

Caitlin R. Bowman, Ph.D.

Department of Psychology, University of Wisconsin-Milwaukee

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Academic Positions

2021 - Assistant Professor, University of Wisconsin-Milwaukee
Department of Psychology

Education and Training

2015 - 2020 Postdoctoral researcher, University of Oregon
Advisor: Dagmar (Dasa) Zeithamova

2010 - 2015 Ph.D., The Pennsylvania State University
Advisor: Nancy Dennis

2008 - 2010 Research Assistant, University of Oregon
Advisors: Michael Anderson, Margaret Sereno

2006 - 2009 B.A., Psychology (Magna Cum Laude, with honors), New York University
Advisors: Lila Davachi, Madeline Heilman

Fellowships, Honors, and Awards

2017 - 2020 Postdoctoral National Research Service Award
National Institute of Aging

2018 Society for Neuroscience Trainee Professional Development Award

2016 Enhancing Postdoctoral Experience Award, University of Oregon

2015 Penn State Psychology Department Outstanding Graduate Teaching Award

2014 APA Dissertation Award

2014 Research and Graduate Studies Office Dissertation Award, Penn State

2013 Superior Teaching and Research Award, Penn State

2011 Kraft Wilson Graduate Fellowship in Social Sciences, Penn State

2009 *Magna cum laude*, New York University

2009 Founder's Day Award, New York University

2006-2009 Deans List, New York University

2006-2009 Baird Scholar, New York University

Publications

Journal articles – in progress

Bowman, C.R., Valdez, M.R., & Obarski, S.A. (under review). Concept learning in young and older adults: A review of age effects in categorization tasks.

Bowman, C.R., Iwashita, T., & Zeithamova, D. (2021). The effects of age on prototype- and exemplar-based categorization. *PsyArXiv*. [Preprint].

Bowman, C.R. & Zeithamova, D. (2021). Coherent category training enhances generalization and increases reliance on prototype representations. *PsyArXiv*. [Preprint].

Chamberlain, J.C., **Bowman, C.R.**, & Dennis, N.A. (under review). Age-related differences in encoding-retrieval similarity and their relationship to false memory.

Journal articles – published

Bowman, C.R., Ashby, S.R., & Zeithamova, D. (in press). Age effects on category learning, categorical perception, and generalization. *Memory*.

Bowman, C.R., de Araujo Sanchez, M.A., Hou, W., Rubin, S., & Zeithamova, D. (2021). Generalization and false memory in an acquired equivalence paradigm: the influence of physical resemblance across related episodes, *Frontiers in Psychology*, 12, 2646.

Bowman, C.R., Iwashita, T., & Zeithamova, D. (2020). Tracking prototype and exemplar representations in the brain across learning. *eLife*.

Zeithamova, D. & **Bowman, C.R.** (2020). Generalization and the hippocampus: More than one story? *Neurobiology of Learning and Memory*, 175.

Ashby, S.R., **Bowman, C.R.**, & Zeithamova, D. (2020). Perceived similarity ratings predict generalization success after traditional category learning and a new paired-associate learning task. *Psychonomic Bulletin and Review*, 27(4), 791-800.

Bowman, C.R. & Zeithamova, D. (2020). Training set coherence and set size effects on concept generalization and recognition. *Journal of Experimental Psychology: Learning Memory & Cognition*, 46(8), 1442-1464.

Frank, L.E.*, **Bowman, C.R.***, & Zeithamova, D. (2019). Differential functional connectivity along the long axis of the hippocampus aligns with differential role in memory specificity and generalization. *Journal of Cognitive Neuroscience*, 31(12), 1-18.

Bowman, C.R., Chamberlain, J.C., & Dennis, N.A. (2019). Sensory representations supporting memory specificity: Age effects on behavioral and neural discriminability. *Journal of Neuroscience*, 39(12), 2265-2275.

Bowman, C.R. & Zeithamova, D. (2018). Abstract memory representations in the ventromedial prefrontal cortex and hippocampus support concept generalization. *Journal of Neuroscience*, 38(10), 2605-2614.

Huhn, J.M., III, **Bowman, C.R.**, Dennis, N.A. (2018). Repeated study of items with and without repeated context: aging effects on memory discriminability. *Memory*, 26(5), 603-609.

Bowman, C.R.*, Sine, S.L.*, & Dennis, N.A. (2017). Modulation of target recollection and recollection rejection networks due to retrieval facilitation and interference. *Learning & Memory*, 24(11), 607-611.

Geiger, A.N.*, **Bowman, C.R.***, Clothier, T. & Adams, R.B., Jr. (2017). Witnessing harm to the environment stimulates neural activation in networks associated with empathic responses. *Social Justice Research*.

Bowman, C.R., & Dennis, N.A. (2016). The neural basis of recollection rejection: increases in hippocampal-prefrontal connectivity in the absence of a shared recall-to reject and target recollection network. *Journal of Cognitive Neuroscience*, 28(8), 1194-1209.

Bowman, C.R. & Dennis, N.A. (2015). Age differences in the neural correlates of novelty processing: The effects of item-relatedness. *Brain Research*, 1612, 2-15.

Bowman, C.R. & Dennis, N.A. (2015) The neural correlates of correctly rejecting lures during memory retrieval: The role of item-relatedness. *Experimental Brain Research*, 233, 1963-1975.

Dennis, N.A., **Bowman, C.R.**, & Peterson, K.M. (2014) Neural correlates mediating false recollection in older adults. *Neurobiology of Aging*, 35(2), 395-407.

Dennis, N.A., **Bowman, C.R.** & Vandekar, S.N. (2012) True and phantom recollection: an fMRI investigation of similar and distinct neural correlates and connectivity. *Neuroimage*, 59, 2982-2993.

*These authors contributed equally to this work.

Chapters

Dennis, N.A., **Bowman, C.R.**, & Turney, I.C. (2015). Functional neuroimaging of false memory. *The Cognitive Neuroscience of Human Memory*. Addis, D.R., Barense, M. & Duarte, A. (eds), Wiley-Blackwell.

Liben, L.S. & **Bowman, C.R.** (2013). The development of memory from a constructivist perspective. *Handbook on the Development of Children's Memory*. Bauer, P. & Fivush, R. (eds), Wiley-Blackwell.

Invited Talks

Brain mechanisms of memory specificity and generalization and their age-related change. *University of Virginia*, November 2020.

Brain mechanisms of memory specificity and generalization and their age-related change. *University of Wisconsin-Milwaukee, Department of Biological Sciences*, March 2021.

Conference Presentations

Symposia

Bowman, C.R. (2021). The hippocampus and ventromedial prefrontal cortex support memory generalization. *Midbrains: Midwest Regional Neuroscience Virtual Conference*.

Garcia, S., **Bowman, C.R.**, Zeithamova, D. (2018). Different types of negative emotion may impact memory for associations. *California State University Summer Symposium at UCLA, Los Angeles, CA*.

Bowman, C.R., Webb, C.E., Chamberlain, J., Kurkela, K. & Dennis, N.A. (2018). Investigating dedifferentiation in visual cortex underlying false memories in aging. *Presented as part of the*

Neural dedifferentiation and age-related cognitive decline symposium at the 25th Annual Cognitive Neuroscience Society Meeting, Boston, MA.

Zeithamova, D., Ashby, S.R., **Bowman, C.R.** (2017). Changes in face representations following category learning. *Presented at the Cognitive Science Association for Interdisciplinary Learning annual meeting, Hood River, OR.*

Zeithamova, D., Resnick, A., de Araujo Sanchez, M.A., & **Bowman, C.R.** (2016) No trade-off between memory specificity and memory generalization. *Presented at the 6th International Conference on Memory, Budapest, Hungary.*

Posters

Bowman, C.R., Iwashita, T., & Zeithamova, D. (2021). Category representations after learning from both typical and atypical examples. *Poster presented at the 2021 Society for Neuroscience Virtual Meeting.*

Bowman, C.R. & Zeithamova, D. (2019). Concept generalization in young and older adults. *Poster presented at the 26th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Iwashita, T., **Bowman, C.R.** & Zeithamova, D. (2019). Investigating contributions of memory systems to concept generalization using individual differences in cognitive abilities. *Poster presented at the 26th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Frank, L.E., **Bowman, C.R.**, & Zeithamova, D. (2019). Distinct connectivity patterns of anterior and posterior hippocampus. *Poster presented at the 26th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Ashby, S.A., **Bowman, C.R.**, & Zeithamova, D. (2019). Spontaneous generalization following paired-associate training. *Poster to be presented at the 26th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Bowman, C.R. & Zeithamova, D. (2018). Tracking the development of specific and generalized representations during concept learning. *Poster presented at the 48th Annual Society for Neuroscience Conference, San Diego, CA.*

Ashby, S., **Bowman, C.R.**, & Zeithamova, D. (2018). Spontaneous generalized memory representations following paired-associates training. *Poster presented at the 48th Annual Society for Neuroscience Conference, San Diego, CA.*

Frank, L., **Bowman, C.R.**, & Zeithamova, D. (2018). Distinct connectivity patterns along the hippocampal anterior-posterior axis. *Poster presented at the 48th Annual Society for Neuroscience Conference, San Diego, CA.*

Bowman, C.R., Webb, C.E., Chamberlain, J., & Dennis, N.A. (2018). Age differences in pattern similarity associated with false recognition. *Poster presented at the 25th Annual Cognitive Neuroscience Society Meeting, Boston, MA.*

- Bowman, C.R.** & Zeithamova, D. (2017). Prototype model correlates in the VMPFC during concept generalization. *Poster presented at the 47th Annual Society for Neuroscience Conference, Washington, D.C.*
- Bowman, C.R.** & Zeithamova, D. (2017). Prototype representations in VMPFC and hippocampus during concept generalization. *Poster presented at the 24th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*
- Ashby, S.R., **Bowman, C.R.**, & Zeithamova, D. (2017). Changes in item representations following category learning. *Poster presented at the 24th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*
- Adke, A., **Bowman, C.R.**, & Zeithamova, D. (2017). Aging effects on perceptual and conceptual memory transformations from short-term to long-term memory. *Poster presented at the 24th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*
- Bowman, C.R.** & Zeithamova, D. (2016) Neural representations of concepts and exemplars: comparing generalization and recognition. *Poster presented at the 46th Annual Society for Neuroscience Conference, San Diego, CA.*
- Bowman, C.R.** & Zeithamova, D. (2016) Flexible use of category representations. *Poster presented at the 6th International Conference on Memory, Budapest, Hungary.*
- Bowman, C.R.**, Huhn III, J.M., & Dennis, N.A. (2016) Repeated study of items with and without repeated context: Aging effects on recollection and familiarity. *Poster presented at the 6th International Conference on Memory, Budapest, Hungary.*
- Bowman, C.R.** & Dennis, N.A. (2016). Recall-to-reject: Aging effects on the neural correlates of recollection rejection. *Poster presented at the 2016 Cognitive Aging Conference, Atlanta, GA.*
- Sine, S., **Bowman, C.R.**, & Dennis, N.A. (2016). The neural correlates of related lure interference on correct recognition and false memory suppression. *Poster presented at the 23rd Annual Cognitive Neuroscience Society Meeting, New York, NY.*
- Bowman, C.R.**, & Dennis, N.A. (2015). Recall-to-reject: The neural correlates of false memory suppression using true recollection. *Poster presented at the 22nd Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*
- Bowman, C.R.**, & Dennis, N.A. (2015). Recall-to-reject: The neural correlates of false memory suppression using true recollection. *Poster presented at the Penn State Graduate Exhibition.*
- Geiger, N., **Bowman, C.R.**, Clothier, T., Nelson, A.J., Adams, R.B., Jr. (2015). Witnessing harm to the environment stimulates neural activation in empathic networks. *Poster presented at the 4th annual Sustainability Psychology preconference for the Society for Personality and Social Psychology, Long Beach, CA.*
- Bowman, C.R.**, Turney, I.C., Dennis, N.A., & Adams, R.B., Jr. (2014). The effects of face age on memory encoding: neural similarities and differences in activity and functional connectivity. *Poster presented at the 21st Annual Cognitive Neuroscience Society Meeting, Boston, MA.*

Cárdenas, R.A., Garrido, C.O., **Bowman, C.R.**, Adams, R.B., Jr. (2014). Gender and caregiving tendencies drive selective sensitivity in the fusiform face area to different aged faces. *Poster presented at the 21st Annual Cognitive Neuroscience Society Meeting, Boston, MA.*

Bowman, C.R. & Dennis, N.A. (2013). The neural correlates mediating age deficits in novelty detection. *Poster presented at the 20th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Bowman, C.R., Peterson, K.M. & Dennis, N.A. (2012). The neural correlates mediating true and false recollection in younger and older adults. *Poster presented at the 2012 Cognitive Aging Conference, Atlanta, GA.*

Bowman, C.R., Peterson, K.M. & Dennis, N.A. (2012). The effects of item relatedness on the neural correlates of novelty detection. *Poster presented at the 19th Annual Cognitive Neuroscience Society Meeting, Chicago, IL.*

Bowman, C.R., Vandekar, S.N. & Dennis, N.A. (2011). Neural correlates mediating true and false recollection. *Poster presented at the 41st Annual Society for Neuroscience Conference, Washington DC.*

Ezzyat, Y., **Bowman, C.R.**, & Davachi, L. (2009). The influence of event perception on long-term memory formation. *Poster presented at the 39th Annual Society for Neuroscience Conference, Chicago, IL.*

Teaching Experience – Lead Instructor

University of Wisconsin-Milwaukee

Cognitive Processes	2021
Introduction to Cognitive Psychology (<i>online</i>)	2021, 2022

Penn State, University Park (in residence)

Neurological Bases of Behavior	2014, 2015
Introduction to Cognitive Psychology (<i>online</i>)	2014
Research Methods in Psychology (<i>online</i>)	2013

Professional Development

2021	High Impact Practices in Teaching Workshop, UW System
2021	Antiracist Teaching Practices for Writing Across Disciplines, UWM
2017	Research mentor training, Online through University of Wisconsin-Madison's NIH-funded <i>What Matters in Mentoring Project</i>

Outreach

2021	What does healthy memory function look like in seniors? Community talk presented at Meetinghouse Senior Living Apartments
2021	UWM Graduate School Open House, Neuroscience program representative
2021	UWM Meet & Greet: An SFN virtual networking event
2021	Graduate school panel, Midbrains & mGluRs conference

- 2018 Brain Awareness Week workshop, Edison Elementary School, Eugene, OR
- 2017 Memory and aging: Transfer of information from short-term to long-term memory, Community talk given to members of the Osher Lifelong Learning Institute, Eugene, OR
- 2017 Mental Time Travel, Hands-on workshop for Apprenticeships in Science & Engineering's Saturday Academy, Corvallis, OR
- 2017 Mental Time Travel, Hands-on workshop for Summer Academy to Inspire Learning, Eugene, OR
- 2016 Science Open House, Science Program to Inspire Creativity and Excellence, Eugene, OR
- 2016 Meet a Scientist, Science Factory, Eugene, OR

Professional Memberships

American Psychological Association – Society for Neuroscience – Cognitive Neuroscience Society

Ad-hoc reviewer

Aging, Neuropsychology, and Cognition – BMC Psychology – Brain and Behavior – Brain and Cognition – Brain Research – Cerebral Cortex – Cognition – Cognitive Science – Cortex – eLife – Entropy – Frontiers in Behavioral Neuroscience – Frontiers in Neuroscience – Human Brain Mapping – Journal of Applied Research on Memory and Cognition – Journal of Cognitive Neuroscience – Journal of Experimental Psychology: Learning, Memory, and Cognition – Journal of Gerontology: Psychological Sciences – Journal of Neuroscience – Memory – Nature Communications – Neurobiology of Aging – NeuroImage – Psychological Bulletin and Review – Psychology and Aging – Quarterly Journal of Experimental Psychology – Scientific Reports

Grant reviewer

2021, 2022 National Science Foundation