., and Polyn, S. M. (Nov. 2014) A neurocomputational model of memory search links distinct large-scale cortical networks to the maintenance and retrieval of mnemonic information. Society for Neuroscience annual meeting, Washington, DC.

Morton, N. W and Polyn, S. M. (Jan., 2015) A neurally constrained model of temporal and semantic context. Winter Conference on the Neurobiology of Learning and Memory, Park City, UT.

Morton, N. W and Polyn, S. M. (Apr, 2015) A predictive framework for evaluating models of semantic organization in free recall. UT Austin Conference on Learning & Memory, Austin, TX.

Kragel, J.E., and Polyn, S. M. (May 2015) Large-scale network activity predicts the maintenance and retrieval of contextual information in memory. Context and Episodic Memory Symposium, Philadelphia, PA.

Morton, N. W and Polyn, S. M. (May, 2015) A predictive framework for evaluating models of semantic organization in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Kragel, J.E., and Polyn, S. M. (Oct, 2015) Decoding episodic retrieval processes: Frontoparietal and medial temporal lobe contributions to free recall. Society for Neuroscience annual meeting, Chicago, IL.

McCluey, J. D. and Polyn, S. M. (Oct, 2015) Oscillatory correlates of enhanced memorability following a shift in the perceptual modality of studied material. Society for Neuroscience annual meeting, Chicago, IL.

Polyn, S. M. and Kragel, J. E. (Nov, 2015) Dynamics of large-scale cortical networks reveal the cognitive control of episodic memory. Psychonomic Society annual meeting, Chicago, IL.

Polyn, S. M., Morton, N. W., and McCluey, J. D. (May, 2016) Eddies in the flow of mental time: Semantic structure and the forward asymmetry of free recall. Context and Episodic Memory symposium, Philadelphia, PA.

Polyn, S. M. and Morton, N. W. (Oct, 2016) Integration and disruption of category-specific oscillatory activity. Memory Disorders Research Society, Princeton, NJ.

Polyn, S. M. (Nov, 2016) The neurocognitive dynamics of memory search. Psychonomic Society annual meeting, Boston, MA.

Hong, M., Polyn, S. M., Fazio, L. K. (Nov, 2017). Why does recall practice benefit memory? An Examination of the Episodic Context Account. Psychonomic Society annual meeting, Vancouver, British Columbia, Canada.

Powell, P. S., Strunk, J., James, T., Polyn, S. M., Duarte, A. L. (Nov, 2017). Decoding selective attention during context memory encoding: An aging study. Society for Neuroscience annual meeting, Washington, DC.

Corbett, B., Polyn, S. M., Duarte, A. (Nov, 2017). Age-related changes in resolving proactive interference in associative memory. Society for Neuroscience annual meeting, Washington, DC.

Cutler, R. A., Klooster, N. B., Duff, M. C., Polyn, S. M. (March, 2018). Searching for semantic knowledge: A vector space semantic analysis of the feature generation task, Cognitive Neuroscience Society annual meeting, Boston, MA.

Hong, M., Fazio, L. K., Polyn, S. M. (May, 2018). Exploring factors that eliminate contiguity in free recall. Context and Episodic Memory Symposium, Philadelphia, PA.

Cutler, R. A., Klooster, N. B., Duff, M. C., Polyn, S. M. (May, 2018). Searching for semantic knowledge: A vector space semantic model of the feature generation task. Context and Episodic Memory Symposium, Philadelphia, PA.

Li, A., Cutler, R. A., Polyn, S. M. (May, 2018) Property dominance and feature-type effects in semantic feature verification. Context and Episodic Memory Symposium, Philadelphia, PA.

Corbett, B., Polyn, S. M., Dulas, M. R., Duarte, A. L. (Nov, 2018) Spontaneous resolution of competing memories is impaired with age. Society for Neuroscience annual meeting, San Diego, CA.

Powell, P. S., Strunk, J., James, T., Polyn, S. M., Duarte, A. L. (Nov, 2018). Decoding context memory representations during retrieval across the adult lifespan. Society for Neuroscience annual meeting, San Diego, CA.

Cutler, R. A., Brown-Schmidt, S., Polyn, S. M. (May, 2019) Semantic and temporal structure in memory for narratives: A benefit for semantically congruent ideas. Context and Episodic Memory Symposium. Philadelphia, PA.

Hong, M., Fazio, L.K., Polyn, S.M. (2019, May). Examining the Episodic Context Account: Does retrieval practice enhance memory for context? Poster presented at the annual meeting of the Context and Episodic Memory Symposium, Philadelphia, PA.

Polyn. S. M. (Oct. 2019) The interaction of time and meaning in human memory. Memory Disorders Research Society annual meeting, NY, NY.

Cutler, R. A., Jeon, J., Brown-Schmidt, S., Polyn, S. M. (Nov. 2019) Semantic and temporal structure in memory for narratives: A benefit for semantically congruent ideas. Psychonomic Society Annual Meeting. Montréal, Québec, Canada

Hong, M., Fazio, L.K., Polyn, S.M., (Nov. 2019). Examining factors that Eliminate Contiguity in Free Recall, Poster presented at the annual meeting of the Psychonomic Society, Montreal, Canada.

Polyn, S. M., Hong, M., Gunn, J. G., Fazio, L. K. (Oct. 2022). The modulation and elimination of temporal organization in free recall. Spoken presentation at the Memory Disorders Research Society annual meeting, Philadelphia, PA.

Polyn, S. M., Hong, M., Gunn, J. G., Fazio, L. K. (Jun. 2023). The modulation and elimination of temporal organization in free recall. Spoken presentation at the Context and Episodic Memory Symposium, Orlando, FL.

F. Teaching-related activities

Teaching

PSY 208/PSY 2150: Principles of Experimental Design
Spring 2010; Fall 2010; Spring 2023; Fall 2024; Fall 2025 Instructor, Vanderbilt University

NSC 3270/6270: Computational Neuroscience
Spring 2017; Spring 2019 Instructor (co-taught with T. Palmeri)
Spring 2020; Spring 2021; Fall 2022; Spring 2026 Instructor, Vanderbilt University

PSY 253/PSY 3775: Human Memory
Spring 2011 (as Special Topics class); Spring 2012, Fall 2012; Fall 2013; Fall 2014 (as Honors seminar); Spring 2015; Spring 2016; Fall 2016; Fall 2018; Fall 2019; Fall 2020; Spring 2022 Instructor, Vanderbilt University

PSY 303/PSY 4775/6775: Models of Human Memory
Fall 2011; Spring 2014; Fall 2015; Spring 2021; Spring 2025 Instructor, Vanderbilt University

Guest Lectures in PSY-PC 7500: Educational Cognitive Neuroscience; SC 250: Scientific Toolbox; NURO 340: Systems Neuroscience; PSY 8744: Brain Inside-out.

Graduate student committees

Saman Abbaspoor (doctoral candidate, Psychology; thesis committee)
M. Taha Bilge (doctoral cand., Psychology; thesis committee)
Xiaoli Chen (graduate student, Psychology)
Rebecca Cutler* (doctoral cand., Psychology; thesis committee)
Evgeniia Diachek* (doctoral cand., Psy. & Hum. Dev.; thesis committee)
Hana Eaton (graduate student, Psychology)
Kristen Ekstrand (doctoral candidate in Neuroscience; thesis committee)
Qianqian Fan (graduate student, Psychology)
F. Douglass Godwin (doctoral cand., Psychology; thesis committee)
Resh Gupta* (graduate student, Neuroscience)
Min-Kyung "Clair" Hong* (doctoral cand., Psy. & Hum. Dev.; thesis committee)
Megan Ichinose (graduate student, Psychology)
James Kragel* (doctoral candidate, Neuroscience; thesis committee)

Dakota Lindsey (doctoral candidate in Psychology; thesis committee)
Neal Morton* (doctoral candidate in Psychology; chair of thesis committee)
Aaron Nidiffer (doctoral candidate in Speech & Hearing; thesis committee)
Hyunyoung Park (doctoral candidate in Psychology; thesis committee)
Jennifer Richler (doctoral candidate in Psychology; thesis committee)
Justin Siemann (graduate student, Neuroscience)
Kristy Snyder (doctoral candidate in Psychology; thesis committee)
Ana Van Gulick (graduate student, Psychology)

* Graduate student in my laboratory (or co-advisor)

Undergraduate research projects supervised

Blake Andreou (Neuroscience Honors student)
Richard Arriviello (Neuroscience major)
Lauren Beal (Medicine, Health, & Society major)
Mackenzie Bird (Neuroscience Honors student)
Kelsey Bowman (Neuroscience major)
Zachary Bullard (Psychology major)
Junhao Cai (Psychology Honors student)
Peter Cheng (volunteer in lab)
Meghan Collins (Neuroscience Honors student)
Rachel Cope (Neuroscience major)
Rahul Devathu (Neuroscience major)
Sarah Fine (volunteer in lab)
Michael Geoghegan (Neuroscience major)
Garvey Gregory (volunteer in lab)
Madeleine Hebert (Psychology major)
Kristen McCabe (Neuroscience Honors student)
Jonathan Menenses (Psychology major)
Aaditi Naik (volunteer in lab)
Alice Li (Neuroscience Honors student)
Jordan Palan (volunteer in lab)
Zachary Roth (volunteer in lab)
Chris Su (Computer Science major)
Rut Thakkar (Neuroscience Honors student)
Andrew Underwood (Neuroscience major)
Tamar Winer (Hunter college, through BP-ENDURE program)
Hattie Zhang (volunteer in lab)

G. Academic service

To department and university

September 2022 to present. Member of the Graduate Studies Committee, advising the Director of Graduate Studies.

September 2022 to present. Director of the Cognition and Cognitive Neuroscience area group for

the Psychology Department.

March 2022. Expert panelist for Vanderbilt Institute for Clinical and Translational Research (VICTR) Pathway for Career Development Studio for Dr. Katherine McDonell, MD.

January 2019 to March 2023. Member of colloquium committee and Psychology Day sub-committee for Psychology Department, Vanderbilt University.

February 2016, multiple years. Organized Department of Psychology graduate recruiting weekend for the programs in Cognition and Cognitive Neuroscience (CCN) & Neuroscience.

July 2013; July 2014. Presentation to the PAVE Pre-College Program at Vanderbilt University, "What is Psychology?"

October 2013 to August 2022. Member of the Undergraduate Studies Committee, advising the Director of Undergraduate Studies.

October 2013. Participated in mock interviews with Honors Students in the Psychology major at Vanderbilt University.

October 2013. Worked with graduate students in the Vanderbilt Center for Teaching's Certificate in College Teaching program.

January 2011 to December 2018. Administration of departmental website: Supervision of administrative staff who keep content up-to-date, interaction with developers at Vanderbilt's Web Communications office to ensure quality of website.

June 2010 to present. Organizing departmental computational modeling meetings (with Tom Palmeri & Gordon Logan).

December, 2009. Participated in a workshop on Professional Development for graduate students and post-doctoral fellows.

To profession

October 2023; June 2022. Ad-hoc member of the Human Complex Mental Function (HCMF) Study Section, Biobehavioral and Behavioral Processes Integrated Review Group, Center for Scientific Review, National Institutes of Health.

January 2023 to present. Member of the Awards sub-committee for the SPARK society, tasked with identifying and nominating historically excluded scholars for awards.

January 2020 to present. Consulting Editor for Memory & Cognition.

May 2017 to 2020. Member of program committee for the annual Context and Episodic Memory Symposium (CEMS) meeting in Philadelphia, PA. Feb. 2019. Chair of CEMS program committee.

Development and distribution of MATLAB-based simulation software for the CMR model of memory, and behavioral datasets used to fit the model (through http://memory.psy.vanderbilt.edu, Software link on front page).

Development and distribution of analysis software for univariate and multivariate analysis of EEG data which supports parallel computation and interfaces with advanced statistical software (link: GitHub Aperture EEG toolbox, also through Software link on lab website).

April 2015. Co-chaired session (with J. Lewis-Peacock) "Human approaches to the study of learning & memory" at Austin Conference on Learning & Memory, Austin, TX.

March 2015. Organized annual Southeastern Workers in Memory Meeting (SWIM) at the Southeastern Psychological Association meeting in Hilton Head, NC. Speakers: Rachel Diana, & Mark Wheeler.

February 2012 to present. Maintenance of a personal YouTube channel which hosts tutorial videos on computational memory topics. As of Nov. 2023, these have been viewed over 182,000 times.

Ad Hoc Journal Reviewer: Behavior Research Methods; Brain Research; Cerebral Cortex; Cognition; Cognitive Neuropsychology; Cognitive Psychology; Cognitive Science; Frontiers in Human Neuroscience; Frontiers in Psychology; Hippocampus; Human Brain Mapping; Journal of Cognitive Neuroscience; Journal of Experimental Psychology: Learning, Memory, & Cognition; Memory & Cognition; Journal of Neuroscience; Memory; Neuroimage; Neuropsychologia; Proceedings of the National Academy of Sciences (USA); Psychological Review; Psychonomic Bulletin & Review; Quarterly Journal of Experimental Psychology; Science.

Reviews for other organizations: National Science Foundation; The Wellcome Trust; Medical Research Council, UK; External examiner for Memorial University, Canada.

Professional Society Memberships:
Association for Psychological Sciences
Cognitive Neuroscience Society
Memory Disorders Research Society
Psychonomic Society
Society for Mathematical Psychology
Society for Neuroscience
SPARK Society

References

Michael J. Kahana
Department of Psychology
University of Pennsylvania
e-mail: kahana@psych.upenn.edu

Kenneth A. Norman
Department of Psychology
Princeton University
e-mail: knorman@princeton.edu

Gordon D. Logan
Department of Psychology

March 4, 2026

Vanderbilt University
e-mail: gordon.logan@vanderbilt.edu