

# Shana K. Carpenter

Curriculum Vitae  
November, 2018

## CONTACT INFORMATION:

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## EDUCATION:

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Ph.D. (2004), Cognitive psychology, Colorado State University, Fort Collins, CO.  
M. S. (2003), Cognitive psychology, Colorado State University, Fort Collins, CO.  
B. A. (2000), Experimental psychology, University of Southern Colorado, Pueblo, CO.

## PROFESSIONAL EXPERIENCE:

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- Associate Professor, Department of Psychology, Iowa State University (2014 - present)
- Assistant Professor, Department of Psychology, Iowa State University (2008 - 2014)
- Assistant Project Scientist, University of California, San Diego (2007 - 2008)
- Postdoc, Department of Psychology, University of California, San Diego (2005 - 2007)

## HONORS AND AWARDS:

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- Iowa State University Department of Psychology Award for Outstanding Success in Extramural Funding (2017)
- Iowa State University Kentner-Fritz Award for Outstanding Research Productivity (2015)
- Association for Psychological Science (APS) *Rising Star* Award (2012)
- Iowa State University Award for Excellence in Honors Teaching (2011)
- Iowa State University Department of Psychology Award for Early Career Excellence in Research (2010)

## FUNDED GRANTS:

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Principal Investigator (Co-Investigators Andrew C. Butler, Jeffrey D. Karpicke, David Miele, Timothy Nokes-Malach, Uma Tauber), "Implementing Principles from the Science of Learning within Educational Practice." Collaborative Activity Award funded by the James S. McDonnell Foundation (\$4,635,718.00), 2016-2021.

Principal Investigator (Co-PIs Clark Coffman, Monica Lamm, Patrick Armstrong, Robert Reason), "Using Retrieval Practice to Enhance Achievement in STEM Courses." Proposal funded by the National Science Foundation (\$247,109.00), 2015-2018.

Principal Investigator (Co-PI Veronica Dark), "Exploring the Optimal Placement of Practice Questions for Enhancing Student Learning." Seed Grant funded by the Iowa State University College of Liberal Arts and Sciences (\$8000.00), 2015-2016.

Principal Investigator, "Implementing Retrieval-Based Interventions to Enhance Achievement in STEM Courses." Small Grant funded by the Iowa State University Department of Psychology (\$3852.00), 2015.

## EDITORSHIPS AND EDITORIAL BOARDS:

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- Associate editor for *Journal of Applied Research in Memory & Cognition* (2013 - 2016, 2018 - present)
- Editorial board member for *Memory & Cognition* (2009 - present)
- Editorial board member for *Journal of Experimental Psychology: Learning, Memory, & Cognition* (2011 - present)
- Editorial board member for *Educational Psychology Review* (2012 - present)
- Editorial board member for *Journal of Experimental Psychology: Applied* (2015 - present)

## REFEREED ARTICLES: (graduate student/postdoc author, undergraduate student author)

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Toftness, A. R., Carpenter, S. K., Lauber, S., & Mickes, L. (in press). The limited effects of prequestions on learning from authentic lecture videos. *Journal of Applied Research in Memory & Cognition*.

Geller, J., Still, M., Dark, V. J., & Carpenter, S. K. (in press). Would disfluency by any other name still be disfluent? Examining the disfluency effect with cursive handwriting. *Memory & Cognition*.

Carpenter, S. K., Haynes, C. L., Corral, D., & Yeung, K. L. (2018). Hypercorrection of high confidence errors in the classroom. *Memory*, 26, 1379-1384.

Carpenter, S. K., Rahman, S., & Perkins, K. (2018). The effects of prequestions on classroom learning. *Journal of Experimental Psychology: Applied*, 24, 34-42.

Geller, J., Toftness, A. R., Armstrong, P. I., Carpenter, S. K., Manz, C. L., Coffman, C. R., & Lamm, M. H. (2018). Study strategies and beliefs about learning as a function of academic achievement and achievement goals. *Memory*, 26, 683-690.

Toftness, A. R., Carpenter, S. K., Geller, J., Lauber, S., Johnson, M., & Armstrong, P. I. (2018). Instructor fluency leads to higher confidence in learning, but not better learning. *Metacognition & Learning*, 13, 1-14.

Geller, J., Carpenter, S. K., Lamm, M. H., Rahman, S., Armstrong, P. I., & Coffman, C. R. (2017). Prequestions do not enhance the benefits of retrieval in a STEM classroom. *Cognitive Research: Principles & Implications*, 2:42.

Carpenter, S. K., Rahman, S., Lund, T. J. S., Armstrong, P. I., Lamm, M. H., Reason, R. D., & Coffman, C. R. (2017). Students' use of optional online reviews and their relationship to summative assessment outcomes in introductory biology. *CBE Life Sciences Education*, 16, 1-9.

Carpenter, S. K. (2017). Spacing effects in learning and memory. In J. T. Wixted (Ed.), *Cognitive Psychology of Memory, Vol. 2 Learning and Memory: A Comprehensive Reference, 2<sup>nd</sup> edition*, J. H. Byrne (Ed.), pp. 465-485. Oxford: Academic Press.

Carpenter, S. K., & Toftness, A. R. (2017). The effect of prequestions on learning from video presentations. *Journal of Applied Research in Memory & Cognition*, 6, 104-109.

Endres, T., Carpenter, S. K., Martin, A., & Renkl, A. (2017). Enhancing learning by retrieval: Enriching free recall with elaborative prompting. *Learning & Instruction*, 49, 13-20.

- Carpenter, S. K., & Yeung, K. L. (2017). The role of mediator strength in learning from retrieval. *Journal of Memory & Language*, 92, 128-141.
- Carpenter, S. K., Mickes, L., Rahman, S., & Fernandez, C. S. (2016). The effect of instructor fluency on students' perceptions of instructors, confidence in learning, and actual learning. *Journal of Experimental Psychology: Applied*, 22, 161-172.
- Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P. I., Lamm, M. H., & Reason, R. D. (2016). A classroom study on the relationship between student achievement and retrieval-enhanced learning. *Educational Psychology Review*, 28, 353-375.
- Butler, A. C., & Carpenter, S. K. (2015). Separating myth from reality in education: Introduction to the special issue. *Educational Psychology Review*, 27, 563-565.
- Kelly, J. W., Carpenter, S. K., & Sjolund, L. A. (2015). Retrieval enhances route knowledge acquisition, but only when movement errors are prevented. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 41, 1540-1547.
- Rawson, K. A., Vaughn, K. E., & Carpenter, S. K. (2015). Does the benefit of testing depend on lag, and if so why? Evaluating the elaborative retrieval hypothesis. *Memory & Cognition*, 43, 619-633.
- Mullaney, K. M., Carpenter, S. K., Grotenhuis, C., & Burianek, S. (2014). Waiting for feedback helps if you want to know the answer: The role of curiosity in the delay-of-feedback benefit. *Memory & Cognition*, 42, 1273-1284.
- Carpenter, S. K. (2014). Enhancing student learning in low-maintenance and cost-effective ways: Introduction to the special issue on applying cognition to education. *Journal of Applied Research in Memory & Cognition*, 3, 121-123.
- Carpenter, S. K. (2014). Spacing and interleaving of study and practice. In V. A. Benassi, C. E. Overson, & C. M. Hakala (Eds.), *Applying the science of learning in education: Infusing psychological science into the curriculum* (pp. 131-141). American Psychological Association.
- Carpenter, S. K., Wilford, M., Kornell, N., & Mullaney, K. M. (2013). Appearances can be deceiving: Instructor fluency increases perceptions of learning without increasing actual learning. *Psychonomic Bulletin & Review*, 20, 1350-1356.
- Carpenter, S. K., & Mueller, F. E. (2013). The effects of interleaving vs. blocking on foreign language pronunciation learning. *Memory & Cognition*, 41, 671-682.
- Carpenter, S. K., Lohse, K. R., Healy, A. F., Bourne, L. E. Jr., & Clegg, B. A. (2013). External focus of attention improves performance in a speeded aiming task. *Journal of Applied Research in Memory & Cognition*, 2, 14-19.
- Carpenter, S. K. (2012). Testing enhances the transfer of learning. *Current Directions in Psychological Science*, 21, 279-283.
- Carpenter, S. K., & Kelly, J. W. (2012). Tests enhance retention and transfer of spatial learning. *Psychonomic Bulletin & Review*, 19, 443-448.
- Carpenter, S. K., Sachs, R. E., Martin, B., Schmidt, K., & Looft, R. (2012). Learning new vocabulary in German: The effects of inferring word meanings, type of feedback, and time of test. *Psychonomic Bulletin & Review*, 19, 81-86.

- Carpenter, S. K., Cepeda, N. J., Rohrer, D., Kang, S. H. K., & Pashler, H. (2012). Using spacing to enhance diverse forms of learning: Review of recent research and implications for instruction. *Educational Psychology Review, 24*, 369-378.
- Carpenter, S. K., & Olson, K. M. (2012). Are pictures good for learning new vocabulary in a foreign language? Only if you think they are not. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 38*, 92-101.
- Carpenter, S. K. (2012). Effects of testing on learning. In N. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1095-1097). New York: Springer.
- Carpenter, S. K. (2011). Semantic information activated during retrieval contributes to later retention: Support for the mediator effectiveness hypothesis of the testing effect. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 37*, 1547-1552.
- Carpenter, S. K., & Vul, E. (2011). Delaying feedback by three seconds benefits retention of face-name pairs: The role of active anticipatory processing. *Memory & Cognition, 39*, 1211-1221.
- Kang, S. H. K., Pashler, H., Cepeda, N. J., Rohrer, D., Carpenter, S. K., & Mozer, M. C. (2011). Does incorrect guessing impair fact learning? *Journal of Educational Psychology, 103*, 48-59.
- Carpenter, S. K. (2009). Cue strength as a moderator of the testing effect: The benefits of elaborative retrieval. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 35*, 1563-1569.
- Carpenter, S. K., Pashler, H., & Cepeda, N. J. (2009). Using tests to enhance 8<sup>th</sup> grade students' retention of U. S. history facts. *Applied Cognitive Psychology, 23*, 760-771.
- Carpenter, S. K., Pashler, H., Wixted, J. T., & Vul, E. (2008). The effects of tests on learning and forgetting. *Memory & Cognition, 36*, 438-448.
- Carpenter, S. K., & Pashler, H. (2007). Testing beyond words: Using tests to enhance visuospatial map learning. *Psychonomic Bulletin & Review, 14*, 474-478.
- Pashler, H., Rohrer, D., Cepeda, N. J., & Carpenter, S. K. (2007). Enhancing learning and retarding forgetting: Choices and consequences. *Psychonomic Bulletin & Review, 14*, 187-193.
- Wixted, J. T., & Carpenter, S. K. (2007). The Wickelgren power law and the Ebbinghaus savings function. *Psychological Science, 18*, 133-134.
- Carpenter, S. K., Pashler, H., & Vul, E. (2006). What types of learning are enhanced by a cued recall test? *Psychonomic Bulletin & Review, 13*, 826-830.
- Carpenter, S. K., & DeLosh, E. L. (2006). Impoverished cue support enhances subsequent retention: Support for the elaborative retrieval explanation of the testing effect. *Memory & Cognition, 34*, 268-276.
- Carpenter, S. K., & DeLosh, E. L. (2005). Application of the testing and spacing effects to name learning. *Applied Cognitive Psychology, 19*, 619-636.
- Carpenter, S. K. (2005). Some neglected contributions of Wilhelm Wundt to the psychology of memory. *Psychological Reports, 97*, 63-73.

**INVITED TALKS:** (graduate student/postdoc author, undergraduate student author)

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- Carpenter, S. K. (2018, November). *Using practice questions to enhance student learning*. Keynote address to be delivered at the conference on effective strategies for teaching and learning. Eindhoven, Netherlands.
- Carpenter, S. K. (2017, October). *Using retrieval practice to enhance achievement in STEM courses*. Dartmouth College, Hanover, NH.
- Carpenter, S. K., Geller, J., Armstrong, P. I., Coffman, C. R., & Lamm, M. H. (2017, May). *Using prequestions to enhance the effects of retrieval practice in STEM courses*. Keynote address delivered at the conference on Fostering Academic Success in Undergraduate Biological Science Education: Science of Learning in Action. University of New Hampshire, Durham, NH.
- Carpenter, S. K., Rahman, S., Lund, T. J. S., Coffman, C. R., Lamm, M. H., & Armstrong, P. I. (2016, August). *Using retrieval practice to enhance achievement in STEM courses: What works, when, and for whom?* Paper presented at the annual conference of the American Psychological Association, Denver, CO.
- Carpenter, S. K., Coffman, C. R., Rahman, S., Lund, T. J. S., Lamm, M. H., Armstrong, P. I., Reason, R. D., & Leow, S. (2016, April). *Using retrieval practice to enhance achievement in STEM courses*. Paper presented at the symposium on envisioning the future of undergraduate STEM education, Washington, DC.
- Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P. I., Lamm, M. H., & Reason, R. D. (2016, April). *Classroom studies on the relationship between student achievement and retrieval-enhanced learning*. Mary Hennessey Blum Lecture, University of New Hampshire, Durham, NH.
- Carpenter, S. K. (January, 2016). *Strategies to improve learning and retention of course material*. Presented at the Preparing Future Faculty symposium, Iowa State University, Ames, IA.
- Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P. I., Lamm, M. H., & Reason, R. D. (2015, June). *Classroom studies on the relationship between student achievement and retrieval-enhanced learning*. Invited keynote address at the annual Cognitive Load Theory Conference, Fort Collins, CO.
- Carpenter, S. K. (January, 2015). *Strategies to improve learning and retention of course material*. Presented at the Preparing Future Faculty symposium, Iowa State University, Ames, IA.
- Carpenter, S. K., Fernandez, C. S. (2014, May). *Blocking benefits foreign language pronunciation learning more than interleaving*. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Carpenter, S. K. (March, 2014). *Strategies to improve learning and retention of course material*. Presented at the Preparing Future Faculty symposium, Iowa State University, Ames, IA.

- Carpenter, S. K., Wilford, M. M., Kornell, N., & Mullaney, K. M. (August, 2013). *Instructor fluency increases perceptions of learning, but not actual learning*. Paper presented at the annual meeting of the American Psychological Association, Honolulu, Hawaii.
- Carpenter, S. K., Kelly, J. W., & Sjolund, L. A. (2013, June). *The effects of retrieval practice on visuospatial learning*. Paper presented at annual meeting of the Society for Applied Research in Memory & Cognition, Rotterdam, Netherlands.
- Carpenter, S. K. (2013, May). *Using spacing to enhance diverse forms of learning: Review of recent research and implications for instruction*. Paper presented at the annual meeting of the Association for Psychological Science, Washington DC.
- Carpenter, S. K. (2013, April). *Explaining the benefits of testing on learning: The role of mediating information*. University of Iowa Delta Center.
- Carpenter, S. K. (2012, November). *Memory principles that optimize learning: Effects of retrieval, distributed practice, and feedback timing*. University of Illinois at Urbana-Champaign.
- Carpenter, S. K., Sachs, R. E., Martin, B. A., Schmidt, K., & Looft, R. (2011, October). *Wie kann man neue Wörter auf Deutsch besser lernen? Die Bedeutung vom Kontext abzuleiten, oder die Übersetzung nur zu lesen?* Paper presented at the Iowa World Language Association, Des Moines, IA.
- Carpenter, S. K. (2011, September). *The effects of testing on retention and transfer of complex forms of learning*. Michigan State University, East Lansing, MI.
- Carpenter, S. K. (2009, February). *Memory principles that optimize learning and retention: Implications for theory and instruction*. University of Northern Iowa, Cedar Falls, IA.
- Carpenter, S. K. (2008, July). *Using tests to optimize learning: Implications for theory and educational practice*. Colorado State University, Fort Collins, CO.
- Carpenter, S. K. (2007, November). *Using tests to enhance learning: Implications for education*. University of South Florida, Tampa, FL.
- Carpenter, S. K., & Pashler, H. (2007, August). *Memory principles that optimize learning and retention: Implications for instruction*. Presented at the Summer Workshop for Teachers, San Diego Unified School Districts, San Diego, CA.
- Carpenter, S. K., Pashler, H., Cepeda, N. J., & Alvarez, D. (2007, August). *Applying the principles of testing and spacing to classroom learning*. Paper presented at the Cognitive Science and Student Learning in the Classroom Symposium, Cognitive Science Society, Nashville, TN.
- Carpenter, S. K. (2007, June). *Using tests to optimize learning: Implications for education*. Auburn University, Auburn, AL.
- Carpenter, S. K., Pashler, H., Wixted, J. T., & Vul, E. (2006, April). *Are tests effective at enhancing learning?* Paper presented at the Cognition and Student Learning Symposium, American Educational Research Association, San Francisco, CA.
- Carpenter, S. K. (2004, April). *Application of the testing and spacing effects to name-learning*. Paper presented at the Ellis-Battig Memory Symposium, Rocky Mountain Psychological Association, Reno, NV.

**CONFERENCE TALKS:** (graduate student/postdoc author, undergraduate student author)

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Corral, D., Carpenter, S. K., & Perkins, K. (2018, April). *Assessing students' use of optional online reviews*. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Endres, T., Carpenter, S. K., Martin, A., & Renkl, A. (2016, June). *Constructive retrieval by prompted recall*. Paper presented at the annual Cognitive Load Theory Conference, Bochum, Germany.

Lamm, M. H., Carpenter, S. K., Rahman, S., Armstrong, P. I., Coffman, C. R., & Reason, R. D. (2015, November). *Show them the data: A strategy to engage students in a material and energy balances course*. Paper presented at the annual meeting of the American Institute of Chemical Engineers, Salt Lake City, UT.

Carpenter, S. K. (2011). *Semantic information activated during retrieval contributes to later retention: Support for the mediator effectiveness hypothesis of the testing effect*. Paper presented at the annual meeting of the Psychonomic Society, Seattle, WA.

Carpenter, S. K., & Olson, K. (2011). *Why are picture superiority effects absent in foreign language vocabulary learning?* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Carpenter, S. K., Sachs, R. E., Looney, M., Martin, B. A., & Schmidt, K. (2010, November). *Learning new vocabulary in German: The beneficial effects of inferring the meanings of unknown words*. Paper presented at the annual meeting of the Psychonomic Society, Saint Louis, MO.

Carpenter, S. K., Sachs, R. E., Martin, B. A., & Looney, M. (2010, October). *Wie kann man neue Wörter auf Deutsch besser lernen? Die Bedeutung vom Kontext abzuleiten, oder die Übersetzung nur zu lesen?* Paper presented at the annual meeting of the Iowa World Language Association, Des Moines, IA.

Rohrer, D., Taylor, K., Carpenter, S. K., Pashler, H., & Kang, S. H. K. (2010, June). *Tests can enhance the transfer of learning*. Paper presented at the annual meeting of the Institute of Education Sciences, Washington, DC.

Carpenter, S. K. (2009, November). *A low-maintenance method for inspiring good student projects in a research methods course*. Presented at the annual meeting of the Iowa Teachers of Psychology, Pella, IA.

Carpenter, S. K., Erdman, M., & Kloeppel, J. (2009, April). *Cue strength as a moderator of the testing effect*. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Pashler, H., Carpenter, S. K., & Rohrer, D. (2008, November). *Does guessing with little information interfere with learning?* Paper presented at the annual meeting of the Psychonomic Society, Chicago, IL.

Carpenter, S. K., Pashler, H., Cepeda, N. J., & Alvarez, D. (2008, February). *Using tests to enhance 8<sup>th</sup> grade students' retention of U. S. history facts*. Paper presented at the annual meeting of the Science of Learning Center, Pittsburgh, PA.

- Carpenter, S. K., Pashler, H., & Cepeda, N. J. (2007, November). *Applying the principles of testing and spacing to classroom learning*. Paper presented at the annual meeting of the Psychonomic Society, Long Beach, CA.
- Carpenter, S. K., Pashler, H., & Alvarez, D. (2007, January). *The Preuss project: Applying the principles of testing and spacing to classroom learning*. Paper presented at first all-hands meeting of the Temporal Dynamics of Learning Center, La Jolla, CA.
- Carpenter, S. K., & Pashler, H. (2006, November). *Enhancing learning through retrieval practice: Can covert retrieval speed up visual and visuospatial learning?* Paper presented at the annual meeting of the Psychonomic Society, Houston, TX.
- Pashler, H., Carpenter, S. K., Rohrer, D., & Cepeda, N. J. (2005, November). *Does being forced to guess make one learn the wrong answer?* Paper presented at the annual meeting of the Psychonomic Society, Toronto, ON.
- Carpenter, S. K. (2003, April). *Untangling the influences of cue effectiveness and item difficulty in the testing effect*. Paper presented at the annual meeting of the Rocky Mountain Psychological Association, Denver, CO.
- Carpenter, S. K. (2003, April). *Wundt's neglected contributions to the psychology of memory*. Paper presented at the annual meeting of the Rocky Mountain Psychological Association, Denver, CO.

**CONFERENCE POSTERS: (graduate student/postdoc author, undergraduate student author)**

- St. Hilaire, K. J., Carpenter, S. K., & Jennings, J. (2018, November). *The prequestion effect: How question type and structure building ability impact learning*. Poster presented at the annual meeting of the Psychonomic Society, New Orleans, LA.
- Lim, A. F., Kelly, J. W., & Carpenter, S. K. (2018, November). *Effect of testing on route learning using GPS navigation*. Poster presented at the annual meeting of the Psychonomic Society, New Orleans, LA.
- Corral, D., & Carpenter, S. K., (2018, November). *Using testing to improve concept learning*. Poster presented at the annual meeting of the Psychonomic Society, New Orleans, LA.
- Corral, D., Carpenter, S. K., & Clingan-Siverly, S. (2018, July). *When being wrong makes you right: Incorrect examples improve complex concept learning*. Poster presented at the annual meeting of the Cognitive Science Society, Madison, WI.
- Romena, N. P., Hefner, H. C., Northern, P. E., Tauber, S. K., Toftness, A. R., & Carpenter, S. K. (2018, April). *The effects of lecture fluency and instructor expertise on students' experiences*. Poster presented at the annual meeting of the Southwestern Psychological Association, Houston, TX.
- Geller, J., Carpenter, S. K., Rahman, S., Toftness, A. R., Coffman, C. R., Manz, C. L., Armstrong, P. I., & Lamm, M. H. (2017, November). *The effects of prequestions on learning introductory biology*. Poster presented at the annual meeting of the Psychonomic Society, Vancouver, BC.



- Toftness, A. R., Carpenter, S. K., Tauber, S. K., & Northern, P. E. (2017, November). *The effects of instructor fluency and expertise on students' overconfidence*. Poster presented at the annual meeting of the Psychonomic Society, Vancouver, BC.
- Toftness, A. R., & Carpenter, S. K. (2016, November). *The effects of prequestions on learning from video presentations*. Poster presented at the annual meeting of the Psychonomic Society, Boston, MA.
- Coffman, C., Manz, C., Armstrong, P., Carpenter, S., Geller, J., Lamm, M., Leow, S., Pederson, L., Rahman, S., Reason, R., & Toftness, A. (2016, July). *Using systematic application of retrieval practice to enhance student achievement in introductory biology*. Poster presented at the annual meeting of the Society for the Advancement of Biology Education Research, Minneapolis, MN.
- Manz, C., Coffman, C., Toftness, A., Reason, R., Rahman, S., Lamm, M., Carpenter, S., & Armstrong, P. (2016, July). *The role of achievement motivation in students' choice of study habits in a large biology course*. Poster presented at the annual meeting of the Society for the Advancement of Biology Education Research, Minneapolis, MN.
- Carpenter, S. K., Lund, T. J. S., Rahman, S., Coffman, C. R., Armstrong, P. I., & Lamm, M. H. (2016, August). *Students' use of retrieval-based review techniques in STEM courses*. Poster presented at the annual meeting of the American Psychological Association, Denver, CO.
- Rahman, S., & Carpenter, S. K. (2016, August). *Exploring the optimal placement of practice questions in learning from lectures*. Poster presented at the annual meeting of the American Psychological Association, Denver, CO.
- Rahman, S., Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P. I., Lamm, M. H., & Reason, R. D. (2015, November). *Tracking students' review patterns: Use of retrieval versus restudy*. Poster presented at the annual meeting of the Psychonomic Society, Chicago, IL.
- Coffman, C. R., Reason, R. D., Rahman, S., Lund, T. J. S., Lamm, M. H., Carpenter, S. K., & Armstrong, P. I. (2015, July). *Engaging students in retrieval practice and reflection on learning to enhance achievement in STEM courses*. Poster presented at the annual meeting of the Society for Advancement of Biology Education Research, Minneapolis, MN.
- Carpenter, S. K., Lamm, M. H., Armstrong, P. I., Coffman, C. R., Rahman, S., & Reason, R. D. (2015, April). *Show them the data: The effects of worked examples on students' problem solving performance, study preferences, and study choices*. Poster presented at the annual meeting for the Center for Integration of Research on Teaching and Learning (CIRTL), College Station, TX.
- Rahman, S., Carpenter, S. K., Lund, T. J. S., Coffman, C. R., Armstrong, P. I., Lamm, M. H., & Reason, R. D. (2015, April). *A classroom study on the relationship between student achievement and retrieval-enhanced learning*. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Fernandez, C. S., & Carpenter, S. K. (2014, November). *Extending the boundaries of the testing effect: A look at verbal and nonverbal components*. Poster presented at the annual meeting of the Psychonomic Society, Long Beach, CA.

- Coffman, C. R., Armstrong, P. I., Brewer, C. E., Carpenter, S. K., Curtiss, J., Houston, J. P., Lamm, M. H., Reason, R. D., & Shuster, M. (2014, July). *Creating a culture of engaged STEM learners: Implementing evidence-based interventions to improve learning and transfer in diverse classrooms*. Poster presented at the annual meeting of the Society for the Advancement of Biology Education Research, Minneapolis, MN.
- Fernandez, C. S., & Carpenter, S. K. (2014, May). *Blocking vs. interleaving: The effects of simultaneous presentation on foreign language pronunciations*. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Vaughn, K. E., Rawson, K. A., & Carpenter, S. K. (2013, November). *Why does the benefit of testing depend on lag? Evaluating the elaborative retrieval hypothesis*. Poster presented at the annual meeting of the Psychonomic Society, Toronto, ON, CA.
- Wilford, M. M., Carpenter, S. K., Kornell, N., & Mullaney, K. M. (2013, November). *The misleading effects of fluency on learning*. Poster presented at the annual meeting of the Psychonomic Society, Toronto, ON, CA.
- Mullaney, K. M., & Carpenter, S. K. (2012, November). *The benefit of spacing on retention and transfer of mathematics knowledge*. Poster presented at the annual meeting of the Psychonomic Society, Minneapolis, MN.
- Olson, K., & Carpenter, S. K. (2011, November). *Delaying feedback helps, but only if you want to know the answer*. Poster presented at the annual meeting of the Psychonomic Society, Seattle, WA.
- Olson, K., & Carpenter, S. K. (2011, May). *Learning new vocabulary through scaffolded feedback*. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.
- Carpenter, S. K., & Vul, E. (2009, November). *The delay-of-feedback benefit: Timing vs. duration*. Poster presented at the annual meeting of the Psychonomic Society, Boston, MA.
- Kang, S., Carpenter, S. K., Pashler, H., & Rohrer, D. (2009, November). *Is subsequent learning hurt by prior erroneous guessing?* Poster presented at the annual meeting of the Psychonomic Society, Boston, MA.
- Kang, S., Carpenter, S. K., Rohrer, D., & Pashler, H. (2009, June). *Does guessing when one doesn't know the answer hurt subsequent learning?* Poster presented at the annual meeting of the Institute of Education Sciences, Washington, DC.
- Carpenter, S. K., Pashler, H., & Jones, J. J. (2008, November). *The effects of retrieval practice on associative recall of word pairs*. Poster presented at the annual meeting of the Psychonomic Society, Chicago, IL.
- Carpenter, S. K., Pashler, H., Rohrer, D., & Coburn, N. (2008, June). *Using retrieval practice to enhance learning of complex anatomy structures*. Poster presented at the annual meeting of the Institute of Education Sciences, Washington, DC.
- Carpenter, S. K., & Pashler, H. (2008, May). *Using retrieval practice to enhance learning of complex visual information*. Poster presented at the annual meeting of the Association for Psychological Science, Chicago, IL.

- Carpenter, S. K., Pashler, H., Cepeda, N. J., & Alvarez, D. (2008, February). *Using tests to enhance 8<sup>th</sup> grade students' retention of U. S. history facts*. Poster presented at the annual student/postdoc meeting of the Science of Learning Center, Pittsburgh, PA.
- Jones, J. J., Pashler, H., & Carpenter, S. K. (2008, January). *Statistical learning for passively viewed, actively recorded and explicitly predicted sequences*. Poster presented at the annual meeting of the Temporal Dynamics of Learning Center, Nashville, TN.
- Carpenter, S. K., Pashler, H., Cepeda, N. J., & Alvarez, D. (2008, January). *Using tests to enhance 8<sup>th</sup> grade students' retention of U. S. history facts*. Poster presented at the annual meeting of the Temporal Dynamics of Learning Center, Nashville, TN.
- Carpenter, S. K., Pashler, H., Rohrer, D., & Cepeda, N. J. (2007, August). *Does forced guessing cause one to learn the wrong answer?* Poster presented at the symposium on Memory Dynamics and the Optimization of Instruction, American Psychological Association, San Francisco, CA.
- Carpenter, S. K., Pashler, H., Wixted, J. T., & Vul, E. (2007, June). *Item characteristics and task conditions that predict forgetting*. Poster presented at the annual meeting of the Institute for Education Sciences, Washington, DC.
- Carpenter, S. K., Pashler, H., Wixted, J. T., & Vul, E. (2007, May). *Facts, faces, and obscure places: Individual and item characteristics that predict rate of forgetting*. Poster presented at the annual meeting of the Association for Psychological Science, Washington, DC.
- Carpenter, S. K., Pashler, H., Wixted, J. T., & Vul, E. (2007, January). *The effects of tests on learning and forgetting*. Poster presented at the annual meeting of the Temporal Dynamics of Learning Center, La Jolla, CA.
- Carpenter, S. K., Pashler, H., & Vul, E. (2006, November). *The effects of test timing and feedback timing on the learning of obscure facts*. Poster presented at the annual meeting of the Psychonomic Society, Houston, TX.
- Carpenter, S. K., Pashler, H., & Vul, E. (2006, May). *What types of learning are enhanced by a cued recall test?* Poster presented at the annual meeting of the Association for Psychological Science, New York, NY.
- Carpenter, S. K., Pashler, H., & Wixted, J. T. (2005, November). *The testing effect: Enhanced retention or attenuated forgetting?* Poster presented at the annual meeting of the Psychonomic Society, Toronto, ON.
- Carpenter, S. K., & DeLosh, E. L. (2004, November). *A multiple-cue hypothesis for the testing effect*. Poster presented at the annual meeting of the Psychonomic Society, Minneapolis, MN.
- Carpenter, S. K. (2003, May). *The role of item difficulty in the testing effect*. Poster presented at the Triple Festschrift in honor of Lyle Bourne, Jr., Walter Kintsch, and Tom Landauer, Boulder, CO.
- Carpenter, S. K., & DeLosh, E. L. (2002, April). *The role of retrieval strategy in memory for high- and low-frequency words*. Poster presented at the annual meeting of the Rocky Mountain Psychological Association, Park City, UT.

## TEACHING:

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- **PSY 598 Graduate Seminar – Memory** (1 section taught): Graduate course exploring empirical, methodological, theoretical, and applied perspectives on memory research.
- **PSY 313 Learning & Memory** (8 sections taught): Undergraduate course exploring behavioral and neurological underpinnings of learning and memory.
- **PSY 101H Introduction to Psychology, Honors** (3 sections taught): Undergraduate honors course covering a broad range of topics in psychology.
- **PSY 302 Research Methods** (15 sections taught): Undergraduate course emphasizing a hands-on approach to empirical research in psychology.

## SERVICE:

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- Ad-hoc reviewer for JEP: General, Journal of Memory & Language, Psych Science, Current Directions in Psychological Science, Perspectives on Psychological Science, Psych Bulletin, Psychonomic Bulletin & Review, Journal of Educational Psychology, Applied Cognitive Psychology, Learning & Instruction, Experimental Psychology, Journal of Cognitive Psychology, Memory, Quarterly Journal of Experimental Psychology, Cognitive Research: Principles & Implications, American Journal of Psychology, Educational Researcher, Psychology of Learning and Teaching, Developmental Psychology, European Journal of Developmental Psychology, Perspectives on Medical Education, Creative Education, Educational Evaluation and Policy Analysis, Studies in Education Evaluation, Frontiers in Cognition, Frontiers in Education, Trends in Neuroscience and Education, Translational Issues in Psychological Science
- NSF Grant Review Panelist (reviewed and ranked 30+ proposals for *Science of Learning*, *Improving Undergraduate STEM Education*, and *Graduate Research Fellowships*)
- ISU Graduate Council for College of Liberal Arts and Sciences (2018 – present)
- ISU Committee on Outdoor Teaching and Learning (2018 – present)
- ISU Psychology Department IRB Administrator (2018 – present)
- ISU Psychology Department Promotion and Tenure Committee (2018 – present)
- ISU Psychology Department Quantitative Search Committee (2018)
- ISU Psychology Department Cognitive Neuroscience Search Committee (2017)
- ISU Psychology Department Faculty Enhancement Committee (2016 – present)
- ISU Committee for Evaluation of Research, Teaching, and Service (2013-2016)
- ISU Faculty Advisor for *Psi Chi* (2010 - 2016)
- ISU Faculty Advisor for *Zeitgeist* (German Speaking) Organization (2009 - present)

## PROFESSIONAL AFFILIATIONS:

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- American Psychological Association (Member since 2005)
- Association for Psychological Science (Member since 2005)
- Midwestern Psychological Association (Member since 2008)
- Psychonomic Society (Member since 2007)