

Caitlin R. Bowman, Ph.D.

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Academic Positions

- 2021 - Assistant Professor, University of Wisconsin-Milwaukee
Department of Psychology
- 2022- Adjunct Assistant Professor, Medical College of Wisconsin
Clinical and Translational Science Institute

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

Bowman, C.R. & Zeithamova, D. (in press). Coherent category training enhances generalization in prototype-based categories. *Journal of Experimental Psychology: Learning, Memory & Cognition*.

Bowman, C.R., Valdez, M.R., & Obarski, S.A. (in press). Learning new categories in older age: a review of theoretical perspectives and empirical findings. *Psychology and Aging*.

Bowman, C.R., Iwashita, T., & Zeithamova, D. (2022). The effects of age on prototype- and exemplar-based categorization. *Psychology and Aging*, *37*(7), 800-815.

Chamberlain, J.C., **Bowman, C.R.**, & Dennis, N.A. (2022). Age-related differences in encoding-retrieval similarity and their relationship to false memory. *Neurobiology of Aging*, *113*, 15-27.

Bowman, C.R., Ashby, S.R., & Zeithamova, D. (2022). Age effects on category learning, categorical perception, and generalization. *Memory*, *30*(3), 230-247.

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.

Grants

Current

National Institute on Aging

MSTEM: Advancing Diversity in Aging Research through Undergraduate Education

UW-Milwaukee Promoting Equity, Diversity, and Academic Success Through Aging Research Program

Role: co-I, PIs: Karyn Frick, Nigel Rothfels

Completed

National Institute on Aging

2017-2020

Ruth L. Kirschstein National Research Service Award

Memory precision and generalization: aging effects on the cognitive and neural basis of adaptive memory function

Role: PI

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. (2023). Learning prototype-based categories in older age. *Presented at the 2023 Context and Episodic Memory Symposium, Orlando, FL.*

Chamberlain, J.C., Dennis N.A., & **Bowman, C.R.** (2022). Age-deficits in ventral visual neural discriminability and recapitulation associated with false memories. *Presented at the 63rd annual meeting of the Psychonomic Society, Boston, MA.*

Bowman, C.R. & Valdez, M.R. (2022). How consistently do individuals use a prototype vs. exemplar strategy to categorize? *Presented as part of the APA Division 3 Early Career Datablitz at the 2022 APA Convention, Minneapolis, MN.*

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

Charles, C.I. & **Bowman, C.R.** (2023). Age effects in associative inference. *Poster presented at the 2023 Context and Episodic Memory Symposium, Orlando, FL.*

Kimura, K., Valdez, M.R., & **Bowman, C.R.** (2023). Does state of mind predict category learning in older adults? *Poster presented at the 2023 Context and Episodic Memory Symposium, Orlando, FL.*

Valdez, M.R. & **Bowman, C.R.** (2023). Age-related differences in reliability of categorization strategies across multiple category-learning opportunities. *Poster presented at the 2023 Context and Episodic Memory Symposium, Orlando, FL.*

Chamberlain, J.C., Dennis, N.A., & **Bowman, C.R.** (2022). Age deficits in ventral visual neural discriminability and recapitulation associated with false memories. *Poster to be presented at the 63rd Annual Meeting of the Psychonomic Society, Boston, MA.*

Charles, C.I. & **Bowman, C.R.** (2022). How does age affect the distinctiveness of anterior versus posterior hippocampal brain networks? *Poster presented at the 29th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

Valdez, M.R., Zeithamova, D. & **Bowman, C.R.** (2022). Neural markers of learning that predict subsequent categorization strategy. *Poster presented at the 29th Annual Cognitive Neuroscience Society Meeting, San Francisco, CA.*

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.*

Presentations at undergraduate research conferences

Birr, S.M., Charles, C.I., & **Bowman, C.R.** (2022). Comparing the consistency of manual and automated segmentations of the human hippocampus from MRI images. *Poster presented at the 2022 MidBrains Undergraduate Neuroscience Conference, Eau Claire, WI.*

Garcia Ramierz, Y., Valdez, M.R., & **Bowman, C.R.** (2022). Cognition in older adults: How does a healthy brain perform? *Poster presented at the 2022 UR@UWM Summer Research Symposium.*

Swanson, E., Obarski, S.A., Valdez, M.R., & **Bowman, C.R.** (2022). Solving a memory mystery: How do people remember inferences? *Poster presented at the 2022 UR@UWM Summer Research Symposium.*

Birr, S., Valdez, M.R., & **Bowman, C.R.** (2022). Learning categories from individual examples. *Poster presented at the 2022 UWM Undergraduate Research Symposium.*

Obarski, S.A., Valdez, M.R., & **Bowman, C.R.** (2022). Confirming a hunch: Do people seek to confirm their inferences? *Poster presented at the 2022 virtual National Conference of Undergraduate Research.*

Teaching Experience

University of Wisconsin-Milwaukee

Graduate Neuroscience seminar	2022
Cognitive Processes	2021, 2022
Introduction to Cognitive Psychology (<i>in-residence</i>)	2023
Introduction to Cognitive Psychology (<i>online</i>)	2021, 2022

Penn State, University Park

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

Professional Development

- 2023 Inclusive Teaching Toward Justice program, UWM (3 session series)
- 2022 Culturally Aware Mentoring, Angela Byars-Winston
- 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 *What Matters in Mentoring Project*

Outreach

- 2023 “The Science of Healthy Cognitive Aging”,
Community talk given to members of the Osher Lifelong Learning Institute,
Milwaukee, WI
- 2022, 2023 Participated in UWM’s Make a Difference Day:
Helped seniors in Milwaukee area winterize their homes
- 2021, 2022 UWM Graduate School Open House, Neuroscience program representative
- 2021 UWM Meet & Greet: An SFN virtual networking event
- 2021, 2022 Graduate school panel, Midbrains & mGluRs conference
- 2021 “What does healthy memory function look like in seniors?”,
Community talk given to residents at the Meetinghouse senior living facility,
Milwaukee, WI
- 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

Departmental Service

- 2022- CLAMS student organization advisor
- 2022- Brownbag coordinator, Neuroscience Area
- 2022- Human subjects coordinator, Department of Psychology
- 2021-2022 Graduate recruitment coordinator, Neuroscience Area

Committee Memberships

- 2022- Graduate Program Committee

2022-2023 Cognitive Neuroscience search committee
2021-2022 Behavioral Neuroscience search committee
2014 – 2015 Social, Life, and Engineering Sciences Imaging Center Student Advisory Council,
Penn State
2013, 2015 Student representative on Penn State search committees

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 – 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 – Neurobiology of Learning and Memory – NeuroImage – Psychological Bulletin and Review – Psychology and Aging – Quarterly Journal of Experimental Psychology – Scientific Reports