

Mary A. Pyc, Ph.D.

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Seeking a position where my expertise in human learning, memory, and cognition can be effectively utilized to make a positive difference. Proficient in research design, from hypothesis generation through public dissemination of results for lab and web-based programs of research. Passionate and driven to keep up with the latest advancements through continual engagement with the research community including presentations and publishing in peer-reviewed journals.

Professional Experience:

The Chicago School of Professional Psychology

Adjunct Faculty

San Diego, CA

2018-present

- Instructor of online courses in Psychology

Dart NeuroScience

Scientist, Cognitive Sciences, Target Discovery

San Diego, CA

2014-2018 (company closure)

- Developed and managed multiple programs of research involving thousands of subjects
- Designed and programmed studies
- Responsible for analyzing data and disseminating results
- Published in peer-reviewed journals
- Identified and managed vendors and contractors for a unique project evaluating the genomic basis of long-term memory abilities
- Lead the Human Genomics Group (collaborative multi-division group of scientists making strategic decisions about human genomics project)
- Presented internally at company- and department-wide meetings
- Represented company and national and international conferences
- Presented externally at scientific conferences and invited guest lectures (see below)
- Promoted global participation in research study through media and social media outreach
- Successfully engaged reporters interest in research projects resulting in media coverage of research
- Regularly presented at weekly, monthly, and quarterly meetings
- Responsible for budget and timeline of Cognitive Sciences group
- Assisted Legal in acquiring IP rights
- Lecturer at Dart NeuroScience Memory 101 Course and contributor to Memory101 Blog
- Quarterly reports on progress of Cognitive Sciences group
- Reviewed grants for external research programs
- Extensive collaboration with outside colleagues/groups
- Participated in company social networking events

Extreme Memory Tournament

Organizer & Event Coordinator

San Diego, CA

2013-2016

- Core member of development team that created a novel international memory competition where individuals compete head to head across multiple days to determine the person with most extreme memory in the world
- First computer based invite-only memory competition with top mental athletes in the world
- Garnered and managed media interest and coverage of event (e.g., NY Times, Today Show, Wired, etc.)
- Identified and managed vendors
- Managed HR and administrative duties surrounding event as well as PR for the event

Washington University in St Louis

St. Louis, MO

Postdoctoral Fellow

2010-2014

- Lead on program of research designed to 1) identify individuals with extraordinary memory abilities 2) identify optimal learning schedules for efficient and effective long-term memory and 3) evaluate theoretical accounts of human learning and memory
- Extensive collaboration with outside colleagues/groups
- Identified and evaluated unique population of individuals with enhanced memory abilities (e.g., memory athletes, former Jeopardy contestants)
- Regularly presented at lab and department meetings
- Created and implemented university-wide memory competition
- Mentored high school, undergraduate, and graduate students
- Published in top-tier peer-reviewed journals
- Guest lecturer in various courses

Education

Kent State University

Kent, OH

Ph.D., December 2010 Mentor: Katherine Rawson

Dissertation: Why is retrieval practice beneficial for memory? An evaluation of the mediator shift hypothesis

M.A., May 2008

Thesis: Labor and gain, but then labor in vain: Diminishing returns of repeated retrieval practice

Course Instructor, Fall 2008 & Spring 2009

Cognitive Psychology

Writing Intensive Course for Cognitive Psychology

Keene State College

Keene, NH

B.A., Psychology (honors program), May 2005

Mentor: Donna Viveiros

Experimental Psychology specialization

Teaching assistant for Statistics

Skills

- Thirteen years of experience evaluating Human Learning and Cognition with specialization in identifying learning schedules that promote efficient and effective learning. 8 years of experience evaluating individual differences in long-term memory abilities.
- Experimental Design
- Hypothesis generation, development, and implementation
- Statistical analyses and visualization (Adobe Creative Suite, Excel, JMP, Spotfire, SPSS)
- Experience evaluating children (preschool through middle school), young adults (college students), older adults (non-dementia population), online populations, and specialized groups of individuals (e.g., individuals with highly superior memory abilities)
- Public speaking
- Scientific/Technical writing
- Visual aid Design (scientific posters, presentations, logos)
- Basic competency in various programming languages

Peer-reviewed Publications

- Bui, D., Pyc, **M. A.**, & Bailey, H. R. (in press). When people's judgments of learning (JOLs) are extremely accurate at predicting subsequent recall: The "displaced-JOL effect". *Memory*.
- Morehead, K., Dunlosky, J., Rawson, K. A., Bishop, M., & **Pyc, M. A.** (in press). Do mediator production and shifts contribute to the spacing effect for cued recall? Critical tests of the shift hypothesis. *Memory*
- **Pyc, M. A.**, Balota, D. A., McDermott, K. B., Tully, T. & Roediger, H. L. III. (2014). Between-list lag effects in recall depend on retention interval. *Memory & Cognition*, 42,965-977
- **Pyc, M. A.**, Rawson, K. A., & Aschenbrenner, A. J. (2014) Metacognitive monitoring during criterion learning: When and why are judgments accurate? *Memory & Cognition*, 42, 886-897.
- Lipowski, S. L., **Pyc, M. A.**, Dunlosky, J., & Rawson, K. A. (2014). Establishing and explaining the testing effect in free recall for young children. *Developmental Psychology*, 50,994-1000.
- Jones, A. C., & **Pyc, M. A.** (2014). The production effect: Costs and benefits in free recall. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40, 300-305.
- **Pyc, M. A.**, Agarwal, P. K., & Roediger, H. L. III (2014). Test-enhanced learning. In V. Benassi, C. Overson, & C. Hakala (Eds.), *Applying the science of learning in education: Infusing psychological science into the curriculum*. Retrieved from the Society for the Teaching of Psychology web site: <http://teachpsych.org/ebooks/asle2014/index.php>

- Vaughn, K. E., Rawson, K. A., & **Pyc, M. A.** (2013). Repeated retrieval practice and item difficulty: Does criterion learning eliminate item difficulty effects? *Psychonomic Bulletin & Review*, 20, 1239-1245.
- Roediger, H. L. III, & **Pyc, M. A.** (2012). Applying cognitive psychology to education: Complexities and prospects. *Journal of Applied Research in Memory and Cognition*, 1, 263-265.
- Roediger, H. L. III, & **Pyc, M. A.** (2012). Inexpensive techniques to improve education: Applying Cognitive Psychology to enhance educational practice. *Journal of Applied Research in Memory and Cognition*, 1, 242-248.
- **Pyc, M. A.**, & Rawson, K. A. (2012). Why is retrieval practice beneficial for memory? An evaluation of the mediator shift hypothesis. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 38, 737-746.
- **Pyc, M. A.**, & Rawson, K. A. (2012). Are judgments of learning made after correct responses during retrieval practice sensitive to lag and criterion level effects? *Memory & Cognition*, 40, 976-988.
- Wissman, K. T., Rawson, K. A. & **Pyc, M. A.** (2012). How and when do students use flashcards? *Memory*, 20, 568-579.
- **Pyc, M. A.**, & Rawson, K. A. (2011). Costs and benefits of dropout schedules of test-restudy practice: Implications for student learning. *Applied Cognitive Psychology*, 25, 87-95.
- Wissman, K. T., Rawson, K. A., & **Pyc, M. A.** (2011). The interim test effect: Testing prior material can facilitate the learning of new material. *Psychonomic Bulletin & Review*, 18, 1140-1147.
- **Pyc, M. A.**, & Rawson, K. A. (2010). Why testing improves memory: Mediator effectiveness hypothesis. *Science*, 333, 335.
- **Pyc, M. A.**, & Dunlosky, J. (2010). Toward an understanding of students' allocation of study time: Why do they decide to mass or space their practice? *Memory & Cognition*, 38, 431-440.
- Grimaldi, P., **Pyc, M. A.**, & Rawson, K. A. (2010). Normative multitrial recall performance, metacognitive judgments, and retrieval latencies for Lithuanian-English paired associates. *Behavior Research Methods*, 42, 634-642.
- **Pyc, M. A.**, & Rawson, K. A. (2009). Testing the retrieval effort hypothesis: Does greater difficulty correctly recalling information lead to higher levels of memory? *Journal of Memory and Language*, 60, 437-447.

- **Pyc, M. A., & Rawson, K. A. (2007).** Examining the efficiency of schedules of distributed retrieval practice. *Memory & Cognition*, 35, 1917-1927.

Invited Presentations/Lectures

- **Pyc, M. A., & Dellis, N. (2015, September)** How memory athletes perform and how their techniques can help you. Invited guest lecturer at John Carroll University, University Heights, OH.
- **Pyc, M. A. (2014, November).** Identifying factors to promote student learning. Invited guest lecturer at Hillsdale College, Hillsdale, MI
- **Pyc, M. A., & Dellis, N. (2014, November).** How memory athletes perform and how their techniques can help you. Invited guest lecturer at Hillsdale College, Hillsdale, MI
- **Pyc, M. A. (2014, May).** Identifying factors to promote student learning. Invited guest lecturer at Dartmouth College, Hanover, NH.
- **Pyc, M. A. (2013, June).** Test-enhanced learning: When and why is testing beneficial for memory? Invited paper presented at the cognitive and brain-imaging studies of test enhanced learning: An international symposium on educational neuroscience, Umea University, Sweden.
- **Pyc, M. A., Balota, D. A., McDermott, K. B., & Roediger, H. L. (2012, November).** Searching for individuals with capacities for superior consolidation. Presentation to owner and board of directors at Dart NeuroScience, Dart NeuroScience Headquarters, San Diego, California.
- **Pyc, M. A., Balota, D. A., McDermott, K. B., & Roediger, H. L. (2012, October).** Searching for individuals with capacities for superior consolidation. Presentation to researchers at Dart NeuroScience, Dart NeuroScience Headquarters, San Diego, California.

Honors and Awards

- 2010 University Fellowship, Kent State University
- 2010 Best Student Research Prepared for Publication or Presentation in Applied Psychology, Kent State University
- 2005 Keene State College Honors Award
- 2001-2005 Dean's Scholar Award, Keene State College

Professional Organizations

- International Association for Metacognition (IAM)
- Psi Chi National Honor Society

- Psychonomic Society – Full Member

Professional Service

Ad Hoc Reviewer:

- Acta Psychologica
- American Journal of Psychology
- Applied Cognitive Psychology
- Bilingualism Language and Cognition
- Canadian Journal of Experimental Psychology
- Educational Psychology
- Educational Psychology Review
- European Journal of Psychology of Education
- Frontiers in Human Neuroscience
- Human Factors
- Journal of Applied Research in Memory and Cognition
- Journal of Cognitive Psychology
- Journal of Experimental Psychology: Learning, Memory, and Cognition
- Memory
- Memory & Cognition
- Psychonomic Bulletin & Review

Presentations

- **Pyc, M. A.**, Fenger, D., Cheung, P., de Belle, S., & Tully, T. (2017, November). The EXTREME MEMORY® Challenge: A search for the heritable foundations of exceptional memory. Poster presented at the 58th Annual Meeting of the Psychonomic Society.
- **Pyc, M. A.**, Giron, E., Cheung, P., Fenger, D., de Belle, S., & Tully, T. (2017, January). The EXTREME MEMORY® Challenge: A search for the heritable foundations of exceptional memory. Poster presented at the Pacific Symposium on Biocomputing, Hawaii.
- **Pyc, M. A.**, Giron, E., Cheung, P., de Belle, S. & Tully, T., (2016, November). The extreme memory challenge: A search for the heritable foundations of exceptional memory. Poster presented at the annual meeting of the Society for Neuroscience, San Diego, California.
- Huff, M. J., Woody, R., **Pyc, M. A.**, & Balota, D. A. (2016, April). Hooked on memory: A method of loci training program for older and younger adults. Poster presented at the biannual meeting of the Cognitive Aging Conference.
- Jones, A. C., & **Pyc, M. A.** (2015, November). I studied write, right? Homophones and the production effect. Poster presented at the 26th annual meeting of the Psychonomic

Society, Chicago, Illinois.

- Maddox, G. B., & **Pyc, M. A.** (2015, November). Examining the contributions of desirable difficulty to the lag effect in recognition testing. Poster presented at the 26th annual meeting of the Psychonomic Society, Chicago, Illinois.
- Schonhoff, A. M., Maddox, G. B., & **Pyc, M. A.** (2015, May). Examining the contributions of encoding variability and desirable difficulty to the benefits of repetition. Poster presented at the 27th annual meeting of the Association for Psychological Science, New York, NY.
- **Pyc, M. A.**, & Jones, A. C. (2014, November). Production enhances item, but not associative, learning. Poster presented at the 55th annual meeting of the Psychonomic Society, Long Beach, California.
- Bui, D., **Pyc, M. A.**, & Bailey, H. R. (2014, November). When people's judgments of learning (JOLs) are extremely accurate at predicting subsequent recall: The displaced JOL effect. Poster presented at the 55th annual meeting of the Psychonomic Society, Long Beach, California.
- **Pyc, M. A.**, Balota, D. A., McDermott, K. B., & Roediger, H. L. III. (2014, May). Mediated effects of testing: The influence of spacing and retention interval on retrieval practice effects. Paper presented at the 26th annual meeting of the Association for Psychological Science, San Francisco, CA.
- **Pyc, M. A.**, Balota, D. A., McDermott, K. A., & Roediger, H. L. III. (2014, February). Identifying individuals with superior memory abilities: Mass screening the general population. Paper presented at the Human biomarkers symposium, San Diego, CA.
- Roediger, H. L. III., Balota, D. A., McDermott, K. A., & **Pyc, M. A.** (2014, February). Memory athletes: Does their ability generalize to other cognitive tasks? Paper presented at the Human biomarkers symposium, San Diego, CA.
- **Pyc, M. A.**, & Balota, D. A. (2013, November). Catastrophic interference? The influence of lag and testing on retention in young and older adults. Paper presented at the 54th annual meeting of the Psychonomic Society, Toronto, Canada.
- Jones, A. C., & **Pyc, M. A.** (2013, May). The costs and benefits of production. Paper presented at the 85th annual meetings of the Midwestern Psychological Association, Chicago, IL.
- **Pyc, M. A.**, & Balota, D. A. (2013, May). Catastrophic interference? The influence of lag and testing on retention in young and older adults. Paper presented at the 85th annual meetings of the Midwestern Psychological Association, Chicago, IL.

- **Pyc, M. A.**, Balota, D. A., Tully, T., McDermott, K. B., & Roediger, H. L. III. (2012, November). Paradoxes of spacing: Effects of mode of second presentation (study or test) and retention interval. Poster presented at the 53rd annual meeting of the Psychonomic Society, Minneapolis, MN.
- Roediger, H. L. III., **Pyc, M. A.**, Balota, D. A., Tully, T., & McDermott, K. B. (2012, November). Memory athletes: Does their ability generalize to other cognitive tasks? Paper presented at the 53rd annual meeting of the Psychonomic Society, Minneapolis, MN.
- Jones, A. C., & **Pyc, M. A.** (2012, May). Making hard things easy: The production effect and paired-associate learning. Paper presented at the 84th annual meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc, M. A.**, Balota, D. A., McDermott, K. B., Tully, T., & Roediger, H. L. III. (2011, November). Overcoming forgetting: Spacing across days can improve memory. Poster presented at the 52nd annual meeting of the Psychonomic Society, Seattle, WA.
- Jones, A. C., & **Pyc, M. A.** (2011, November). How durable is the production effect? Poster presented at the 52nd annual meeting of the Psychonomic Society, Seattle, WA.
- **Pyc, M. A.**, Rawson, K. A., & Dunlosky, J. (2011, May). Are self-regulated learning decisions sensitive to spacing and lag effects? Paper presented at the 83rd annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Lipowski, S. L., **Pyc, M. A.**, Dunlosky, J., & Rawson, K. A. (2011, May). An examination of developmental trends and mechanisms underlying the testing effect. Paper presented at the 83rd annual meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc, M. A.**, & Rawson, K. A. (2010, November). Why does testing promote memory? The mediator effectiveness hypothesis. Paper presented at the 51st annual meeting of the Psychonomic Society, St Louis, MO.
- **Pyc, M. A.**, & Rawson, K. A. (2010, November). Why does testing improve memory? Evaluating the mediator shift hypothesis. Poster presented at the 51st annual meeting of the Psychonomic Society, St Louis, MO.
- Vaughn, K. E., Rawson, K. A., & **Pyc, M. A.** (2010, November). The effects of repeated retrieval as a function of item difficulty. Poster presented at the 51st annual meeting of the Psychonomic Society, St Louis, MO.
- Rawson, K. A., Wissman, K. T., & **Pyc, M. A.** (2010, August). Do interim recall tests promote text learning and retention? Paper presented at the 20th Annual meeting of the Society for Text and Discourse, Chicago, IL.
- **Pyc, M. A.** & Rawson, K. A. (2010, April). Why does testing improve memory? Evaluating

the mediator shift hypothesis. Paper presented at the 82nd annual meeting of the Midwestern Psychological Association, Chicago, IL.

- Wissman, K. T., **Pyc**, M. A., & Rawson, K. A. (2010, April). Do intervening tests facilitate learning of complex materials? Poster presented at the 82nd annual meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc**, M. A., & Rawson, K. A. (2009, November). Are students sensitive to ISI and criterion level effects when monitoring learning? Poster presented at the 50th annual meeting of the Psychonomic Society, Boston, MA.
- **Pyc**, M. A., & Rawson, K. A. (2009, May). Are judgments-of-learning sensitive to ISI and criterion level effects? Paper presented at the 81st annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Wissman, K. T., **Pyc**, M. A., & Rawson, K. A. (2009, May). Less is more: Shorter texts improve memory and reduce proactive interference. Poster presented at the 81st annual meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc**, M. A., & Rawson, K. A. (2008, November). Testing the Desirable Difficult Account of Retrieval Practice. Poster presented at the 49th annual meeting of the Psychonomic Society, Long Beach, CA.
- **Pyc**, M. A., & Rawson, K. A. (2008, May). Diminishing Returns of Increasing Retrieval Practice. Paper presented at the 80th meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc**, M. A., & Rawson, K. A. (2007, November). Distributed retrieval practice: How much is enough? Poster presented at the 48th annual meeting of the Psychonomic Society, Long Beach, CA.
- **Pyc**, M. A., & Rawson, K. A. (2007, May). Efficiency of fixed vs. variable schedules of distributed retrieval practice. Paper presented at the 79th meeting of the Midwestern Psychological Association, Chicago, IL.
- Burke, T. M., **Pyc**, M. A., & Rawson, K. A. (2007, May) Does repeated retrieval-plus restudy improve memory for key ideas in text? Poster presented at the 79th meeting of the Midwestern Psychological Association, Chicago, IL.
- **Pyc**, M. A., & Rawson, K. A. (2006, November). Schedules of retrieval practice for improving learning: Less is more? Poster presented at the 47th meeting of the Psychonomic Society, Houston, TX.
- Rawson, K. A., Dunlosky, J., & **Pyc**, M. A. (2006, June). Do repeated practice tests promote student learning of text material? Poster presented at the Institute of Education Sciences Research Conference, Washington, DC.

- **Pyc, M., & Viveiros, D. M.** (2006, May). Film-induced emotionality does not influence performance on a reading comprehension task. Presented at the 18th meeting of the Association for Psychological Science, New York, NY.
- **Pyc, M. A., Balota, D. A., McDermott, K. B., Tully, T., & Roediger, H. L. III.** (2011, November). Overcoming forgetting: Spacing across days can improve memory. Poster presented at the 52nd annual meeting of the Psychonomic Society, Seattle, WA.
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- **Pyc, M. A., & Rawson, K. A. (2008, November).** Testing the Desirable Difficult Account of Retrieval Practice. Poster presented at the 49th annual meeting of the Psychonomic Society, Long Beach, CA.
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- **Pyc, M. A., & Rawson, K. A. (2007, May).** Efficiency of fixed vs. variable schedules of distributed retrieval practice. Paper presented at the 79th meeting of the Midwestern Psychological Association, Chicago, IL.
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- **Pyc, M. A., & Rawson, K. A. (2006, November).** Schedules of retrieval practice for improving learning: Less is more? Poster presented at the 47th meeting of the Psychonomic Society, Houston, TX.
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