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Eric D. Wilkey, PhD

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Department of Psychology & Human Development
Peabody College, Vanderbilt University
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EDUCATION

Ph.D. *2013 – 2018*
Neuroscience
Vanderbilt University, Nashville TN

M. Ed. *2010 – 2011*
Mind, Brain and Education
Harvard University, Cambridge, MA

B.A. 2003 – 2007
Philosophy, minors in Classical Greek and Studio Art
Belmont University, Nashville, TN

APPOINTMENTS & AFFILIATIONS

Assistant Professor *2022 – present*
Department of Psychology & Human Development
Peabody College, Vanderbilt University

2022 - present
Vanderbilt Brain Institute, Training Faculty
Vanderbilt University School of Medicine

2023 – *present*
Vanderbilt Kennedy Center, Investigator
Vanderbilt Data Science Institute, Faculty Affiliate

Assistant Professor *Jan 2022 – May 2022*
Center for Computation & Technology
Louisiana State University

Jan 2022 – May 2022
Department of Psychology
Louisiana State University

Postdoc *2018 – 2021*
Brain and Mind Institute
Western University, London, ON, Canada
Advisor: Dr. Daniel Ansari

Research Analyst *2011 – 2013*
Vanderbilt University, Peabody Research Institute
- Large-scale meta-analysis of predictors of school success
- City-wide Kindergarten reading intervention assessment

FELLOWSHIPS & AWARDS

2024	Rising Star Award, Association for Psychological Science (APS)
2021	Western University Postdoctoral Scholar of the Year
2019–2021	*Banting Postdoctoral Fellowship* (only 70 awarded yearly across Canada), awarded by The Natural Sciences and Engineering Research Council of Canada (NSERC) $140,000 CAD ($70K per year CAD).
2019–2021	*BrainsCAN Tier I Postdoctoral Fellowship Award Top-Up*, University of Western Ontario, $20,000 CAD ($10K per year CAD).
2018	Travel grant award by BrainsCAN to attend a workshop on Open Science at University College Cork, Ireland (October 2018)
2017–2018	*Hardy Culver Wilcoxon Award*, presented by the Peabody College Department of Psychology & Human Development (Vanderbilt University) to the graduate student with the most distinguished doctoral dissertation in any area of Psychological Inquiry.
2017	Competitive *Research-Achievement Fellowship* from Vanderbilt Department of Psychology and Human Development. Award provides stipend for one semester to pursue research aims that build on a previous first-author publication.
2016	Fellow at Kavli Summer Institute in Cognitive Neuroscience, UC Santa Barbara, 2016. Fellowship for tuition, room, and board.
2016	Stipend awarded from NIH to present at NIH and IES funded Math Cognition and Learning Conference special topic: The Role of Linguistic and Cultural Factors in Mathematical Cognitive Development, Ft. Worth, Texas.
2015–2018	Peabody Dean's Fellowship for PhD (Vanderbilt University).
2013–2018	Peabody Graduate Honors Scholarship (Vanderbilt University)
2014	IMBES outstanding poster award at International Mind, Brain and Education Society, Fort Worth, TX.

GRANTS

2024	$10,000	Peabody College Small Research Grant. *Graphicacy & Autism.* PI: Eric Wilkey
2024	$1,980	Vanderbilt Institute for Clinical and Translational Research. *Beyond Integers.* PI: Isabella Starling-Alves; Postdoc Mentor: Eric Wilkey
2024	$59,415	MRI-compatible eye-tracking to capture brain mechanisms of visual attention in diverse populations. Vanderbilt University Office of the Vice Provost for Research and Innovation. *Seeding Success.* PI: S. Vinci-Booher, co-PIs: Frank Tong, James Booth, Eric Wilkey
2020-2023	$2,000,000	AERDF. *My Math Stories: Taking My Place in Our Mathematical World* PI's David Purpura, Caroline Hornburg; Co-Investigator, Eric Wilkey
2022-2023	$692,302	Collaborator (PI Benjamin Clarke), *Mapping Non-Response to Math Interventions NSF* (1660840) – Subaward to Vanderbilt for 2022/2023 PI Benjamin Clarke; Co-PI, Eric Wilkey

PUBLICATIONS | ORCiD | Google Scholar | ResearchGate

Peer-Reviewed Articles (n = 27, h-index = 14 via google scholar)
*equal contribution
underlined indicates mentee during initiation of project
Δ indicates a paper with myself as senior author

27. Δ Starling Alves, I., Shanley, L., Cook, M., Smith, J., Sabb, F. W., Clarke, B., **Wilkey, E. D.** (*accepted*). *Scientific Reports*. Altered resting-state functional connectivity in subdivisions of the intraparietal sulcus and the angular gyrus in 1st graders identified for math support in the classroom.

26. Δ Starling-Alves, I., Peters, L., **Wilkey, E. D.** (2025). Beyond the sum of their parts: a multi-dimensional approach to dyscalculia-dyslexia comorbidity. *Developmental Cognitive Neuroscience.* https://doi.org/10.1016/j.dcn.2025.101510

25. Δ Starling-Alves, I., Russell-Lasalandra, L. L., Lau, N. T. T., Moreira Paiva, G., Geraldi Haase, V., & **Wilkey, E. D.** (2024). Number and domain both affect the relation between executive function and mathematics achievement: A study of children's executive function with and without numbers. *Developmental Psychology, 60*(12), 2345–2366. https://doi.org/10.1037/dev0001814

24. *Kwok, F. Y., ***Wilkey, E. D.**, *Peters, L., Khiu, E., Bull, R., Lee, K., & Ansari, D. (2023). Developmental dyscalculia is not associated with atypical brain activation: A univariate fMRI study of arithmetic, magnitude processing, and visuospatial working memory. *Human Brain Mapping*, *44*(18), 6308–6325. https://doi.org/10.1002/hbm.26495

23. **Wilkey, E. D.** (2023). The Domain-Specificity of Domain-Generality: Attention, Executive Function, and Academic Skills. *Mind, Brain, and Education*, *17*(4), 349–361. https://doi.org/10.1111/mbe.12373

22. Mielicki, M. K., **Wilkey, E. D.**, Scheibe, D. A., Fitzsimmons, C. J., Sidney, P. G., Bellon, E., Ribner, A. D., Soltanlou, M., Starling-Alves, I., Coolen, I., Ansari, D., & Thompson, C. A. (2023). Task features change the relation between math anxiety and number line estimation performance with rational numbers: Two large-scale online studies. *Journal of Experimental Psychology: General, 152*(7), 2094–2117. https://doi.org/10.1037/xge0001382

21. **Wilkey, E. D.**, Peiris, A., Gupta, I., Ansari, D. (2023) The Mathematical Brain at Rest. *Current Opinion in Behavioral Sciences, 49, 101246.* https://doi.org/10.1016/j.cobeha.2022.101246

20. Smith, J., **Wilkey, E. D.**, Clarke, B., Shanley, L., Men, V., Fair, D., Sabb, F. W.. (2022) Can this data be saved? Techniques for high motion in resting state scans of first grade children. Techniques for high motion in resting state scans of first grade children. *Developmental Cognitive Neuroscience*, *58*, 101178. https://doi.org/10.1016/j.dcn.2022.101178

19. **Wilkey, E. D.**, Shanley, L., Sabb, F., Ansari, D., Cohen, J. C., Men, V., Heller, N. A., & Clarke, B. (2022). Sharpening, focusing, and developing: A study of change in nonsymbolic number comparison skills and math achievement in 1st grade. *Developmental Science*, *25*(3), e13194. https://doi.org/10.1111/desc.13194

18. Pollack, C., **Wilkey, E. D.**, & Price, G. R. (2022). Predictors of Middle School Students' Growth in Symbolic Number Comparison Performance. *Journal of Numerical Cognition*, *8*(1), 53–72. https://doi.org/10.5964/jnc.8069

17. Lau, N. T., **Wilkey, E. D.**, Soltanlou, M., Lagacé Cusiac, R., Peters, L., Tremblay, P., ... & Ansari, D. (2022). Numeracy and COVID-19: examining interrelationships between numeracy, health numeracy and behaviour. *Royal Society Open Science*, *9*(3), 201303. https://doi.org/10.1098/rsos.201303 Project page: https://osf.io/qpdnt/

16. Lynn, A., **Wilkey, E. D.**, & Price, G. R. (2022). Predicting Children's Math Skills from Task-Based and Resting-State Functional Brain Connectivity. *Cerebral Cortex*, *32*(19), 4204–4214. https://doi.org/10.1093/cercor/bhab476

15. **Wilkey, E. D.**, & Ansari, D. (2020). Challenging the neurobiological link between number sense and symbolic numerical abilities. *Annals of the New York Academy of Sciences.* https://doi.org/10.1111/nyas.14225

14. **Wilkey, E. D.,** Conrad, B. N., Yeo, D. J. & Price, G. R. (2020). Shared Numerosity Representations Across Formats and Tasks Revealed with 7 Tesla fMRI: Decoding, Generalization, and Individual Differences in Behavior. *Cerebral Cortex Communications*. https://doi.org/10.1093/texcom/tgaa038

13. Conrad, B. N., **Wilkey, E. D.**, Yeo, D. J. & Price, G. R. (2020). Network topology of symbolic and nonsymbolic number comparison. *Network Neuroscience*. https://doi.org/10.1162/netn_a_00144

12. **Wilkey, E.D.**, Pollack, C., Price, G. R. (2020). Dyscalculia and typical math achievement are associated with individual differences in number specific executive function. *Child Development*, 91(2), 596-619. https://doi.org/10.1111/cdev.13194

11. Yeo, D. J**., Wilkey, E.D.,** Price, G. R. (2019). Malleability of mapping between Arabic numerals and approximate quantities: Factors underlying individual differences and the relation to math. *Acta Psychologica*, 198, 102877. https://doi.org/10.1016/j.actpsy.2019.102877

10. **Wilkey, E. D.**, & Price, G. R. (2019). Attention to number: The convergence of numerical magnitude
processing, attention, and mathematics in the inferior frontal gyrus. *Human Brain Mapping*, 1–16. https://doi.org/10.1002/hbm.24422

9. **Wilkey, E. D.**, Cutting, L. E., & Price, G. R. (2018). Neuroanatomical correlates of performance in a state-wide test of math achievement. *Developmental Science*, 21(2), e12545. http://doi.org/10.1111/desc.12545

8. Price, G. R., Yeo, D. J., **Wilkey, E. D.**, & Cutting, L. E. (2018). Prospective relations between resting-state connectivity of parietal subdivisions and arithmetic competence. *Developmental Cognitive Neuroscience*, 30, 280–290. http://doi.org/10.1016/j.dcn.2017.02.006

7. **Wilkey, E. D.**, Barone, J. C., Mazzocco, M. M. M., Vogel, S. E., & Price, G. R. (2017). The effect of visual parameters on neural activation during nonsymbolic number comparison and its relation to math competency. *NeuroImage*, *159* (August), 430–442. http://doi.org/10.1016/j.neuroimage.2017.08.023

6. Price, G. R. & **Wilkey, E. D.** (2017). Cognitive mechanisms underlying the relation between nonsymbolic and symbolic magnitude processing and their relation to math. *Cognitive Development*, *44*(September), 139–149. http://doi.org/10.1016/j.cogdev.2017.09.003

5. Yeo, D. J., **Wilkey, E. D.**, & Price, G. R. (2017). The search for the number form area: A functional neuroimaging meta-analysis. *Neuroscience & Biobehavioral Reviews*, *78*(April), 145 160. http://doi.org/10.1016/j.neubiorev.2017.04.027

4. Price, G. R., **Wilkey, E. D.**, & Yeo, D. J. (2017). Eye-movement patterns during nonsymbolic and symbolic numerical magnitude comparison and their relation to math calculation skills. *Acta Psychologica*, 176(March), 47–57. http://doi.org/10.1016/j.actpsy.2017.03.012

3. *Merkley, R., ***Wilkey, E. D.,** & *Matejko, A. A. (2016). Exploring the Origins and Development of the Visual Number Form Area: A Functionally Specialized and Domain-Specific Region for the Processing of Number Symbols? *Journal of Neuroscience*. 36, 4659–4661. DOI: http://dx.doi.org/10.1523/JNEUROSCI.0710-16.2016

2. Price, G. R., **Wilkey, E. D.**, Yeo, D. J., & Cutting, L. E. (2016). The relation between 1st grade grey

matter volume and 2nd grade math competence. *NeuroImage*, 124, 232–237. https://doi.org/10.1016/j.neuroimage.2015.08.046

1. Tripney, J., Hombrados, T. J., Newman, M., Hovish, K., Brown, C., Steinka-Fry, K., & **Wilkey, E. D.** (2013). Technical and Vocational Education and Training Training (TVET) Interventions to Improve the Employability and Employment of Young People in Low- and Middle Income Countries : Systematic Review. *Campbell Systematic Reviews*, *9*. doi:10.4073/csr.2013.9

Conference Papers, Book Chapters, Encyclopedia Entries, and Reports (n = 4)

4. ∆ Starling-Alves, **Wilkey, E. D.** (2025). Same, but Different: Sequential and Simultaneous Fraction Comparison Tasks Elicit Different Distance and Congruency Effects. *Proceedings of the Annual Meeting of the Cognitive Science Society.*

3. Price, G. R. & **Wilkey, E. D.** (2018). Developmental Dyscalculia. In The SAGE encyclopedia of intellectual and developmental disorders. E. B. Braaten (Ed.). (Vol. 1, pp 379-383). Thousand Oaks, CA. Sage. http://dx.doi.org/10.4135/9781483392271.n125

2. Wilson, S. J., & **Wilkey, E. D.** (2012). Final evaluation report: Enhanced Language and Literacy Project. Unpublished manuscript. Nashville, TN: Peabody Research Institute, Vanderbilt University.

1. Cerruti, C., **Wilkey, E. D**., (2011) Verbal overshadowing and verbal facilitation in creative cognition. In L. DellaPietra (Ed.), *Perspectives on Creativity Vol. 2*. (pp. 178-187). Cambridge, UK: Cambridge Scholars Press. download.

Manuscripts In Progress (n = 4) (in press, registered reports accepted)

Abreu-Mendoza, Roberto. A., …. Mogan, A. D., **Wilkey, E. D.** (stage 1 registered report accepted) ManyNumbers 1: A multi-lab international study of early number knowledge. *Developmental Science*. https://doi.org/10.17605/OSF.IO/2TK7U

Bhat, K. G., Mogan, A. D., Saavedra, A., Fuentes-Jimenez, M., Siebert, J. M., Anya Ma, W., Townley-Flores, C., Richie-Halford, A. C., The ROAR Developer Consortium, **Wilkey, E. D.,*** Yeatman. J. D.* https://osf.io/preprints/osf/em3bg_v1. Shared and Unique Influences of Phonological Processing on Reading and Math
*Denotes shared senior authorship

Khan, O. A., Peters, L., Kwok, F. Y., Lynn, A., Ansari, D., **Wilkey, E. D.** (*accepted pending revisions*) Neural Connectivity in Dyscalculia: A Resting-State fMRI Study Using ROI-Based and Connectome-Based Approaches in Children with Mathematical Learning Difficulties

∆ Starling Alves, I., **Wilkey, E. D.** (*under review*) Congruency and distance effects vary across simultaneous and sequential two-digit integer, fraction, and decimal comparison tasks. (preprint: https://osf.io/preprints/psyarxiv/t4nzb_v1)

CONFERENCE PRESENTATIONS

International Conference Talks & Poster Presentations (n = 52)
*conference talk
underlined indicates mentee during initiation of project

*52. **Wilkey, E.D.**, Mogan, A. D., Starling-Alves, I. Working with numbers: Exploring the domain-specificity of executive functions. **Symposium talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Hong Kong. June, 2025.

51. Mogan, A. D., Bhat, K. G., Lau, N. T. T., Murray, A., Bashir, M., **Wilkey, E.D.**. Working with numbers: Does task content influence the measurement of executive functions and their relation to math ability? **Poster presented** at the annual conference of the Mathematical Cognition and Learning Society, Hong Kong. June, 2025.

50. Bhat, K. G., Mogan, A. D., Townley-Flores, C., Richie-Halford, A. D., The ROAR Developer Consortium, Domingue, B., **Wilkey, E.D.,** Yeatman, J. D.. Effects of response modality on math fluency assessment. **Poster presented** at the annual conference of the Mathematical Cognition and Learning Society, Hong Kong. June, 2025.

*49. **Wilkey, E. D.**, Khan, O. A., Starling-Alves, I.. Investigating the Neural Profiles of Children Identified for Math Support with resting-state functional connectivity MRI. **Talk** presented at the Educational Neuroscience Collaboration and research UK (ENCoRE) 2025, University College London, London, UK. April 2025.

48. Murray, A.C., Arif, Z., Harriott, E.M., Vinci-Booher, S., Cutting, L.E., & **Wilkey, E.D.**. (2025) Task-based fMRI analysis of symbol form areas in 6-8 year-old children. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA. March 2025.

*47. Kumar, S. C., Joy, A., Varnell, S., McElveen, T. L., Miller-Cotto, D., Prishker, N., **Wilkey, E. D.**, Ribner, A. D., Kim, J., Valdivia, I., Grose, G. E., Powell, S. R., Schmitt, S. A., Purpura, D. J., & Hornburg., C. B.. *How children's drawings of mathematicians relate to their gender and math identity.* **Symposium presented** at the Biennial Meeting of the Society for Research in Child Development (SRCD), Minneapolis, Minnesota, USA, May 2025

*46. **Wilkey, E. D.**, Mogan, A. D., Starling-Alves, I. (2024) Working with numbers: Two studies exploring the domain-specificity of executive functions. **Symposium talk presented** at the biennial conference of the International Mind, Brain, and Education Society, KU Leuven, Belgium. July 2024.

45. Cook, M., Starling-Alves, I., Shanley, L., Moore, M., Smith, J., Sabb, F., Wilkey, E. D., Clarke, B. (2024) Examining domain general cognitive skills and functional connectivity as predictors of mathematics achievement for first grade students. **Poster presented** at the biennial conference of the International Mind, Brain, and Education Society, KU Leuven, Belgium. July 2024.

*44. Mogan, A. D., Guang., C., Bishop, C., Zajas, M., Alvarez, S., Whitsitt, C., **Wilkey E. D.**, McNeil, N. M. (2024) Bridging the divide: Comparing the efficiency and transparency of two division

algorithms. **Flash talk and poster** presented at the biennial conference of the International Mind, Brain, and Education Society, KU Leuven, Belgium. July 2024.

43. Mogan, A. D., Lau, N. T. T., Murray, A., Bashir, M., **Wilkey, E. D.** (2024) Working with numbers: Does task content influence the measurement of executive functions and their relation to math ability? **Poster presented** at the annual conference of the Mathematical Cognition and Learning Society, Washington DC, USA. June, 2024.

42. Starling Alves, I., Shanley, L., Cook, M., Moore, M., Smith, J., Sabb, F. W., Clarke, B., **Wilkey, E. D.** (2024) Resting state functional connectivity in 1st graders identified for math support in the classroom. **Poster presented** at the annual conference of the Mathematical Cognition and Learning Society, Washington DC, USA. June, 2024.

41. **Wilkey, E.D.**, Starling-Alves, I., Kwok, F.Y., Peters, Ansari, D. (2024) Functional activation patterns in developmental dyscalculia across arithmetic, magnitude processing, and visuospatial working memory tasks. **Poster presented** at the annual conference of the Mathematical Cognition and Learning Society, Washington DC, USA. June, 2024.

40. Reinhardt, M. A., Valdivia, I., Kim, J., McElveen, T. L., Mayes, A. S., Miller-Cotto, D., **Wilkey, E. D.**, Ribner, A. D., Prishker, N., Andres-Salgarino, M. A., Powell, S. R., Schmitt, S. A., Purpura, D. J., & Byrd Hornburg, C. (2024) Relations among students' experience of the math error climate, math identity, and math problem solving performance. **Poster presented** at annual meeting of the Cognitive Development Society (CDS), Pasadena, California, USA. March 2024.

39. Starling Alves, I., Shanley, L., Cook, M., Moore, M., Smith, J., Sabb, F. W., Clarke, B., **Wilkey, E. D.** (2023) Functional Connectivity Profiles in 1st Graders Identified for Math Support in the Classroom. **Poster presented** to the annual Flux Congress, Santa Rosa, California, USA. September 2023.

*38. Starling Alves, I. & **Wilkey, E. D**. (2023) Understanding the relations between magnitude processing, executive functions, and mathematics achievement. **Flash talk presented** at the Numerical Cognition Meets Executive Functions Symposium, Surrey, UK. June 2023.

*37. Starling-Alves, I**., Wilkey, E. D.** (2023) Beyond integers: Understanding the cognitive mechanism and neural bases of rational number development. **Pre-registration flash talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Loughborough, England. June, 2023.

*36. **Wilkey, E. D**. (2023) The domain-specificity of domain-generality: Attention, executive function, and mathematical skills. **Symposium talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Loughborough, England. June, 2023.

*35. Cook, M., Shanley, L., **Wilkey, E. D.**, Clarke, B., Sabb, F. (2023) Patterns of network connectivity associated with phonological memory, language, and numerical processing for multilingual first graders. **Flash talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Loughborough, England. June, 2023.

*34. Lau, N. T. T., **Wilkey, E. D.**, Legacé-Cusiac, R., Ansari, D. (2023) Examining the concurrent validity of extant measures of approximate number system as measured by the dot comparison paradigm. **Symposium talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Loughborough, England. June, 2023.

33. **Wilkey, E.D.,** Kwok, F.Y., Peters, Ansari, D. (2023) Developmental Dyscalculia is not associated with atypical brain activation: an fMRI study. **Poster presented** at the Organization of Human Brain Mapping Annual Meeting, Montreal, Canada. July, 2023.

*32. McElveen, T., Hornburg, C., **Wilkey, E. D**., Ribner, A., Schmitt, S., Duncan, R., Miller-Cotto, D., Mayes, A., Andres-Salgarino, M. B., Powell, S., Purpura, D. (2023) Examining Classroom-Based Executive Functioning Tasks and Relations to Elementary Students' Mathematical Word-Problem Solving. **Symposium paper presented** at the Biennial Meeting of the Society for Research in Child Development (SRCD), Salt Lake City, Utah, USA, March 2023.

*31. **Wilkey, E.D.,** Kwok, F.Y., Peters, L., Ansari, D. (2022) Developmental Dyscalculia is not associated with atypical brain activation during basic number processing, mental arithmetic, or visuo-spatial working memory: an fMRI study. **Symposium talk presented** at the annual conference of the Mathematical Cognition and Learning Society, Antwerp, Belgium. June 2022.

30. Kwok, F.Y., **Wilkey, E.D.,** Peters, L. Khiu, E., Cheung, P., Lee, K., Bull, R., Ansari, D. (2022) No evidence for functional neuroanatomical deficits in children with dyscalculia. **Poster presented** at the Organization of Human Brain Mapping Annual Meeting, Glasgow, Scotland. June, 2022.

29. Hornburg, C. B., McElveen, T. L., Miller-Cotto, D., **Wilkey, E. D.**, Ribner, A. D., Prishker, N., Choe, K. W, Mayes, A. S., Andres-Salgarino, M. B., Powell, S. R., Schmitt, S. A., & Purpura, D. J. (2022). Relations among aense of belonging to math, math identity, and math achievement in the late elementary grades. **Poster presented at** the annual conference of the Mathematical Cognition and Learning Society, Antwerp, Belgium. June 2022.

28. Cook, M., Shanley, L., **Wilkey, E. D.,** Sabb, F., Clarke, B. (2022). Examining patterns of network connectivity associated with symbolic and non-symbolic numerical magnitude processing for first graders using rs-fcMRI. **Poster presented at** the annual conference of the Mathematical Cognition and Learning Society, Antwerp, Belgium. June 2022.

27. Lynn, Andrew, **Wilkey, E. D.**, Price, G. R. (2021). Predicting children's math skills from functional brain network connectivity. **Poster presented at** the Organization of Human Brain Mapping Annual Meeting. June 2021 2021.

26. Lynn, Andrew, **Wilkey, E. D.**, Price, G. R. (2021). Canonical network functional connectivity predicts math achievement in childhood: A connectome-based predictive modeling approach. **Poster presented at** the Flux Virtual Congress. September 2021.

*25. **Wilkey, E. D.** (accepted 2020 – conference canceled). Attention to Number: The convergence of numerical magnitude processing, attention, and mathematics development. **Symposium talk presented**

at the biennial conference of the International Mind, Brain, and Education Society, Montreal, Canada. June 2020.

*24. **Wilkey, E. D.**, Conrad, B. N., Price, G. R. (2020) Shared Representation of Symbolic and Nonsymbolic Number, But Overlap Negatively Predicts Math. **Symposium talk presented at** the annual conference of the Organization of Human Brain Mapping, Montreal, Canada. June 2020.

23. **Wilkey, E. D.**, Conrad, B. N., Price, G. R. (2020) Shared Representation of Symbolic and Nonsymbolic Number, But Overlap Negatively Predicts Math. **Poster presented at** the annual conference of the Organization of Human Brain Mapping, Montreal, Canada. June 2020.

22. **Wilkey, E. D.**, Conrad, B. N., Price, G. R. (2020) Individual Differences in Shared Representation of Symbolic and Nonsymbolic Number at 7T fMRI. **Poster presented at** the annual conference of the Association for Psychological Science, Chicago Illinois. May 2020.

*21. **Wilkey, E. D.** & Price, G. R. (2019). Attention to Number: The convergence of numerical magnitude processing, attention, and mathematics. **Symposium talk presented at** the annual conference of the Mathematical Cognition and Learning Society, Ottawa, Ontario. June 2019.

20. Pollack, C., **Wilkey, E. D.**, Price, G. R. (2019) What predicts middle school students' growth in symbolic number comparison performance? **Poster presented at** the biennial conference of the Society for Research in Child Development, Baltimore, Maryland, USA. March 2019.

19. **Wilkey, E.D.** & Price, G. R. (2018). The influence of attentional modulation on numerical magnitude processing mechanisms and their relation to math achievement. **Poster presented at** the biennial conference of the International Mind, Brain, and Education Society, Los Angeles, USA. September 2018.

18. Conrad, B. N., **Wilkey, E. D.**, & Price, G. R. (2018). Frontoparietal reorganization during symbolic and nonsymbolic number processing. **Poster presented at** the annual conference of the Society for Neuroscience, San Diego. November 2018.

17. Yeo, D. J**., Wilkey, E.D.,** Price, G. R. (2018). Malleability of mapping between Arabic numerals and approximate quantities: Factors underlying individual differences and the relation to math. **Poster presented at** the Mathematics Education Center's 3rd annual symposium: The symbol grounding problem, Loughborough, UK. June 2018.

16. **Wilkey, E.D.,** Pollack, C., & Price, G.R. (2018). ANS acuity, mathematics achievement, and dyscalculia: Evidence for a domain-specific executive function relation. **Poster presented at** the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA. March 2018.

*15. Conrad, B. N., **Wilkey, E. D.**, & Price, G. R. (2018). Network Topology of Symbolic and Nonsymbolic Number Processing: A 7T fMRI Study. **Data blitz talk presented** at the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA. March 2018.

14. Conrad, B. N., **Wilkey, E. D.**, & Price, G. R. (2018). Network Topology of Symbolic and

Nonsymbolic Number Processing: A 7T fMRI Study. **Poster presented at** the Annual Meeting of the Cognitive Neuroscience Society, Boston, MA. March 2018.

*13. **Wilkey, E.D.,** Barone, J. C., Mazzocco, M. M. M., Vogel, S. E., & Price, G. R. (2017). The Influence of Visual Cues on Nonsymbolic Number Comparison and Their Relation to Math Competency. **Nanosymposium talk presented at** the annual conference of the Society for Neuroscience, Washington, DC. November, 2017.

12. Yeo, D. J., **Wilkey, E. D.,** & Price, G. R. (2017). An ALE meta-analytical search for the putative number form area and its associated network. **Poster presented at** the annual conference of the Organization of Human Brain Mapping, Vancouver, Canada. June 2017.

11. **Wilkey, E. D.,** & Price, G. R. (2017). Symbolic and Nonsymbolic Magnitude Processing, the Neural Distance Effect, and Math Achievement. **Poster presented at** the annual conference of the Organization of Human Brain Mapping, Vancouver, Canada. June 2017.

10. **Wilkey, E.D.,** Barone, J. C., Mazzocco, M. M. M., Vogel, S. E., & Price, G. R. (2017). The Influence of Visual Cues on Nonsymbolic Number Comparison and Their Relation to Math Competency. **Poster presented at** the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA March 2017.

9. Yeo, D. J., **Wilkey, E. D.**, & Price, G. R. (2017). The search for the putative number form area: A meta-analysis. **Poster presented at** the Annual Meeting of Cognitive Neuroscience Society, San Francisco, CA, March 2017.

8. **Wilkey, E.D.**, Barone, J. C., Mazzocco, M. M., Vogel, S. E., Price, G. R. (2016). The Influence of Non-Numeric Visual Parameters on Performance and Neural Activation Patterns During Nonsymbolic Number Comparison. **Poster presented at** the biannual conference of the International Mind, Brain, and Education Society, Toronto, Canada. September 2016.

7. Yeo, D. J., **Wilkey, E.D.**, Price, G. R. (2016). The relation between numerical estimation flexibility and mathematical competence. **Poster presented at** the biannual conference of the International Mind, Brain, and Education Society, Toronto, Canada. September 2016.

6. **Wilkey, E.D.,** Price, G. R. (2016). Eight-Year Growth in Math Skills and Its Relationship to Nonsymbolic and Symbolic Number Processing. **Poster presented at** the NIH and IES funded Math Cognition and Learning Conference special topic: The Role of Linguistic and Cultural Factors in Mathematical Cognitive Development, Ft. Worth , Texas. May 2016.

5. Yeo, D. J., **Wilkey, E.D.,** Price, G. R. (2016). Eye movement patterns underlying symbolic and nonsymbolic numerical magnitude comparison. **Poster presented at** the NIH and IES funded Math Cognition and Learning Conference special topic: The Role of Linguistic and Cultural Factors in Mathematical Cognitive Development, Ft. Worth, Texas. May 2016.

4. **Wilkey, E.D.,** Price, G. R. (2016). Task-Specific Processing of Arabic Digits in the Left Angular Gyrus. **Poster presented at** the annual conference of Cognitive Neuroscience Society, New York City, NY. April 2016.

3. Price, G. R, **Wilkey, E.D**., Yeo, D. J., Cutting, L. E. (2015). Resting-State Connectivity At 1st Grade Predicts Math Competence at 2nd Grade. **Poster presented at** the annual conference of the Society for Neuroscience, Chicago, IL. October 2015.

2. **Wilkey, E.D.,** Price, G. R, Cutting, L. E. (2015). Neuroanatomical Correlates of Performance in State-Wide Test of Math Achievement. **Poster presented at** the annual conference of the Cognitive Neuroscience Society, San Francisco, CA March 2015.

1. [+]Price, G. R, **Wilkey, E.D**., Cutting, L. E. (2014). Neuroanatomical predictors of 3rd Grade Math Competence. **Poster presented at** the biannual conference of the International Mind, Brain and Education Society, Fort Worth, TX. November 2014.

[+]*outstanding poster award; only one award for research posters at conference*

Invited Talks

9/27/24 *Executive function and math learning difficulties: How we define EFs in context and what that means for how we measure them,* presented at the workshop Developoing a Toolkit: Studying the Interactions between Exectuive Function and Learning Disabilities at the 2024 Flux Society meeting, pre-conference workshop. Baltimore, MD, USA

2/13/24 *The domain-specificity of domain-generality: Attention, executive function, and academic skills* presented at the Brain Health and Research Institute Seminar Series at Kent State University, Kent, OH, USA.

9/7/23 *The domain-specificity of domain-generality: Attention, executive function, and academic skills* presented at the Science of Learning Symposium at the 2023 Flux Congress (The Society for Developmental Cognitive Neuroscience), Santa Rosa, CA, USA.

6/9/23 *The domain-specificity of domain-generality: Attention, executive function, and academic skills* presented at the Numerical Cognition Meets Executive Functions symposium, University of Surrey, Guildford, UK

3/24/23 *The Neurocogntive Foundations of Math* presented at the Stanford Graduate School of Education at Stanford University, Stanford, *California, USA*

6/14/22 The Dyslexia Foundation: Extraordinary Brain Series XVIII conference talk on "Neurocognitive Foundations of Math Skills," *Bermuda*

3/29/22 International Mind, Brain, & Education Society: Ask-Me-Anything Series talk with Lina Shanley on research in Mind, Brain, and Education, *virtual*

3/8/22	Centre for Mathematical Cognition Seminar Talk on "Challenging & Investigating the Link Between Symbolic and Nonsymbolic Numbers", *virtual appearance for Center for Mathematical Cognition, Loughborough University, UK*
2/14/22	Sharpening, Focusing, Developing paper presentation for the Learning, Research, & Development Center lab presentation and the University of Pittsburgh, *virtual*
8/20/21	Academic Job Market panel talk organized by the Mathematical Cognition & Learning Society (MCLS) 2021, *virtual*
7/30/21	Preparing for the Academic Job Market presented for the Postdoc Professional Development Series at University of Western Ontario, London, Ontario, Canada, *virtual*
9/16/20	*The Foundations of Mathematics* presented at the Educational Psychology Colloquium at University of Alabama, Tuscaloosa, *virtual*
2/26/20	*Going for the Big Prize* presented for the Scholars to Leaders Speaker Series at Western University; London, Ontario
6/16/19	Workshop on Open Science in Numerical Cognition at the Mathematical Cognition and Learning Society Annual Conference; Carleton University; Ottawa, Ontario
5/31/19	Attention to Number, Neurocognitive Foundations of Mathematical Competence presented at the Visiting Scholar, Research Group at the Center on Teaching and Learning, University of Oregon; Eugene, Oregon
5/2/19	Panel Discussion on Securing a Postdoctoral Fellowship for the Postdoctoral Research Forum; Western University; London, Ontario; Canada
11/13/18	Open Science Talk for BrainsCAN, Western University, London, ON
7/20/2016	*Learning and the Brain: Where are we now* (keynote address) at the Making Math Matter: Integrating Math Skills in Grades PK – 8; Teacher Training; Memphis, TN
7/19/16	*The Mathematical Brain* **presented at** Making Math Matter: Integrating Math Skills in Grades PK – 8; Teacher Training; Memphis, TN
3/1/16	*The Mathematical Brain presented at* Brain Awareness Month; talk open to the general public*;* Nashville, TN

PRESS

https://news.vanderbilt.edu/2024/05/15/christensen-and-wilkey-emerging-leaders-in-psychological-sciences/

https://medschool.vanderbilt.edu/basic-sciences/2024/03/07/educational-neuroscience-program-is-epicenter-of-research/

https://notables.vkcsites.org/2023/12/leading-the-vanguard-eric-wilkey/

TEACHING

Vanderbilt University

2022-2024 Cognitive Aspects of Human Development (PSY-PC 2250), Fall and Spring

Louisiana State University

2022 Cognitive Neuroscience (PSYC- 4041)

MENTORING / SUPERVISION

Vanderbilt University

Postdoctoral Scholars
Isabella Starling Alves (2022 – current)

Doctoral Students
Alexa Mogan (2023 – current), Psychology, Vanderbilt University
Omair Khan (2023 – current), Neuroscience, Vanderbilt University

Master' Students
Siyu Liu (2024 – current), Cognitive Psychology in Context, Vanderbilt University

Undergraduate Honor's Thesis Students
Amelia Murray (2023 – current)

Vanderbilt Undergraduate Summer Research Program (VUSRP)
Amelia Murray (2024)
Kanoe Bonilla (2023), Littlejohn Summer Research Scholar Award

Master's Thesis / MAP Committees
Yanbin Niu (2023 – 2024), Developmental Psychology
Anna Miller (2022 – 2024), Special Education
Vishakha Agrawal (2025 – current), Special Education

PhD Advisory Committees

Internal **(Vanderbilt)**

Sanjana Ravi (2025 – current), Clinical Psychology, Vanderbilt University, Doctoral Committee
Yanbin Niu (2023 – current), Developmental Psychology, Vanderbilt University, Doctoral Committee
Emily Harriott (2024 – current), Neuroscience, Vanderbilt University, Doctoral Committee Chair
Anna Miller (2023 – current), Special Education, Vanderbilt University, Doctoral Committee
Alisha Compton (2022 – current), Neuroscience, Vanderbilt University, Doctoral Committee
Jake Kaufman (2022 – 2023), Psychology, Vanderbilt University, Doctoral Committee

External
Alexander Lawriw (2022 – current), Psychology, Louisiana State University
Madison Cook (2023 – current), School Psychology, University of Oregon

Western University

Undergraduate Honor's Thesis Students
Julia Schmid (2019 - 2022), honors undergraduate in Neuroscience
- co-advisor for NSERC award (Summer 2021)
- co-advisor for independent study (Spring 2021)

Ashini Peiris (2019 - 2022), honors undergraduate in Neuroscience
- co-advisor for Diversity in Neuroscience Summer Internship (2021)
- co-advisor for USRI award (undergraduate summer research internship, 2020)

Ira Gupta (2019 - 2022), honors undergraduate in Neuroscience
- co-advisor for USRI award (undergraduate summer research internship, 2021)
- co-advisor for USRI award (undergraduate summer research internship, 2020)

SERVICE

Editorial Boards:
Developmental Psychology, Consulting Editor

Ad hoc Journal Article Reviews:
Acta Psychologica
Attention, Perception, & Psychophysics
Brain and Cognition
Cerebral Cortex
Child Development
Child Neuropsychology
Cognition
Cognitive Science
Communications Biology
Current Research in Behavioral Sciences
Developmental Psychology
Developmental Cognitive Neuroscience
Developmental Science
eLife
Human Brain Mapping
Journal of Applied Developmental Psychology
Journal of Cognition
Journal of Cognition and Development
Journal of Cognitive Neuroscience
Journal of Educational Psychology
Journal of Experimental Child Psychology
Journal of Experimental Psychology: Human Perception and Performance
Journal of Neuroscience
Mind, Brain, and Education
Nature Communications
Neuroimage
Neuroimage-Clinical

NPJ Science of Learning
Proceedings of the National Academy of Sciences (PNAS)
Trends in Neuroscience & Education

Grant Review Committees:
2022 National Science Foundation *(ad hoc reviewer)*
2022 National Science Foundation, panel member
2021 National Science Foundation *(ad hoc reviewer)*
2020 Singapore National Institute of Education
2020 National Science Foundation, panel member
2019 National Science Foundation *(ad hoc reviewer)*
2019 Postdoctoral Fellowship Reviewer, University of Western Ontario

Conference Committees:
2024 Mathematical Cognition and Learning Society, Scientific Committee
2023 Mathematical Cognition and Learning Society, Scientific Committee
2021 Mathematical Cognition and Learning Society, Scientific Committee
2018 International Mind, Brain, and Education Conference Poster Committee (Co-Chair)

Thesis Committees:
2023 Undergraduate Honors Thesis Committee; Amelia Shaddinger, Vanderbilt University
2018 Undergraduate Honors Thesis Committee; Olivia Lasala, Vanderbilt University
2018 Undergraduate Honors Thesis Committee; Jack Lyden, Vanderbilt University
2017 Undergraduate Honors Thesis Committee; Rachel Telles, Vanderbilt University

Academic Committees:
2025 Vanderbilt Graduate Faculty Council, Member
2024 Vanderbilt Brain Institute, Neuroscience Graduate Program, Admissions Committee
2023 Peabody Psychological Sciences, Graduate Studies Committee
2023 Vanderbilt Brain Institute, Neuroscience Graduate Program, Admissions Committee
2016 Neuroscience Student Organization- elected to Curriculum Committee, Vanderbilt University
2015 Neuroscience Student Organization- elected to Curriculum Committee, Vanderbilt University

University Events:
2024 Vanderbilt University Undergraduate Summer Research Program (VUSRP),
2023 Vanderbilt University Postdoc Association Annual Symposium, Alumni Panel Speaker
2023 Vanderbilt University Undergraduate Research Fair Poster Reviewer (VURF)
2021 Western University – Brain and Mind Institute: *Lab Fair Event Organizer*
2020 Western University – Brain and Mind Institute: *Lab Fair Event Organizer*
2019 Western University – Brain and Mind Institute: *Lab Fair Event Organizer:* Proposed and help organize inaugural Lab Fair event for undergraduates interested in research to connect with research labs at the Brain and Mind Institute

Symposium Organized

Title: *Current Perspectives in Developmental Dyscalculia*

Date: June, 2022
Event: Annual Meeting of the Mathematical Cognition & Learning Society (MCLS)
Role: Organizer and presenter
Other Presenters: Flávia H. Santos, Bert De Smedt, Mojtaba Soltanlou, Daniel Ansari (*chair*)

ADVANCED COURSES ATTENDED

2020	NeuroHackademy	online: https://neurohackademy.org/
2018	Open Science Workshop	Cork, Ireland
2017	Connectivity Course: Structural and Functional	Boston, USA
2016	Summer Institute in Cognitive Neuroscience	UC Santa Barbara, USA
2015	Freesurfer Training Course	Boston, USA

LANGUAGE, SOFTWARE, AND CODING SKILLS

- **English:** mother tongue; **Spanish:** upper intermediate/advanced
- Proficient at handling large-scale datasets, complex analyses, and creating graphical displays in: **R, MATLAB, jamovi, Python, SPSS, STATA, JASP** (in order of competency).
- Proficient at neuroimaging analysis in: **fMRIPrep, Brainvoyager (Neuro-elf, batch processing, Python scripting), Freesurfer, MATLAB, CONN Toolbox, and SPM.**
- Coding skills in: **R, Python, BASH, and C++, Markdown, R Markdown, Git**, **MATLAB**
- Experiment presentation in: **PsychoPy, EPrime, PsychToolbox, Experiment Builder, Presentation, Pavlovia, Qualtrics, Open Sesame**
- Database creation and management using REDCAP & Filemaker