

Rebecca D. Burwell, Ph.D.
Departments of Psychology and Neuroscience
Brown University

Curriculum Vitae

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 Psychology and Neuroscience (secondary appointment), Brown University,
07/2006-present

Associate Professor of Neuroscience (secondary appointment), Brown University, 04/2003-
06/2006

Associate Professor of Psychology, Brown University, 07/2002-06/2006

Assistant Professor of Psychology, Brown University, 07/1996-06/2002

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

Research Grants

Current grants

NSF Award: Cognitive Functions of the Postrhinal Cortex (07/2005-06/2010).

Completed grants

NIMH BSTART Award: The Contribution of the Perirhinal Cortex to Configural Learning, 1997-98.

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

NSF Career Award: Cognitive Functions of the Postrhinal Cortex (02/98-02/06).

NIMH R01, Corticohippocampal Systems and Function in the Mouse (05/00-04/07).

Brain Science Pilot Grant (internal): The Postrhinal Cortex and Fear Conditioning, 2006, collaborator, Mayank Mehta.

Affiliations

American Psychological Association

American Psychological Society

Sigma Xi, The Scientific Research Society

Society for Neuroscience

NIH Neurobiology of Learning and Memory Study Section, Center for Scientific Review (LAM, formerly IFCN7), permanent member, 07/03-06/07.

Reviewing Editor, Hippocampus, 2003-present.

Publications

Research 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. D., & 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.
- 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.
- 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.
- 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., & Eichenbaum, H. (1999). What's new in animal models of amnesia. *Behavioral and Brain Sciences*, *22*, 446-448.
- Burwell, R. D. (2000). The parahippocampal region: Corticocortical connectivity. *Annals of the New York Academy of Sciences*, *911*, 25-42.
- Bucci, D. J., & Burwell, R. D. (2000). 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., Sadoris, 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., Bucci, D. J., Wiig, K. A., Sadoris, 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. & Hafeman, D. (2003). Positional firing properties of postrhinal neurons in the rat. *Neuroscience* *119*(2), 577-588.
- Burwell, R. D., Sadoris, 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*. 2007, 17(9):709-722.
- 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. 4). In J.H. Byrne (Series Ed.) *Learning and Memory – A Comprehensive Reference*. London: Elsevier, in press.