

Curriculum Vitae

MARK GRAY PACKARD

CONTACT

Department of Psychology
Texas A & M University
979-845-9504
979-845-7172(Fax)
e-mail: markpackard@.tamu.edu

EDUCATION

- | | |
|-----------|--|
| 1984 | University of California, Santa Barbara
B. A. Zoology
B. Sc. Biopsychology |
| 1986-1987 | McGill University
M. Sc. Experimental Psychology |
| 1988-1991 | McGill University
Ph. D. Experimental Psychology |
| 1991-1993 | University of California, Irvine
Center for the Neurobiology of Learning and Memory
Post-Doctoral Fellow |

PROFESSIONAL CAREER

- | | |
|----------------|---|
| 1991-1993 | Post-doctoral fellow, University of California, Irvine,
Center for the Neurobiology of Learning and Memory |
| 1993-6/1998 | University of New Orleans
Assistant Professor, Psychology
<i>(early tenure promotion to Associate Professor, approved
Louisiana State Univ. Board of Regents 1/98, effective date 8/98)</i> |
| 7/1998-6/2001 | Yale University
Assistant Professor, Psychology |
| 7/2001- 6/2002 | Yale University
Associate Professor, Psychology |

8/2002-8/2005 Texas A & M University
Associate Professor, Psychology

8/2005-present Texas A & M University
Full Professor, Psychology

AWARDS/RECOGNITION

Morgan Most Promising Researcher in Psychology, Undergraduate Award
Department of Psychology, University of California, Santa Barbara, 1984

Undergraduate Honors student in Biopsychology, Distinction in the Major
Department of Psychology, University of California, Santa Barbara, 1984

Early Career Achievement Award for Excellence in Research
University of New Orleans, 1995 (campus-wide, single faculty member recipient)

Yale University Junior Faculty Fellowship, 2000

“Essential Science Indicators” Thompson Scientific (Analytical tracking of research performance of 3 million worldwide scientists' and lists the top one percent of authors in terms of total publication citations, discipline of behavioral neuroscience, 10-year survey, 1996-2006).

Elected Fellow Association of Psychological Sciences, 2012

Elected Fellow American Psychological Association, 2013

GRANTS

Post-Doctoral:

National Institutes of Health, NRSA Post-Doctoral Fellowship
Cholinergic-Dopaminergic Interactions in Memory, 1991-1993

Federal:

National Institutes of Health, B-Start Grant (**Two Years**)
Amygdala Modulation of Multiple Memory Systems, 1995-1996

National Institutes of Health, FIRST award (**Five Years**)
Neurobiology of Multiple Memory Systems, 1997-2002

National Science Foundation (**Seven Years**)
Amygdala and Affective Modulation of Multiple Memory Systems, 2003-2010

University Funding Awards:

University of New Orleans, Summer Scholars Grant
Glutamatergic Modulation of Memory, 1994-1994

Louisiana State University Center for Neuroscience Excellence, Incentive Grant
Neurochemical Bases of Memory, 1994-1995

Yale University Social Science Faculty Research Fund
Neurobiology of the Rewarding Affective Properties of Testosterone, 1999-2000

Yale University Social Science Faculty Research Fund
Multiple Memory Systems and Drug Addiction, 2000-2001

Yale Sciences & Engineering Association
Amygdala and Extinction of Drug-Seeking Behavior, 2001-2002

Foundations:

Alzheimer's Association
Estradiol-Acetylcholine Interactions in Memory Modulation, 1995-1997

Corporate:

Pfizer, Inc.
Post-training Estrogen and Memory Modulation, 1999-2001

GRANT REVIEW ACTIVITIES

Federal

U.S. Veterans Administration
Behavioral Neuroscience Program
external grant reviews 1998, 1999

National Science Foundation
Integrative and Behavioral Neuroscience Program
external grant reviews 2000, 2001, 2005, 2006, 2007

National Institutes of Health
B-Start Cognitive Neuroscience
external grant reviews 2001, 2002

NIH National Institutes of Mental Health
Special Emphasis Panel, Minority Training Grants
Panel meeting Washington, D.C. Fall, 2001
National Science Foundation

Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Fall, 2002

National Science Foundation
Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Spring, 2003

National Science Foundation
Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Fall, 2003

National Science Foundation
Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Spring, 2004

National Institutes of Health
Training Grant and Career Development Grant Review Panel, National Institutes of
Neurological Disorders and Stroke
Panel meeting Washington D.C. Spring, 2004

National Institutes of Health (NIDA)
Neurotoxicology and Drug Abuse Grant Review Panel
Panel meeting, Washington DC Fall, 2004

National Science Foundation
Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Fall, 2004

National Institutes of Health
Training Grant and Career Development Grant Review Panel, National Institutes of
Neurological Disorders and Stroke
Panel meeting Washington, D.C. Fall, 2004

National Institutes of Health (NIDA)
Drug Abuse Special Emphasis Grant Review Panel

Panel meeting, Washington DC
Spring, 2005

National Science Foundation
Behavioral Neuroscience and Endocrinology Grant Review Panel
Panel meeting Washington, D.C. Spring, 2005

National Institutes of Mental Health
NRSA and Postdoctoral Award Grant Review Panel Member
Panel meeting Washington, D.C. Fall, 2005

National Institutes of Health (NIDA)
Neurotoxicology and Drug Abuse Panel
Panel meeting, Washington DC Fall, 2005

National Institutes of Health
B-Start Grant Program
(external grant reviewer, 2004, 2005)

National Institutes of Mental Health
NRSA and Postdoctoral Award Grant Review Panel Member
Panel meeting Washington, D.C. Spring, 2006

National Institutes of Mental Health
Special Emphasis Panel Basic Neuroscience Conte Centers
Panel meeting Washington, D.C Fall 2006

National Institutes of Health
Behavioral Neuroscience, ICFN-7
Panel meeting, Fall, 2007

National Science Foundation
Systems Neuroscience: Modulation
Panel Meeting, Washington DC, Fall 2007

National Institutes of Health (NIDA)
Drug Abuse Special Emphasis Grant Review Panel Member
Panel meeting, Fall, 2007

Agency: National Institutes of Health (NIDA)
Drug Abuse Special Emphasis Grant Review Panel Member
Panel meeting, Fall, 2008

National Science Foundation
Systems Neuroscience: Modulation

Panel Meeting, Washington DC, Fall 2008

Agency: National Science Foundation (NSF)
Neural Systems Cluster: Behavioral Neuroscience
Panel member/meeting, Fall 2010

Agency: National Institutes of Health (NIDA)
Drug Abuse Special Emphasis Grant Review Panel Member
Panel meeting, Fall, 2012

Agency: National Science Foundation (NSF)
Neural Systems Cluster
Ad-hoc reviewer 2011-2017

International

United States-Russia Joint Behavioral Neuroscience Grant Program
(external grant reviewer 2002, 2003, 2004)

United States- Israel Binational Science Foundation Grant Program
(external grant reviewer, 2001, 2002, 2003, 2004)

U.S. Civilian Research & Development Foundation, United States – Russia
Cooperative Grants Program, Behavioral Neuroscience
(external grant reviewer, 2002, 2003, 2004)

Foundation

Alzheimer's Association Grant Review and Medical Advisory Board (1998-
present)

PROFESSIONAL MEMBERSHIPS

Society for Neuroscience

American Psychological Society

Society for Behavioral Neuroendocrinology

American Psychological Association

International Society for Behavioral Neuroscience

EDITORIAL BOARDS

Hippocampus
Frontiers in Systems Neuroscience
Brazilian Journal of Neuropsychology

JOURNAL REFEREE (Ad-Hoc)

Proceedings of the National Academy of Sciences	Journal of Neuroscience
Behavioral Neuroscience	Behavioral Brain Research
Neurobiology of Learning and Memory	Brain Research
Physiology and Behavior	European Journal of Pharmacology
Pharmacology, Biochemistry, and Behavior	Hormones and Behavior
Neuroscience Letters	European Journal of Neuroscience
Journal of Neuroscience Research	Psychopharmacology
Learning and Memory	Neuroscience
Experimental Brain Research	Brain Research Bulletin

INVITED SEMINARS

Department of Neurology, University of California, Irvine, 1991
Center for the Neurobiology of Learning and Memory, UC Irvine, 1991
Department of Psychology, University of New Orleans, 1993
Department of Psychology, Tulane University, 1994
Department of Neuroscience, LSU Medical School, 1994
Department of Neurology, LSU Medical School, 1994
Department of Anatomy, LSU Medical School, 1996
Department of Psychology, Yale University, 1998
Neuroscience Department, Pfizer Incorporated, 1998
Department of Psychology, University of California, Santa Barbara, 1998
Department of Psychobiology, University of California, Irvine, 1998
Department of Psychology, Columbia University, 2000
Neurobiology of Learning and Memory Conference, Utah University, 2000
Department of Psychology, University of Oregon, 2001
Department of Psychiatry, Columbia University, 2001
Department of Psychology, University of Connecticut, 2001
Neuroscience Department, Pfizer Incorporated, 2001
Department of Psychology, Columbia University, 2001

Department of Psychology, McGill University, 2001
Center of Neurobiology and Behavior, Columbia University, 2001
Neurobiology of Learning and Memory Conference, Utah University, 2002
Department of Psychology, CUNY, 2002
Department of Psychology, Texas A & M University, 2002
Department of Psychology, University of Texas, 2002
Department of Psychology, University of Illinois at Chicago, 2004
Department of Neurobiology and Anatomy, University of Texas Medical School, 2004
Neurobiology of Learning and Memory Conference, Utah University, 2004
Neurobiology of Learning and Memory Conference, Utah University, 2005
Neurobiology of Learning and Memory Conference, Univ. of California, Irvine, 2006
Department of Neuroscience, University of South Carolina Medical School, 2007
Brain Research Meeting: Stress, Disease and Coping, Washington, DC, 2008
Society for Neuroscience Satellite Symposium, New Orleans, 2012
Neurobiology of Stress and Memory Conference, University of Texas, Dallas, 2012
Society for Biological Psychiatry Annual Conference, San Francisco, 2013
Department of Psychology, University of Texas, 2014
Department of Psychology, University of Southern Illinois, 2014
American Psychological Association Annual Conference, Washington DC, 2014
Society for Biological Psychiatry Conference, San Francisco, 2014
American Academy of Child and Adolescent Psychiatry, San Antonio, 2015
National Institutes of Health, Washington D.C., 2016
Universidad Nacional Autonoma de Mexico (UNAM), Querattaro, 2017

Invited Seminars, International Conferences:

McDonnell-Pew Foundation Conference, Montreal, Canada, 1997
FESBE Conference, Xacambu, Brazil, 1999
European Society for Behavioral Neuroscience Conference:
Emotional Modulation of Memory Symposium, Marsille, France, 2001
European Society for Behavioral Neuroscience Conference:
Basal Ganglia and Cognition Symposium, Barcelona, Spain, 2003
International Society for Behavioral Neuroscience, Sardinia, Italy, 2009

Conference Organizer:

Amygdala Interactions with other Brain Regions in Learning,
University of California, Irvine, 2001
Co-organizer with Dr. Larry Cahill, International Conference

TEACHING

Undergraduate

Graduate

Introductory Psychology
Physiological Psychology
Experimental Design

Introductory Statistics
Motivation
Comparative Psychology
Honors Psychology

Psychopharmacology
Neurobiology of Learning and Memory
Neurobiology of Multiple Memory
Systems
Physiological Psychology

JOURNAL PUBLICATIONS (REFEREED)

1. Packard, M. G., Hirsh, R., & White, N. M. Differential effects of fornix and caudate nucleus lesions on two radial maze tasks: evidence for multiple memory systems. Journal of Neuroscience, 9, 1465-1472, 1989.
2. Packard, M. G., & White, N. M. Memory facilitation produced by dopamine agonists: role of receptor subtype and mnemonic requirements. Pharmacology, Biochemistry, and Behavior, 33, 511-518, 1989.
3. Packard, M. G., & White, N. M. Effects of post-training glucose injections on the acquisition of two appetitive learning tasks. Psychobiology, 18, 282-286, 1990.
4. Packard, M. G., Regenold, W, Qurion, R., & White, N. M. Post-training injection of the selective acetylcholine M2 receptor antagonist AFDX 116 improves memory. Brain Research, 524, 72-76, 1990.
5. Packard, M. G., & White, N. M. Lesions of the caudate nucleus selectively impair reference memory acquisition in the radial maze. Behavioral and Neural Biology, 53, 39-50, 1990.
6. White, N. M., Packard, M. G., & Hiroi, N. Place conditioning with dopamine D1 and D2 agonists injected peripherally or into nucleus accumbens. Psychopharmacology, 103, 271-276, 1991.
7. Packard, M. G., & White, N. M. Dissociation of hippocampus and caudate nucleus memory systems by post-training intracerebral injections of dopamine agonists. Behavioral Neuroscience, 105, 295-306, 1991.
8. Packard, M. G., Williams, C. L. , & McGaugh, J. L. Enhancement of win-shift radial maze retention by peripheral post-training administration of d-amphetamine and 4-OH amphetamine. Psychobiology, 20, 280-285, 1992.

9. Packard, M. G., Winocur, G., & White, N. M. The caudate nucleus and acquisition of win-shift radial maze behavior: effect of exposure to the reinforcer during maze adaptation. Psychobiology, 29, 127-132, 1992.
10. Packard, M. G., & McGaugh, J. L. Double dissociation of fornix and caudate nucleus lesions on acquisition of two water maze tasks: further evidence for multiple memory systems. Behavioral Neuroscience, 106, 1-7, 1992.
11. Gasbarri, A., Introini-Collison, I. B., Packard, M. G., & McGaugh, J. L. Interaction of cholinergic-dopaminergic systems in the regulation of memory storage in aversively motivated learning tasks. Brain Research, 627, 72-78, 1993.
12. Salinas, J. Packard, M. G., & McGaugh, J. L. Amygdala modulates memory for changes in reward magnitude: post-training reversible inactivation attenuates negative behavioral contrast. Behavioral Brain Research, 59, 153-159, 1993.
13. White, N. M., Packard, M. G., & Seamens, J. Memory enhancement by post-training peripheral administration of low doses of dopamine agonists: possible autoreceptor effect. Behavioral and Neural Biology, 59, 230-241, 1993.
14. Packard, M. G., Cahill, L., & McGaugh, J. L. Amygdala modulation of hippocampal-dependent and caudate-dependent memory processes. Proceedings of the National Academy of Sciences, 91, 8477-8481, 1994.
15. Packard, M. G., & McGaugh, J. L. Post-training quinpirole and d-amphetamine administration enhances memory on spatial and cued water maze tasks. Psychobiology, 22, 54-60, 1994.
16. Alexander, G. M., Packard, M. G., & Hines, M. Testosterone has rewarding affective properties in male rats: implications for the biological bases of sexual motivation. Behavioral Neuroscience, 108, 424-428, 1994.
17. Gasbarri, A., Packard, M. G., Campana, E., & Pacitti, C. Anterograde and retrograde tracing of projections from the ventral tegmental area to the hippocampal formation in the rat. Brain Research Bulletin, 33, 445-452, 1994.
18. Williams, C. L., Packard, M. G., & McGaugh, J. L. Amphetamine facilitation of win-shift radial maze retention: the involvement of peripheral adrenergic and central dopaminergic systems. Psychobiology, 22, 141-148, 1994.
19. Packard, M. G. Dissociating multiple memory systems: Don't forsake the brain. Behavioral and Brain Sciences, 17, 414-415, 1994.

20. Packard, M. G. A neurological law of memory. Contemporary Psychology, 40, 14-16, 1995.
21. Packard, M. G., Teather, L. A., & Bazan, N. G. Effects of intra-striatal injections of platelet activating factor and BN52021 on memory. Neurobiology of Learning and Memory, 66, 176-182, 1996.
22. Gasbarri, A., Packard, M. G., & Paccitti, C., The projections of the retrorubal field A8 to the hippocampal formation in the rat. Experimental Brain Research, 112, 244-252, 1996.
23. Packard, M. G., Kohlmaier, J. R., & Alexander, G. M. Intra-hippocampal injections of estradiol enhance spatial memory in male rats: interaction with cholinergic systems. Behavioral Neuroscience, 110, 626-632, 1996.
24. Packard, M. G., & McGaugh, J. L. Inactivation of hippocampus or caudate nucleus with lidocaine differentially affects expression of place or response learning. Neurobiology of Learning and Memory, 65, 65-72, 1996.
25. Packard, M. G., Introini-Collison, I. B., & McGaugh, J. L. Stria terminalis lesions attenuate the memory enhancement produced by intra-caudate nucleus injections of oxotremorine. Neurobiology of Learning and Memory, 67, 278-282, 1996.
26. Packard, M. G., & Teather, L. A. Post-training estradiol injections enhance memory in ovariectomized rats: cholinergic blockade and synergism. Neurobiology of Learning and Memory, 68, 172-188, 1997.
27. Packard, M. G., & Teather, L. A. Intra-hippocampal estradiol infusion enhances memory in ovariectomized rats. Neuroreport, 8, 3009-3113, 1997.
28. Packard, M. G., & Teather, L. A. Double dissociation of hippocampal and dorsal striatal memory systems by post-training intracerebral injections of 2-amino-phosphonopentanoic acid. Behavioral Neuroscience, 111, 543-551, 1997.
29. Packard, M. G., & Teather, L. A. Post-training injections of MK-801 impair memory in a time-dependent manner in two water maze tasks. Neurobiology of Learning and Memory, 68, 42-50, 1997.
30. Gasbarri, A., Sulli, A., & Packard, M. G. The dopaminergic mesencephalic projections to the hippocampal formation in the rat. Progress in Neuropsychopharmacology and Biological Psychiatry, 21, 1-22, 1997.
31. Packard, M. G., Cornell, A. H., & Alexander, G. M. Rewarding affective properties of intra-nucleus accumbens injections of testosterone. Behavioral Neuroscience, 111, 219-224, 1997.

32. Bazan, N. G., Packard, M. G., & Teather, L. A. Role of excitatory amino acids and biolipids in neural plasticity. International Journal of Neurochemistry, 30, 225-231, 1997.
33. Packard, M. G., Schroeder, J., & Alexander, G. M. Expression of testosterone conditioned place preference is blocked by peripheral or intra-accumbens injections of flupenthixol. Hormones and Behavior, 34, 39-47, 1998.
34. Packard, M. G. Post-training estrogen and memory modulation. Hormones and Behavior, 34, 126-139, 1998.
35. Teather, L. A., Packard, M. G., & Bazan, N. G. Effects of post-training intra-hippocampal injections of platelet activating factor and PAF antagonists on memory. Neurobiology of Learning and Memory, 70, 349-363, 1998.
36. Packard, M. G., & Teather, L. A. Amygdala modulation of multiple memory systems: hippocampus and caudate-putamen. Neurobiology of Learning and Memory, 69, 163-203, 1998.
37. Packard, M. G., Glutamate infused post-training into the hippocampus or caudate-putamen differentially strengthens place and response learning. Proceedings of the National Academy of Sciences, 96, 12881-12886, 1999.
38. Packard, M. G., & Chen, S. The basolateral amygdala is a co-factor in the memory enhancing effects of intra-hippocampal injections of glutamate. Psychobiology, 27, 377-385, 1999.
39. King, B. A., Packard, M. G., & Alexander, G. M. Affective properties of intra-medial preoptic area injections of testosterone, Neuroscience Letters, 269, 149-152, 1999.
40. Packard, M. G., & Teather, L. A. Dissociating multiple memory systems by intra-cerebral injections of glutamate. Psychobiology, 27, 40-50, 1999.
41. Schroeder, J., & Packard, M. G. Role of dopamine receptor subtypes in acquisition of a testosterone conditioned place preference in male rats. Neuroscience Letters, 297, 340-345, 2000.
42. Schroeder, J., & Packard, M. G. Differential effects of intra-basolateral amygdala infusions of lidocaine on memory consolidation and expression of a food conditioned place preference. Psychobiology, 28, 486-491, 2000.
43. Teather, L. A., Packard, M. G., & Bazan, N. B. Differential interaction between platelet-activating factor and NMDA receptor function in hippocampal and dorsal striatal memory processes. Neurobiology of Learning and Memory, 75, 310-324, 2001.

44. Packard, M. G., Vecheoli, F., Schroeder, J., & Gasbarri, A. Task-dependent role for dorsal striatal metabotropic glutamate receptors in memory. Learning and Memory, 8, 96-103, 2001.
45. Packard, M. G. On the neurobiology of multiple memory systems: Tolman versus Hull, system interactions, and the emotion-memory link. Cognitive Processing, 2, 1-22, 2001.
46. Kim, J. J., Lee, J., Boon, K., & Packard, M. G. Amygdala is critical for stress-induced modulation of hippocampal long-term potentiation and learning. Journal of Neuroscience, 21, 5222-5228, 2001.
47. Evans, D. W., Elliot, J. M., & Packard, M. G. Visual organization and perceptual closure are related to compulsive-like behavior in typically developing children. Merrill-Palmer Quarterly, 47, 323-335, 2001.
48. Packard, M. G. and Cahill, L. C. Affective modulation of multiple memory systems. Current Opinion in Neurobiology, 11, 752-755, 2001.
49. Hsu, E., Schroeder, J. A., & Packard, M. G. The amygdala mediates memory consolidation for an amphetamine conditioned place preference. Behavioral Brain Research, 129, 93-100, 2002.
50. Packard, M. G. & Knowlton, B. J. Learning and Memory Functions of the Basal Ganglia. Annual Review of Neuroscience, 25, 653-593, 2002.
51. Alexander, G. M., Packard, M. G., & Peterson, B. S. Sex and spatial position effects on object location memory following intentional learning of object identities. Neuropsychologia, 40, 1516-1522, 2002.
52. Teather, L. A., Packard, M. G., & Bazan, N. G. Post-training cyclooxygenase-2-(Cox-2) inhibition impairs memory consolidation. Learning and Memory, 9, 41-47, 2002.
53. Schroeder, J. A., Wingard, J., & Packard, M. G. Post-training reversible inactivation of the dorsal hippocampus reveals interference between multiple memory systems. Hippocampus, 480-484, 2002.
54. Schroeder, J. P. & Packard, M. G. Post-training intra-basolateral amygdala scopolamine impairs food and amphetamine conditioned place preferences. Behavioral Neuroscience, 116, 922-927, 2002.
55. Poldrack, R. A., & Packard, M. G. Competitive interactions among multiple memory systems: converging evidence from human and animal research. Neuropsychologia, 41, 245-251, 2003.

56. Packard, M. G. Behaviorism versus cognitivism: The brain speaks. Contemporary Psychology, 48, 442-445, 2003.
57. Schroeder, J. A., & Packard, M. G. Systemic or intra-amygdala injections of glucose facilitate memory consolidation for extinction of drug-induced conditioned reward. European Journal of Neuroscience, 17, 1482-1488, 2003.
58. Packard, M. G., & Wingard, J. A. Amygdala and emotional modulation of the relative use of multiple memory systems. Neurobiology of Learning and Memory, 82, 243-252, 2004 .
59. Schroeder, J. A., & Packard, M. G. Facilitation of extinction of drug-conditioned reward: role of acetylcholine and amygdala. Learning and Memory, 11, 641-647, 2004.
60. Marsh, R., Alexander, G. M., Packard, M. G., Zhu, H., Wingard, J. C., Quackenbush, G. & Peterson, B. S. Habit Learning in Tourette Syndrome: A Translational Neuroscience Approach to a Developmental Psychopathology. Arch Gen Psychiatry. 61:1259-1268, 2004.
61. Marsh R. Alexander GM. Packard MG. Zhu H. Peterson BS. Perceptual-motor skill learning in Gilles de la Tourette syndrome. Evidence for multiple procedural learning and memory systems. Neuropsychologia. 43:1456-65, 2005.
62. Teather LA. Packard MG. Smith DE. Ellis-Behnke RG. Bazan NG. Differential induction of c-Jun and Fos-like proteins in rat hippocampus and dorsal striatum after training in two water maze tasks. Neurobiology of Learning & Memory. 84: 75-84, 2005.
63. Gabriele, A. Packard, M.G. Evidence of a role for multiple memory systems in behavioral extinction. Neurobiology of Learning and Memory. 85: 289-299. 2006.
64. Gabriele, A, Packard, M.G. D-Cycloserine enhances memory consolidation of hippocampus-dependent latent extinction. Learning & Memory. 14(7):468-71, 2007.
65. Hsu, E., Packard, M.G. Medial prefrontal cortex infusions of bupivacaine or AP-5 block extinction of amphetamine conditioned place preference. Neurobiology of Learning and Memory. 88; 271-280, 2007.
66. Wingard, J. C., Packard, M. G. Amygdala and emotional modulation of competition between cognitive and habit memory. Behavioral Brain Research. 193: 126-131, 2008.

67. Elliot, A., Packard, M. G. Intra-amygdala administration of an anxiogenic drug prior to retrieval biases rats towards the use of habit memory. *Neurobiology of Learning and Memory*, 90: 613-623, 2008.
68. Gabriele, A.G. Setlow, B., Packard, M.G. Cocaine self-administration alters the relative effectiveness of multiple memory systems during extinction. *Learning and Memory*, 16: 296-299, 2009.
69. Packard, M. G. Exhumed from thought: The basal ganglia and plus-maze behavior. *Behavioral Brain Research*, 12, 24-31, 2009.
70. Packard, M. G. Anxiety, cognition, and habit: A multiple memory systems perspective. *Brain Research*, 1293, 121-128, 2009.
71. Gabriele, A.G., Packard, M.G. Peripheral anxiogenic drug injections differentially affect cognitive and habit memory: Role of basolateral amygdala. *Neuroscience*, 154, 467-472, 2009.
72. Raz A, Packard MG, Alexander GM, Buhle JT, Zhu H, Yu S, Peterson BS. A slice of pi: an exploratory neuroimaging study of digit encoding and retrieval in a superior memorist. *Neurocase*, 15, 361-372, 2010.
73. Marsh, R, Hao X., Wang, Z., Martinez, D, Tau, G.Z., Packard, M. G. Peterson, B.S. A virtual reality-based fMRI study of reward-based spatial learning. *Neuropsychologia*, 2912-21, 2010.
75. Packard, M. G. Role of basal ganglia in habit learning and memory: Rats, monkeys, and humans. *Handbook of Basal Ganglia Structure and Function*. Elsevier Publishers, 2010.
76. Packard, M.G., Goodman, J. Emotional arousal and multiple memory systems in the mammalian brain. *Frontiers in Behavioral Neuroscience*, 6, 1-9, 2012.
77. Goodman, J., Leong, K.C. Packard, M.G. Emotional modulation of multiple memory systems: Implications for the neurobiology of post-traumatic stress disorder, *Reviews in the Neurosciences*, 9:20, 1-17, 2012.
78. Leong, K.C, Goodman, J., Packard, MG. Buspirone blocks the ability of the anxiogenic drug RS 7798-197 to facilitate consolidation of habit memory. *Behavioural Brain Research*, 234. 299-302, 2012.
79. Packard. M.G., Goodman, J. Factors that influence the relative use of multiple memory systems. *Hippocampus*, 11, 1044-1052, 2013.

80. Tau, G.Z., Marsh, R., Wang, Z., Torres, T., Graniello, B., Hao, X., Xu, D., Packard, M.G., Duan, Y., Fangarlu, A., Martinez, D., Peterson, B.S. Neural correlates of reward-based spatial learning in persons with cocaine dependence. *Neuropsychopharmacology*, 39, 545-555, 2014.
81. White, N.M., Packard, M.G., McDonald, R.J. Dissociating memory systems: The story unfolds. *Behavioral Neuroscience*, 127, 813-834, 2013.
82. Goodman, J. Marsh, R., Peterson, B.S., Packard, M. G. The neurobehavioral development of multiple memory systems: Implications for childhood and adolescent psychiatric disorders. *Journal of Child Psychology and Psychiatry*, 55, 582-610, 2014.
83. Goodman, J., Packard, M. G. Peripheral and intra-dorsolateral striatum injections of the cannabinoid receptor agonist WIN 55,212-2 impair consolidation of stimulus-response memory. *Neuroscience*, 74, 128-137, 2014.
84. Leong, K. C., Packard, M. G. Exposure to predator odor influences the relative use of multiple memory systems: Role of basolateral amygdala. *Neurobiology of Learning and Memory*, 109, 56-61, 2014.
85. Gasbarri, A., Pompili, A., Packard, M.G., Tomaz, C. Habit learning and memory in mammals: Behavioral and neural characteristics. *Neurobiology of Learning and Memory*, 114, 198-208, 2014.
86. Horga, G., Maia, T.V., Marsh, R., Hao, X., Xu, D., Duan, Y., Tau, G.Z., Wang, Z., Kangarlu, A., Martinez, D., Packard, M.G., Peterson, B.S. Changes in corticostriatal connectivity during reinforcement learning in humans. *Human Brain Mapping*, 36, 793-803, 2015.
87. Marsh, R. Tau, G.Z., Wang, Z., Hou, Y., Lui, B.A., Hao, X., Xu, D., Packard, M.G., Peterson, B.S., Simpson, B. Reward-based spatial learning in unmedicated adults with obsessive-compulsive disorder. *American Journal of Psychiatry*, 172, 383-392, 2015.
88. Leong, K. C., Goodman, J., Packard, M. G. Post-training re-exposure to fear conditioned stimuli enhances memory consolidation and biases rats towards the use of striatum-dependent response learning. *Behavioural Brain Research*, 291, 195-200, 2015.
89. Wingard, J., Leong, K. C., Goodman, J. Packard, M. G. Differential effects of massed and distributed training on place and response learning: A memory systems perspective. *Behavioural Processes*, 118: 85-89, 2015.

90. Goodman, J., Packard, M. G. The influence of cannabinoids on learning and memory processes of the dorsal striatum. *Neurobiology of Learning and Memory*, 125: 1-14. 2015.
91. Goodman, J., Leong, K. C., Packard, M. G. Glucocorticoid enhancement of dorsal striatum-dependent habit memory requires concurrent noradrenergic activity. *Neuroscience*, 311, 1-8, 2015.
92. Goodman, J., Packard, M. G. The memory system engaged during acquisition determines the effectiveness of different extinction protocols. *Frontiers in Behavioral Neuroscience*, 9, 1-13, 2015.
93. Goodman, J. Packard, M. G. Memory systems and the addicted brain. *Frontiers in Psychiatry*, 25, 1-8, 2016.
94. Leong, K. C., Goode, T., Goodman, J. Maren, S., Packard, M. G. Enhancement of striatum-dependent memory by conditioned fear memory is mediated by beta-adrenergic receptors in the basolateral amygdala. *Neurobiology of Stress*, 3, 74-82, 2016.
95. Goodman, J., Gabriele, A., Packard, M. G. Hippocampus NMDA receptors selectively mediate latent extinction of place learning in the plus-maze. *Hippocampus*, 26, 1115-1123, 2016.
96. Goodman, J. Ressler, R., Packard, M. G. Dorsolateral striatum selectively mediates extinction of habit memory. *Neurobiology of Learning and Memory*, 136, 54-62, 2016.
97. Goodman, J., Ressler, R., Packard, M. G. Enhancing and impairing extinction of habit memory through modulation of NMDA receptor activity in the dorsolateral striatum. *Neuroscience*, 352, 216-225, 2017.
98. Goodman, J., Gabriele, A., Packard, M. G. Differential effects of neural inactivation of the dorsolateral striatum on response and latent extinction. *Behavioral Neuroscience*, 313, 143-148, 2017.
99. Packard, M. G., Ressler, R., Goodman, J. Emotional modulation of habit memory: Neural mechanisms and implications for psychopathology. *Current Opinion in Behavioral Sciences*, 20, 25-32, 2018.
100. Goodman, J. Packard, M. G., The role of the dorsal striatum in extinction: A memory systems perspective. *Neurobiology of Learning and Memory*, 150, 48-55, 2018.

101. Goodman, J., Hsu, E., Packard, M. G. NMDA receptors in the basolateral amygdala mediate acquisition and extinction of an amphetamine conditioned place preference. In Press, *Behavioral Neuroscience*, 2019.
102. Goodman, J., **Packard, M. G.** There is more than one kind of extinction learning. *Frontiers in Systems Neuroscience*, 13, 2019. **Impact Factor: 3.92**

BOOK CHAPTERS

- White, N. M., Viaud, M., & Packard, M. G. Dopaminergic-cholinergic function in neostriatal memory function: role of nigrostriatal terminals. In: (Palamo, T., Archer, T., & Beninger, R, eds.), Strategies for studying brain disorders, Vol. 2: Schizophrenia, Movement disorders, and age related cognitive disorders. Madrid, Editorial Complutense, 299-311, 1994.
- Packard, M. G., Williams, C. L., Cahill, L. & McGaugh, J. L. The anatomy of a memory modulatory system: from periphery to brain. In: (Spear, Spear, & Woodruff, Eds.), Neurobehavioral Plasticity: Learning, Development, and Response to Brain Insults. Lawrence Erlbaum Assoc., New Jersey, pp. 149-184, 1995.
- Packard, M. G. Amygdala modulation of multiple memory systems. In: Memory Consolidation: Essays in Honor of James L. McGaugh. American Psychological Association Publishing, 2001.
- Packard, M. G. Multiple memory systems in mammalian brain. *Learning and Memory*, Second Edition, Macmillan Publishers. 2003.
- Packard, M. G. Basal Ganglia. International Encyclopedia of the Social and Behavioral Sciences, Elsevier Science Publishing, 2002.
- Packard, M. G. Dissociation Methodology. Encyclopedia of Cognitive Science, Nature Publishing Group, 2002
- Packard, M. G. Procedural learning in animals. *Learning and Memory*, Second Edition, Macmillan Publishers. 2003.
- Packard, M. G. Tolman versus Hull: Place and response learning revisited in the brain. *Learning and Memory*, Second Edition, Macmillan Publishers. 2003.
- Packard, M. G. Neurobiology of procedural learning in animals. *Learning and Memory: A Comprehensive Reference*. MacMillan Publishers, 2008.
- Packard, M. G. Basal ganglia and procedural learning in animals. *Encyclopedia of Neuroscience*. Elsevier Publishers, 2008.

Packard, M. G. Role of basal ganglia in habit learning and memory: Rats, monkeys, and humans. Handbook of Basal Ganglia Structure and Function. Elsevier Publishers, 2010.

Goodman, J., Packard, M. G. Memory systems of the basal ganglia. Handbook of Basal Ganglia Structure and Function 2. Elsevier Publishers, 2016.

Packard, M. G., Goodman, J. Procedural Learning in Animals. Learning and Memory, Third Edition, Macmillan Publishers. Elsevier Publishers, 2017.

Goodman, J., Mcyintire, C., Packard, M. G. Amygdala and emotional modulation of multiple memory systems. Intech Publishing, 2017.