

Brice Alan Kuhl, Ph.D.

Department of Psychology, University of Oregon
Lewis Integrative Science Building, Rm 333, Eugene, OR 97403
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ACADEMIC POSITIONS

- 2015 - present Assistant Professor, Department of Psychology and Institute of Neuroscience
University of Oregon
- 2012 - 2015 Assistant Professor, Department of Psychology and Neurosciences Program,
New York University

EDUCATION & TRAINING

- 2009 - 2012 Postdoctoral Research Fellow, Department of Psychology, Yale University,
Advisor: Marvin M. Chun
- 2003 - 2009 Ph.D., Stanford University, Psychology (Cognitive Neuroscience),
Dissertation: *Competitive remembering: Neural systems for overcoming
interference in episodic memory*, Advisor: Anthony D. Wagner
- 1997 - 2001 A.B., Kenyon College, Psychology (Cum Laude, Departmental Highest Honors)

FELLOWSHIPS, HONORS, AND AWARDS

Whitehead Fellowship for Junior Faculty in Biomedical and Biological Sciences, 2014-2015
Ruth L. Kirschstein National Research Service Award for Postdoctoral Fellows, 2010-2012
Department of Psychology Excellence in Graduate Teaching Award, Stanford University, 2008
National Science Foundation Graduate Student Fellowship, 2004-2007
Phi Beta Kappa, 2001

RESEARCH SUPPORT

Pending

NIH R01 (submitted to NINDS)

Brice A. Kuhl, PI

Parietal memory representations as a window into hippocampal learning

\$2,182,675 Total Costs requested

* *Impact Score: 27, Percentile: 10th*

Current

NSF CAREER Award (BCS-1752921)

Brice A. Kuhl, PI 01/01/2018 – 12/31/2022

CAREER: Functional contributions of lateral parietal cortex to episodic memory

\$750,000 Total Costs awarded

M.J. Murdock Charitable Trust

Brice A. Kuhl, Co-PI

Neurons to Mind: Advanced Large Scale Multineuronal Activity Imaging Microscope and Human EEG Equipment to Bridge the Gap Between Functional Neuronal Networks in Behaving Mice to Cognition and Behavior in Humans

\$504,000 Direct Costs awarded

NIH-NINDS (1R01NS089729)

Brice A. Kuhl, PI 09/30/2014 – 07/31/2019

\$984,375 Direct Costs awarded

Neural mechanisms for reducing interference during episodic memory formation

Completed

NYU Whitehead Fellowship for Junior Faculty in Biomedical and Biological Sciences

Brice A. Kuhl, PI 09/01/2014 – 08/31/2015

Reconstructing faces from patterns of brain activity

\$30,000 awarded

PUBLICATIONS

In Progress

Lee, H., Samide, R., Richter, F.R., **Kuhl, B.A.** (invited revision, *Cerebral Cortex*). Decomposing parietal memory reactivation to predict consequences of remembering.

<http://www.biorxiv.org/content/early/2017/10/25/208678>

Published Journal Articles

Long, N.M., **Kuhl, B.A.** (in press). Bottom-up and top-down attention differentially influence stimulus representations across large-scale brain networks. *Journal of Neuroscience*.

Chanales, A.J.H., Oza, A., Favila, S.E., **Kuhl, B.A.** (2017). Overlap among spatial memories triggers divergence of hippocampal representations. *Current Biology*, 27, 2307–2317.

Kuhl, B.A., & Long, N.M. (2017). Sampling memory to make profitable choices. *Nature Neuroscience*, 20, 903–904. (News and Views article).

Lee, H., Chun, M.M., & **Kuhl, B.A.** (2017). Lower parietal encoding activation is associated with sharper information and better memory. *Cerebral Cortex*, 27, 2486–2499.

Long, N.M., Lee, H., **Kuhl, B.A.** (2016). Hippocampal mismatch signals are modulated by the strength of neural predictions and their similarity to outcomes. *Journal of Neuroscience*, 36, 12677–12687.

Lee, H. & **Kuhl, B.A.** (2016). Reconstructing perceived and retrieved faces from activity patterns in lateral parietal cortex. *Journal of Neuroscience*, 36, 6069–6082.

Favila, S.E., Chanales, A.J.H., & **Kuhl, B.A.** (2016). Experience-dependent hippocampal pattern differentiation prevents interference during subsequent learning. *Nature Communications*, 7.

Richter, F.R., Chanales, A.J.H., & **Kuhl, B.A.** (2016). Predicting the integration of overlapping memories by decoding neural states during learning. *NeuroImage*, 124, 323–335.

Johnson, M.K., **Kuhl, B.A.**, Mitchell, K.J., Ankudowich, E., & Durbin, K.A. (2015). Age-related differences in the neural basis of the subjective vividness of memories: Evidence from multivoxel pattern classification. *Cognitive, Affective, & Behavioral Neuroscience*, 15, 644–661.

Kuhl, B.A., & Chun, M.M. (2014). Successful remembering elicits event-specific activity patterns in lateral parietal cortex. *Journal of Neuroscience*, *34*, 8051-8060.

Cowen, A.S., Chun, M.M. & **Kuhl, B.A.** (2014). Neural portraits of perception: Reconstructing face images from evoked brain activity. *NeuroImage*, *94*, 12-22.

Favila, S.E., & **Kuhl, B.A.** (2014). Stimulating memory consolidation. *Nature Neuroscience* (News and Views), *17*, 151–152.

Kuhl, B.A., Johnson, M.K. & Chun, M.M. (2013). Dissociable neural mechanisms for goal-directed versus incidental memory reactivation. *Journal of Neuroscience*, *33*, 16099–16109.

Ward, E.J., Chun, M.M. & **Kuhl, B.A.** (2013). Repetition suppression and multi-voxel pattern similarity differentially track implicit and explicit visual memory. *Journal of Neuroscience*, *33*, 14749-14757.

Kuhl, B.A., & Chun, M.M. (2012). Attending to the present when remembering the past. *Neuron* (Previews), *75*, 944–947.

Kuhl, B.A., Bainbridge, W.A., & Chun, M.M. (2012). Neural reactivation reveals mechanisms of memory updating. *Journal of Neuroscience*, *32*, 3453–3461.

Kuhl, B.A., Rissman, J., & Wagner, A.D. (2012). Multi-voxel patterns of visual category representation during episodic encoding are predictive of subsequent memory. *Neuropsychologia*, *50*, 458–469.

Kuhl, B.A., & Anderson, M.C. (2011). More is not always better: paradoxical effects of repetition on semantic accessibility. *Psychonomic Bulletin & Review*, *18*, 964–972.

Kuhl, B.A., Rissman, J., Chun, M.M., & Wagner, A.D. (2011). Fidelity of neural reactivation reveals competition between memories. *Proceedings of the National Academy of Sciences: USA*, *108*, 5903–5908.

Anderson, M.C., Reinholz, J., **Kuhl, B.A.**, & Mayr, U. (2011). Intentional suppression of unwanted memories grows more difficult as we age. *Psychology and Aging*, *26*, 397–405.

Kuhl, B.A., Shah, A.T., DuBrow S., & Wagner, A.D. (2010). Resistance to forgetting associated with hippocampus-mediated reactivation during new learning. *Nature Neuroscience*, *13*, 501–506.

Kuhl, B.A., Kahn, I, Dudukovic, N.M., & Wagner, A.D. (2008). Overcoming suppression in order to remember: Contributions from anterior cingulate and ventrolateral prefrontal cortex. *Cognitive, Affective, & Behavioral Neuroscience*, *8*, 211-221.

Kuhl, B.A., Dudukovic, N.M., Kahn, I, & Wagner, A.D. (2007). Decreased demands on cognitive control reveal the neural processing benefits of forgetting. *Nature Neuroscience*, *10*, 908-914.

Anderson M.C., Ochsner, K., **Kuhl, B.**, Cooper, J., Robertson, E., Gabrieli, S.W., Glover, G.H., & Gabrieli, J.D.E. (2004). Neural systems underlying the suppression of unwanted memories. *Science*, *303*, 232-235.

Chapters

Long, N.M., **Kuhl, B.A.**, & Chun, M.M. (in press). Memory and Attention. In E. Phelps & L. Davachi (Eds.) *Stevens' Handbook of Experimental Psychology, Learning and Memory*. Wiley.

Dudukovic, N.M., **Kuhl, B.A.** (2017). Cognitive control in memory encoding and retrieval. In T. Egner (Ed.) *The Wiley Handbook of Cognitive Control*. John Wiley and Sons.

Kuhl, B.A., & Chun, M.M. (2014). Memory and attention. In A.C. Nobre & S. Kastner (Eds.) *The Oxford Handbook of Attention*, (pp. 806-836). Oxford University Press.

Dudukovic, N.M., & **Kuhl, B.A.** (2013). Forgetting and amnesia. In Biswas-Diener R & Diener E (Eds.), *Noba textbook series: Psychology*. Champaign, IL: DEF Publishers. DOI: <http://www.nobaproject.com>

Levy, B.J., **Kuhl, B.A.**, & Wagner, A.D. (2010). The functional neuroimaging of forgetting. In S. Della Sala (Ed.), *Forgetting*, pp. 135–163. Hove and New York: Psychology Press.

Kuhl, B.A., & Wagner, A.D. (2009). Forgetting and Retrieval. In G. G. Berntson & J. T. Cacioppo (Eds.). *Handbook of Neuroscience for the Behavioral Sciences*. John Wiley and Sons.

Race, E.A., **Kuhl, B.A.**, Badre, D., & Wagner, A.D. (2009). The dynamic interplay between cognitive control and memory. In M. S. Gazzaniga (Ed.), *The Cognitive Neurosciences IV*, pp. 705–724. Cambridge, MA: MIT Press.

Kuhl, B.A., & Wagner, A.D. (2009). Strategic control of memory. In L. Squire et al. (Eds.). *The New Encyclopedia of Neuroscience*, 9, 437-444.

INVITED TALKS

Upcoming

Baylor College of Medicine, Core for Advanced MRI Journal Club, February 2018

Past

Duke University, Center for Cognitive Neuroscience Colloquium, April 2017

Yale University, MEMfest, a conference in honor of Marcia Johnson, May 2015

New York University, Advances in Memory Systems Meeting, May 2015

University of Texas at Austin, Conference on Learning and Memory, April 2015

University of Oregon, Department of Psychology, March 2015

Columbia University, Department of Psychology, February 2015

Brown University, Department of Psychology, February 2015

Princeton University, Cognitive Area Meeting, February 2015

University of California Davis, Center for Mind and Brain, January 2015

Stanford University, Center for Mind, Brain and Computation, November 2014

New York University, Weizmann Institute of Science Meeting, March 2014

New York University, Advances in Memory Systems Meeting, April 2013

Columbia University, Cognitive Area Meeting, November 2012

University of California, Irvine, Center for the Neurobiology of Learning & Memory, March 2012

University of Pennsylvania, Department of Psychology, February 2012

New York University, Department of Psychology, February 2012

Johns Hopkins University, Department of Psychology, January 2012
Rice University, Department of Psychology, January 2012
Carnegie Mellon University, Department of Psychology, December 2011
Columbia University, fMRI Methods Workshop, October 2011
Columbia University, Cognitive Area Meeting, March 2011

CONFERENCE PRESENTATIONS

Kuhl, B.A. (2017). Decomposing memory representations in lateral parietal cortex. *Memory Disorders Research Society Annual Meeting*.

Chanales, A.J., Richter, F.R., **Kuhl, B.A.** (2017). Online integration of overlapping events prevents subsequent interference. *Context and Episodic Memory Symposium*.

Long, N.M., **Kuhl, B.A.** (2016). Fronto-parietal regions represent both abstract goals and goal-relevant feature information. *Society for Neuroscience*.

Chanales, A.J., Favila, S.E., **Kuhl, B.A.** (2016). Overlap among real-world spatial routes triggers divergence of their hippocampal representations. *Society for Neuroscience*.

Lee, H., Samide, R., Richter, F.R., **Kuhl, B.A.** (2016). Parietal memory reactivation and retrieval-induced modification of long-term memories. *Society for Neuroscience*.

Favila, S.E., Long, N.M., **Kuhl, B.A.** (2016). Stimulus-specific memory representations in lateral parietal cortex. *Society for Neuroscience*.

Kuhl, B.A. (2016). Differentiated representations of overlapping spatial memories in human hippocampus. *Memory Disorders Research Society, Princeton University*.

Long, N.M., Lee, H., Chun, M.M., **Kuhl, B.A.** (2016). Hippocampal mismatch signals are modulated by the similarity between predicted and realized outcomes. *Context and Episodic Memory Symposium*.

Chanales, A.J.H., Richter, F.R., **Kuhl, B.A.** (2016). Integration reduces interference between overlapping memories. *Cognitive Neuroscience Society*.

Samide, R., Lee, H., Richter, F., **Kuhl, B.A.** (2016). Effects of retrieval practice on the modification of long-term memories. *Cognitive Neuroscience Society*.

Favila, S.E., Samide, R., **Kuhl, B.A.** (2016). Distributed cortical representations of visual features and items in perception and memory. *Cognitive Neuroscience Society*.

Chanales, A.J.H., **Kuhl, B.A.** (2015). Reducing interference between overlapping memories. *Society for Neuroscience*.

Favila, S.E., **Kuhl, B.A.** (2015). Distributed cortical representations of visual features in perception and memory. *Society for Neuroscience*.

Chanales, A.J.H., **Kuhl, B.A.** (2014). Decoding route learning from medial temporal and medial parietal activity patterns. *Society for Neuroscience*.

Lee, H., Cowen, A.S., **Kuhl, B.A.** (2014). Decoding face retrieval and reconstructing face perception from activity patterns in posterior parietal cortex. *Society for Neuroscience*.

Favila, S.E., Chanales, A.J.H., **Kuhl, B.A.** (2014). High discrimination demands reduce interference during later learning. *Society for Neuroscience*.

Richter, F.R., Chanales, A.J.H., **Kuhl, B.A.** (2014). Predicting the integration of older and newer experiences. *Society for Neuroscience*.

Richter, F.R., Chanales, A.J.H., **Kuhl, B.A.** (2013). Encoding, retrieval, and integration of visual memories: Distributed representations of mnemonic state and content. *Society for Neuroscience Abstracts*.

Kuhl, B.A., & Chun, M.M. (2012). Effects of visual memory reactivation on subsequent recognition. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Johnson, M.K., & Chun, M.M. (2012). Incidental memory reactivation during retrieval promotes future remembering. *Cognitive Neuroscience Society*.

Kuhl, B.A., Johnson, M.K., & Chun, M.M. (2012). Incidental reactivation of visual event features promotes long-term remembering. *Vision Science Society Abstracts*.

Kuhl, B.A., Cartmell, S.C.D., & Chun, M.M. (2011). Multi-voxel pattern analysis reveals dynamic tradeoffs between reactivating the past and encoding the present. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Bainbridge, W.A., & Chun, M.M. (2011). Decoding retrieval of competing visual memories from neural reactivation. *Vision Science Society Abstracts*.

Kuhl, B.A., Bainbridge, W.A., & Chun, M.M. (2010). Acquiring new memories in the face of competition from prior learning. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Rissman, J., Chun, M.M., & Wagner, A.D. (2010). Selective remembering: multivoxel pattern analysis of cortical reactivation during retrieval of visual images. *Vision Science Society Abstracts*.

Kuhl, B.A., Rissman, J., Chun, M.M., & Wagner, A.D. (2009). Competitive reactivation of episodic memories assessed via multivoxel pattern analysis. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Shah, A.T., DuBrow, S., & Wagner, A.D. (2008). The gains and losses of remembering amidst reward and interference: Prefrontal and mesolimbic contributions. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Shah, A.T., DuBrow, S., & Wagner, A.D. (2008). Reward- and interference based modulations of memory: Joint contributions of prefrontal and mesolimbic structures. Paper presented at the Bay Area Memory Meeting.

Kuhl, B.A., Chen, J., & Wagner, A.D. (2007). Cognitive control and episodic retrieval: Electrophysiological measures of the components and consequences of selective remembering. *Abstracts of the Cognitive Neuroscience Society*.

Kuhl, B.A., Chen, J., & Wagner, A.D. (2006). Multimodal imaging of prefrontal and parietal cortical contributions to conflict resolution during episodic retrieval. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Kahn, I., Dudukovic, N.M., & Wagner, A.D. (2006). Prefrontal and parietal cortical mechanisms that resolve mnemonic competition during retrieval. Paper presented at the 4th International Conference on Memory.

Kuhl, B.A., Kahn, I., Dudukovic, N.M., & Wagner, A.D. (2005). Forgetting and remembering during competitive memory retrieval: Prefrontal and parietal cortical mechanisms impact episodic memory suppression and recovery. *Society for Neuroscience Abstracts*.

Kuhl, B.A., Kahn, I., Dudukovic, N.M., & Wagner, A.D. (2005). Forgetting and remembering during competitive memory retrieval: Prefrontal and parietal mechanisms impact episodic memory suppression and recovery. Paper presented at the Bay Area Memory Meeting.

Kuhl, B.A., Kahn, I., Dudukovic, N.M., & Wagner, A.D. (2005). Resolving interference in episodic memory: Neurobiological mechanisms recruited during competitive retrieval attempts and memory suppression. *Abstracts of the Cognitive Neuroscience Society*.

Anderson, M.C., Ochsner, K., Gabrieli, J., **Kuhl, B.**, Cooper, J., Robertson, E., & Glover, G. (2003). Neural systems underlying the suppression of unwanted memories. *Society for Neuroscience Abstracts*.

Anderson, M.C., Ochsner, K., Gabrieli, J.D.E., **Kuhl, B.**, Cooper, J., Robertson, E., & Glover, G. (2003). Neural systems underlying the suppression of unwanted memories. Talk presented at the annual meeting of the Psychonomic Society.

Kuhl, B.A., & Anderson, M.C. (2002). Semantic satiation: Diminished accessibility following prolonged repetition. Poster presented at the Cognitive Science Association for Interdisciplinary Learning.

Kuhl, B.A., & Anderson, M.C. (2002). Inhibitory mechanisms underlying semantic satiation. Poster presented at the American Psychological Society.

Kuhl, B.A., & Anderson, M.C. (2002) Inhibitory processes in semantic satiation. Poster presented at the annual meeting of the Western Psychological Association.

Kuhl, B.A., & Anderson, M.C. (2002). Semantic satiation revisited: A new methodology for examining the effects of prolonged vocal repetition. Poster presented at the annual meeting of the Northwest Cognition and Memory Association.

Kuhl, B.A., & Stoltzfus, E.R. (2002). Retrieval-induced forgetting of positive and negative events for dysphoric and non-dysphoric participants. Poster presented at the annual meeting of the American Psychological Society.

TEACHING EXPERIENCE

Learning & Memory (undergraduate), Instructor, University of Oregon, 2016, 2017, 2018

Grant Writing (graduate), Co-Instructor, University of Oregon, 2017

Perception (undergraduate), Instructor, University of Oregon, 2016, 2017

fMRI Pattern Analysis (graduate), Instructor, New York University, 2015

Lab in Human Cognition (undergraduate), Instructor, New York University, 2013-2014 (4 terms)

Memory Reactivation (graduate), Instructor, New York University, 2012

Cognitive Neuroscience (undergraduate), Co-Instructor, Stanford University, 2005-2006

Introduction to Learning & Memory (undergraduate), TA & Guest Lecturer, Stanford, 2005-2007

Introduction to Statistical Methods (undergraduate), Head TA, Stanford University, 2005-2006

Statistical Analysis in Psychology (undergraduate), TA, Kenyon College, 2001

ACADEMIC SERVICE

Vice Chair, Committee for Inclusive Community, University of Oregon, Psychology, 2017-2018

Chair, Faculty Search Committee, University of Oregon, Psychology, 2017-2018

Atneave Lecture Committee, University of Oregon, Psychology, 2016-2017

Chair, Faculty Search Committee, University of Oregon, Psychology, 2016-2017

Colloquium Committee, University of Oregon, Psychology, 2016-2017

Atneave Lecture Committee, University of Oregon, Psychology, 2015-2016

Faculty Search Committee, University of Oregon, Psychology, 2015-2016

Cognition & Perception Colloquium Co-Organizer, New York University, Psychology, 2014-2015

Educational Policy Committee, New York University, Psychology, 2013-2015

Center for Brain Imaging Protocol Review Committee, New York University, 2012-2013

Graduate Admissions Committee, New York University, Psychology, 2012-2013

Summer Research College Advisor, Stanford University, 2007

Graduate Admissions Committee, Stanford University, Psychology, 2005, 2008

Faculty Search Committee, Stanford University, Psychology, 2006-2007

Cognitive Seminar Committee, Stanford University, Psychology, 2005-2006

ACADEMIC ADVISING

Postdoctoral Fellows

Ghootae Kim	University of Oregon	2016-present
Nicole Long	University of Oregon	2015-present
Franziska Richter	New York University	2013-2015

Doctoral Students

Yufei Zhao	University of Oregon	2017-present
Max Drascher	University of Oregon	2016-present
Serra Favila	New York University	2013-present
Hongmi Lee	New York University	2013-present
Avi Chanales	New York University	2014-present

Masters Students

Rotem Herrmann	New York University	2015
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Undergraduate and Postgraduate Researchers

Krista Wurscher	University of Oregon	2017-present
Sam Staver (honors thesis)	University of Oregon	2017-present
Emma Wischmeyer	University of Oregon	2017
Dillon Murphy	University of Oregon	2017
Alaska Yokota	University of Oregon	2017
Sarah Sweigart (lab manager)	University of Oregon	2016-present
Tyler Cozy (honors thesis)	University of Oregon	2016
Rosalie Samide (lab manager)	University of Oregon	2014-2016
Jada Alexander	New York University	2015
Nayaab Bakshi	New York University	2013-2015
Zara Chaudhury	New York University	2013-2014
Ashima Oza (honors thesis)	New York University	2013-2015
Avi Chanales	New York University	2012-2014

PROFESSIONAL MEMBERSHIPS

Cognitive Neuroscience Society; Memory Disorders Research Society; Society for Neuroscience

AD HOC REVIEWER

Acta Psychologica; Cerebral Cortex; Cortex, Current Biology; eLife; Experimental Psychology; Frontiers in Human Neuroscience; Frontiers in Systems Neuroscience, Hippocampus; Journal of Cognitive Neuroscience; Journal of Experimental Psychology: General; Journal of Neuroscience; Journal of Neurophysiology; Memory & Cognition; Nature Communications; Nature Human Behavior; Nature Neuroscience; Neuropsychologia; Neurobiology of Learning and Memory; NeuroImage; Neuron; PLOS ONE; PNAS; Psychological Science; Psychonomic Bulletin and Review; Science; Trends in Cognitive Sciences