

# Neal W Morton, Ph.D.

## Curriculum Vitae

The University of Texas at Austin  
Center for Learning & Memory  
1 University Station Stop C7000  
Austin, TX 78712-0805  
(512) 232-5145  
*email:* neal.morton@austin.utexas.edu

### CURRENT POSITION

Postdoctoral Fellow, The University of Texas at Austin 2014–present  
Preston Lab, Center for Learning and Memory  
Advisor: Dr. Alison R. Preston

### EDUCATION

Ph.D. in Psychology – Cognition and Cognitive Neuroscience 2009–2014  
Vanderbilt University, Nashville, TN, USA  
Advisor: Dr. Sean M. Polyn

B.A. in Cognitive Science, minor in Chemistry 2003–2007  
University of Pennsylvania, Philadelphia, PA, USA  
Advisor: Dr. Michael J. Kahana

### GRANTS

National Institute of Mental Health (NIMH) 2017–present  
Postdoctoral National Research Service Award  
A neurocognitive framework for understanding how experience shapes object representations (1F32MH114869-01)

### HONORS AND AWARDS

Center for Learning & Memory Postdoctoral Fellowship 2016  
Center for Learning & Memory Travel Award 2015–2016  
Context and Episodic Memory Symposium Student Travel Award 2013–2014  
William F. Hodges Teaching Assistant Award 2011–2012  
University Graduate Honor Fellowship, Vanderbilt University 2009–2014  
Bachelor of Arts with Distinction, University of Pennsylvania 2007  
Dean's List, University of Pennsylvania 2006–2007  
Robert C. Byrd Honors Scholarship 2003–2007  
Institutional Development and Undergraduate Education Service

### RESEARCH INTERESTS

Cognition and cognitive neuroscience; episodic memory; fMRI; ECoG; EEG; tDCS; computational modeling

## PUBLICATIONS

**Morton NW**, Polyn SM. In revision. A neurocognitive theory of episodic and semantic interactions during memory search.

**Morton NW\***, Sherrill KR\*, Preston AR. In press. Memory integration constructs maps of space, time, and concepts. *Current Opinion in Behavioral Sciences*.

Chan SCY, Applegate MC, **Morton NW**, Polyn SM, Norman KA. 2017. Lingering representations of stimuli influence recall organization. *Neuropsychologia*. 97:72-82.

**Morton NW**, Polyn SM. 2017. Beta-band activity represents the recent past during episodic encoding. *NeuroImage*. 147:692-702.

**Morton NW**, Polyn SM. 2016. A predictive framework for evaluating models of semantic organization in free recall. *Journal of Memory and Language*. 86:119-140.

Polyn SM, McCluey JD, **Morton NW**, Woolard AA, Luksik AS, Heckers S. 2015. Temporal context and the organizational impairment of memory search in schizophrenia. *Cognitive Neuropsychiatry*. 20(4):296-310.

Kragel JE, **Morton NW**, Polyn SM. 2015. Neural activity in the medial temporal lobe reveals the fidelity of mental time travel. *Journal of Neuroscience*. 35(7):2914-2926.

**Morton NW**, Kahana MJ, Rosenberg EA, Baltuch GH, Litt B, Sharan AD, Sperling MR, Polyn SM. 2013. Category-specific neural oscillations predict recall organization during memory search. *Cerebral Cortex*. 23(10):2407-2422.

Polyn SM, Kragel JE, **Morton NW**, McCluey JD, Cohen ZD. 2012. The neural dynamics of task context in free recall. *Neuropsychologia*. 50(4):447-457.

\* authors contributed equally.

## MANUSCRIPTS IN PREPARATION

Zippi EL, **Morton NW**, Preston AR. Patterns of activity in parahippocampal cortex and temporal pole represent semantic similarity of famous people and places.

**Morton NW**, Schlichting ML, Preston AR. A neurocognitive model of memory integration.

## TALKS

**Morton, NW**, Preston, AR. 2017. Medial prefrontal cortex supports flexible memory

retrieval. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton, NW**, Schlichting ML, Preston AR. 2016. A neurocognitive model of memory integration. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton NW**, Polyn SM. 2015. A neurally constrained model of temporal and semantic context. Winter Conference on the Neurobiology of Learning and Memory. Park City, UT.

**Morton NW**. 2011. EEG Analysis Toolbox. University of Pennsylvania Computational Memory Lab. Philadelphia, PA.

### CONFERENCE PRESENTATIONS

**Morton NW**, Preston AR. 2016. Medial prefrontal cortex supports retrieval of integrated memories. Program No. 637.24. 2016 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Zippi EL, **Morton NW**, Mack ML, Preston AR. 2016. Mapping cortical representations of semantic similarity using Wikipedia and Google News. Program No. 644.22. 2016 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

**Morton NW**, Preston AR. 2015. Developing a neurocognitive model of memory integration. Program No. 719.23. 2015 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience.

**Morton, NW**, Polyn SM. 2015. A predictive framework for evaluating models of semantic organization in free recall. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton NW**, Polyn SM. 2015. A predictive framework for evaluating models of semantic organization in free recall. UT Austin Conference on Learning & Memory. Austin, TX.

**Morton NW**, Polyn SM. 2014. Neural correlates of temporal context evolution in free recall. Annual Meeting of the Psychonomic Society. Long Beach, CA.

Polyn SM, Kragel JE, **Morton NW**. 2014. Medial temporal lobe activity reflecting the precision of mental time travel. Annual Meeting of the Psychonomic Society. Long Beach, CA.

**Morton NW**, Polyn SM. 2014. Oscillatory neural correlates of semantic organization in free recall. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton NW**, Polyn SM. 2013. Inter-item distraction dissociates temporal and semantic organization in free recall. Program No. 572.03. 2013 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Polyn SM, **Morton NW**, Kragel JE, McCluey JD. 2013. Incorporating neural signals into computational models of memory search. Program No. 572.01. 2013 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Chan SCY, Applegate MC, Manning JR, **Morton NW**, Polyn SM, Norman KA. 2013. Recall order is predicted by category-specific neural activity of preceding items at study. Program No. 284.15. 2013 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

**Morton NW**, Polyn SM. 2013. A neurally constrained model of category clustering in free recall. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton NW**, Polyn SM. 2012. A neurally constrained model of category clustering in free recall. 53rd Annual Meeting of the Psychonomic Society. Minneapolis, MN.

**Morton NW**, Polyn SM. 2012. Manipulating the forward asymmetry of the contiguity effect with categorized stimuli. Context and Episodic Memory Symposium. Bloomington, IN.

**Morton NW**, Polyn SM. 2011. Category-sensitive neural oscillations predict recall organization during memory search. 52nd Annual Meeting of the Psychonomic Society. Seattle, WA.

**Morton NW**, Polyn SM. 2011. Oscillatory neural correlates of category cuing during memory search. Context and Episodic Memory Symposium. Philadelphia, PA.

Kragel JE, **Morton NW**, Cohen ZD, McCluey JD, Polyn SM. 2011. Neural correlates of organization in free recall. Context and Episodic Memory Symposium. Philadelphia, PA.

**Morton NW**, Polyn SM. 2010. Illuminating the dynamics of memory search: Tracking category-related oscillations during free recall. Program No. 396.6. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Cohen ZD, **Morton NW**, Polyn SM. 2010. Using the context maintenance and retrieval model to interpret task-related neural activity in free recall. Program No. 396.7. 2010 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Polyn SM, **Morton NW**, Kahana MJ. 2010. Using intracranial oscillatory patterns to bridge cognitive and neural theories of memory search. Program No. 413.23. 2010

Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

**Morton NW**, Polyn SM. 2010. Illuminating the dynamics of memory search: Tracking category-related oscillations during free recall. Context and Episodic Memory Symposium. Philadelphia, PA.

Polyn SM, **Morton NW**, Kahana MJ. 2009. Unraveling subsequent memory: Tracking category-specific and category-general neural patterns using scalp EEG. Program No. 279.4. 2009 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience.

Polyn SM, **Morton NW**, Kahana MJ. 2008. Bridging cognitive and neural theories of memory search with the Context Maintenance and Retrieval model. Program No. 870.21. 2008 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience.

**Morton NW**, Burke JF, Hollidge BS, Polyn SM, Kahana MJ. 2008. Recency and contiguity in a temporal-context model of paired-associate learning. Poster presented at the 41<sup>st</sup> Annual Meeting of the Society for Mathematical Psychology. Washington, DC.

**Morton NW**, Polyn SM, Kahana MJ. 2007. Tracking encoding task context during free recall using scalp EEG. Program No. 526.1. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Polyn SM, Koshkin VS, **Morton NW**, Kahana MJ. 2007. Tracking category-related neural patterns during free recall using scalp EEG. Program No. 526.2. 2007 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience.

Polyn SM, **Morton NW**, Kogen DK, Norman KA, Kahana MJ. 2007 Task context and memory accessibility in free recall. Cognitive Neuroscience Society Annual Meeting. New York, NY.

Polyn SM, **Morton NW**, Kogen, DK, Norman KA, Kahana MJ. 2006. Task effects on memory accessibility in free recall. Poster presented at the 47<sup>th</sup> Annual Meeting of the Psychonomic Society. Houston, TX.

## TEACHING EXPERIENCE

### ***The University of Texas at Austin, Psychology Department***

Guest Lecturer, Cognitive Neuroscience

2015, 2017

### ***The University of Texas at Austin, Department of Statistics and Data Sciences***

Instructor, Introduction to Matlab and Intermediate Matlab

2016–2017

Instructor, Matlab (Summer Statistics Institute)

2016

***Vanderbilt University, Department of Psychology***

Expert Teaching Assistant Panelist and Practice Teaching Leader	2013
Teaching Assistant and Guest Lecturer, Human Memory (Dr. Sean Polyn)	2012
Teaching Assistant, Introduction to Psychology (Dr. Isabel Gauthier)	2011
Teaching Assistant and Guest Lecturer, Cognitive Psychology (Dr. Gordon Logan)	2011
Teaching Assistant, Principles of Experimental Design (Dr. Sean Polyn)	2010

**PROFESSIONAL EXPERIENCE*****University of Pennsylvania***

Research Coordinator, Computational Memory Laboratory Director: Dr. Michael J. Kahana	2007–2009
Research Assistant, Bipolar Disorders Center Director: Dr. Laszlo Gyulai	2006
Research Assistant, X-ray Crystallography Facility Director: Dr. Patrick J. Carroll	2004–2005
Research Assistant, Center for Bioinformatics Director: Dr. Maja Bucan	2003–2004

**ACADEMIC ADVISING*****Undergraduate Researchers (University of Texas at Austin)***

Ellen L. Zippi (Dean's Scholars Honors Program) Ph.D. student, University of California at Berkeley, NSF GRFP fellow	2015–2017
---	-----------

**RESEARCH SOFTWARE DEVELOPMENT**

Creator and Lead Developer, Aperture MATLAB-based software package for univariate and multivariate analysis of EEG data; supports ERP analysis, oscillatory power analysis, distributed computing, plotting and report generation. <a href="http://mortonne.github.io/aperture/">http://mortonne.github.io/aperture/</a>	2007–present
Developer, Behavioral Toolbox MATLAB-based software package for analysis of recall performance and organization in free recall paradigms. <a href="http://memory.psych.upenn.edu/Behavioral_toolbox">http://memory.psych.upenn.edu/Behavioral_toolbox</a>	2008–2014

**PROFESSIONAL SOCIETY MEMBERSHIPS**

Society for Neuroscience	2007–present
--------------------------	--------------

**AD-HOC REVIEWER**

- NeuroImage
- Psychological Review
- Psychonomic Bulletin & Review
- Journal of Mathematical Psychology
- Journal of Memory and Language
- Journal of Experimental Psychology: Human Perception and Performance