Rebecca D. Burwell, Ph.D.
Department of Cognitive, Linguistic, and Psychological Sciences
Curriculum Vitae 2015

Name and Position:

Rebecca D. Burwell, Ph.D.
Professor of Psychology and Neuroscience
Department of Cognitive, Linguistic, and Psychological Sciences
http://www.brown.edu/Research/BurwellLab/

Education:

Ph.D., The University of North Carolina at Chapel Hill, 1992
Experimental and Biological Psychology Program
Thesis title: The Effects of Aging on Brain Dopamine Systems and Behavior

M.A., The University of North Carolina at Chapel Hill, 1989
Clinical Psychology Program
Thesis title: The Relationship Between Age-related Deficits in Spatial Learning and Diurnal Rhythms

B.A., Southern Methodist University, 1974

Professional Appointments:

Professor of Cognitive, Linguistic, and Psychological sciences (secondary appointment in Neuroscience), Brown University, 2011-present

Professor of Psychology (secondary appointment in Neuroscience), Brown University, 2006-present

Associate Professor of Neuroscience (secondary appointment), Brown University, 2003-2006

Associate Professor of Psychology, Brown University, 2002-2006

Assistant Professor of Psychology, Brown University, 1996-2002

Postdoctoral Fellow and Lecturer, Center for Behavioral Neuroscience, The State University of New York at Stony Brook, 1993-1996

Postdoctoral Research Associate, Laboratory for Neuronal Structure and Function, The Salk Institute for Biological Studies, 1992-1993

Academic Honors

National Merit Scholarship, 1971-1974

University Scholarship, SMU, 1973-1974
James R. Kenan Fellowship, UNC, 08/87-05/88
NSF Predoctoral Fellowship, 06/88-05/91
APA Division 20 Student Research Award, 1991
NIH Predoctoral Fellowship, 06/91-08/92
NIMH Postdoctoral Fellowship, 12/92-11/94
McDonnell-Pew Fellowship to Cold Spring Harbor Biology of Memory Course, Summer 1993
NIMH Postdoctoral Fellowship, 03/95-02/96
Salomon Award: The Postrhinal Cortex and Context Conditioning, 1997-1999
NSF Career Development Award: Cognitive Functions of the Postrhinal Cortex, 1999-2003
Karen T. Romer Prize for Undergraduate Advising, 2011
Keynote speaker, Scholarship Sewanee Undergraduate Research Day, Sewanee: The University of the South, 2013.
Keynote Speaker, Women in Learning Luncheon, APA Annual Conference, 2014.
Women in Learning, Certificate of Appreciation, August 8, 2014.
Elected member of the Memory Disorders Research Society, 2015.
Elected fellow of the American Association for the Advancement of Science, 2015

Professional memberships

American Psychological Association, since 1988, Fellow since 2013
Association for Psychological Science, since 1988, Fellow since 2013
Sigma Xi, The Scientific Research Society, since 1996
Society for Neuroscience, since 1988
Brown Institute for Brain Sciences, since 1998
Brown Center for Vision Research, since 2012
Women in Learning, since 2014
Memory Disorders Research Society, elected member since 2015
American Association for the Advancement of Science, member since 1997, elected Fellow 2015

Professional Service

NIH IFCN7 Grant Review Panel – temporary member, June 2002.
NIH IFCN5 Grant Review Panel – temporary member, March 2003.
NIH Neurobiology of Learning and Memory Study Section, Center for Scientific Review (LAM, formerly IFCN7), permanent member, 07/2003-06/2007.
NIH ZRG1-IFCN-B-04M Study Section, Center for Scientific Review, temporary member, 2007.
NSF Science of Learning Centers, ad hoc site review panel, 01/2004.
ZNS1 SRB-M Special Emphasis Panel/Scientific Review Group, July 2008.
American Psychological Association, Selection Committee for the Young Investigator Award in Cognitive Neuroscience, Chair, 2008
Texas A&M University and Texas A&M Health Science Center, Faculty of Neuroscience,

External Review Committee, 2008.
External Advisory Committee for an NIMH Silvio Conte Center on Cognitive and Physiological Studies of Episodic Memory. Boston University, 2008-present.
National Science Foundation, grant reviewer, 1999-present.
Alzheimer Association Research Grants Program, reviewer, 2005-2009.
NIMH, Special Emphasis Panel, Comparative Interdisciplinary Studies of Cerebral Cortical Development, Center for Scientific Review, February 2009.
NIMH RFA 09-080 Grant Review Panel – temporary member, March 2009
NIH ZRG1 F02A Grant Review Panel – temporary member, May 2010
IAR Reviewer Invitation for
NIH ZRG1 IFCN-L (02) Member Conflict panel, temporary member, October 2010
Biotechnology and Biological Sciences Research Council (BBSRC), UKs leading funding agency, ad hoc reviewer, ongoing.
NSF Site Visitor, Review of the Center of Excellence for Learning in Education, Science and Technology (CELEST), Boston, MA, 2011.
NSF Site Visitor, Review of the Center of Excellence for Learning in Education, Science and Technology (CELEST), Boston, MA, 2012.
Reviewing Editor, Hippocampus, 2003-present.
Reviewing Editor, Frontiers in Neuroanatomy, 2007-present.
Consulting Editor, Behavioral Neuroscience, 2009-2013.
COBRE Junior Faculty Mentor: Amy Griffin, Ph.D. University of Delaware. Mentor for Griffin as a part of COBRE: Delaware Center for Neuroscience Research, 2012- present
NSF Review Panel: Neural CAREER Full Proposal Panel Fall FY14, October 2013
Incoming Editor-in-Chief, Behavioral Neuroscience, starting January 1, 2014-December 31, 2014 (my editorial team began handling all new submissions)
Editor-in-Chief, Behavioral Neuroscience, starting January 1, 2015-December 31, 2020

Refereed journal articles

Gallagher, M., & Burwell, R. D. (1989). Relationship of age-related decline across several behavioral domains. *Neurobiology of Aging, 10*, 691-708.

Gallagher, M., Burwell, R. D., Kodsi, M. H., McKinney, M., Southerland, S., Vella-Roundtree, L., & Lewis, M. H. (1990). Markers for biogenic amines in the aged rat brain: Relationship to decline in spatial learning ability. *Neurobiology of Aging, 11*, 506-514.

Burwell, R. D., Whealin, J., & Gallagher, M. (1992). Effects of Aging on the Circadian Pattern of Water Intake in Rats. *Behavioral and Neural Biology, 58*, 196-203.

Burwell, R. D., & Gallagher, M. (1993). A Longitudinal Study of Reaction Time Performance in Long-Evans Rats. *Neurobiology of Aging, 14*, 57-64.

Duley, J. F., Wilkins, J. W., Hamby, S. L., Hopkins, D. G., Burwell, R. D., & Barry, N. S. (1993). Explicit scoring criteria for the Rey-Osterreith and the Taylor complex figures. *The Clinical Neuropsychologist, 7*(1), 29-38.

Gallagher, M., Burwell, R., & Burchinal, M. (1993). Severity of spatial learning impairment in aging: Development of a learning index for performance in the Morris water maze. *Behavioral Neuroscience, 107(4)*, 618-626.

Whealin, J. M., Burwell, R. D., & Gallagher, M. (1993). The effects of aging on diurnal water intake and melatonin binding in the suprachiasmatic nucleus. *Neuroscience Letters, 154*, 149-152.

Burwell, R. D., Lawler, C. P., & Gallagher, M. (1995). Mesostriatal dopamine markers in aged Long-Evans rats with sensorimotor impairment. *Neurobiology of Aging, 16(2)*, 175-186.

Burwell, R. D., Witter, M. P., & Amaral, D. G. (1995). The perirhinal and postrhinal cortices of the rat: A review of the neuroanatomical literature and comparison with findings from the monkey brain. *Hippocampus, 5*, 390-408.

Chen, H.-C., & Burwell, R. D. (1996). An anterograde tract-tracing study of the perirhinal and postrhinal cortical projections to the thalamus in the rat brain. *J. Undergraduate Res., 3*(1), 47-68.

Burwell, R. D., & Amaral, D. G. (1998). The perirhinal and postrhinal cortices of the rat: Interconnectivity and connections with the entorhinal cortex. *Journal of Comparative Neurology, 391*(3), 293-321.

Burwell, R. D., & Amaral, D. G. (1998). Cortical afferents of the perirhinal, postrhinal, and entorhinal cortices. *Journal of Comparative Neurology, 398*(2), 179-205.

Burwell, R. D., Shapiro, M. S., O'Malley, M. T., & Eichenbaum, H. (1998). Positional firing properties of perirhinal cortex neurons. *NeuroReport, 9*, 3013-3018.

Wiig, K. A., & Burwell, R. D. (1998). Memory impairment on a delayed-non-matching-to-position task following lesions of the perirhinal cortex in the rat. *Behavioral Neuroscience, 112*(4), 828-838.

Burwell, R. D. (2000). The parahippocampal region: Corticocortical connectivity. *Annals of the New York Academy of Sciences, 911*, 25-42.

Bucci, D. J., Phillips, R.G., & Burwell, R. D. Contributions of postrhinal and perirhinal cortex to contextual information processing. *Behavioral Neuroscience, 25,* 882-894.

Burwell, R. D. (2001). The perirhinal and postrhinal cortices of the rat: Borders and cytoarchitecture. *J Comp Neurol, 437*(17-41).

Bucci, D. J., Saddoris, M. P., & Burwell, R. D. (2002). Contextual fear discrimination is impaired by damage to postrhinal or perirhinal cortex. *Behavioral Neuroscience, 116(3), 479–488.*

Rapp, P. R., Deroche, P. S., Mao, Y., & Burwell, R. D. (2002). Neuron number in the parahippocampal region is preserved in aged rats with spatial learning deficits. *Cereb Cortex, 12(11) 1171-1179*.

Burwell, R.D. & Hafeman, D. (2003). Positional firing properties of postrhinal neurons in the rat. *Neuroscience 119(2), 577-588*.

Burwell, R. D., Saddoris, M. P., Bucci, D. J.,& Wiig, K.A. (2004). Corticohippocampal Contributions to Spatial and Contextual Learning, *Journal of Neuroscience. 24:3826-36.*

Bucci, D. J.,& Burwell, R. D. (2004). Deficits in attentional orienting following damage to the perirhinal or postrhinal cortices. *Behav Neurosci.* 118(5), 1117-1122.

Burwell, R. D., Bucci, D. J., Sanborn, M. R., & Jutras, M. J. (2004). Postrhinal and perirhinal contributions to remote memory for context. *J Neurosci, 24(49), 11023-11028*.

Long, M. A., Jutras, M. J., Connors, B. W., & Burwell, R. D. (2005). Electrical synapses coordinate activity in the suprachiasmatic nucleus. *Nat Neurosci, 8(1), 61-66*.

Theroux, S., Pereira, M., Casten, K.S., Burwell, R.D., Yeung, K.C., Sedivy, J.M., and Klysik, J. (2007). Raf kinase inhibitory protein knockout mice: Expression in the brain and olfaction deficit. *Brain Research Bulletin*. 71(6):559-67.

Kerr KM, Agster KL, Furtak SC, Burwell RD. (2007) Functional neuroanatomy of the parahippocampal region: The lateral and medial entorhinal areas. *Hippocampus*, 17(9):697-708.

Furtak SC, Wei SM, Agster KL, Burwell RD. (2007) Functional neuroanatomy of the parahippocampal region in the rat: The perirhinal and postrhinal cortices. *Hippocampus*, 17(9):709-722.

Beaudin, S.A., Agster, K.L. Beck, R.D., & Burwell, R. D. (under revision). Borders and cytoarchitecture of the perirhinal and postrhinal cortices in the mouse, *Cerebral Cortex*.

Agster, K.L., Brown, S.F., and Burwell, R. D. (2009) Cortical efferents of the perirhinal, postrhinal, and entorhinal cortices, *Hippocampus*. 19(12):1159-86. PMCID: PMC3066185

Furtak, S.C., Cho, C.E., Kerr, K.M., Barredo, J.L., Alleyne, J.E., Patterson, Y.R. & Burwell, R.D. (2009). The Floor Projection Maze: A novel behavioral apparatus for presenting visual stimuli to rodents, *Journal of Neuroscience Methods,* 181(1):82-8. PMCID: PMC2883467.

Jing, W., Borton, D. A., Jiayi, Z., Burwell, R. D., & Nurmikko, A. V. (2010). A neurophotonic device for stimulation and recording of neural microcircuits. *Conf Proc*

IEEE Eng Med Biol Soc. 2010;2010:2935-8.

Wang, J., Ozden, I., Diagne, M., Wagner, F., Borton, D., Brush, B., Agha, N., Burwell, R, Sheinberg, D., Diester, I., Deisseroth, K., Nurmikko, A. (2011) Approaches to optical neuromodulation from rodents to non-human primates by integrated optoelectronic devices. *Conf Proc IEEE Eng Med Biol Soc.* 2011;2011:7525-8.

Casten, K.S., Gray, A.C., and Burwell, R.D. (2011). Discrimination Learning and Attentional Set Formation in a Mouse Model of Fragile X. *Behav. Neurosci.* 125(3):473-9. PMCID: PMC3109093.

Wang, J., Wagner, F., Borton, D.A., Zhang, J., Ozden, I., Burwell, R.D., Nurmikko, A.V., van Wagenen, R., Diester, I., and Deisseroth, K. (2012). Integrated device for combined optical neuromodulation and electrical recording for chronic in vivo applications. *J. Neural Eng* 9, 016001.

Sills, J.B., Connors, B.W., and Burwell, R.D. (2012). Electrophysiological and morphological properties of neurons in layer 5 of the rat postrhinal cortex. *Hippocampus*. Sep. 22(9):1912-22.

Gastelum, E.D., Guilhardi, P., and Burwell, R.D. (2012). The effects of combined perirhinal and postrhinal damage on complex discrimination tasks. *Hippocampus*. Oct. 22 (10):2059-67.

Futak, S.C., Ahmed, O.J., and Burwell, R.D. (2012). Single neuron activity and theta modulation in postrhinal cortex during visual object discrimination. *Neuron*. Dec. 6 (76:976-988.

Beaudin, S.A., Singh, T., Agster, K.L., and Burwell, R.D. (2013). Borders and Comparative Cytoarchitecture of the Perirhinal and Postrhinal Cortices in an F1 Hybrid Mouse. *Cerebral cortex*. 23(2):460-76.

Agster, K.L. and Burwell, R. D. (2013) Hippocampal afferents and efferents of the perirhinal, postrhinal, and entorhinal cortices, *Behavioural Brain Research.* Published online, 2013 Oct 1;254:50-64.

Jacobson T.K., Ho J.W., Kent B.W., Yang, F-C., Burwell R.D. (2014) Automated visual cognitive tasks for recording neural activity using a Floor Projection Maze, *J. Vis. Exp*. (84), e51316.

Scaplen K.M., Gulati A.A., Heimer-McGinn V.L., Burwell R.D. (2014) Objects and landmarks: Hippocampal place cells respond differently to manipulations of visual cues depending on size, perspective, and experience. *Hippocampus*. 2014 Nov;24(11):1287-99.

Gallagher M, Burwell R, Burchinal M. (2015). Severity of spatial learning impairment in aging: Development of a learning index for performance in the Morris water maze. *Behav. Neurosci.* 2015 Aug;129(4):540-8.

Tomás Pereira I, Burwell RD. (2015). Using the spatial learning index to evaluate performance on the water maze. *Behav. Neurosci.* 2015 Aug;129(4):533-9.

Ho, J.W., Poeta, D.L., Jacobson, T.K., Zolnik, T., Neske, G., Connors, B.W. (2015). Bidirectional Control of Recognition Memory. *J. Neuroscience*. 2015 Sep 30;35(39):13323-35.

Yang, F-C, Jacobson T.K., Burwell R.D. (under revision) Posterior parietal cells signal stimulus onset, spatial locations, and behavioral outcome during performance on a visuospatial attention task.

Tomás Pereira, I., Agster, K.L., and Burwell, R. D. (under revision). Subcortical connections of the perirhinal, postrhinal, and entorhinal cortices. I. Afferents.

Agster, KL, Tomás Pereira, I., Saddoris, M.P., and Burwell, R. D. (under review). Subcortical connections of the perirhinal, postrhinal, and entorhinal cortices. II. Efferents.

Chapters, Commentaries, Book Reviews, and Editorials

Gallagher, M., Nagahara, A., & Burwell, R. (1995). Cognition and hippocampal systems in aging: Animal models. In J. L. McGaugh, N. Weinberger, & G. Lynch (Eds.), *Brain and Memory: Modulation and Mediation of Neuroplasticity* (0 ed., pp. 103-126). New York: Oxford University Press.

Burwell, R. D., Suzuki, W. A., Insausti, R., & Amaral, D. G. (1996). Some observations on the perirhinal and parahippocampal cortices in the rat, monkey, and human brains. In T. Ono (Ed.), *Perception, Memory, and Emotion: Frontier in Neuroscience*. New York: Elsevier.

Burwell, R.D. (1996) Review of Kruger, L., Saporta, S., & Swanson, L. W. (1995). *The Quarterly Review of Biology*, 71(3), 440.

Rapp, P. R., Burwell, R. D., & West, M. J. (1996). Individual differences in aging: Implications for stereological studies of neuron loss. *Neurobiology of Aging, 17,* 495-496.

Burwell, R. D., & Eichenbaum, H. (1999). What's new in animal models of amnesia. *Behavioral and Brain Sciences, 22*, 446-448.

Burwell, R. D., Bucci, D. J., Wiig, K. A., Saddoris, M. P., & Sanborn, M. R. (2002). Experimental lesions of the parahippocampal region in rats. In M. P. Witter & F. G. Wouterlood (Eds.), *The Parahippocampal Region, Organization and Role in Cognitive Functions*. London: Oxford University Press.

Burwell, R. D., Menno, M. P. (2002). Basic anatomy of the parahippocampal region in monkeys and rats. In M. P. Witter & F. G. Wouterlood (Eds.), *The Parahippocampal Region, Organization and Role in Cognitive Functions*. London: Oxford University Press.

Burwell, R. D. (2002). Perirhinal cortex and associated cortical areas. In Byrne, J.H., Eichenbaum, H., Roediger, J., III, Thompson, R.F. (Eds.), *Learning and Memory*. Farmington Hills: MacMillan Reference USA.

Burwell, R. D., & Agster, K. L. (2008). Anatomy of the hippocampus and the declarative memory system. In H. E. Eichenbaum (Ed.), Systems and Neuroscience (Vol. 3, pp. 47-66) of J.H. Byrne (Ed.), Learning and Memory: A Comprehensive Reference. Oxford: Elsevier.

Burwell, R. D., & Furtak, S. C. (2008). Recognition memory: can you teach an old dogma new tricks? *Neuron*, 59(4), 523-525. PMCID: PMC3109738.

Burwell, R. D., & Agster, K. L. (2009). Anatomy of the hippocampus and the declarative memory system. In J. H. Byrne (Ed.), *Concise Learning and Memory: The Editor's Selection* (pp. 189-208). London: Academic Press.

Ho, J.W. & Burwell, R. D. (2014). Perirhinal and postrhinal functional inputs to the hippocampus. In Knierim, J.J. & Derdikman, D. (Ed.), *Space, Time & Memory in the Hippocampal Formation*. New York: Springer Publishing Company.

Burwell RD. Editorial. (2015). Editorial: The neural bases of cognition and behavior. *Behav. Neurosci*. 2015 Feb;129(1):1.

Invited addresses

Neuroanatomy of the Hippocampal System and Related Cortical Regions. Invited address at Johns Hopkins University Department of Psychology, July 1997.

Interactions Between Memory and Attention. Invited to organize symposium for the Winter Conference on Learning and Memory, Park City, UT, January 13, 1998.

Functions of Parallel Pathways in the Hippocampal System. Spring Hippocampal Meeting, Grand Cayman, April 24, 1998.

Information Processing in Parahippocampal Cortical Regions. Washington State University Psychology Department, Pullman, WA, May 1, 1998.

The Organization of Entorhinal, Perirhinal, and Parahippocampal Cortex in Rats, Monkeys, and Humans. Tenth Annual Convention of the American Psychological Society, Washington, D.C., May 23, 1998.

Parallel Corticohippocampal Pathways in the Rat. Mount Sinai School of Medicine, Neurobiology of Aging Laboratories, New York, NY, July 23, 1998.

Memory-related Brain Regions in the Mouse. Cold Spring Harbor Course in Mouse Behavior, Cold Spring Harbor, New York, NY, December 8, 1998.

Connectivity within the Parahippocampal Region, A New York Academy of Sciences Conference on The Parahippocampal Region: Basic Science and Clinical Implications. Baltimore, MD, September 23-26, 1999.

Hippocampus Club Monthly Colloquium. *Topographic Patterns in the Intrinsic Pathways of the Hippocampus*, Boston University, November 16, 1999.

Perirhinal and Postrhinal Contributions to Contextual Learning, University of Connecticut at Storrs, March 16, 2000.

Places and Spaces: Cortical Contributions to Memory. Brown University, The Michael S. Goodman 1974 Memorial Lectures, February 20, 2002.

Places and Spaces: Cortical Contributions to Memory. UMASS-Boston, Biology Department Seminar Series. March 1, 2002.

Parahippocampal Contributions to Memory, Rutgers University, Neuroscience Seminar Series, March 4, 2002.

Parahippocampal Regions: Bridging Memory and Attention. Norwegian University of Science and Technology, Trondheim, Norway, Department of Neuroscience, June 2, 2003.

Corticohippocampal Structure and Function. University of Oslo, Norway, Center for Molecular Biology & Neuroscience and the Department of Anatomy, June 4, 2003.

Rodent models of learning and memory: Dissociating cortical and hippocampal function, Mayo Clinic, Alzheimer's Disease Research Colloquium, Jacksonville, FL, September 19, 2003.

Corticohippocampal contributions to Spatial and Contextual Learning. Brown University NSGP Proseminar. April 12, 2004.

Animal models of Learning and Memory, Duke University Medical School SIGN (Student Interest Group In Neuroscience), Durham, NC, May 10, 2004.

Configural And Contextual Learning in the Parahippocampal Region, Yale University Behavioral Neuroscience Seminar Series, October 12, 2004.

Perirhinal Contributions to Contextual and Configural Learning, Winter Conference on the Neurobiology of Learning and Memory, Park City Utah, January 7, 2005.

Perirhinal Contributions to Contextual and Configural Learning, Winter Conference on the Neural Plasticity, Guadeloupe, French Antilles February 19-26, 2005.

Functional Neuroanatomy of the Parahippocampal Region, Arizona University, Cognitive and Neural Systems Program, March 10, 2005.

Configural and Contextual Learning in the Parahippocampal Region, Johns Hopkins University Psychology Department Seminar Series, April 13, 2005.

Parahippocampal Contributions to Attention, John B. Pierce Laboratory and the Yale School of Medicine, September 13, 2005.

What Does the Parahippocampal Region Do? Laboratoire NAMC CNRS, Université Paris Sud, Orsay, France, October 13, 2005.

Functional Neuroanatomy of the Hippocampal System in the Rat. Center for Memory and Brain Speaker Series, Boston University Center for Learning and Memory, December 5, 2005.

Corticohippocampal Circuits: Structure and Function. Neuroscience Seminar Series, Princeton University. March 23, 2006.

The Organization of the Hippocampal Connections with the Perirhinal, Postrhinal, and Entorhinal Cortices of the Rat. Workshop on the Interactions between the Hippocampus and other Medial Temporal Lobe Structures, University College London, May 10-12, 2006.

Organization of the Hippocampal Output to the Parahippocampal cortices. Federation of European Neuroscience Societies, Forum 2006 Symposium: The parahippocampal cortex as an interface between hippocampus and neocortex. Vienna, Austria, July 10, 2006.

Dual cortical systems bring information to the dentate gyrus (hippocampus) forming the basis of the medial and lateral perforant paths, Workshop on Learning and Memory: Information Flow into Hippocampal Memory Stores, Marine Biology Laboratory, Woods Hole, August 3-4, 2006

Co-organized the Winter Conference on the Neurobiology of Learning and Memory, 2007. Park City, Utah, January 4-7, 2007. http://www.psych.utah.edu/wintconf/

Context: What is it? Where is it? And how is it represented in the brain? Co-organized session in the Winter Conference on the Neurobiology of Learning and Memory, 2007. Park City, Utah, January 4-7, 2007.

The Neural Bases of Memory and Attention, Tougaloo College, Presentation to undergraduates interested in biomedical research, November 16, 2007.

Visuospatial Information Processing in the Rat, Psychology Colloquium Series, Brown University, December 5, 2007.

Visual discrimination learning in rats: Parsing objects, scenes, and contexts, Neuroscience In House Seminar Series, Brown University, January 28, 2008.

The Role of the Hippocampal System in Perception, Attention, and Memory, NSGP Recruitment Weekend, by invitation of the graduate students, February, 2008.

Visual Information Processing in the Parahippocampal Region, University of Arizona, Cognitive and Neural Systems Program, May 18, 2008.

Video games for rats: A new method for studying visuospatial information processing in rodents, University of Cambridge, Behavioral Neuroscience Seminars, June 2, 2008.

Visual Information Processing in the Parahippocampal Region, NSGP Retreat, by invitation of the graduate students, August 26, 2008.

Understanding visual information processing in the parahippocampal region, Boston University, Center for Memory and Brain, December 12, 2008.

Attention and Memory in the Hippocampal System, Galenea Corporation, Cambridge, MA, January 19, 2009.

Attention: the stuff that memory is made of, Neuroscience In House Seminar Series, Brown University, February 3, 2009.

Visual and spatial information processing in the parahippocampal region, NSGP Recruitment Weekend, by invitation of the graduate students, February 27, 2009.

Objects, Landmarks, and the Postrhinal Cortex, University of Arizona, Evelyn F. McKnight Brain Institute University of Arizona, April 17, 2009.

Video games for rats: Understanding information processing in the parahippocampal region, Brown University CLS Seminar Series, November 16, 2009.

Two-Choice Discrimination in rats: Or, rats are smarter than you think, Neuroscience In House Seminar Series, Brown University, February 23, 2010.

Using the Floor Projection Maze: CinePlex Video Capture, Position Tracking, and Behavioral Analysis, Plexon Technical Workshop and Training, March 23-25, 2010.

In Vivo Optogenetics and Visuospatial Attention, DARPA REPAIR Program Kick-Off Meeting, New Orleans, LA, April 25-27, 2010

What does the retrosplenial cortex do? Invited commentator, Boston University, Center for Memory and Brain, December 8, 2010.

"Optorodent" Research at Brown, DARPA REPAIR Meeting, Miami, FL, March 31-April 1, 2011.

Optogenetics and Behavior: Studies in rats DARPA NEST Meeting, Washington, DC, November 16-17, 2011.

Co-organized the Dave Olton Data Blitz Session at the Winter Conference on the Neurobiology of Learning and Memory, 2012. Park City, Utah, January 4-7, 2012.

Integration of spatial and non-spatial information in the parahippocampal region, Mt. Sinai School of Medicine, New York, NY, March 13, 2012.

Optogenetic Modulation of Spontaneous Exploration of Novelty, Functional Architecture of Memory Conference, Ruhr University, Bochum, GER, May 23-25, 2012.

What does the Parahippocampal Cortex Do? Center for Memory and Brain, Boston University, September 10, 2012.

Bidirectional Modulation of Recognition Memory. Department of Psychology, Dartmouth University, October 23, 2012.

Explorations in the Neural Bases of Memory. Keynote speaker, Scholarship Sewanee Undergraduate Research Day, Sewanee: The University of the South, April 26, 2013.

The Hippocampus Differentiates between Landmarks and Objects. Spring Hippocampal Research Conference Taormina Sicily Italy 2013. Taormina, Sicily, 9-14 June, 2013.

Object and Context Representations in Parahippocampal structures, 2nd Functional Architecture of Memory Conference, Ruhr University, Bochum, GER, May 21-23, 2014.

Optogenetic Modulation of Recognition Memory, American Psychological Association 2014 Convention, Aug. 7-10, 2014 in Washington, D.C.

Explorations in the Neural Bases of Memory. Keynote speaker, 4th Annual Women in Learning Luncheon and the APA convention. Washington, DC, August 8, 2014.

Bidirectional Modulation of Recognition Memory. Behavioral Neuroscience Seminar Series, University of Delaware, October 13, 2014.

Perirhinal-postrhinal Interactions in the Representation of Context. Spring Hippocampal Research Conference Taormina Sicily Italy 2015. Taormina, Sicily, 7-11 June, 2015.

Conjunctive coding in the postrhinal cortex. Memory Disorders Research Society Meeting, Cambridge University, 8-11 Sept, 2015.

Funding

Current grants

NSF Award (IOS 1146334) Cognitive Functions of the Postrhinal Cortex, 2012-2016, PI: Burwell.

Brown Institute for Brain Science, Disorders of cerebral spinal fluid, 2015-2020. Co-PI.

Pending grants

NIH 1R01MH108729-01. Circuit Analysis of Corticohippocampal Interactions in Memory. (Pending). PI: Burwell.

Completed grants

DARPA REPAIR Phase II: Brain Reorganization and Plasticity to Accelerate Injury Recovery (N66001-10-C-2010): Multi-scale and Multi-modal Models Enabled by Next Generation Neurotechnology, 09/2012-08/2014, no cost extension until 03/2015, PI: Krishna Shenoy (Stanford University), Brown Subcontract PI: Arto Nurmikko, Brown Subcontract Co-PI: Burwell.

NIMH BSTART Award (R03MH057268): The Contribution of the Perirhinal Cortex to Configural Learning, 1997-98, PI: Burwell.

Solomon Research Award (internal): The Postrhinal Cortex and Fear Conditioning, 1997, PI: Burwell.

NSF Career Award (IBN 9875792): Cognitive Functions of the Postrhinal Cortex (02/98-02/06), PI: Burwell.

NIMH (5R01MH060284), Corticohippocampal Systems and Function in the Mouse (05/00-04/07), PI: Burwell.

Brain Science Program Pilot Grant (internal), Attentional modulation of hippocampal place fields by postrhinal cortex (03/06-02/07), PI: Burwell, Collaborator: Mayank Mehta.

NSF Award (IOS 0522220) Cognitive Functions of the Postrhinal Cortex, 2005-2010.

NSF EFRI Award (EFRI 0937848) Dynamic Sensing and Actuating of Sensory and Motor Neural Microcircuits, 2009-2013 (NCE until 09/2014), PI: Arto Nurmikko, Co-PI: Burwell.