Jarrod Alan Lewis-Peacock, Ph.D.

Assistant Professor
Department of Psychology
University of Texas at Austin

Lab: https://lewpealab.psy.utexas.edu
Email: jalewpea@utexas.edu
Phone: (512) 232-2149

Academic Degrees

Ph.D., Psychology — 2010
University of Wisconsin-Madison
Dissertation: "*Long-term memory supports the retention, preservation, and prioritization of short-term memory*"
Advisor: Bradley R. Postle, Ph.D.

M.S., Psychology — 2008
University of Wisconsin-Madison

M.S., Computer Sciences — 2002
University of Wisconsin-Madison

B.S., Electrical Engineering (Computer Option) — *with Distinction* — 2000
University of Wisconsin-Madison

Professional Appointments

Assistant Professor — 2013-Present

Department of Psychology, Imaging Research Center,
Center for Learning and Memory, Institute for Neuroscience,
Department of Neuroscience (by courtesy)
Clinically Applied Rehabilitation Engineering (CARE) Initiative
Department of Psychiatry (by courtesy), Dell Medical School — 2017-Present
The University of Texas at Austin

Postdoctoral Researcher — 2010-2013

Department of Psychology
Princeton Neuroscience Institute
Princeton University
Advisors: Kenneth A. Norman, Ph.D., and Jonathan D. Cohen, M.D., Ph.D.

Research Interests

- Cognitive and neural bases of memory
- Attention and cognitive control
- Machine learning and advanced neuroimaging analyses
- Real-time functional neuroimaging and neurofeedback

Fellowships, Awards, and Honors

College Research Fellowship, University of Texas at Austin	2017
Summer Research Assignment, University of Texas at Austin	2015
Laird Cermak Postdoctoral Travel Award, Memory Disorders Research Society	2012
Predoctoral Individual National Research Service Award, NIMH	2009
Marian S. Schwartz Graduate Fellowship, University of Wisconsin-Madison	2009

Publications

Peer-Reviewed Journal Articles

Tang, Y.-Y., Tang, Y., Tang, R., & Lewis-Peacock, J. A. (2017). Brief Mental Training Reorganizes Large-Scale Brain Networks. *Frontiers in Systems Neuroscience*, 11. https://doi.org/10.3389/fnsys.2017.00006

Sitaram, R., Ros, T., Stoeckel, L., Haller, S., Scharnowski, F., Lewis-Peacock, J.A., Weiskopf, N., Blefari, M.L., Rana, M., Oblak, E., Birbaumer, N., & Sulzer, J. (2016). Closed-loop brain training: the science of neurofeedback. *Nature Reviews Neuroscience.* doi: 10.1038/nrn.2016.164

Lewis-Peacock, J.A., Cohen, J.D., & Norman, K.A. (2016). Neural evidence of the strategic choice between working memory and episodic memory in prospective remembering. *Neuropsychologia,* doi:10.1016/j.neuropsychologia.2016.11.006

Bakkour, A., Lewis-Peacock, J.A., Poldrack, R.A., & Schonberg, T. (2016). Neural mechanisms of cue-approach training. *Neuroimage,* doi:10.1016/j.neuroimage.2016.09.059

Lewis-Peacock, J.A., Drysdale, A.T., & Postle, B.R. (2015). Neural evidence for the flexible control of mental representations. *Cerebral Cortex.* doi:10.1093/cercor/bhu130

Lewis-Peacock, J.A., Norman, K.A. (2014). Competition between items in working memory leads to forgetting. *Nature Communications,* 5, Article number: 5768, doi:10.1038/ncomms6768

Kim, G., Lewis-Peacock, J.A., Norman, K.A., & Turk-Browne, N. (2014). Pruning of memories due to context-based prediction error. *Proceedings of the National Academy of Sciences USA*, 111, 8897-9002.

LaRocque, J. J., Lewis-Peacock, J. A., & Postle, B. R. (2014). Multiple neural states of representation in short-term memory? It's a matter of attention. *Frontiers in Human Neuroscience*, 8, 5.

LaRocque, J.J., Lewis-Peacock, J.A., Drysdale, A.T., Oberauer, K., & Postle, B.R. (2013). Decoding attended information in short-term memory: An EEG study. *Journal of Cognitive Neuroscience,* 25(1): 127-142.

Lewis-Peacock, J.A. & Postle, B.R. (2012). Decoding the internal focus of attention. *Neuropsychologia*, 50(4): 470-478.

Lewis-Peacock, J.A., Drysdale, A.T., Oberauer, K., & Postle, B.R. (2012). Neural evidence for a distinction between short-term memory and the focus of attention. *Journal of Cognitive Neuroscience*, 24(1): 61-79.

Johnson, J.S., Sutterer, D.W., Acheson, D. J., Lewis-Peacock, J.A., & Postle, B.R. (2011). Increased alpha-band power during the retention of shapes and shape-location associations in visual short-term memory. *Frontiers in Perception Science*, 2(128): 1-9.

Lewis-Peacock, J.A. & Postle, B.R. (2008). Temporary activation of long-term memory supports working memory. *Journal of Neuroscience*, 28(35), 8765-8771.

Lewis, J.A., Black, B., & Lipasti, M.H. (2002). Avoiding initialization misses to the heap. In the 29th Annual *International Symposium on Computer Architecture*, 183-194.

Archival Preprints

Lewis-Peacock, J.A., Cohen, J.D., & Norman, K.A. (2016). Neural evidence of the strategic choice between working memory and episodic memory in prospective remembering. *bioRxiv,* doi:10.1101/055004

Book Chapters

Lewis-Peacock, J.A. & Norman, K.A. (2014). Multivoxel pattern analysis of functional MRI data. In M.S. Gazzaniga & G.R. Mangun (Eds.), *The Cognitive Neurosciences, 5th ed.,* 911-920. Cambridge, Massachusetts: MIT Press.

Grants

Extramural Awards

Medical Research Grant (Co-PIs: Sulzer, Lewis-Peacock) 2017-2020
Robert J. Kleberg Jr. and Helen C. Kleberg Foundation
Neurally guiding fine motor recovery after stroke
Direct costs: $453,515

R21 MH108848-01A1 (MPIs: Banich, Lewis-Peacock) 2016-2018
NIH/NIMH
Clearing the contents of working memory: mechanisms and representations
Direct costs: $138,750

Pilot Project Grant (PI: Sulzer, Co-PI: Lewis-Peacock) 2016-2017
National Center of Neuromodulation for Rehabilitation (NC NM4R) at the Medical University of South Carolina
Real-time fMRI Operant Conditioning of Fine Motor Skills
Direct costs: $37,411

Pilot in Integrative Medicine (PI: Weng, Consultant: Lewis-Peacock) 2015-2016
University of California, San Francisco
Identifying neural patterns of body awareness with the Brain Body Awareness Metric: A novel brain-based method of measuring mindfulness of body sensations
Direct costs: $50,000

F32NS096962-01A1 (PI: Wang; Sponsor: Lewis-Peacock) 2016-2019
Postdoctoral National Research Service Award
NIH/NINDS
Investigating the contributions of neural competition to intentional forgetting and real-time neurofeedback

F31MH085444-01A1 (PI: Lewis-Peacock, Sponsor: Postle) 2009-2011
Predoctoral National Research Service Award
NIH/NIMH
The role of activated long-term memory representations in working memory storage

Intramural Awards

UT BRAIN Seed Grant (PI: Lewis-Peacock) 2015-2018
The University of Texas System
Neuroscience and Neurotechnology Research Institute
Adaptive Brain Training Using fMRI Neurofeedback
Direct costs: $130,000

Special Research Grant (PI: Lewis-Peacock) 2015
The University of Texas at Austin
Semantic similarity assessment of object and scene pictures to be used in a fMRI study of human memory
Direct costs: $750

Scholarly Presentations

Invited Talks

Linking the cognitive and neural consequences of activation in working memory. Talk in Cognoscenti Seminar Series, Texas A&M University, Feb 2017

Linking the cognitive and neural consequences of activation in working memory. Talk in Center for Vital Longevity Seminar Series, University of Texas at Dallas, Oct 2016.

Adaptive Brain Training Using fMRI Neurofeedback. Talk in Center for BrainHealth Seminar Series, University of Texas at Dallas, Jun 2016.

Linking the cognitive and neural consequences of activation in working memory. Talk in Department of Psychology Seminar Series, University of Zurich, Switzerland, Mar 2016.

Forgetting intentionally through biased competition. Talk included in Symposium titled "Attention and Memory: A Two-Way Street", at the Memory Disorders Research Society Annual Meeting, Cambridge, UK, Sep 2015.

The power of memory: Techniques to using your brain's full potential. Track session talk at the Shepperd Institute Texas Leadership Forum, Austin, TX, Feb 2015.

Competition between items in working memory leads to forgetting. Faculty talk presented at the 19th Annual Neuroscience Symposium, Institute for Neuroscience, University of Texas at Austin, Jan 2015.

Using fMRI brain decoding to study learning & memory. Keynote talk at the Consortium for Research in Teacher Education, College of Education, University of Texas at Austin, Mar 2014.

The flexible deployment of memory resources. Talk in the Cognitive Brown Bag Series, Department of Psychology, Rice University, Jan 2014.

Multi-voxel pattern analysis of fMRI data. Talk in the Summer Institute in Cognitive Neuroscience, Lake Tahoe, California, Jul 2013.

The flexible deployment of memory resources. Talk in the Imaging Research Center Colloquium, University of Texas at Austin, Jan 2013.

The flexible deployment of memory resources. Talk in the Neuroscience Colloquium, University of Wisconsin-Milwaukee, Jan 2013.

The flexible deployment of memory resources. Talk in the Institute of Cognitive Science Colloquium, University of Colorado, Boulder, Dec 2012.

Residual activation of items in working memory leads to forgetting. Cermak Award talk at the Memory Disorders Research Society Annual Meeting, Davis, CA, Sep 2012.

Selected Conference Presentations

Oblak, E., Lewis-Peacock, J.A., Sulzer, J.S. (Dec 2016). Simulating real-time fMRI neurofeedback for cortical rehabilitation. Poster presented at the Mission Connect Scientific Symposium, Houston, TX.

Kim, H., Schlichting, M.L., Preston, A.R, & Lewis-Peacock, J.A. (Nov 2016). The precision of memory-based prediction biases memory pruning. Poster presented at the Psychonomic Society Annual Meeting, Boston, MA.

Hollenbeck, M., Dutcher, A., Jeanneret, S., & Lewis-Peacock, J.A. (Nov 2016). Competition and forgetting during context-based episodic memory retrieval. Poster presented at the the Society for Neuroscience Annual Meeting, San Diego, CA.

Weng, H.Y., Lewis-Peacock, J.A., Ziegler, D.A., Uncapher, M.R., Farb, N., Duncan, L.G., Chao, M.T., Goldman, V., Skinner, S., Lopilato, R., McKenna, F., Hecht, F.M., Gazzaley, A (Nov 2016). Decoding types of mind wandering during breath meditation. Poster presented at the International Symposium for Contemplative Studies, San Diego, CA.

Wang, T.H., Placek, K., and Lewis-Peacock, J.A. (Apr 2016). Forgetting is more work than remembering. Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York, NY.

Mukerji, A., and Lewis-Peacock, J.A. (Oct 2015). Working memory allocation reflects task demands during prospective remembering. Poster presented at the the Society for Neuroscience Annual Meeting, Chicago, IL.

Banich, M.T., Smolker, H.R., Snyder, H.R., Lewis-Peacock, J.A., Godinez, D., & Hankin, B.L. (Sep 2015). Individual differences in executive control and negative affect as they influence the ability to ignore emotionally distracting information in mid-adolescence. Poster presented at the the Third Annual Flux Congress in Leiden, The Netherlands.

Weng, H.Y., Lewis-Peacock, J.A., Stodola, D.E., & Davidson, R.J. (Jun 2015) Neural pattern similarity before and after short-term compassion meditation training. Poster presented at the Mind and Life Summer Research Institute (MLSRI), Garrison, NY.

Mukerji, A., & Lewis-Peacock, J.A. (Apr 2015). Calibrating the usage of working memory for prospective remembering. Poster presented at the Austin Conference on Learning and Memory.

Hollenbeck, M., & Lewis-Peacock, J.A. (Apr 2015). The role of contextual information in retrieval-induced forgetting. Poster presented at the Austin Conference on Learning and Memory

Kim, H., Schlichting, M.L., Preston, A.R, & Lewis-Peacock, J.A. (Apr 2015). Shifting the granularity of context-based predictions modulates memory pruning. Poster presented at the Austin Conference on Learning and Memory

Mukerji, A., deBettencourt, M., and Lewis-Peacock, J.A. (Feb 2015). Realtime neurofeedback of working memory usage during prospective remembering. Poster presented at the 2nd Real-time Functional Imaging and Neurofeedback meeting, Gainesville, FL.

Mukerji, A., deBettencourt, M., and Lewis-Peacock, J.A. (Nov 2014). Realtime neurofeedback of working memory usage during prospective remembering. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.

Wang, T.H., Placek, K., Mukerji, A., and Lewis-Peacock, J.A. (Nov 2014). Contributions from memory competition on intentional forgetting. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.

Lewis-Peacock, J.A. (May 2014). Neural evidence for the flexible use of working memory and episodic memory in prospective remembering. Talk presented at the Vision Sciences Society Annual Meeting, St. Pete Beach, FL.

Lewis-Peacock, J.A. (Aug 2013). Sustained neural activation reflects the internal focus of attention. Talk presented at the American Psychological Association Annual Convention, Honolulu, HI.

Lewis-Peacock, J.A., Cohen, J.D., and Norman, K.A. (May 2013). Neural evidence for the flexible use of working memory and episodic memory in prospective remembering. Poster presented at the Context and Episodic Memory Symposium, Philadelphia, PA.

Lewis-Peacock, J.A. (Nov 2012). Delay-period activity reflects the internal focus of attention. Talk presented at the Psychonomic Society Annual Meeting, Minneapolis, MN.

Lewis-Peacock, J.A., & Norman, K.A. (Oct 2012). Residual activation of items in working memory leads to forgetting. Talk presented at the Society for Neuroscience Annual Meeting, New Orleans, LA.

Cohen, J.D., Lewis-Peacock, J.A., & Norman, K.A. (Oct 2012). Neural evidence for the flexible use of working memory and episodic memory in prospective remembering. Poster presented at the Society for Neuroscience Annual Meeting, New Orleans, LA.

Lewis-Peacock, J.A. & Norman, K.A. (May 2012). Deactivation of items in working memory can weaken long-term memory. Poster presented at the Context and Episodic Memory Symposium, Bloomington, IN.

Weng, H.Y., Lewis-Peacock, J.A., Stodola, D.E., & Davidson, R.J. (Apr 2012). Multi-voxel pattern analysis of brain states after compassion training predicts charitable donations. Talk presented at the Cognitive Neuroscience Annual Meeting, Chicago, IL.

Lewis-Peacock, J.A. & Norman, K.A. (Apr 2012). Deactivation of items in working memory can weaken long-term memory. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Chicago, IL.

Lewis-Peacock, J.A., Salesi, MR, Cohen, J.D., & Norman, K.A. (Nov 2011). Decoding the use of working memory and episodic memory in prospective remembering. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.

Postle, B.R. & Lewis-Peacock J.A. (Sep 2011). Long-term memory supports the retention, preservation, and prioritization of short-term memory. Talk presented at the International Conference on Cognitive Neuroscience Annual Meeting, Palma, Mallorca, Spain.

Lewis-Peacock J.A. & Postle, B.R. (Nov 2010). Tracking the evolution of a thought: stimulus encoding automatically engages multiple domains of information representation that are flexibly retained in short-term memory. Talk presented at the Society for Neuroscience Annual Meeting, San Diego, CA.

Lewis-Peacock, J.A., Drysdale, AT, Oberauer, K., & Postle, B.R. (Apr 2010). Functionally distinct states of working memory retention are revealed by pattern classification of fMRI. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Montreal, Quebec, Canada.

Drysdale, AT, Lewis-Peacock, J.A., Oberauer, K., & Postle, B.R. (Apr 2010). Removing irrelevant information from working memory: Domain-specific prioritization takes time. Poster presented at the Cognitive Neuroscience Society Annual Meeting, Montreal, Quebec, Canada.

Lewis-Peacock, J.A., Rogers, T.T., & Postle, B.R. (Oct 2009). Unsupervised dimensionality reduction of fMRI reveals widely distributed and massively redundant representation of gender during face processing. Poster presented at the Society for Neuroscience Annual Meeting, Chicago, IL.

Lewis-Peacock, J.A. & Postle, B.R. (Mar 2009). Classification reveals distraction-resistant representations in working memory. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

Lewis-Peacock, J.A. & Postle, B.R. (Nov 2008). The effects of distraction on the retention of information in visual working memory. Poster presented at the Society for Neuroscience Annual Meeting, Washington, D.C.

Lewis-Peacock, J.A. & Postle, B.R. (Apr 2008). Probing working memory representations with pattern classification. Poster presented at the Cognitive Neuroscience Society Annual Meeting, San Francisco, CA.

Lewis-Peacock, J.A. & Postle, B.R. (May 2007). Retrospective vs. prospective coding in object working memory. Poster presented at the Cognitive Neuroscience Society Annual Meeting, New York, NY.

Teaching

Graduate Instructor

Cognitive Neuroscience Area Seminar, PSY 383E	2016
fMRI Brain Decoding, PSY 387D / NEU 394P	2014-Present

Undergraduate Instructor

Research Design and Statistics, PSY 418	2013-Present

Guest Lectures

Principles of Cognitive Neuroscience, PSY 387R (grad), UT Austin	2015-Present
Principles of Neuroscience II, PSY 394U / NEU 383T (grad), UT Austin	2014-Present
Introduction to Cognitive Science, CGS 360 (undergrad), UT Austin	2014-2015
Fundamentals of Cognition, PSY 387R (grad), UT Austin	2014
Machine Organization, CS 354 (undergrad), UW-Madison	2003

Workshops

Multivariate Pattern Analysis of Neuroimaging Data A 3-day workshop for doctoral students on advanced neuroimaging analyses, Department of Psychology, University of Zurich	Jan 4-6, 2017

Teaching Assistant

Cognitive Psychology, PSY 414, UW-Madison	2009
Cognitive Neuroscience, PSY 481, UW-Madison	2009
Experimental Psychology, PSY 225, UW-Madison	2008
Career Development, Business X220, IU-Bloomington	2004

Academic Advising

Postdoctoral Researchers

Tracy Wang, 2014-Present

Doctoral Students

Hyojeong Kim (Psychology), 2014-Present
Linnéa Marks (Psychology), 2014-2015
Ethan Oblak (Mechanical Engineering), 2015-Present
Seth Koslov (Psychology), 2016-Present
Remington Mallett (Psychology), 2016-Present
Anthony Dutcher (Neuroscience), 2016-Present
Augustin Hennings (Neuroscience), 2017-Present

Masters Students

Mark Hollenbeck (Computer Science), 2014-2015	Software Engineer, Blackfynn
Keum San Chun (Electrical Engineering), 2016-2017	
Allison Berman (Electrical & Computer Eng.), 2017-Present	

Undergraduate Theses Supervised

Grace Haaland, 2011-2012	B.S., Princeton, 2012
Rochelle Stewart, 2015-2016	B.S., UT Austin, 2016

Undergraduate Students

Andrew Drysdale, 2009-2010
Matthew Salesi, 2010-2011
Katerina Placek, 2013-2014
Arjun Mukerji, 2013-2015
Bernard Gelman, 2015-2016
Anna Hebel, 2015
Morgan Harnois, 2015
Clinton Burgos, 2015
Rochelle Stewart, 2014-Present
Evan Roche, 2015-Present
Ellen Crowe, 2015-Present
Stephanie Jeanneret, 2015-Present
Song Liu 2016-Present
Katlyn Hedgpeth, 2016-Present
Zoe Davis, 2016-Present
Zean Aaron Evan Luna, 2017-Present

Service

Journal Reviewing

Behavioral and Brain Functions
Biomedical Signal Processing and Control
Cerebral Cortex
Cortex
Cognitive, Affective, & Behavioral Neurosci.
Cognitive Neurodynamics
Consciousness and Cognition
European Journal of Neuroscience
Frontiers in Behavioral Neuroscience
Hippocampus
Human Brain Mapping
Journal of Cognitive Neuroscience
Journal of Cognitive Psychology
Journal of Exp. Psych: General
Journal of Exp. Psych: Hum. Percep. & Perf.
Journal of Exp. Psych: Learn., Mem., & Cogn.
Journal of Neurophysiology
Journal of Neuroscience
Medical Research Council UK
Neuroimage
Neuron
Neuropsychologia
Neuroscience
PLOS ONE
Proc. Natl. Acad. Sci. USA
Psychonomic Bulletin & Review
Qtrly. Journal of Experimental Psychology
Scientific Reports

Grant Reviewing

UK Medical Research Council (MRC)
French National Research Agency (ANR)
US-Israel Binational Science Foundation (BSF)

Departmental Committees

Imaging Research Center Executive Committee	2016-Present
Institute for Neuroscience Seminar Committee	2013-Present

Dissertation Committees

Akram Bakkour, UT Austin, 2013-2014	Ph.D. 2014
Nicholas Malecek, UT Austin, 2013-2014	Ph.D. 2014
Meg Schlichting, UT Austin, 2013-2015	Ph.D. 2015
Dan Willard, UT Austin, 2016-Present	Ph.D. 2016

Scientific Meeting Organization

Organizing Committee — Nov 2017
Real-time Functional Imaging and Neurofeedback (rtFIN)
Nara, Japan

Co-Organizer (with Gagan Wig, Ph.D.) — Aug 2016
Dallas & Austin Area Memory Meeting (DAAMM)
Dallas, TX

Organizing Committee — Feb 2015
Real-time Functional Imaging and Neurofeedback (rtFIN)
Gainesville, FL

Co-Organizer (with James Sulzer, Ph.D.) — 2014-Present
Methods and Experiments in Real-Time Imaging and Neurofeedback (MERLIN). Weekly seminar held at UT Austin for students and researchers interested in real-time neuroimaging techniques and applications.

Public Discourse

"Cognitive Neuroscience Summer Camp" — Aug 2016
Educational session led for middle school students enrolled in the Dell Medical School Health Sciences Summer Camp, Austin, TX

"*The Neuroscience of Change: how current research in neuroscience could help us live better to nurture brain health, remember more, and imagine a brighter future."* Panel discussion at Center for Learning & Memory's "Memory Matters" community education and outreach event, Austin, TX — May 2016

The power of memory: Techniques to using your brain's full potential. Track session led at the Shepperd Institute Texas Leadership Forum, Austin, TX — Feb 2015

Professional Memberships

Memory Disorders Research Society (invited)
Society for Neuroscience
Cognitive Neuroscience Society
Vision Sciences Society
Psychonomic Society