

Jordan D. Chamberlain

•The Pennsylvania State University •Department of Psychology •441 Moore Building •jdc80@psu.edu

Education

Doctor of Philosophy

The Pennsylvania State University, University Park, PA
Cognitive Psychology

2023 (Expected)

Master of Science

University of Michigan, Ann Arbor, MI
Psychology: Cognition and Cognitive Neuroscience
Thesis: *Neural Distinctiveness and GABA Concentrations in the Aging Ventral Visual Cortex*

2017

Bachelor of Science

University of Michigan, Ann Arbor, MI
Biopsychology, Cognition, and Neuroscience

2016

Research Interests

Cognitive neuroscience of aging, false memory, cognitive training, neuroimaging, multivariate analyses

Peer-Reviewed Publications

Published

Ricupero, S*, Carpenter, C*, Steinkraus, A. C., Gerver, C. R., **Chamberlain, J. D.**, Monkman, R.G., Overman, A. A., Dennis, N. A. (in press). Neural distinctiveness and reinstatement of hippocampal representations supports associative unitization. *Brain Research*. <https://doi.org/10.1016/j.brainres.2022.148143>

Chamberlain, J. D., Bowman, C. R., & Dennis, N. A. (2022). Age-related differences in encoding-retrieval similarity and their relationship to false memory. *Neurobiology of Aging*. <https://doi.org/10.1016/j.neurobiolaging.2022.01.011>

Dennis, N. A., **Chamberlain, J. D.**, Carpenter, C. (2022). False memories: What neuroimaging can tell us about how we mis-remember the past. *The SAGE Handbook of Cognitive and Systems Neuroscience. Vol. 2: Cognitive Systems, Development and Applications*. (PsyArXiv preprint <https://doi.org/10.31234/osf.io/hrj8v>)

Chamberlain, J. D., Sprague, B. N., Ross, L. A. (2022). Age- and time-varying associations between subjective health and episodic memory in older adults. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*. <https://doi.org/10.1093/geronb/gbab142>

Kurkela, K. A., Carpenter, C. M., Babu, H., **Chamberlain, J. D.**, Dennis, N. A. (2021). The effect of memory cue duration on performance in the directed forgetting task in healthy aging. *Aging, Neuropsychology, and Cognition*. <https://doi.org/10.1080/13825585.2021.1942427>

Chamberlain, J. D., Turney, I. C., Goodman, J., Hakun, J., Dennis, N. A. (2021). Fornix white matter microstructure differentially predicts false recollection rates in older and younger adults. *Neuropsychologia*. <https://doi.org/10.1016/j.neuropsychologia.2021.107848>

Chamberlain, J. D., Gagnon, H., Lalwani, P., Cassady, K., Simmonite, Seidler, R, Taylor, S., Weissman, D., Park, D. C., Polk, T. A. (2021). GABA levels in ventral visual cortex decline with age and are associated with neural distinctiveness. *Neurobiology of Aging*. <https://doi.org/10.1101/743674>

Bowman, C. R., **Chamberlain, J. D.**, & Dennis, N. A. (2019). Sensory Representations Supporting Memory Specificity: Age Effects on Behavioral and Neural Discriminability. *Journal of Neuroscience*, 39(12), 2265–2275. <https://doi.org/10.1523/JNEUROSCI.2022-18.2019>

Gagnon, H., Simmonite, M., Cassady, K., **Chamberlain, J.**, Freiburger, E., Lalwani, P., Kelley, S., Foerster, B., Park, D. C., Petrou, M., Seidler, R. D., Taylor, S. F., Weissman, D. H., & Polk, T. A. (2019). Michigan Neural

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Distinctiveness (MiND) study protocol: Investigating the scope, causes, and consequences of age-related neural dedifferentiation. *BMC Neurology*, 19(1), 61. <https://doi.org/10.1186/s12883-019-1294-6>

Under Review

Turney, I. C.*, **Chamberlain, J. D.***, Hakun, J. G., Steinkraus, A. C., Ross, L. A., Kirchoff, B. A., Dennis, N.A. (under review). Investigating neural effects of memory training to reduce false memories in older adults: Univariate and multivariate analyses. (bioRxiv preprint <https://doi.org/10.1101/2022.11.08.515495>)

In-Prep Publications

Chamberlain, J. D., & Dennis, N. A. (in prep). Systematically reducing schematic information during encoding differentially impacts true and false memory at retrieval in younger and older adults.

Note: * indicates co-first authors.

Pre-Registered Ongoing Studies

Chamberlain, J. D., & Dennis, N. A. Synchronous neural discriminability between ventral visual cortex and posterior hippocampus supports mnemonic pattern separation. (OSF [pre-registration](#)).

Chamberlain, J. D., Tian, J., Dennis, N. A., Ross, L. A. The longitudinal impact of memory-based cognitive training on false memories in older adults: Results from the ACTIVE study. (OSF [pre-registration](#)).

Dennis, N.A., Steinkraus, A. C., Carpenter, C.M., **Chamberlain, J. D.** Understanding the contributions of individual differences to domain-general and domain-specific components of false memories in both young and older adults. (OSF [preregistration](#))

Byrne, K. A., Ross, L. A., **Chamberlain, J. D.**, Visscher, K. A. Examining the link between cortical thickness, selective attention, and social isolation among older adults. (OSF [pre-registration](#)).

Conference Presentations

Talks

Chamberlain, J. D., Bowman, C. R., & Dennis, N. A. *Age-Deficits in Ventral Visual Neural Discriminability and Recapitulation Associated with False Memories*. Presented at the Psychonomic Society's Annual Meeting (November, 2022), Boston, MA.

Bowman, C., Webb, C., **Chamberlain, J. D.**, Dennis, N. *Investigating Dedifferentiation in Visual Cortex Underlying False Memories in Aging*. Presented at the Cognitive Neuroscience Society's Annual Meeting (March, 2018), Boston, MA.

Posters

Chamberlain, J.D., Turney, I. C., Hakun, J. G., Steinkraus, A. C., Ross, L. A., Kirchoff, B. A., Dennis, N.A. *Investigation of the neural effects of memory training to reduce false memories in older adults*. Accepted to be presented at the Cognitive Neuroscience Society's Annual Meeting (March, 2023), San Francisco, CA.

Chamberlain, J. D., Steinkraus, A., Dennis, N. A. *Manipulating schematic information affects both true and false memory in younger and older adults*. Presented at the Cognitive Aging Conference (April, 2022), Atlanta, GA.

Chamberlain, J. D., Bowman, C. R., Dennis, N. A. *Age-related differences in encoding-retrieval similarity and their relationship to false memory*. Accepted to be presented at the Dallas Aging and Cognition Conference (January, 2022), Dallas, TX. Event canceled due to COVID-19.

Chamberlain, J. D., Bowman, C. R., Dennis, N. A. *Age-related reductions in encoding-retrieval similarity associated with perceptual and thematic false memories*. Presented virtually at the Cognitive Neuroscience Society's Annual Meeting (March, 2021), Boston, MA.

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Chamberlain, J. D., Turney, I. C., Dennis, N. A. *Neural Discriminability Increases in Older Adults Following Cognitive Training to Reduce False Memories.* Accepted to be presented at the Cognitive Aging Conference (2020b), Atlanta, GA. Event cancelled due to COVID-19.

Chamberlain, J. D., Turney, I. C., Dennis, N. A. *Encoding-Retrieval Similarity (ERS) of Perceptually Related Items and Their Relation to False Memories in Aging.* Presented virtually at the Cognitive Neuroscience Society's Annual Meeting (April, 2020a), Boston, MA.

Chamberlain, J. D., Hultman, C., Martinez, V., Carpenter, C., Overman, A., Dennis, N. *Configuration Manipulation Impacts Neural Patterns in Medial Temporal Lobe in Associative Memory Retrieval.* Presented at the Cognitive Neuroscience Society's Annual Meeting (March, 2019c), San Francisco, CA.

Chamberlain, J. D., Gray, C., McGraw, K., Babu, H., Overman, A., Dennis, N. A. *The Influence of Memory Performance on Neural Representations Supporting Associative Retrieval.* Presented at the Cognitive Neuroscience Society's Annual Meeting (March, 2019b), San Francisco, CA.

Chamberlain, J. D., Gagnon, H., Lalwani, P., Cassady, K., Simmonite, M., Foerster, B., Petrou, M., Seidler, R., Taylor, S., Weissman, D., Polk, T. A., *GABA Levels in Ventral Visual Cortex Decline with Age and Predict Neural Distinctiveness.* Presented at the Dallas Aging and Cognition Conference (January, 2019a), Dallas, TX.

Chamberlain, J. D., Turney, I., Goodman, J., Hakun, J., Dennis, N. *Understanding the Relationship between False Memory and White Matter in Younger and Older Adults.* Presented at the Cognitive Aging Conference (May, 2018), Atlanta, GA.

Bowman, C., Webb, C., **Chamberlain, J. D.,** Dennis, N. *Age Differences in Neural Pattern Similarity Associated with False Recognition.* Presented at the Cognitive Neuroscience Society's Annual Meeting (March, 2018), Boston, MA.

Chamberlain, J. D., Gagnon, H., Lalwani, P., Cassady, K., Simmonite, M., Foerster, B., Petrou, M., Seidler, R., Taylor, S., Weissman, D., Polk, T. A., *Neural Distinctiveness and GABA Concentrations in the Aging Ventral Visual Cortex.* Presented at the Society for Neuroscience's Annual Conference (November, 2017), Washington, D.C.

Cassady, K., Gagnon, H., **Chamberlain, J. D.,** Lalwani, P., Simmonite, M., Petrou, M., Seidler, R., Taylor, S., Weissman, D., Polk, T. A., *Aging in the Somatosensory System: Neural Distinctiveness, GABA Concentrations, and Tactile Function.* Presented at the Society for Neuroscience's Annual Conference (November, 2017), Washington, D.C.

Lalwani, P., Gagnon, H., Cassady, K., **Chamberlain, J. D.,** Simmonite, M., Petrou, M., Seidler, R., Taylor, S., Weissman, D., Polk, T. A. *Age-related Declines in Neural Distinctiveness and GABA Concentrations in the Auditory Cortex.* Presented at the Society for Neuroscience's Annual Conference (November, 2017), Washington, D.C.

Simmonite, M., Lovden, M., Lalwani, P., **Chamberlain, J. D.,** Polk, T. A. *Independent Components of Neural Activation Before and After 100 Days of Cognitive Training.* Presented at the Society for Neuroscience's Annual Conference (November, 2017), Washington, D.C.

Simmonite, M., Gagnon, H., Carp, J., Cassady, K., **Chamberlain, J. D.,** Lalwani, P., Ossher, L., Foerster, B., Park, D. C., Petrou, M., Seidler, R., Taylor, S., Weissman, D., Polk, T. A. *Age-related Reductions of Neural Distinctiveness and Fluid Processing are Associated with Lower GABA Concentrations in Visual, Auditory, and Sensorimotor Cortex.* Presented at the International Symposium on MRS of GABA (September, 2017), Leuven, Belgium.

Chamberlain, J. D., Vineet, R., Nielsen, K., Alicia, A., Gonzalez, R., *Trail Making and Electrodermal Activity in Older Adults: When Does Arousal Indicate Cognition?* Presented at the Gerontological Society of America's 69th Annual Scientific Meeting (November, 2016), New Orleans, LA.

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Chamberlain, J. D., Polk, T. A., *GABA and Age-Related Neural Dedifferentiation in the Visual Cortex*. Presented at the Psychology Research Symposium at the University of Michigan (April, 2015), Ann Arbor, MI.

Chamberlain, J. D., Breitenbach, S., *Effects of Copper Solution on Plant-Rhizobia Interactions*. Presented at the 2012 Math and Science Symposium at the Grand Valley State University (March, 2012), Grand Rapids, MI.

Research Experience

Graduate Research Assistant

2019-Present

The Study of Healthy Aging & Applied Research Programs, State College, PA

Primary Investigator: Lesley Ross PhD.

Primary Project: Neural mechanisms associated with cognitive training in healthy older adults

Graduate Research Assistant

2017-Present

Cognitive Aging & Neuroimaging Lab, State College, PA

Primary Investigator: Nancy Dennis PhD.

Primary Project: Age-related differences in neural patterns underlying true and false memories

Research Associate

2016-2017

BioSocial Methods Collaborative, Research Center for Group Dynamics, Institute for Social Research, Ann Arbor, MI

Primary Investigator: Richard Gonzalez PhD.

Primary Project: Electrodermal activity associated with neuropsychological testing in older adults

Research Assistant I

2014-2017

Computational and Cognitive Neuroscience Lab, Ann Arbor, MI

Primary Investigator: Thad Polk PhD.

Primary Project: Age-related differences in neural distinctiveness and GABA levels

Laboratory Assistant

2014-2016

Juanita Merchant Lab, Biomedical Science Research Building, Ann Arbor, MI

Primary Investigator: Juanita Merchant PhD.

Primary Projects: Mouse necropsy, immunohistochemistry staining, plasmid transformation/isolation

Teaching Experience-The Pennsylvania State University

Co-Lead Instructor

Psychology 511-Graduate Seminar in Contemporary Psychology: Neuroimaging Methods

Spring 2022

Teaching Assistant

Psychology 260-Neural Basis of Human Behavior

Spring 2023

Guest Lecture: Neurophysiology

Psychology 452-Learning & Memory

Fall 2021

Guest Lecture: Older Adult Memory Interventions

Psychology 490-False Memory & Eyewitness Testimony

Spring 2021

Psychology 260-Neural Basis of Human Behavior

Fall 2020

Guest Lecture: Neuroimaging

Psychology 458-Advanced Visual Cognition

Spring 2019

Psychology 452-Learning & Memory

Spring 2019

Guest Lecture: Older Adult Memory Interventions

Psychology 462-Physiological Psychology

Fall 2018

Guest Lectures: Neuroimaging Parts I & II

Guest Lectures: Neuropsychology Parts I & II

Psychology 260-Neural Basis of Human Behavior

Fall 2018

Psychology 452-Learning & Memory

Spring 2018

Psychology 261-Introduction to Learning Psychology

Spring 2018

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Psychology 243-Introduction to Well-being and Positive Psychology

Fall 2017

Teaching Experience-University of Michigan

Graduate Student Instructor

Psychology 240-Introduction to Cognitive Psychology

Winter 2017

Psychology 345-Introduction to Human Neuropsychology

Fall 2016

Leadership & Involvement

Positions-The Pennsylvania State University

Undergraduate Research Exhibition Judge

2019, 2021

Psychology Graduate Student Peer Mentor

2019-2020

Brownbag Coordinator, Cognitive Area

2018-2019

AXONS Graduate Student Member

2017-Present

Positions-University of Michigan

President, Undergraduate Psychology Society

2015-2016

Education Committee Member, Neuroscience Student Association

2014-2015

Awards and Fellowships

Penn State College of Liberal Arts Superior Teaching and Research (STAR) Award

2022

Penn State Research and Graduate Studies Office (RGSO) Dissertation Award

2022

University of Utah's Advanced Statistical Methods in Neuroimaging & Genetics Course Fellowship

2022

Dallas Aging & Cognition Conference Sallie P. Asche Travel Assistance Award

2021

Bruce V. Moore Graduate Fellowship

2021

Psi Chi Teaching Assistant of the Year

2021

Psi Chi Teaching Assistant of the Year

2019

Georgetown University's Multivariate Pattern Analysis Course Fellowship

2017

Semper Fidelis Award in Musical Excellence

2012

Ad Hoc Reviewer

Memory

Neurobiology of Aging

Cerebral Cortex

Aging, Neuropsychology, and Cognition

Cognitive, Affective, and Behavioral Neuroscience

Frontiers in Aging Neuroscience

Outdoor Eats

Professional Memberships

Psychonomic Society

2022-Present

Cognitive Neuroscience Society

2017-Present

Society for Neuroscience

2017-Present

Gerontological Society of America

2016-Present

Software Proficiencies

MATLAB (Psychtoolbox; SPM12; CoSMoMvPA; The Decoding Toolbox; The SWE toolbox), FSL, Linux, E-Prime, SPSS, R Studio, Qualtrics, Noldus Observer XT, Inqscribe

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