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Employment

2015– *Assistant Professor*, **Dartmouth College**, Hanover, NJ
Department of Psychological and Brain Sciences

2011–2015 *Postdoctoral Research Associate*, **Princeton University**, Princeton, NJ
Princeton Neuroscience Institute & Department of Computer Science
Advisors: Kenneth Norman, PH.D. & David Blei, PH.D.

Education

2011 PH.D. in Neuroscience, **University of Pennsylvania**, Philadelphia, PA
Advisor: Michael Kahana, PH.D.
Dissertation: *Acquisition, storage, and retrieval in digital and biological brains*

2006 B.S. in Neuroscience (High honors, *Magna cum laude*), **Brandeis University**, Waltham, MA
Advisor: Robert Sekuler, PH.D.
Dissertation: *Modeling human spatial navigation using a degraded ideal navigator*

2006 B.S. in Computer Science (*Magna cum laude*), **Brandeis University**, Waltham, MA

Grants, honors, & awards

2010 – 2011 NIMH Ruth L. Kirshstein National Research Service Award for an Individual Predoctoral Fellowship

2008 – 2010 NIH Computational Neuroscience Training Grant

2006 – 2008 NIH Systems and Integrative Biology Training Grant

Publications & presentations

PEER-REVIEWED JOURNAL ARTICLES

In prep **Manning JR**, Hulbert JC, Williams J, Piloto L, Sahakyan L, Norman KA (2015) A neural signature of intentional forgetting via contextual flushing. *Under review at The Journal of Neuroscience.*

Manning JR, Stachenfeld K, Ranganath R, Turk-Browne NB, Norman KA, Blei DM (2015) A probabilistic approach to full-brain functional connectivity analyses. *In preparation.*

Ramayya AG, **Manning JR**, Jacobs J, Fried I, Kahana MJ (2015) A nonlinear relation between human neuronal spiking and spectral changes in the local field potential. *Under revision at Neuron.*

Manning JR*, Li N*, Kahana MJ (2015) Long-range interactions between neurons encode navigationally relevant information in the human brain. *In preparation. *Denotes equal contribution.*

2014 Benson NC, **Manning JR**, Brainard DH (2014) Unsupervised learning of cone spectral classes from natural images. *PLoS Computational Biology*, 10(6): e1003652.

Manning JR, Ranganath R, Norman KA, Blei DA (2014) Topographic Factor Analysis: a Bayesian model for inferring brain networks from neural data. *PLoS One*, 9(5): e94914.

Manning JR, Lew TF, Li N, Kahana MJ, Sekuler RW (2014) MAGELLAN: a cognitive map-based model of human wayfinding. *Journal of Experimental Psychology: General*, 143(3): 1314 - 1330.

2012 **Manning JR**, Kahana MJ (2012) Interpreting semantic clustering effects in free recall. *Memory*, 20(5): 511 - 517.

Manning JR, Sperling MR, Sharan A, Rosenberg EA, Kahana MJ (2012) Spontaneously reactivated patterns in frontal and temporal lobe predict semantic clustering during memory search. *The Journal of Neuroscience*, 32(26): 8800 - 8816.

2011 **Manning JR**, Polyn SM, Baltuch G, Litt B, Kahana MJ (2011) Oscillatory patterns in temporal lobe reveal context reinstatement during memory search. *Proceedings of the National Academy of Sciences of the United States of America*, 108(31): 12893 - 12897.

2010 Jacobs J, **Manning JR**, Kahana MJ (2010) Response to Miller: "broadband" vs. "high gamma" electrocorticographic signals. *The Journal of Neuroscience*, 30(19): Online.

2009 **Manning JR**, Jacobs J, Fried I, Kahana MJ (2009) Broadband shifts in local field potential power spectra are correlated with single-neuron spiking in humans. *The Journal of Neuroscience*, 29(43): 13613 - 13620.

Manning JR, Brainard DH (2009) Optimal design of photoreceptor mosaics: why we do not see color at night. *Visual Neuroscience*, 26: 5-19.

Peer-reviewed conference proceedings

2014 **Manning JR**, Ranganath R, Keung W, Turk-Browne NB, Cohen JD, Norman KA, Blei DM (2014) Hierarchical Topographic Factor Analysis. *IEEE Xplore, 4th International Workshop on Pattern Recognition in Neuroimaging*: 113 - 116.

2012 **Manning JR**, Gershman SJ, Norman KA, Blei DM (2012) Factor topographic latent source analysis: factor analysis for brain images. *Neural Information Processing Systems (NIPS) Workshop on Machine Learning and Interpretation in Neuroimaging*, 2: Online.

Book chapters

2014 **Manning JR**, Kahana MJ, Norman KA (2014) The role of context in memory. In Gazzaniga M, Ed. *The Cognitive Neurosciences, Fifth Edition.* Cambridge, MA: MIT Press. Chapter 47: 557 - 566.

Talks

2015 **Manning JR** (2015) A neural signature of mental time travel. Talk given at: *Columbia University*, New York, NY; *Brown University*, Providence, RI; *Dartmouth College*, Hanover, NH; *Georgetown University*, Washington, DC; and *Johns Hopkins University*, Baltimore, MD.

2014 **Manning JR**, Williams J, Piloto L, Hulbert JC, Abushanab B, Sahakyan L, Norman KA (2014) Neural evidence for a contextual change account of list-method directed forgetting. *Manhattan Area Memory Meeting (MAMM).* New York, NY.

Manning JR (2014) Hierarchical Topographic Factor Analysis. *Pattern Recognition in Neuroimaging.* Tübingen, Germany.

Manning JR, Williams J, Piloto L, Hulbert JC, Abushanab B, Sahakyan L, Norman KA (2014) Neural evidence for a contextual change account of list-method directed forgetting. *Context and Episodic Memory Symposium.* Philadelphia, PA.

Manning JR (2014) The dark matter of memory search. *Dartmouth-Hitchcock Medical Center.* Lebanon, NH.

2013 **Manning JR** (2013) Topographic Factor Analysis: inferring brain networks from fMRI data. *Neuroimaging and Analysis Methods Seminar, Princeton University.* Princeton, NJ.

Manning JR (2013) Commentary on incorporating neural signals into computational models of memory search. *Context and Episodic Memory Symposium.* Philadelphia, PA.

Manning JR (2013) A neural signature of mental time travel. Talk given at: *University of Massachusetts*, Amherst, MA and *Dartmouth College*, Hanover, NH.

2012 **Manning JR** (2012) Decoding topic vectors from brain images. *Neuroimaging and Analysis Methods Seminar, Princeton University.* Princeton, NJ.

Manning JR (2012) Acquisition, storage, and retrieval in digital and biological brains. Talk given at: *Natick Soldier Systems Center*, Natick, MA and *Charles River Analytics.* Cambridge, MA.

2011 **Manning JR** (2011) Intracranial recordings yield novel insights into how episodic memories are represented, stored, and retrieved. *Society for Mathematical Psychology.* Boston, MA.

Manning JR (2011) Identifying neural signatures of conceptual representations and context reinstatement. *Neuroimaging and Analysis Methods Seminar, Princeton University.* Princeton, NJ.

Poster presentations & published abstracts

2014 **Manning JR**, Stachenfeld K, Ranganath R, Turk-Browne N, Norman KA, Blei DM (2014) The Hierarchical Topographic Factor Analysis MATLAB Toolbox. *Collaborative Research in Computational Neuroscience (CRCNS) Principal Investigators Meeting.* Tempe, AZ.

Manning JR, Ranganath R, Norman KA, Blei DM (2014) Efficient discovery of functional brain networks in large multisubject fMRI datasets. *Society for Neuroscience.* Washington, DC.

Manning JR, Hulbert JC, Williams J, Piloto L, Sahakyan L, Norman KA (2014) Neural evidence for a context-change account of list-method directed forgetting. *Society for Neuroscience.* Washington, DC.

Manning JR, Ranganath R, Norman KA, Blei DM (2014) Hierarchical Topographic Factor Analysis: a MATLAB toolbox for efficiently discovering brain networks in fMRI data. *Context and Episodic Memory Symposium.* Philadelphia, PA.

2013 **Manning JR**, Blei DM, Norman KA (2013) Integrating neural and behavioral data into episodic memory models. *Society for Neuroscience.* San Diego, CA.

Manning JR, Blei DM, Norman KA (2013) A probabilistic temporal context model for tracking mental context using neural and behavioral data. *Collaborative Research in Computational Neuroscience (CRCNS) Principal Investigators Meeting.* Cambridge, MA.

Manning JR, Blei DM, Norman KA (2013) A probabilistic temporal context model for tracking mental context using neural and behavioral data. *Context and Episodic Memory Symposium.* Philadelphia, PA.

2012 **Manning JR**, Blei DM, Norman KA (2012) Decoding topic vectors during memory encoding and retrieval. *Society for Neuroscience.* New Orleans, LA.

Manning JR, Blei DM, Norman KA (2012) Text, neuroimaging, and memory: unified models of corpora and cognition. *Collaborative Research in Computational Neuroscience (CRCNS) Principal Investigators Meeting.* St. Louis, MO.

Manning JR, Blei DM, Norman KA (2012) Tracking item representations during free recall. *Context and Episodic Memory Symposium.* Bloomington, IN.

2011 **Manning JR**, Kahana MJ (2011) How does the brain represent and retrieve word meanings? *Collaborative Research in Computational Neuroscience (CRCNS) Principal Investigators Meeting.* Princeton, NJ.

Gershman SJ, **Manning JR**, Blei DM, Norman KA (2011) New tools for decoding mental representations from neuroimaging data. *Collaborative Research in Computational Neuroscience (CRCNS) Principal Investigators Meeting.* Princeton, NJ.

Manning JR, Kahana MJ (2011) How does the brain represent and retrieve word meanings? *Society for Neuroscience.* Washington, DC.

Manning JR, Kahana MJ (2011) Temporal and frontal networks reveal how conceptual memories are organized. *Context and Episodic Memory Symposium.* Philadelphia, PA.

Manning JR, Hurst B, Brainard DH (2011) Learning receptor types from receptor responses. *Computational and Systems Neuroscience (COSYNE).* Salt Lake City, UT.

2010 **Manning JR**, Polyn SM, Kahana MJ (2010) A neural signature of mental time travel. *Society for Neuroscience.* San Diego, CA.

Ramayya AG, **Manning JR**, Jacobs J, Kahana MJ (2010) The firing rate–LFP relation changes as a function of firing rate in humans. *Society for Neuroscience.* San Diego, CA.

Manning JR, Polyn SM, Kahana MJ (2010) Observing mental time travel in action: neurophysiological support for context-based models of episodic memory. *Context and Episodic Memory Symposium.* Philadelphia, PA.

2009 **Manning JR**, Polyn SM, Kahana MJ (2009) Neural correlates of context-based models of free recall. *Society for Neuroscience.* Chicago, IL.

Manning JR, Polyn SM, Kahana MJ (2009) The neural representation of context and its role in free recall. *Society for Mathematical Psychology.* Amsterdam, The Netherlands.

2008 **Manning JR**, Jacobs J, Fried I, Kahana MJ (2008) Broadband shifts in EEG power spectra are correlated with single-neuron activity in humans. *Society for Neuroscience.* Washington, DC.

Manning JR, Jacobs J, Fried I, Kahana MJ (2008) Broadband shifts in EEG power spectra are correlated with single-neuron activity in humans. *Society for Mathematical Psychology.* Washington, DC.

2007 **Manning JR**, Kahana MJ, Sekuler R (2007) An ideal navigator model of human wayfinding: learning one's way around a new town. *Cognitive Neuroscience Society.* New York, NY.

Manning JR, Brainard DH (2007) Why don't we see color at night? *Computational and Systems Neuroscience (COSYNE)*. Salt Lake City, UT.

Software

2014 **Manning JR** (2014) Hierarchical Topographic Factor Analysis. Efficiently discover functional brain networks in fMRI data.

2013 **Manning JR** (2013) MATLAB Ipsum. Generate filler text using MATLAB. MATLAB Central File Exchange: 43428.

Manning JR (2013) Easy resample. Simple interface for interpolating or resampling a 1D signal. MATLAB Central File Exchange: 43320.

2012 **Manning JR** (2012) Chuck Close-ify. Automatically create artwork in Chuck Close's iconic style based on existing photographs. MATLAB Central File Exchange: 38770.

Manning JR (2012) Plot fMRI images. Quick and easy method for generating 2D and 3D brain plots. MATLAB Central File Exchange: 36139.

Manning JR (2012) Generate synthetic fMRI data. Generate synthetic data for testing fMRI analyses and models. MATLAB Central File Exchange: 36125.

Manning JR (2012) Sane pColor. Create 2D images that don't look blurry in OS X's Preview PDF viewer. MATLAB Central File Exchange: 35601.

Manning JR (2012) Attach. MATLAB implementation of the attach function in R. MATLAB Central File Exchange: 35436.

Manning JR (2012) Get tight subplot handles. Allows user to exert finer control over subplot spacing in MATLAB. MATLAB Central File Exchange: 35435.

Manning JR (2012) Slices. Efficiently slice a tensor along the n^{th} dimension. MATLAB Central File Exchange: 35439.

Teaching

Princeton University

2012 – *Co-supervisor*, 2 research assistants and 1 doctoral rotation student
2013 – 2014 *Organizer*, Machine Learning Reading Group

University of Pennsylvania

2009 – 2011 *Co-supervisor*, 2 masters students and 4 undergraduate research assistants
2011 *Instructor*, Computational Neuroscience (summer course)
2010 *Instructor*, Computational Neuroscience (summer course)
Guest lecturer, Human Memory (topic: Hopfield networks)
2009 *Co-instructor, Teaching assistant*, Computational Neuroscience (summer course)
2008 *Teaching assistant*, Introduction to Brain and Behavior

Brandeis University

2005 – 2006 *Computer Science Undergraduate Department Representative*

2005 *General teaching assistant*, Programming in Java and C; Structure and Interpretation of Computer Programs; Internet and Society

Last updated: August 12, 2015