

Mark A. McDaniel Curriculum Vitae

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EDUCATION

A.B.	Mathematics and Psychology	Oberlin College	1974
M.A.	Experimental Psychology	University of Colorado	1978
Ph.D.	Experimental Psychology	University of Colorado	1980

PROFESSIONAL EXPERIENCE

July, 2011 -- Present
Co-Director, Center for Integrative Research on Cognition, Learning, and Education

July, 2004 – Present
Professor, Department of Psychological and Brain Sciences, Washington University

August, 2002 – May, 2004
Chair, Department of Psychology, University of New Mexico

July, 1994 – June, 2004
Professor, Department of Psychology, University of New Mexico

August, 1993 - July, 1994
Visiting Professor, Department of Psychology, University of Arizona

July, 1991 - July, 1994
Professor, Department of Psychological Sciences, Purdue University

February, 1990 - March, 1990
Visiting Scholar, Department of Psychology, University of Padova, Padova, Italy

April, 1990 - May, 1990
Visiting Scholar, Institute of Psychology, University of Basel, Basel, Switzerland

June, 1987 - July, 1991
Associate Professor, Department of Psychological Sciences, Purdue University

August, 1981 - June, 1987
Assistant Professor, Department of Psychology, University of Notre Dame

January, 1980 - August, 1981
Member of Technical Staff at Bell Laboratories, Holmdel, N.J.

AWARDS & HONORS

Lifetime Achievement Award, International Conference on Prospective Memory	2018
President, American Psychological Association, Division 3 (Experimental Psychology and Cognitive Science)	2012-2013
Member, Memory Disorders Research Society	2008
Fellow, Society of Experimental Psychologists	2008
Fellow, Association for Psychological Science	2007
Fellow, American Psychological Association, Divisions 3 & 20	2003
President, Rocky Mountain Psychological Association	1996-1997
Elected to Sigma Xi	1985
Heyers-Bowers Industrial Psychology Award	1978

PRIMARY ADMINISTRATIVE EXPERIENCE

Co-Director of the Center for Integrative Research on Cognition, Learning, and Education (CIRCLE), Washington University	2011-present
President, American Psychological Association, Division 3 (Experimental Psychology and Cognitive Science)	2012-2013
Area Coordinator, Brain, Behavior, and Cognition, Washington University	2005-2010
Chair, Psychology Department, University of New Mexico	2002-2004
Chair, Cognitive Program, Psychology Department, University of New Mexico	1995-2002
President, Rocky Mountain Psychological Association	1996-1997
Program Chair, Annual Meeting of the Midwestern Psychological Association	1993
Director of Graduate Studies, Psychological and Brain Sciences, Purdue	1991-1993
Scientific Committee, Third European Workshop on Imagery and Cognition	1990
Scientific Committee, Second European Workshop on Imagery and Cognition	1998
Director of Graduate Studies, Psychology, University of Notre Dame	1987

PUBLICATIONS

Refereed Journal Articles

McDaniel, M. A., & Masson, M. E. (1977). Long-term retention: When incidental semantic

- processing fails. *Journal of Experimental Psychology: Human Learning and Memory*, 3, 270-281.
- McDaniel, M. A., Friedman, A., & Bourne, L. E., Jr. (1978). Remembering the levels of information in words. *Memory & Cognition*, 6, 156-164.
- Maier, S. F., Coon, D. J., McDaniel, M. A., Jackson, R. L., & Grau, J. (1979). The time course of learned helplessness, inactivity and nociceptive deficits in rats. *Learning and Motivation*, 10, 467-487.
- Masson, M. E. J., & McDaniel, M. A. (1981). The role of organizational processes in long-term retention. *Journal of Experimental Psychology: Human Learning and Memory*, 7, 100-110.
- McCombs, B. L., & McDaniel, M. A. (1981). On the design of adaptive treatments for individualized instructional systems. *Educational Psychologist*, 6, 11-22.
- McDaniel, M. A. (1981). Syntactic complexity and elaborative processing. *Memory & Cognition*, 9, 487-495.
- McCombs, B. L., & McDaniel, M. A. (1983). Individualizing through treatment matching: A necessary but not sufficient approach. *Education, Communication & Technology Journal*, 31, 213-225.
- Einstein, G. O., McDaniel, M. A., Bowers, C. A., & Stevens, D. T. (1984). Memory for prose: The influence of relational and proposition-specific processing. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 10, 133-143.
- McDaniel, M. A. (1984). The role of elaborative and schema processes in story memory. *Memory & Cognition*, 12, 46-51.
- McDaniel, M. A., & Pressley, M. (1984). Putting the keyword method in context. *Journal of Educational Psychology*, 76, 598-609.
- McDaniel, M. A., & Kearney, E. M. (1984). Optimal learning strategies and their spontaneous use: The importance of task appropriate processing. *Memory & Cognition*, 12, 361-373.
- McDaniel, M. A., & Masson, M. E. J. (1985). Altering memory representations through retrieval. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11, 371-385.
- Lyman, B. J., & McDaniel, M. A. (1986). Effects of encoding strategy on long-term memory for odors. *Quarterly Journal of Experimental Psychology*, 38A, 753-765. (Reprinted in P. T. Smith and R. A. Boakes [Eds.], *Human and animal memory* [pp. 227-239]. Hillsdale, N.J.:

Erlbaum).

- McDaniel, M. A., & Einstein, G. O. (1986). Bizarre imagery as an effective mnemonic aid: The importance of distinctiveness. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *12*, 54-65.
- McDaniel, M. A., Einstein, G. O., Dunay, P. K., & Cobb, R. (1986). Encoding difficulty and memory: Toward a unifying theory. *Journal of Memory and Language*, *25*, 645-656.
- Pryor, J. B., McDaniel, M. A., & Kott, T. L. (1986). The influence of the level of schema abstractness upon the processing of social information. *Journal of Experimental Social Psychology*, *22*, 312-327.
- McDaniel, M. A., & Kerwin, M. L. E. (1987). Long-term prose retention: Is an organizational schema sufficient? *Discourse Processes*, *10*, 237-252.
- McDaniel, M. A., Lapsley, D. K., & Milstead, M. (1987). Testing the generality and automaticity of self-reference encoding with release from proactive interference. *Journal of Experimental Social Psychology*, *23*, 269-284.
- McDaniel, M. A., Pressley, M., & Dunay, P. K. (1987). Long term retention of vocabulary after keyword and context learning. *Journal of Educational Psychology*, *79*, 87-89.
- McDaniel, M. A., & Tillman, V. P. (1987). Discovering a meaning versus applying the keyword method: Effects on recall. *Contemporary Educational Psychology*, *12*, 156-175.
- Pressley, M., McDaniel, M. A., Turnure, J. E., Wood, E., & Ahmad, M. (1987). Generation and precision of elaboration: Effects on intentional and incidental learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *13*, 291-300.
- McDaniel, M. A., Dunay, P. K., Lyman, B. J., & Kerwin, M. L. E. (1988). Effects of elaboration and relational distinctiveness on sentence memory. *American Journal of Psychology*, *101*, 357-369.
- McDaniel, M. A., Einstein, G. O., & Lollis, T. (1988). Qualitative and Quantitative considerations in encoding difficulty effects. *Memory & Cognition*, *16*, 8-14.
- McDaniel, M. A., Waddill, P. J., & Einstein, G. O. (1988). A contextual account of the generation effect: A three-factor theory. *Journal of Memory and Language*, *27*, 521-536.
- Pressley, M., Symons, S., McDaniel, M. A., Snyder, B. L., & Turnure, J. E. (1988). Elaborative interrogation facilitates acquisition of confusing facts. *Journal of Educational Psychology*, *80*, 268-278.

- Waddill, P. J., McDaniel, M. A., & Einstein, G. O. (1988). Illustrations as adjuncts to prose: A text-appropriate processing approach. *Journal of Educational Psychology, 80*, 457-464.
- Einstein, G. O., McDaniel, M. A., & Lackey, S. (1989). Bizarre imagery, interference, and distinctiveness. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 15*, 137-146.
- McDaniel, M. A., Anderson, D. C., Einstein, G. O., & O'Halloran, C. M. (1989). Modulation of environmental reinstatement effects through encoding strategies. *American Journal of Psychology, 102*, 523-548.
- McDaniel, M. A., & Einstein, G. O. (1989). Material appropriate processing: A contextualist approach to reading and studying strategies. *Educational Psychology Review, 1*, 113-145.
- McDaniel, M. A., Kowitz, M. D., & Dunay, P. K. (1989). Altering memory through recall: The effects of cue-guided retrieval processing. *Memory & Cognition, 17*, 423-434.
- McDaniel, M. A., & Pressley, M. (1989). Keyword and context instruction of new vocabulary meanings: Effects on text comprehension and memory. *Journal of Educational Psychology, 81*, 204-213.
- McDaniel, M. A., Ryan, E. B., & Cunningham, C. J. (1989). Encoding difficulty and memory enhancement for young and old readers. *Psychology and Aging, 4*, 333-338.
- Einstein, G. O., & McDaniel, M. A. (1990). Normal aging and prospective memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16*, 717-726.
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- Lyman, B. J., & McDaniel, M. A. (1990). Memory for odors and odor names: Modalities of elaboration and imagery. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16*, 656-664.
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- McDaniel, M. A., Riegler, G. L., & Waddill, P. J. (1990). Generation effects in free recall: Further support for a three-factor theory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16*, 789-798.
- McDaniel, M. A., & Schlager, M. S. (1990). Discovery learning and transfer of problem solving

- skills. *Cognition and Instruction*, 7, 129-159.
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- Pressley, M., Tannebaum, R., McDaniel, M. A., & Wood, E. (1990). What happens when university students try to answer prequestions that accompany textbook materials? *Contemporary Educational Psychology*, 15, 27-35.
- Stadler, M. A., & McDaniel, M. A. (1990). On imaging and seeing: Repetition priming and interactive views of imagery. *Psychological Research*, 52, 366-370.
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- DeLosh, E. L., & McDaniel, M. A. (1996). The role of order information in free recall: Application to the word-frequency effect. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 22*, 1136-1146.
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- Donnelly, C. M., & McDaniel, M. A. (2000). Analogy with knowledgeable learners: When analogy confers benefits and exacts costs. *Psychonomic Bulletin & Review*, *7*, 537-543.
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- McDaniel, M. A., DeLosh, E. L., & Merritt, P. S. (2000). Order information and distinctiveness: Recall of common versus bizarre material. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 26, 1045-1056.
- McDaniel, M. A., & Einstein, G. O. (2000). Strategic and automatic processes in prospective memory retrieval: A multiprocess framework. *Applied Cognitive Psychology*, 14, S127-S144.
- McDaniel, M. A., Waddill, P. J., Finstad, K., & Bourg, T. (2000). The effects of text-based interest on attention and recall. *Journal of Educational Psychology*, 92, 492-502.
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- McDaniel, M. A., Neufeld, K. H., & Damico-Nettleton, S. (2001). Many-to-one and one-to-many associative learning in a naturalistic task. *Journal of Experimental Psychology: Applied*, 7, 182-194.
- McDaniel, M. A., Schmalhofer, F., & Keefe, D. (2001). What is minimal about predictive inferences? *Psychonomic Bulletin & Review*, 8, 840-846.
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- McDaniel, M. A., Hines, R. J., & Gynn, M. J. (2002). When text difficulty benefits less-skilled readers. *Journal of Memory and Language*, 46, 544-561
- McDaniel, M.A., Maier, S.F., Einstein, G.O. (2002). Brain-specific nutrients: A memory cure? *Psychological Science in the Public Interest*, 3, 11-37.
- Schmalhofer, F., McDaniel, M. A., & Keefe, D. (2002). A unified model for predictive and bridging inferences. *Discourse Processes*, 33, 105-132.

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- McDaniel, M.A., Maier, S.F., Einstein, G.O. (2003). Brain-specific nutrients: A memory cure? *Nutrition*, 19, 957-975. [republished from *Psychological Sciences in the Public Interest* by decision of Editor in Chief of *Nutrition*]
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Frey, R. F., & McDaniel M. A. (in press). The case of the enterprising instructor. In R. J. Sternberg (Ed.), *My Biggest Research Mistake: Adventures and Misadventures in Psychological Research*. London: Sage Publications.

McDaniel, M. A., & Einstein, G. O. (in press). Realized accomplishments in prospective memory and some thoughts about the future. In J. Rummel & M. A. McDaniel (Eds.), *Current Issues in Memory: Prospective memory*. Oxfordshire, UK: Taylor & Francis.

Rummel, J., & McDaniel, M. A. (in press). Introduction: Prospective memory. In J. Rummel & M. A. McDaniel (Eds.), *Current Issues in Memory: Prospective memory*. Oxfordshire, UK: Taylor & Francis.

Books

McDaniel, M. A., & Pressley, M. (Eds.) (1987). *Imagery and related mnemonic processes: Theories, individual differences, and applications*. New York, NY: Springer-Verlag.

Cornoldi, C., & McDaniel, M. A. (Eds.) (1991). *Imagery and cognition*. New York, NY: Springer-Verlag.

Brandimonte, M., Einstein, G. O., & McDaniel, M. A. (Eds.) (1996). *Prospective memory: Theory and applications*, Mahwah, NJ: Erlbaum.

Einstein, G. O., & McDaniel, M. A. (2004). *Memory fitness: A guide for successful aging*. New Haven, Conn: Yale University Press.

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Kliegel, M., McDaniel, M. A., & Einstein, G. O. (Eds.) (2008). *Prospective memory: Cognitive, neuroscience, developmental, and applied perspectives*. Mahwah, NJ, Erlbaum.

Brown, P. C., Roediger, H. L., III., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning*. Cambridge, MA: Harvard University Press.

McDaniel, M. A., Frey, R., Fitzpatrick, S., & Roediger, H. L. (Eds.) (2014). *Integrating cognitive science with innovative teaching in stem disciplines*. Doi: 10.7936/K75Q4T1X

Rummel, J., & McDaniel, M. A. (Eds.) (in press) *Current Issues in Memory: Prospective memory*. Oxfordshire, UK: Taylor & Francis.

Technical Reports

Clark, V. P., Lugar, G. F., McClain, J. T., Verzi, S. J., McDaniel, M. A., Hamilton, D., England, R., & Morissette, N. (2006). *fMRI analysis of human function learning*. (Sandia National Laboratories Report 2006). Albuquerque, NM: U. S. Department of Energy.

Bernard, M., Morrow, J. D., Taylor, S., Verzi, S., Vineyard, C., Caudell, T., Cohen, N., Eichenbaum, H., McDaniel, M., & Watson, P. (2009). *Modeling Aspects of Human fMemory for Scientific Study* (Sandia National Laboratories Report 2009-6164). Albuquerque, NM: U. S. Department of Energy.

EXTRAMURAL GRANTS

National Science Foundation: “Maximizing Undergraduate STEM Learning: Promoting Research at The Intersection of Cognitive Psychology and Discipline-Based Education Research” -- \$71,249 direct costs (submitted through University of Illinois) for funding for a workshop held September 16-17, 2016, and a 2-day mini-conference at Washington University (December, 2017) (Co-PI with Dr. Jose Mestre, University of Illinois).

National Science Foundation: “Enhancing Learning of Science Categories through Guidance of Psychological Models of Classification” - \$388,071 total direct costs (for Washington University subcontract) for funding period September 1, 2015 – August 31, 2018 (PI via subcontract from Indiana University; Dr. Robert Nosofsky, Project Director).

Institute of Education Sciences: “Exploring the Potential of Essay Testing for Improving Memory and Learning” - \$1,189,541 total funding for funding period July 1, 2013 – June 30, 2017 (PI via subcontract from Duke University; Dr. Beth Marsh, Project Director).

AAU: “STEM Education Initiative” - \$500,000 total funding for period July 1, 2013 – June 30, 2016 (CO-PI; Dr. Regina Frey, Kathy Miller, Kurt Thoroughman, CO-PIs).

LUCE Foundation: “College Freshmen Migrating out of STEM: Identifying Who & How Many are At-Risk; Causes; How to Increase Retention” - \$282,138 total funding period December 1, 2011—November 30, 2015 (CO-PI; Dr. Regina Frey, CO-PI)

Institute of Education Sciences: “Developing a Manual for Test-Enhanced Learning in the Classroom” - \$1,903,829 total funding for funding period August 1, 2011 – July 31, 2015 (CO-PI; Dr. Henry L. Roediger, Project Director).

National Institute on Aging: “Combining Exercise and Cognitive Training To Improve Everyday Function”-- \$768,384 total costs granted for funding period September 17, 2009 – September 16, 2012 (CO-PI; Dr. Ellen Binder, CO-PI).

National Institute on Aging: “Neural Mechanisms of Age-Related Changes in Prospective Memory” – \$903,673 total costs for funding period September 30, 2009—September 29, 2011 (PI; Dr. Todd Braver, Co-Investigator).

McDonnell Foundation: “Applying Cognitive Psychology to Enhance Educational Practice II” - \$6,470,000 total direct costs granted for funding period August 1, 2008 – July 31, 2013 (Collaborative Activity Award with Dr. Henry L. Roediger, III, PI and Co-PI’s from Columbia, Duke, Kent St. University, UCSD, and UCLA).

Institute of Education Sciences: “Test-Enhanced Learning in the Classroom” - \$2,964,770 total funding for funding period August 1, 2006 – July 31, 2011 (with Dr. Henry L. Roediger, Co-PI).

National Institute of Mental Health: “Comparing Models of Function Learning” - \$440,000 total direct costs for funding period July 1, 2004 – June 30, 2007 (Co-PI with Dr. Jerome Busemeyer).

McDonnell Foundation: “Applying Cognitive Psychology to Enhance Educational Practice” - \$2,152,000 total direct costs granted for funding period August 1, 2003 – July 31, 2008 (Collaborative Activity Award with Drs. Robert and Elizabeth Bjork, Dr. Elizabeth Marsh; Dr. Henry L. Roediger, III, and Dr. Kathleen McDermott, Co-PI’s).

Institute of Education Sciences: “Test-Enhanced Learning” - \$330,000 total direct costs granted for funding period August 1, 2003 – July 31, 2006 (with Dr. Henry L. Roediger, III, and Dr. Kathleen McDermott, Co- PIs).

NASA: “Prospective Remembering: Theoretical Processes, Minimizing Prospective Memory Failure, and Remembering Deferred Intentions” - \$390,009 total costs granted for funding period March 1, 2003 – February 28, 2006 (with Dr. Gilles O. Einstein, Co-PI).

National Institute on Aging: “Aging and Memory Illusions” - \$788,210 total direct costs granted for funding period April 15, 2001 - March 31, 2007 (with Dr. Henry L. Roediger, III, Co-PI).

National Science Foundation: “Science of Learning Center-Catalyst” - \$240,000 total direct costs granted for funding period October 1, 2003 – September 30, 2004 (Collaborative award with CO-PI’s from several departments at University of New Mexico)

National Institute of Deafness and Other Communicative Disorders: A Cognitive Analysis of Coding Schemes for Speech Protheses, \$304,335 total costs granted for funding period April 1, 1998 - March 31, 2001.

NASA: "Prospective memory under complex, demanding, and fluid conditions" -- over \$500,000 total direct costs granted for period 1999-2002 (with Dr. Gilles O. Einstein, Co-PI).

National Institute on Aging: "A Componential Analysis of Prospective Memory and Aging" -- \$348,440 total direct costs granted for funding period: April 8, 1994 - March 31, 1997 (with Dr. Gilles O. Einstein, Co-PI).

National Institute on Aging: "Neuropsychology of Memory and Aging" -- National Research Service Award to fund year of study at University of Arizona, Aug. 1, 1993 - July 31, 1994.

National Institute of Mental Health: "Learning intervening concepts in a multivariate environment" -- \$225,612 total direct costs granted for funding period April 1, 1991 - September 30, 1993 (co-PI with Dr. Jerome Busemeyer).

National Institute on Aging: "Prospective memory across the adult lifespan" -- \$120,240 total direct costs granted for funding period Sept. 1, 1989 - Aug. 30, 1991 (with Dr. Gilles O. Einstein, Co-PI).

National Institute of Child Health and Human Development: "Encoding difficulty and memory: Toward a unifying theory" -- \$140,380 total direct costs granted for funding period June 1, 1987 - Nov. 30, 1989 (with Dr. Gilles O. Einstein, Co-PI).

DISSERTATIONS DIRECTED

"A computational investigation of expertise in problem solving" by Paul Kevin Dunay (September, 1987, University of Notre Dame).

"A mind's nose makes scents: A converging operations approach to the study of olfactory imagery" by Brian J. Lyman (September, 1987, University of Notre Dame).

"Dissociations among measures of mental workload: Effects of experimenter-induced inadequacy" by Patricia Casper (December, 1988, Purdue University).

"Effects of instructional variables and spacing of repetitions in cued-memory tests" by Bradford H. Challis (August, 1989, Purdue University, co-chair).

"Distinctiveness effects in recognition: A new look at some old views" by Gregory Riegler (August, 1990, Purdue University, co-chair).

"The roles of instance-based and abstract processing in memory for perceptual information" by Dennis E. Keefe (May, 1992, Purdue University).

- "The mental representation of narrative: All stories are not created equal" by Paula J. Waddill (August, 1992, Purdue University).
- "The influence of situation models on the free recall of narrative texts" by Robert J. Hines (July, 1993, Purdue University).
- "Footprints of monitoring in event-based prospective memory" by Melissa J. Guynn (May, 2001, University of New Mexico).
- "The effects of transfer context on the stability of two types of conceptual structure in a function concept" by Jacqueline A. Griego (December, 2001, University of New Mexico).
- "Analogical problem solving in casual and experienced users: When interface consistency leads to inappropriate transfer" by Kraig A. Finstad (July, 2002, University of New Mexico)
- "Role of executive function in cognitive skill acquisition: An examination of cognitive impairments associated with Parkinson's disease" by Amanda L. Price (July, 2003, University of New Mexico)
- "Cognitive Interview Components and their Application to Academic Settings" by Courtney Dornburg (May, 2005, University of New Mexico)
- "Automatic Acquisition for Location: Mapping the Boundary Conditions" by David D. Hochstein (May, 2005, University of New Mexico)
- "Implementation Intentions and Cost in Prospective Memory Retrieval" by Jennifer Breneiser (August, 2007, Washington University)
- "The Effects of Prior Knowledge Relevance and Organization on Text Comprehension and Memory" by Aimee Calender (August, 2008, Washington University)
- "Individual Differences in Function Learning as They Relate to the Learning of Conceptual Information" by Cynthia L. Fadler (August, 2012, Washington University)
- "Sleep, Memory, and Aging: Effects of Pre- and Post-Sleep Delays and interference on Memory in Younger and Older Adults" by Michael K. Scullin (May, 2012, Washington University)
- "In Search of a Lost Effect: Generality of Discrepancy Effects in Memory Paradigms" by Ji hae Lee (August 2015, Washington University)

MASTER'S THESES DIRECTED

- "The roles of distinctiveness and elaboration in memory" by Paula Waddill (December, 1990).
- "Contextual effects in prospective memory" by M. Bridget Robinson (January, 1992).
- "Rule abstraction and hypothesis testing in the learning of functional concepts" by Edward DeLosh (October, 1994, co-chair).
- "Effortful or automatic: The acquisition of icon-referent and location-referent association information" by Dave D. Hochstein (May, 2000).
- "An inquiry into the nature of controlled processes in the multiprocess framework: The implications of task relatedness in a non-focal prospective memory environment" by Thomas F. W. Graham (March, 2002).
- "Accommodative reconstruction or source monitoring confusion in the Spiro paradigm: Are false memories irreversible?" by Courtney C. Dornburg (June, 2002).
- "Sleeping to Remember: Spontaneous Retrieval of Prospective Memories Across Sleep and Wake Sleeping delays" by Michael K. Scullin (November, 2009).
- "Typical prospective memory targets are not typically better than atypical prospective memory targets: Underlying mechanisms of prospective memory retrieval" by Ji hae Lee (November, 2010).
- "Testing promotes transfer with authentic educational materials" by Khuyen Nguyen (November, 2013).
- "Utilizing Multiple-level Category Information to Enhance Category Learning: Theoretical and practical considerations in application to authentic natural categories" by Toshiya Miyatsu (July, 2016).
- "Exploring the Underlying Mechanisms of Structure Building" by Reshma Gouravajhala (December, 2017).
- "Quizzing and Restudy Dynamics in a TST Paradigm: The (Null) Effect of Feedback and the (Significant) Effects of Metacognition" by Francis Anderson (December, 2017)

INVITED ADDRESSES

McDaniel, M. A. & Einstein, G. O. A framework toward understanding encoding difficulty and memory. Invited paper presented at the Midwestern Psychological Association Meeting, Chicago, May, 1986.

- McDaniel, M. A. Special Discussant at the European Workshop on Imagery and Cognition. Paris, France, September, 1986.
- McDaniel, M. A. Correspondences between imagery and perception. Invited paper presented at the Second Workshop on Imagery and Cognition, Padua, Italy, September, 1988.
- McDaniel, M. A. Effective encoding: The influence of material appropriate processing. Southeastern Workers in Memory Annual Meeting held at the Southeastern Psychological Association Meeting, Knoxville, TN, March, 1992.
- McDaniel, M. A. Study strategies, interest, and learning from text: The application of material appropriate processing. Invited paper presented at the Third Practical Aspects of Memory Conference, University of Maryland, August, 1994.
- McDaniel, M. A. Prospective Memory: Empirical Work and a New View. Presidential Address at the Rock Mountain Psychological Association Meeting, Reno, Nevada, April, 1997.
- McDaniel, M. A. Prospective memory: A new view and some preliminary data. Invited presentation at the workshop on Prospective Memory, Leuven, Belgium, May, 1997.
- McDaniel, M. A. The Role of Order Information in Recall of Unusual Information. Invited presentation at the Southwestern Psychological Association Convention, Albuquerque, New Mexico, April, 1999.
- McDaniel, M. A. & Einstein, G. O. Prospective memory retrieval and delayed execution: Multiple memory processes and age-related effects. Keynote lecture at the 1st International Conference on Prospective Memory, July, 2000.
- McDaniel, M. A. Minding the P(rocess)'s and Q(ue)'s of prospective memory: A multiprocess framework. Keynote lecture at the 12th Armadillo Conference, Dallas, Texas, October, 2001.
- McDaniel, M. A. Minding the P(rocess)=s and Q(ue)=s of prospective memory: A multiprocess framework. Invited presentation at the American Psychological Society Annual Convention, New Orleans, LA, June, 2002
- McDaniel, M. A. 'Brain-specific' nutrients: A memory cure? Invited presentation at the American Psychological Society Annual Convention, New Orleans, LA, June, 2002
- McDaniel, M. A. Prospective memory: What does your grandmother really forget? The McCahan Lecture at Furman University, Greenville, SC, April, 2003.
- McDaniel, M. A. Material appropriate difficulty: A framework for determining when difficulty is

desirable for improving learning. Keynote lecture at Triple Festschrift in Honor of Lyle Bourne, Walter Kintsch, Thomas Landauer, Boulder, Co, May, 2003.

McDaniel, M. A. Prospective memory and aging: A decade of progress and a handful of issues. Invited overview presentation at the Cognitive Aging Conference, Atlanta, GA, April, 2004.

McDaniel, M. A. Improving student learning: Moving from the memory laboratory to the classroom. Invited talk at the Reinvention Center Conference on Integrating Research into Undergraduate Education: The Value Added, Washington DC, November, 2004.

McDaniel, M. A. Spontaneous Retrieval in Prospective Memory. Presented at the Roddyfest: Directions in Memory Research, Purdue University, West Lafayette, IN, March, 2005

McDaniel, M. A. Prospective Memory and Aging: Old Issues and New Questions. Invited talk at the International Conference on the Future of Cognitive Aging Research, University Park, PA, May, 2005.

McDaniel, M. A. Improving Student Learning: Moving from the Memory Laboratory to the Classroom. Invited talk presented at the National Academies Institute for Undergraduate Biology Education, Madison, Wisconsin, August, 2005

McDaniel, M. A. The Scholarship of Teaching and Learning: Lessons from the Memory Laboratory. Invited talk presented at the Biology Leadership Conference: Shaping the Future of Introductory Biology for Majors, Bermuda, March, 2006.

McDaniel, M. A. Improving Student Learning: Lessons from the Memory Laboratory Applied to the Classroom. Invited talk presented at the Wisconsin Symposium on Human Biology, Madison, Wisconsin, May, 2006.

McDaniel, M. A. Test Enhanced Learning. Invited plenary presentation at the Institute of Education Sciences' 2006 Research Conference, Washington D.C., June, 2006.

McDaniel, M. A. Spontaneous Retrieval in Prospective Memory. Keynote address presented at the Show-Me Mental State Conference on Cognition, St. Louis, Missouri, July, 2006.

McDaniel, M. A. Testing to improve learning in post-secondary education. Invited talk at the 116th Annual Convention of the American Psychological Association, Boston, MA. August 15, 2008.

McDaniel, M. A. The power of quizzing. Invited talk at the 3rd Annual Conference of the Redesign Alliance, Orlando, FL. March 24, 2009.

McDaniel, M. A. Improving Student Learning: Importing Retrieval Practice Effects into

- the Classroom. Past President's Address at the 79th Annual Convention of the Rocky Mountain Psychological Association, Albuquerque, NM. April 17, 2009.
- McDaniel, M.A. Prospective memory: Cue-driven spontaneous retrieval and contextual control of implementing retrieved intentions. Keynote Address presented at the Fall Meeting of the Comparative Cognition Society, St. Louis, MO. November, 2010.
- McDaniel, M.A. Individual differences in concept learning: Tendencies to focus on exemplars versus abstraction. Keynote address presented at the North Carolina Conference on Cognition, Greensboro, NC. February, 2011.
- McDaniel, M. A. Importing memory principles to education: Improving learning and instruction. Invited talk presented at the Midwestern Psychological Association Conference, Chicago, IL. May, 2011.
- McDaniel, M. A. Improving student learning: Moving from the memory laboratory to the classroom. Keynote address at the Science of Learning Goes to College: Applying the Science of Learning in College and University Curricula Conference, University of New Hampshire, Durham, NH. April, 2012.
- McDaniel, M. A., & Einstein, G. O. Overview of aging and prospective memory (from the perspective of the multiprocess theory). Invited talk presented at the Cognitive Aging Conference, Atlanta, GA. April, 2012.
- McDaniel, M. A. Individual differences in concept learning tendencies: Spanning the laboratory and the classroom. Invited lecture presented at the 3rd Latin American School on Education, Cognitive, and Neural Sciences, Bahia, Brazil, March, 2013.
- McDaniel, M. A. Applying cognition to education: Lessons from the experimental psychology laboratory. Division 3 President's Address presented at the Annual Convention of the American Psychological Association, Honolulu, HI. August 2, 2013.
- McDaniel, M. A. Test-enhanced learning in the classroom. Invited talk presented at the Annual Convention of the American Psychological Association, Honolulu, HI. August 1, 2013.
- McDaniel, M. A. The good, the bad, and the ugly of "best" practices: Some lessons from the memory laboratory. Bill Hill Keynote Address presented at the Annual Best Practices Conference, Atlanta, Georgia. October 11, 2013.
- McDaniel, M. A. Online versus in-class courses: The challenges (and solutions) to evaluation. Invited paper presented in From Principles of Cognitive Science to MOOCS: A Workshop in Honor of William K. Estes, held at the Fifty-Fourth Annual Meeting of the Psychonomics Society, Toronto. November 16, 2013.

- McDaniel, M. A. Improving student learning: Moving from the memory laboratory to the classroom. Opening keynote address at the National Institute on the Teaching of Psychology, St. Petersburg Beach, Fla. January 3, 2014.
- McDaniel, M. A. Individual differences in concept learning tendencies: Spanning the laboratory and the classroom. Invited talk presented at the Connexions Conference, Rice University, Houston, April 2, 2014.
- McDaniel, M. A. Improving instructional effectiveness and equipping students to learn smarter: Evidence-based approaches. Keynote address at the Improving Student Achievement Summit on Learning and Education, Kent State University. October 9, 2014.
- McDaniel, M. A. Evidence-Based Techniques to Improve Instructional Effectiveness and Student Learning. Keynote address presented at the Association of College Educators-Deaf and Hard of Hearing Annual Meeting, St. Louis, MO, February 13, 2015.
- McDaniel, M. A. Making Learning Stick: Evidence-Based Techniques to Improve Learning. Keynote address presented at the Southeastern Teachers of Psychology Annual Conference, Atlanta, GA, February 27, 2015.
- McDaniel, M. A., & Roediger, H. L. (joint talk). Making Learning Stick: Evidence-Based Techniques to Improve Student Learning. Keynote address presented at the 12th Annual Teaching Professor Conference, Atlanta, GA, May 29, 2015
- McDaniel, M. A. Making Learning Stick: Equipping Students to Learn Smarter and Forget Less. Keynote address presented at the 25th Annual Meeting of the Society for Text and Discourse, Minneapolis, MN, July 8, 2015.
- McDaniel, M. A. Making Learning Stick: Evidence-Based Techniques to Improve Instruction and Student Learning. Keynote address presented at the Society for Swiss Psychology Conference, Geneva, Switzerland, September 9, 2015.
- McDaniel, M. A. Marking Learning Stick: What We Know (or think we know) about Practices to Promote Effective Learning. Keynote address presented at the Teaching with Fire Teaching Day, Northern Arizona University, Flagstaff, AZ, January 14, 2016.
- McDaniel, M. A. Making Learning Stick: Evidence Toward Improving Teaching and Learning. Distinguished lecture presented at the Annual Convention for Psychological Science and the 23rd Annual Teaching Institute, Chicago, IL, May 26, 2016.
- McDaniel, M. A. Make Learning Stick: Evidence Based Techniques to Improve Learning and Instruction. Keynote presentation at the Center for University Education Scholarship (CUES) Symposium, Tucson, AZ, February 17, 2017.

McDaniel, M. A. Make it Stick: The Science of Successful Learning. Invited talk presented at the SEE Professional Development Conference, Federal Reserve Bank of St. Louis, St Louis, MO, May 17, 2017

Frey, R., & McDaniel, M. A. (joint presentation). Connecting Biology and Social Sciences Communities. Invited talk presented at the EMBER Conference, Harris-Stowe State University, St. Louis, MO, June 12, 2017.

Frey, R., & McDaniel, M. A. (joint presentation). Sustainability of the EMBER Network. Invited talk presented at the EMBER Conference, Harris-Stowe State University, St. Louis, MO, June 12, 2017.

McDaniel, M. A. Make it Stick: Techniques to Improve Instruction. Invited plenary talk presented at the STEM FIT (Faculty Institute on Teaching) Symposium, Washington University, St. Louis, MO, June 14, 2017.

Brown, P., & McDaniel, M. A. (joint presentation). Three big ideas about learning. Keynote talk presented at the annual conference of the Electrical and Computer Engineering Department Heads Association (ECEDHA), Monterey, California, March 17, 2018.

McDaniel, M. A., Anderson, F., & Rummel, J. Retrieval in Prospective Memory: Multiple Routes or Setting Thresholds for Information Accumulation. Keynote talk presented at the conference on Theoretical and Applied Advances in Prospective Memory Research, Heidelberg, Germany, July 2, 2018.

Colloquia presented at various universities including Purdue University, SUNY-Binghamton, Indiana University (Bloomington), Rice University, University of Padova, Italy, University of Saarlandes, Germany, University of Basel, Switzerland, Ohio State, North Dakota State University, St. Thomas University, McMaster University, University of Illinois, Central Michigan University, Washington University in St. Louis, New Mexico State University, University of Minnesota, University of Colorado, University of Victoria, St. Louis University, Davidson College, Auburn University, University of Chicago, St. Francis University, Franklin & Marshall College, Florida Gulf Coast University, University of Georgia, Northwestern University

CONFERENCE PRESENTATIONS (2018)

Gouravajhala, R. & McDaniel, M. A. The effects of presentation order and training instructions in naturalistic category learning. Paper presented at the 90th Annual Meeting of the Midwestern Psychological Society, Chicago, Illinois, April, 2018.

Gouravajhala, R. & McDaniel, M. A. What's the (main) point?: Exploring the underlying mechanisms of structure building. Poster presented at the 30th Annual Convention of the Association for Psychological Science, San Francisco, California, May, 2018.

Anderson, F. T., & McDaniel, M. A. Hey buddy, why don't we take it outside: An ESM study of prospective memory. Poster presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA, November, 2018.

Gouravajhala, R. , Wahlheim, C. N., & McDaniel, M. A. Changes in categorization strategy choices: Are there individual differences in knowledge restructuring among younger and older adults? Poster presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA, November, 2018.

McDaniel, M. A., & Gouravajhala, R. Coaching of naturalistic rule-based categories with exceptions: Unexceptional performance. Paper presented at the 59th Annual Meeting of the Psychonomic Society, New Orleans, LA, November, 2018.

PARTICIPATION IN PROFESSIONAL ORGANIZATIONS

Fellow of the American Psychological Society
Fellow of the American Psychological Association
Member of the Rocky Mountain Psychological Association
Member of the American Association for the Advancement of Science
Fellow of the Psychonomic Society
Member of the Memory Disorders Research Society
Member of the Society of Experimental Psychologists

SERVICE

Editorial

1995 - 2000	Associate Editor, <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>
1992 - 1994	Consulting (Action) Editor, <i>Memory</i>
2003 - 2009	Consulting (Action) Editor, <i>Cognitive Psychology</i>
1986 -1993, 2007 - present	Editorial Board, <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>
1988 - 1993	Editorial Board, <i>Psychological Research</i>
1989 - 1994	Editorial Board, <i>Memory & Cognition</i>

- 1993 - 1994 Editorial Board, *Psychonomic Bulletin & Review*
- 1990 -1994, 2014 - 2016 Editorial Board, *Journal of Educational Psychology*
- 2012 – 2013 Editorial Board, *Educational Psychology Review*
- 2012 - Present Editorial Board, *Journal of Applied Research in Memory and Cognition*

Ad hoc reviewer for various journals including: *American Journal on Mental Retardation; American Journal of Psychology; Applied Cognitive Psychology; British Journal of Mathematical and Statistical Psychology; Canadian Journal of Experimental Psychology; Cognition; Cognition and Instruction; Cognitive, Affective, & Behavioral Neuroscience; Journal of Behavioral Medicine; Journal of Experimental Psychology: Applied; Journal of Gerontology: Psychological Sciences; Journal of Memory and Language; Psychology and Aging; Psychological Review; Psychological Science; Quarterly Journal of Experimental Psychology; Psychological Record*

National (while on Washington University faculty)

- 2005 - 2008 American Psychological Association Division 3 (Experimental Psychology and Cognitive Science) Executive Committee
- 2007 Member of a national 6-person committee assembled by the Institute of Education Sciences to develop and write a Cognition and Student Learning Practice Guide for teachers
- 2008 Filmed a *Doing What Works Video* for national website sponsored by US Department of Education
- 2009 - 2012 Grant Review Panel, Institute of Education Sciences
- 2012 - 2013 American Psychological Association Division 3 President
- 2013 Selection Committee for Editor-in-Chief of *Psychonomic Bulletin & Review*
- 2016-2019 Advisory Committee member for NSF funded USE-DUE grant (awarded to Dr. M. Dawood, PI, Engineering, New Mexico State University)
- 2018-2019 Advisory Committee member for Developing a National Agenda for STEM Academic Support Conference (Organizers: Dr. M Micari, Northwestern University, and Dr. Jay Sriram, Washington University)

Ad hoc grant reviewer for: National Institute of Mental Health, National Science Foundation, Air Force Office of Scientific Research

University

- 2005 - 2008 Social Science Review/Oversight Committee for Undergraduate Research
- 2006 Public policy/education search committee
- 2006 Member of the Executive Committee for the 2006 Friedman Conference

- 2007 (“Modifiers of Cognitive Aging”) of the Washington University Center for Aging Social Science search committee
- 2007 - 2009 Advisory Committee—Department of Performing Arts
- 2007 - 2011 Learning Sciences Program Committee
- 2008 - Present Core member and Facilitator of the A&S Education Research Group
- 2008 - 2009 Presented a class at the Washington University Neuroscience and Behavior course (NSF Institute for Biology Teachers): *Improving Student Learning: Lessons from Cognitive Neuroscience*
- 2008 - 2009 International Center for Advanced Renewable Energy and Sustainability (I-CARES) Search Committee
- 2009 Panelist at the A & S New Faculty Orientation
- 2009 - 2010 Committee on Training Women in STEM Fields
- 2011 - Present Co-Director (and co-founder) of the Center for Integrative Research on Cognition, Learning, and Education (CIRCLE)
- 2012, 2014,
2018 Organized (with Co-Director Frey) 3 CIRCLE conferences on developing interdisciplinary research between psychologists and discipline-based education researchers to improve STEM education
- 2017 - 2018 University Accreditation Criterion Committee (Criterion 4 Group)

Seminars presented to various departments and events at the Medical Campus on applying principles of human memory to improve (medical) education and instruction and at the semi-annual ITEACH event on the Danforth campus

Departmental

- 2004 - Present Advisor to 10-16 undergraduate majors
- 2004 - Present Human Subjects Committee
- 2005 - 2010 Coordinator of the Brain, Behavior, and Cognition area
- 2009 - 2011 Graduate Studies Committee

TEACHING (at Washington University)

Core Graduate Course

Advanced Cognitive Psychology (L33 5087)*

Core course (co-developed with Jeff Zacks) for the Brain, Behavior, and Cognition (BBC) graduate students and also fulfills distributional requirements for students in Psychological and Brain Sciences outside of the BBC area and students in Cognitive, Computational, & Systems Neuroscience (CCNS) pathway.

Graduate Level Specialty Seminars

Prospective Memory (L33 508)*

Categorization, Judgment, and Decision Making (L33 5081)*

Transfer in Learning, Training, and Problem Solving (L33 5081)*
Concept Learning and Categorization (L33 5081)*

Undergraduate Courses

Cognitive Psychology Applied to Education (L33 4302)*

Upper level undergraduate course designed for Psychological and Brain Sciences majors and Education majors. This course fulfilled the Educational Psychology course requirement for Education when that course could not be offered in Education.

Applying the Science of Learning (L33 261)* (New course developed for Spring, 2019)

Designed for freshman and sophomores, the course focuses on theory and research that have potential to improve how students learn. The course covers experimental and theoretical findings and explicitly translates these findings to inform students' techniques regarding their own learning challenges.

Independent Study (L33 333)

3-9 undergraduates each semester conducting primary research; some students present their projects at Washington University Undergraduate Research Symposium and/or regional undergraduate research conferences.

*Courses that I developed for Washington University