

Sean Matthew Polyn, Ph.D.
Curriculum Vitae

A. Contact information

Sean Matthew Polyn

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

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.

E. Research

1. Articles in refereed journals

- 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., Erlichman, 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.

2. Book chapters

- 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.

3. Working Papers

- 1) Polyn, S. M., Kragel, J. E., McCluey, J. D., and Burke, J. F. Altering the flow of mental time: A test of retrieved-context theory.

4. Research grants received

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.

5. Research grants currently under review

National Science Foundation research grant. Project title: Neural Mechanisms of Semantic and Episodic Memory (Proposal #1736467).

6. 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.

7. 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.

F. Teaching-related activities

Teaching

NSC 3270/5270: Computational Neuroscience
Spring 2017 Instructor (co-taught with T. Palmeri), Vanderbilt University

PSY 253/PSY 3775: Human Memory
Spring 2012, Fall 2012; Fall 2013; Spring 2015; Spring 2016; Fall 2016 Instructor,
Vanderbilt University

HONS 185: College Scholars Honors Seminar: Models of Human Memory

Fall 2014; Instructor, Vanderbilt University

PSY 303: Models of Memory

Fall 2011; Spring 2014; Fall 2015; Instructor, Vanderbilt University

PSY 282: Special Topics in Cognition: Foundations of Human Memory

Spring 2011; Instructor, Vanderbilt University

PSY 208: Principles of Experimental Design

Spring 2010, Fall 2010; Instructor, Vanderbilt University

PSY-PC 7500: Educational Cognitive Neuroscience (taught by Prof. Alexandra Key)

Fall 2015; Guest Lecturer, Vanderbilt University

SC 250: Scientific Toolbox (taught by Prof. Thomas Palmeri and others)

Fall 2011, Fall 2012, Fall 2015; Guest Lecturer, Vanderbilt University

NURO 340: Systems Neuroscience (taught by Profs. Wallace and Casagrande and others)

Fall 2009–2013, 2015–2016; Guest Lecturer, Vanderbilt University

“The hippocampus: Insights into memory”

Foundations of Human Memory (taught by Prof. Michael J. Kahana)

Spring 2008; Guest Lecturer, University of Pennsylvania

“Context and the organization of memory”

Graduate level multivariate statistics (taught by Prof. Andrew Conway)

Fall 2005; Guest Lecturer, Princeton University

“Pattern classification”

Graduate student committees

M. Taha Bilge (doctoral candidate in Psychology; thesis committee)

Kristen Ekstrand (doctoral candidate in Neuroscience; thesis committee)

F. Douglass Godwin (doctoral candidate in Psychology; thesis committee)

James Kragel* (doctoral candidate in Neuroscience; 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)

Kristy Snyder (doctoral candidate in Psychology; thesis committee)

Xiaoli Chen (graduate student, Psychology)

Rebecca Cutler* (graduate student, Psychology)

Hana Eaton (graduate student, Psychology)

Qianqian Fan (graduate student, Psychology)

Resh Gupta* (graduate student, Neuroscience)

Min-Kyung “Clair” Hong* (graduate student, Psych. & Human Development)
Megan Ichinose (graduate student, Psychology)
Dakota Lindsey (graduate student, Psychology)
Justin Siemann (graduate student, Neuroscience)
Ana Van Gulick (graduate student, Psychology)
* Graduate student in my laboratory

Undergraduate research projects supervised

Richard Arriviello (Neuroscience major)
Mackenzie Bird (Neuroscience major; on Honors thesis committee)
Kelsey Bowman (Neuroscience major)
Zachary Bullard (Psychology major)
Peter Cheng (volunteer in lab)
Meghan Collins (Neuroscience major; Honors student)
Sarah Fine (volunteer in lab)
Madeleine Hebert (Psychology major)
Michael Geoghegan (Neuroscience major)
Kristen McCabe (Neuroscience major; Honors student)
Jonathan Menenses (Psychology major)
Aaditi Naik (volunteer in lab)
Alice Li (volunteer in lab)
Zachary Roth (volunteer in lab)
Chris Su (Computer Science major)
Andrew Underwood (Neuroscience major; work-study employee)
Tamar Winer (Hunter college, through BP-ENDURE program)
Hattie Zhang (volunteer in lab)

G. Academic service

To department and university

February 2016. 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 present. Member of the Undergraduate Studies Committee, advising the Director of Undergraduate Studies (Prof. J. Bachorowski) on the structure of the undergraduate major in Psychology, as well as other undergraduate issues in the department.

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 present. 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

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 Jan. 2016, these have been viewed over 59,000 times.

Ad Hoc Journal Reviewer: 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:

Cognitive Neuroscience Society
Memory Disorders Research Society
Psychonomic Society
Society for Mathematical Psychology
Society for Neuroscience

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References

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