NICOLE VARGA, Ph.D.

PERSONAL
1627 Brookhaven Road
Wynnewood, PA 19096
Phone: 856-304-6771
https://nicolevarga.com

OFFICE
University of Texas at Austin
1 University Station, C7000
Austin, TX 78712
nvarga@austin.utexas.edu

APPOINTMENTS

Postdoctoral Research Fellow, Department of Neuroscience — 2018-present
University of Texas at Austin (Advisor: Alison Preston)

Postdoctoral Research Fellow, Interdisciplinary Studies (IDS) — 2016—2017
Emory University

EDUCATION

Ph.D., Cognition & Development — May 2016
Emory University
Advisor: Patricia Bauer
Thesis: Constructing a knowledge base through memory integration:
Cognitive and neural factors involved

B.S., Psychology & Neuroscience — May 2010
Distinguished Honors; Magna Cum Laude
Ursinus College

FELLOWSHIPS, HONORS, & AWARDS

Cermak-Corkin Postdoctoral Award, Memory Disorders Research Society — 2022

Ruth L. Kirschstein Postdoctoral National Research Service Award (NRSA) — 2018-2022

Eleanor Main Graduate Student Mentor Award, Emory University — 2016

Dean's Teaching Fellow, Emory University — 2015-2016

NIH Institutional Research Training Grant (T32) Trainee, Emory University, — 2013-2014
Title: Mechanisms of Learning & Memory across Species & Development

The George Fago Prize for excellent scholarship in psychology, Ursinus College — 2010

RESEARCH

My work brings educationally relevant paradigms and cutting-edge tools (EEG, MRI, modeling) to bear on questions of how we learn from experience in ways that enable extension beyond it, advancing our understanding of the neurocognitive and environmental factors that contribute to individual and age-related variability in knowledge acquisition.

JOURNAL PUBLICATIONS

Varga, N. L., Cronin-Golomb, L., & Bauer, P. J. (2022). Self-derivation of new knowledge through memory integration varies as a function of prior knowledge. *Memory,* 1-17.

Coughlin, C., Ben-Asher, E., Roome, H. E., **Varga, N. L.**, Moreau, M. M., Schneider, L. L., & Preston, A. R. (2022). Interpersonal family dynamics relate to hippocampal CA subfield structure. *Frontiers in Neuroscience, 16,* 1-12.

Varga, N. L., & Manns, J. R. (2021). Delta-modulated cortical alpha oscillations support new knowledge generation through memory integration. *NeuroImage*, *244*, 118600.

Varga, N. L., Esposito, A. G., & Bauer, P. J. (2019). Cognitive correlates of memory integration across development: Explaining variability in an educationally relevant phenomenon. *Journal of Experimental Psychology: General*, *148* (4), 739-762.

Varga, N. L., Gaugler, T., & Talarico, J. (2019). Are mnemonic failures and benefits two sides of the same coin?: Investigating the real-world consequences of individual differences in memory integration. *Memory & Cognition*, *47* (3), 496-510.

Bauer, P. J., Dugan, J. A., **Varga, N. L.**, & Riggins, T. (2019). Relations between neural structures and children's self-derivation of new knowledge through memory integration. *Journal of Developmental Cognitive Neuroscience, 36*, 100611.

Manns, J. R., **Varga, N. L.**, Trimper, J. B., & Bauer, P. J. (2018). Cortical dynamics of emotional autobiographical memory retrieval differ between women and men. *Neuropsychologia, 110*, 197-207.

Varga, N. L., & Bauer, P. J. (2017). Using ERPs to inform the neurocognitive processes underlying knowledge extension through memory integration. *Journal of Cognitive Neuroscience, 29* (11), 1932-1949.

Varga, N. L., & Bauer, P. J. (2017). Young adults self-derive and retain new factual knowledge through memory integration. *Memory & Cognition, 45* (6), 1014-1027.

Varga, N. L., Stewart, R. A., & Bauer, P. J. (2016). Integrating across episodes: Investigating the long-term accessibility of self-derived knowledge in 4-year-old children. *Journal of Experimental Child Psychology, 145*, 48-63.

Bauer, P. J., Varga, N. L., King, J. E., Nolen, A. M., & White, E. A. (2015). Semantic elaboration through integration: Hints both facilitate and inform the process. *Journal of Cognition and Development, 16* (2), 351-369.

Varga, N. L., & Bauer, P. J. (2013) Effects of delays on 6-year-old children's self-generation and retention of knowledge through integration. *Journal of Experimental Child Psychology, 115* (2), 326-341.

Bauer, P. J., King, J. E., Larkina, M., Varga, N. L., & White, E. A. (2012). Characters and clues: Factors affecting children's extension of knowledge through integration of separate episodes. *Journal of Experimental Child Psychology, 111*(4), 681-694.

CHAPTERS & REVIEWS

Varga, N. L., Morton, N. W., & Preston, A. R. (2022). Schema, inference, and memory. M. J. Kahana & A. D. Wagner (Eds.), Handbook of human memory: Foundations and applications. Oxford University Press.

Bauer, P. J., & Varga, N. L. (2017). Similarity and deviation in event segmentation and memory integration. [Peer commentary on the paper "Event perception: Translations and applications" by L. L. Richmond, D. A. Gold, & J. M. Zacks]. *Journal of Applied Research in Memory and Cognition, 6* (2), 124-128.

Bauer, P. J., & Varga, N. L. (2016). The developmental cognitive neuroscience of memory: Implications for education. In E. Tardif & P. Doudin (Eds.), Collective work on the topics of neuroscience, cognition and education (pp. 135-164). Oxford, UK: De Boeck.

Varga, N. L., Dugan, J. A., Merrill, N. A., & Bauer, P. J. (2016). Knowledge. SAGE Encyclopedia of Lifespan Human Development.

Varga, N. L., & Bauer, P. J. (2014). Conceptual knowledge extension: An examination of its development and the underlying cognitive processes involved. In R. Chen (Ed.), Cognitive development: Theories, stages and processes and challenges (pp. 1-16). Huntington, NY: Nova Science Publishers.

Bauer, P. J., Leventon, J. S., & Varga, N. L. (2012). Neuropsychological assessment of memory in preschoolers. *Neuropsychology Review, 22* (4), 414-424.

MANUSCRIPTS IN PROGRESS

† Author was an undergraduate student or postbaccalaureate trainee at time of collaboration.
* Authors contributed equally to the work.

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Mack, M. L., Preston*, A. R., & Schlichting*, M. L. (submitted). Differentiation of related events in hippocampus supports memory organization and retrieval in development.

Coughlin, C., Pudhiyidath, A., Roome, H. E., **Varga, N. L.**, Nguyen†, K. V., & Preston, A. R. (submitted). Asynchronous development of memory integration and differentiation influence temporal memory organization.

Bauer, P. J., Cronin-Golomb†, L., Lee, K., **Varga, N. L.**, Hanft, M., Miller, A. G., & Porter, B. (submitted). Effects of proximity on integration of memory content in adults and children: Implications of semantic relatedness.

Varga, N. L., Dutcher, A. M., Roome, H. E., & Preston, A. R. (complete draft). Evidence for developmental increases in generalized but not specific hippocampal neural coding.

Varga, N. L., Dutcher, A. M., & Preston, A. R. (50% complete). Neural mechanisms underlying repetition-related improvements in event organization during development.

RESEARCH SUPPORT

National Institute of Child Health and Human Development 09/2018 –
F32 HD095586 (Ruth L. Kirschstein National Research Service Award) 04/2022
Influence of brain maturation on memory representation during development
Role: PI. Total: $192,090
Sponsor: Dr. Alison Preston

PRESENTATIONS

‡ Presentation was invited
† Author was an undergraduate student or postbaccalaureate trainee at time of collaboration.
* Authors contributed equally to the work.

TALKS

‡**Varga, N. L.** (2023). Influence of neurocognitive development on representational change. University of Toronto Developmental Interest Group, Toronto, Canada.

‡ **Varga, N. L.** (2023). Charting individual and developmental differences in knowledge acquisition. Memory Disorders Research Society Annual Meeting, Philadelphia, Pennsylvania.

‡ **Varga, N. L.** (2022). Neurocognitive correlates of memory integration in children and adults. Temple Memory Meeting, Philadelphia, Pennsylvania.

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Mack, M. L., Preston*, A. R., & Schlichting*, M. L. (2022). Differentiation of related events in hippocampus is associated with successful memory reinstatement in development. Psychonomic Society Annual Meeting, Boston, Massachusetts.

Varga, N. L., & Preston, A. R. (2021). Developmental differences in hippocampus and prefrontal representations of related memories. In **N. L. Varga (Chair)**, *The development of memory organization: Converging insight from multiple perspectives.* Paper presented at the Society for Research in Child Development (SRCD) Biennial Meeting.

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Mack, M. L., Preston*, A. R., & Schlichting*, M. L. (2021). Evidence for different hippocampal codes yet similar neocortical reinstatement of memories across development. In X. Chai (Chair), *Functional development of episodic memory in the hippocampus.* Paper presented at the Society for Research in Child Development (SRCD) Biennial Meeting.

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Mack, M. L., Preston*, A. R., & Schlichting*, M. L. (2020). Cortical reinstatement relates to memory retrieval in children and adults. Dallas Austin Area Memory Meeting (DAAMM).

Varga, N. L., Roome, H. E., Preston*, A. R., Schlichting*, M. A. (2019). Evidence for differential reinstatement of associative memories in children and adults. Center for Learning & Memory Annual Departmental Meeting, Austin, TX.

Varga, N. L., Roome, H. E., Preston*, A. R., Schlichting*, M. A. (2019). Neural evidence for reinstatement of associative memories in children and adults. Biomedical Imaging Seminar Series, Austin, TX.

Coughlin, C., Pudhiyidath, A., Roome, H. E., **Varga, N. L.**, Nguyen†, K., & Preston, A. R. (2019). Developmental differences in temporal memory organization. In C. Coughlin & A.R. Preston (Chairs), *Children's representation of time in memory and future-oriented thought*. Paper presented at the Society for Research in Child Development (SRCD) Biennial Meeting, Baltimore, MD.

Varga, N. L. & Manns, J. R. (2018). Cortical dynamics of memory integration: Implications for educational success. Dallas Austin Area Memory Meeting (DAAMM), Waco, TX.

‡**Varga, N. L.,** & Bauer, P. J. (2017). Children retain unique event and semantic details associated with episodes that are integrated in memory. In T. Riggins (Chair), Memory formation exhibits qualitative and quantitative changes across development. Invited symposium at Society for Research in Child Development (SRCD) Biennial Meeting, Austin, TX.

‡**Varga, N. L.** & Manns, J. R. (2017). Cortical dynamics of memory integration: Implications for educational success. Department of Psychology, Emory University, Atlanta, GA.

‡**Varga, N. L.**, & Bauer, P. J. (2016). Building a knowledge base across developmental time: Dissociating the cognitive and neural mechanisms involved. Lafayette College, Easton, PA.

Varga, N. L., & Bauer, P. J. (2016). Using ERPs to dissociate the neurocognitive processes underlying knowledge extension through memory integration. North Georgia Regional Annual Memory Meeting (NGRAMM), Atlanta, GA.

‡**Varga, N. L.**, & Bauer, P. J. (2014) Examining the Neurocognitive Processes Underlying Successful Knowledge Extension. Cognition and Development Issues Seminar, Emory University, Atlanta, GA.

Varga, **N. L.**, & Bauer, P. J. (2012) The whole is greater than the sum of its parts: The self-generation of integrated knowledge. Cognition and Development Issues Seminar. Emory University, Atlanta, GA.

‡**Varga, N. L.**, Bish, J. P., & Principe, G. (2010) The neurocognitive correlates of reconstructive memory. Ursinus College Celebration of Student Achievement (COSA) Day. Collegeville, PA.

‡**Varga, N. L.**, Bish, J. P., & Principe, G. (2009) Neurocognition and reconstructive memory errors. Ursinus College Family Day. Collegeville, PA.

POSTERS

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Mack, M. L., Preston*, A. R., & Schlichting*, M. L. (2022). Differentiation of related events in hippocampus supports memory reinstatement in development. Society for Neuroscience Annual Meeting, San Diego, California.

Ben-Asher, E., Coughlin, C., Roome, H. E., **Varga, N. L.**, Preston, A. R. (2021). Paternal mental health interacts with children's hippocampal volume to predict children's anxiety. Society for Research in Child Development. (Virtual).

Ben-Asher, E., Coughlin, C., Roome, H. E., **Varga, N. L.**, Moreau†, M. M., Schneider†, L., Preston, A. R. (2021). Family social function impacts hippocampal CA subfield structure. Flux Congress. (Virtual)

Varga, N. L., Roome, H. E., Molitor, R. J., Martinez†, L., Hipskind†, E. M., Preston*, A. R., Schlichting*, M. A. (2019). Evidence for differential neural reinstatement of associative memories in children and adults. Society for Neuroscience, San Diego, CA.

Varga, N. L., Roome, H. E., Preston*, A. R., Schlichting*, M. A. (2019). Neural evidence for reinstatement of associative memories in children and adults. Society for Research in Child Development, Baltimore, MD.

Varga, N. L., Roome, H. E., Preston*, A. R., Schlichting*, M. A. (2019). Neural evidence for reinstatement of associative memories in children and adults. Austin Conference on Learning & Memory (ACLM), Austin, TX.

Martinez†, L., **Varga, N. L.,** Roome, H. E., Preston*, A. R., Schlichting*, M. A. (2019). Neural evidence for reinstatement of associative memories in children and adults. Longhorn Research Poster Session, Austin, TX.

Varga, N. L., Manns, J. R. (2017). Cortical oscillations during a fact-based memory integration task relate to academic success. Society for Neuroscience, Washington D.C.

Varga, N. L., Bauer, P. J. (2017). Using ERPs to dissociate the neurocognitive processes underlying knowledge extension through memory integration in adults. Cognitive Neuroscience Society. San Francisco, CA.

Elder†, J. M., **Varga, N. L.**, Bauer, P. J. (2017). Deriving new knowledge through memory integration: Effects of prior knowledge. Neuroscience and Behavioral Biology Annual Undergraduate Research Symposium, Atlanta, GA.

Carr†, A. N., **Varga, N. L.**, Bauer, P. J. (2016). Effects of modality of learning on information integration and source memory judgments. Neuroscience and Behavioral Biology Annual Undergraduate Research Symposium, Atlanta, GA.

Varga, N. L., Bauer, P. J. (2015). Extending knowledge through memory integration: The effect of lag during encoding. Cognitive Neuroscience Society. San Francisco, CA.

Varga, N. L., Broyles†, A. K., Stewart†, R. A., Bauer, P. J. (2015). Transforming experience into knowledge: Comparing the status of self-generated vs. explicitly learned information. Cognitive Development Society. Columbus, OH.

Varga, N. L., Jaganjac†, A., Bauer, P. J. (2015). Expanding on prior knowledge: Effects of pre-existing schemas on the generation of new knowledge through cross-episode integration. Society for Research in Child Development. Philadelphia, PA.

Broyles†, A. K., **Varga, N. L.**, Carr†, A. N., Bauer, P. J. (2015). The source of knowledge matters: Comparing retention of self-generated knowledge vs. explicitly taught knowledge. Society for Research in Child Development. Philadelphia, PA.

Jaganjac†, A., **Varga, N. L.**, Bauer, P. J. (2014). The effect of prior domain knowledge on self-generative learning in preschool and school-age children. Annual Summer Undergraduate Research Experience (SURE) Symposium, Atlanta, GA.

Carr†, A. N. , **Varga, N. L.**, Broyles†, A. K. , Bauer, P. J. (2014). Hard work pays off: The facilitative effects of generating your own knowledge. Annual Summer Undergraduate Research Experience (SURE) Symposium, Atlanta, GA.

Carr†, A. N., **Varga, N. L.**, Bauer, P. J. (2014). Effects of delays on 4-year-olds knowledge extension through semantic integration. Scholarly Inquiry and Research at Emory (SIRE) Undergraduate Research Symposium, Atlanta, GA.

Jaganjac†, A., **Varga, N. L.**, Bauer, P. J. (2014). The influence of domain knowledge on the capacity to successfully extend new knowledge through integration. Scholarly Inquiry and Research at Emory (SIRE) Undergraduate Research Symposium, Atlanta, GA.

Varga, N. L., Stewart†, R., Bauer, P. J. (2013). The extension and retention of relational knowledge. Cognitive Development Society. Memphis, TN.

Varga, N. L., White, E. A., Bauer, P. J. (2013). Deriving mind from matter: Effects of delays on 6-year-old children's generation and retention of knowledge through integration. Society for Research in Child Development. Seattle, WA.

Larkina, M., **Varga, N. L.**, Pathman, T., Bauer, P. J. (2013). Autobiographical time in words and pictures: Representation of time in personal narratives and photographs in 8-10-year-olds. Society for Research in Child Development. Seattle, WA.

Okoro†, I., **Varga, N. L.**, Jackson, F., Bauer, P. J. (2012). Does lag affect the ability to integrate novel information? Center for Behavioral Neuroscience, Atlanta, GA.

Varga, N. L., White, E. A., Bauer, P. J. (2011). The cognitive accessibility of self-generated knowledge in school-aged children. Emory Cognition Project, Atlanta, GA.

Smith†, M., **Varga, N. L.**, Bauer, P. J. (2011). Everyone does it, the question is when and how: Integration. Center for Behavioral Neuroscience, Atlanta, GA.

Varga, N. L., Hamilton†, C., Bish, J. P. (2010). The neurocognitive development of reconstructive memory errors. Lehigh Valley Society for Neuroscience, PA.

TEACHING EXPERIENCE

I have ten years of experience teaching introductory, advanced, interdisciplinary, and service-learning courses in psychology and neuroscience, both at the undergraduate and graduate levels.

† seminar was taught at the graduate level

Instructor of Record, Emory University

IDS 220: What Does it Mean to be Human?	Spring 2017
PSY 385: The Development of Learning & Memory	Fall 2015
PSYC 200W: Experimental Methods (Lab)	Spring 2012
PSYC 230: Applied Statistics for Psychology (Lab)	Fall 2011

Instructor of Record, Oxford College

PSY 205: Child Development	Fall 2014

Service-Learning Instructor, Emory University

Developmental Methods: Dundee, Scotland; London, England	Summer 2013

Teaching Assistant, Emory University

PSYC 730: Proseminar in Learning †	Fall 2013-Spring 2014
PSYC 215: Cognition (Embodied)	Spring 2013

Guest Lecturer, University of Texas at Austin

PSY 387S: Principles of Cognitive Neuroscience †	Spring 2019, 2020
PSY 333D: Introduction to Developmental Psychology	Fall 2019
PSY 355N: Cognitive Neuroscience	Spring 2018

ACADEMIC SERVICE

Department of Neuroscience, University of Texas at Austin

Diversity, Equity, & Inclusion Committee, Member	2020—present

Department of Psychology, Emory University

Graduate Student Advisory Committee, Member	2013—2016
Graduate Student Ethics Committee, Member	2010—2016
Curriculum Committee, Student Member	2015
Cognition and Development Seminar, Coordinator	2014

Laney Graduate School, Emory University

Graduate Research Interdisciplinary Team of Scholars, Member	2010—2016

PROFESSIONAL SERVICE

*Denotes co-review with a mentor

Ad-hoc Journal Reviewing

Proceedings for the National Academy of Sciences, Nature Human Behaviour*, Neuron*, Scientific Reports, PLOS ONE*, PLOS Biology, Journal of Neuroscience, Hippocampus, Neuropsychologia*, Memory & Cognition, Memory, Journal of Applied Research on Memory & Cognition, Child Development, Developmental Cognitive Neuroscience, Cognitive Development*

Ad-hoc Grant Reviewing

National Science Foundation, Developmental Sciences Program
Society for Research in Child Development (Early Career Grant)

Ad-hoc Conference Reviewing

Society for Research in Child Development (Biennial Meeting)

COMMUNITY OUTREACH

University of Texas Brainstorms Outreach Events

The student brain: A conversation about the neuroscience behind effective studying, Panelist	2019
The remembering brain: A conversation about how memory contributes to children and adults' ability to navigate the world, acquire new knowledge, and imagine their future, Speaker	2019
The developing brain: A conversation about learning during childhood and adolescence, Panelist	2018

School-Aged Outreach Events

University of Texas Life Sciences Camp, Instructor	2018, 2019
Clarkston High School, College Application Mentor	2016, 2017
Fernbank Museum Experiments Day, Volunteer	2016, 2017
Brainy Days Classroom Program, Volunteer	2010—2016

MENTORSHIP

Undergraduate Research Training Programs, Mentor

Nudleman Foundation Summer Research Program, UT Austin	2019

Scholarly Inquiry and Research at Emory (SIRE), Emory 2012—2014
Summer Undergraduate Research Experience (SURE), Emory 2014
Behavioral Research Advancements in Neuroscience, Emory 2011—2012

Graduate Teaching Training Programs, Mentor

Teaching Assistant Training Program, Emory University 2014—2015
Best Practices for Lab Teaching Assistants, Emory University 2014

Student Trainees & Outcomes

* Awarded Undergraduate Research Distinction or Honors
† Awarded Undergraduate Research Grant or Fellowship
‡ Awarded Presentation Award at Undergraduate Research Symposium
Ŧ Member of a traditionally underrepresented population

Undergraduate Honors Students, UT Austin

Lauren Quesada*Ŧ, *Long School of Medicine, M.D. Student* 2018—2021
Elizabeth Hipskind*Ŧ, *Baylor College of Medicine, Ph.D. Student* 2018—2020

Undergraduate Research Assistants, UT Austin

Adam Czernuszenko: *UPenn, Research Coordinator* 2019—2022
Kanishka Chelikani Ŧ: *UT Medical Branch, M.D. Student* 2019—2022
Francis (Drew) Hussey: *MIT, Research Coordinator* 2019—2021
Lucia Martinez*†Ŧ: *Harvard University, Master's Student* 2018—2020

Undergraduate Honors Students, Emory University

Allison Carr*†‡Ŧ, Sante Fe College, *Psychology Instructor* 2015—2016

Undergraduate Research Assistants, Emory University

Reilly Allison Ŧ, *Medical College of Wisconsin, Ph.D. Student* 2016—2017
Adna Jaganjac*†‡Ŧ, *Boston University, Master's Student* 2014—2016

Undergraduate Summer Research Fellows, Emory University

Ijeoma Okoro‡Ŧ, Emory School of Medicine, *M.D. Student* summer 2012
Mikhaila Smith Ŧ, *Temple School of Medicine, M.D. Student* summer 2011

Doctoral Students, UT Austin

Anthony Dutcher, UT Austin, Postdoctoral Fellow 2020—2022
Athula Pudhiyidath Ŧ, Data Scientist 2019—2020

PROFESSIONAL AFFILIATIONS

Psychonomic Society 2020—Present
Flux: The Society for Developmental Cognitive Neuroscience 2019—Present
Society for Neuroscience 2016—Present
Cognitive Neuroscience Society 2012—Present

Cognitive Development Society	2012—Present
Society for Research in Child Development	2010—Present
Lehigh Valley Society for Neuroscience	2009—2010