

Alexa Ellis

Assistant Professor
Human Development and Family Studies
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PROFESSIONAL AND ACADEMIC POSITIONS

Assistant Professor , Human Development and Family Studies University of Alabama	2022-Present
Postdoctoral Research Associate , Human Development and Family Science Purdue University	2020-2022

EDUCATION AND TRAINING

Ph.D. , Combined Program in Education and Psychology University of Michigan	2020
M.S. , Developmental Psychology University of Michigan	2015
B.A. , Major: Psychology, Minor: French University of Michigan	2014

RESEARCH SUPPORT

EXTERNAL FUNDING

Heising-Simons Foundation , Grant #2021-2596 (\$1,698,222). Title: Promoting Math Language in Dual Language Learners Through Picture Books: Evaluating Technological Supports for Dialogic Reading Role: Co-Investigator	2021-2025
Caplan Foundation for Early Childhood , Grant #00100470 (\$49,896). Title: A Tool for Aligning Parent-Driven Math Activities with Children's Math Skills Role: Co-Principal Investigator	2022-2023
National Science Foundation , Graduate Research Fellowship (\$138,000). Award Number: 2016225239	2015-2020

INTERNAL FUNDING

Center for Innovative Research in Autism , Pilot Research Program at UA (\$15,000). Title: Classroom language environments of neurodiverse toddlers Role: Principal Investigator	2023-2024
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SUBMITTED

AERA NSF , Secondary Dataset Research Grant (\$35,000). Title: The Evolving Home Mathematics Environment: International Evidence Across Four TIMSS Waves Role: Principal Investigator	Submitted 2026
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NOT FUNDED

Caplan Foundation for Early Childhood (\$55,225.80). Title: Using the Mosaic Approach to Study Children's Sense of Self-Regulation Role: Co-Principal Investigator	Submitted 2026
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National Institutes of Health, NICHD R21 (\$469,281). Submitted 2025
Title: Accurately Capturing Early Language Environments: Setting a Baseline for Daily Interactions | **Role:** Principal Investigator

The Jacobs Foundation, LEVANTE (\$414,026). Submitted 2024
Title: Children's Early Language Environment, School Readiness Skills, and Learning Trajectories | **Role:** Co-Principal Investigator

National Institutes of Health, NICHD R21 (\$424,147). Submitted 2024
Title: Enhancing Early Language Development: Interventions in Home and Childcare Environments | **Role:** Principal Investigator

National Science Foundation, EDU-ECR Core (\$1,263,338). Submitted 2023
Title: Collaborative Research: Within and Between Approach to a Cross-National Longitudinal Evaluation of the Home Mathematics Environment: Understanding Changes Across Development and Context | **Role:** Principal Investigator

PUBLICATIONS * denotes student

23. **Ellis, A.**, Devlin, B. L., Day, E., Ehrman, P. C., Elicker, J., Duncan, R. J., Schmitt, S. A., & Purpura, D. J. (*in press*). Developmental Differences in Classifiers of Low and High Mathematics Performance: A Classification and Regression Tree Analysis. *Journal of Numerical Cognition*. <https://doi.org/10.23668/psycharchives.22121>
22. Miller-Cotto, D., Smith, L.V., Ribner, A.D., Ahmed, S.F., & **Ellis, A.** (2026). When executive function assessments shape opportunity: Using developmental science to inform policy and practice. *Policy Insights from Behavioral and Brain Sciences*. <https://doi.org/10.1177/23727322261470338>
21. Cosso, J., Visconti, G., **Ellis, A.**, Purpura, D. J. (2026). Hidden Bias: How a Language Screener Can Misrepresent Dual Language Learner Performance in Mathematics. *Educational Researcher*, 0013189X261436769. <https://doi.org/10.3102/0013189X261436769>
20. Miller-Cotto, D., Ribner, A., Ahmed, S., Ellis, A., & Czerwiński, S. (2025). Examining ethnic/racial measurement invariance in fourth-grade executive function: A registered report of data from the Early Childhood Longitudinal Study—Kindergarten. *Journal of Educational Psychology*. Advance online publication. <https://dx.doi.org/10.1037/edu0000985>
19. **Ellis, A.**, Connor, D. O., Cosso, J., & Purpura, D. J. (2025). Examining the factor structure of the home learning environment. *Journal of Experimental Child Psychology*, 252, 106186. <https://doi.org/10.1016/j.jecp.2024.106186>
18. Cosso, J., **Ellis, A.**, Camargo Salamanca, S. L., Susperreguy, M. I. (2025). Variation in Mathematical Performance: A Multilevel Analysis Exploring Students' and Schools' Characteristics. *Journal of Numerical Cognition*. <https://doi.org/10.5964/jnc.14087>
17. Varnell, S.*, Ehrman, P., Kumar, S. C., Sandel, J., **Ellis, A.**, & Purpura, D. J. (2025). What I say is not what I do: Gender differences in the home mathematics environment. *Developmental Psychology*. Advance online publication. <https://doi.org/10.1037/dev0001901>

16. **Ellis, A.,** & Davis-Kean, P. E. (2024). Analyzing teacher audio: The contribution of classroom mathematics instruction to early numeracy. *The Journal of Educational Research*, 1-14. <https://doi.org/10.1080/00220671.2024.2393607>
15. Davis-Kean, P. E., **Ellis, A.,** & Syed, M. (2024). Editorial: Registered Reports with secondary developmental data: Introduction to the special issue. *Infant and Child Development*, 33: e2506. <https://doi.org/10.1002/icd.2506>
14. Devlin, B. L., **Ellis, A.,** Zehner, T. M., Duncan, R. J., Elicker, J., Purpura, D. J., & Schmitt, S. A. (2024). Contributions of preschool behavioral self-regulation and social skills to growth in different domains of early math knowledge. *Journal of Experimental Child Psychology*, 241, 105867. <https://doi.org/10.1016/j.jecp.2024.105867>
13. Kim, M. H., Buford, K., **Ellis, A.,** Davis-Kean, P. E., Antony, C., Braun, C., Hurst, T., & Todd, J. (2023). A metascience investigation of inclusive, open, and reproducible science practices in research posters at the 2021 SRCD biennial meeting. *Child Development*, 00, 1–15. <https://doi.org/10.1111/cdev.14059>
12. Ehrman, P.*, **Ellis, A.,** & Purpura, D. J. (2023). Goldilocks and the home mathematics environment: Parents' rate activities 'too easy,' 'just right,' or 'too hard' across early development. *Infant and Child Development*, 32(6), e2458. <https://doi.org/10.1002/icd.2458>
11. Purpura, D. J., O'Rear, C. D., **Ellis, A.,** Logan, J. A. R., Westerberg, L., Ehrman, P., King, Y. A., Vander Tuin, M., Nordgren, I., Anderson, K., Cosso, J., Zippert, E., Napoli, A. R., Hornburg, C. B., Schmitt, S. A., & Dobbs-Oates, J. (2023). Unique and Combined Effects of Quantitative Mathematical Language and Numeracy Instruction Within a Picture Book Intervention: A Registered Report. *Journal of Educational Psychology*. <https://dx.doi.org/10.1037/edu0000820>
Selected as an Editor's Choice article
10. **Ellis, A.,** Cosso, J., Duncan, R. J., Susperreguy, M. I., Simms, V., & Purpura, D. J. (2023). International Comparisons of the Home Mathematics Environment and Academic Achievement. *British Journal of Educational Psychology*, e12625. <https://doi.org/10.1111/bjep.12625>
9. Ribner, A., Ahmed, S. F., Miller-Cotto, D., **Ellis, A.** (2023). The role of executive function in shaping the longitudinal stability of math achievement during early elementary grades. *Early Childhood Research Quarterly*, 64, 84-93. <https://doi.org/10.1016/j.ecresq.2023.02.004>
8. Ahmed, S.F., **Ellis, A.,** Ward, K.P., Chaku, N., & Davis-Kean, P.E. (2022) Working memory development from early childhood to adolescence using two nationally representative samples. *Developmental Psychology*, 58(10), 1962–1973. <https://doi.org/10.1037/dev0001396>
7. Cosso, J.*, **Ellis, A.,** O'Rear, C. D., Zippert, E. L., Schmitt, S. A., & Purpura, D. J. (2022). Conceptualizing the factor structure of parents' math anxiety and associations with children's mathematics skills. *Annals of the New York Academy of Sciences*, 1511(1), 119-132 <https://doi.org/10.1111/nyas.14736>
6. Davis-Kean, P. E., Domina, T., Kuhfeld, M., **Ellis, A.,** & Gershoff, E. T. (2022). It Matters How You Start: Early Numeracy Mastery Predicts High School Math Course-Taking and College Attendance. *Infant and Child Development*, 31(2), e2281. <https://doi.org/10.1002/icd.2281>
Recognized by Wiley for being a Top Cited Article in 2022

5. **Ellis, A.**, Susperreguy, M. I., Purpura, D. J., & Davis-Kean, P. E. (2021). Conceptual Replication and Extension of the Relation Between the Number Line Estimation Task and Mathematical Competence Across Seven Studies. *Journal of Numerical Cognition*, 7(3), 435-452. <https://doi.org/10.5964/jnc.7033>
4. **Ellis, A.**, Ahmed, S. F., Zeytinoglu, S., Isbell, E., Grammer, J.K., Gehring, W. J., Calkins, S. D., Leerkes, E. M., Morrison, F. J. & Davis-Kean, P. E. (2021). Reciprocal associations between executive function and academic achievement: A conceptual replication of Schmitt et al. (2017). *Journal of Numerical Cognition*, 7(3), 453-472. <https://doi.org/10.5964/jnc.7047>
3. Hornburg, C. B., Borriello, G. A., Kung, M., Lin, J., Litkowski, E., Cosso, J., **Ellis, A.**, King, Y. A., Zippert, E., Cabrera, N. J., Davis-Kean, P., Eason, S. H., Hart, S. A., Iruka, I. U., LeFevre, J.-A., Simms, V., Susperreguy, M. I., Cahoon, A., Chan, W. W. L., ... Purpura, D. J. (2021). Next Directions in Measurement of the Home Mathematics Environment: An International and Interdisciplinary Perspective. *Journal of Numerical Cognition*, 7(2), 195-220. <https://doi.org/10.5964/jnc.6143>
2. Davis-Kean, P. E., & **Ellis, A.** (2019) An overview of issues in infant and developmental research for the creation of robust and replicable science. *Infant Behavior and Development*, 57, 101339. <https://doi.org/10.1016/j.infbeh.2019.101339>
1. **Ellis, A.**, Hu, X., Smith, C., Davis-Kean, P. E., & Kovelman, I. (2018). Sharing as a model for understanding division. *Neuroreport*, 29(11), 889- 893. <https://doi.org/10.1097/WNR.0000000000001050>

CHAPTERS

- Ribner, A., **Ellis, A.** (*in press*). Teacher math talk in the early childhood classroom and how mathematics and language interactions intersect in school. Invited Chapter in *The Intersection of Language and Mathematics: Theories, Empirical Evidence, and Future Directions*.
- Ellis, A.**, Cosso, J., & Purpura, D. J. (*in press*). The role of language in mathematics: A developmental and contextual perspective. Invited Chapter in *Routledge Handbook of Mathematical Cognition*.
- Ahmed, S. F, Chaku, N., Waters, N. E., **Ellis, A.**, & Davis-Kean, P. E. (2023). Developmental cascades and educational attainment. *Advances in Child Development and Behavior*, 171. <https://doi.org/10.1016/bs.acdb.2022.10.006>
- O'Rear, C. D., Zippert, E. L., Ehrman, P., **Ellis, A.**, Purpura, D. J. (2022). Based Design and Use of Picture Books to Promote Children's Early Mathematical Learning: A Conceptual Model. In *Handbook of Research on Innovative Approaches to Early Childhood Development and School Readiness* (pp. 602-636). IGI Global. DOI: 10.4018/978-1-7998-8649-5.ch025
- Ellis, A.**, Westerberg, L., King, Y. A., Eason, S. H., Connor, D. O., & Purpura, D. J. (2022). To Home Literacy and Beyond: Discussing Subdomains of the Home Learning Environment. In *Handbook of Research on Innovative Approaches to Early Childhood Development and School Readiness* (pp. 212-241). IGI Global. DOI: 10.4018/978-1-7998-8649-5.ch010
- Miller, A., **Ellis, A.**, & Domoff, S. (2016). Food Talk in Families. In *Socializing Children Through Language* (pp. 147-176). Academic Press. <https://doi.org/10.1016/B978-0-12-803624-2.00006-0>

MANUSCRIPTS AND CHAPTERS UNDER REVIEW

* denotes student

Ehrman, P.*, **Ellis, A.**, Devlin, B. L., Purpura, D. J. (*under review*). Differential ratings of children's math skills and home numeracy environment by age.

Ehrman, P.*, O'Rear, C. D., **Ellis, A.**, Devlin, B., Schmitt, S. A., Duncan, R. J., Purpura, D. J. (*under review*). More is Better: Inclusion of Large Set Sizes When Measuring Cardinality.

Addie, A.*, & **Ellis, A.** (*under review*). Teacherese: How Do Teachers Use Emotional Prosody in the Classroom?

King, Y. A., Zippert, E. L., **Ellis, A.**, O'Rear, C. D., Lin, J., & Purpura, D. J. (*revise and resubmit*). Accuracy of Parent and Teacher Reports of Early Math Skills.

Ellis, A., Manikkan, R., West, K. (*under review*). Toddler Classroom Daily Schedules and Language Environments.

Westerberg, L. E., Ehrman, P., Herrera, F., Varnell, S., King, Y. A., Closser, A. H., Clark, E., Carkoglu, C., McElveen, T. L., **Ellis, A.**, Cosso, J., Beltrán-Grimm, S., & Purpura, D. J. (*under review*). Spontaneous focusing on early mathematical domains.

O'Rear, C. D., Clark, E., Donegan, S., Varnell, S., Woten, C., **Ellis, A.**, Eason, S. H., Purpura, D. J. (*under review*). Factors related to the questions parents ask during book reading: a replication and extension.

Cosso, J., **Ellis, A.**, Purpura, D. J. (*under review*). Rethinking Our Approach to Measuring the Home Math Environment. Invited Chapter in *Early Mathematics Skill Development in the Home Environment*.

OPEN SOURCES AND PUBLISHED DATA

Ellis, A., King, Y. A., Westerberg, L., O'Rear, C. D., Hornburg, C. B., McElveen, T. L., Zippert, E. L., Cosso, J., Grimm, S. B., Ehrman, P. C., & Purpura, D. J. (2022). *Early Home Learning Environment*. LDbase. <https://doi.org/10.33009/ldbbase.1644347317.4c34>

Kim, M., Woods, A.D., **Ellis, A.**, & Davis-Kean, P.E. (2020). Teaching and Mentoring Open Science. *Society for Improving Psychological Science 2020 Meeting*. DOI 10.17605/OSF.IO/JUX4T <https://osf.io/jux4t/>

Ellis, A. (2020). *HomeBank English Ellis Corpus*. TalkBank. <https://doi.org/10.21415/CXHA-CM62>

PRESENTATIONS

* denotes student

Ellis, A., Ahmed, S. F., Ernst, J., Ehrman, P. C., Purpura, D. J., Vandell, D. (June 2026; Paper). Developmental pathways linking preschool math skills to educational and socioeconomic outcomes during adulthood. *Mathematical Cognition and Learning Society*. Padua, Italy.

Laney, S.*, West, K., **Ellis, A.** (April 2026; Poster). Accuracy of AI in Transcription of Toddler Classroom Language Environments. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.

- Stallings, O.*, Dixon, S.C.*, Mason, S.*, Alvarez-Vargas, D., Korucu, I., Duncan, R., **Ellis, A.** (April 2026; Poster). Differences in Toddler Language Environments. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.
- Ellis, A.**, Cosso, J., & Purpura, D. J. (June 2025; Paper). Tracking the Home Numeracy Environment: A longitudinal Study of Three-Year-Olds in the United States. *Mathematical Cognition and Learning Society*. Hong Kong.
- Ellis, A.**, Colburn, R., & West, K. (May 2025; Paper). Toddler Classroom Daily Schedules and Conversational Turns in Session: Conversational Turns Across the First Five Years and in Home and Early Childhood Education Contexts. *Society for Research on Child Development*. Minneapolis, MN, USA.
- Stallings, O.* & **Ellis, A.** (April 2025; Poster). Variability in Toddler Classroom Conversational Turns. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.
- McGrath, E.* & **Ellis, A.** (April 2025; Poster). Gender Differences in Early Childhood Language Interactions. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.
- Childress, C.* & **Ellis, A.** (April 2025; Poster). The Development of Early Math Skills in Home Numeracy Environments. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.
- Turner, D.* **Ellis, A.**, & West, K. (April 2025; Poster). The Influence of Activity Context on Language Opportunity in Preschools. *Undergraduate Research and Creative Activity Conference*. Tuscaloosa, AL, USA.
- Colburn, R.* & **Ellis, A.** (March 2024; [Poster](#)). Child Vocabulary and Toddler Classroom Language Environments. *Cognitive Development Society*. Pasadena, CA, USA.
- Clark, E.*, O'Rear, C. D., Donegan, S.*, Varnell, S.*, Woten, C.*, **Ellis, A.**, Eason, S. H., Purpura, D. J. (June 2023; Paper). The Association Between Book Features and Parent Questions During Number Book Reading. *Mathematical Cognition and Learning Society*. Loughborough, United Kingdom
- Purpura, D. J., O'Rear, C., **Ellis, A.**, Logan, J., Westerberg, L., King, Y., Vander Tuin, M., Ehrman, P., Nordgren, I., Anderson, K., Cosso, J., Zippert, E., Napoli, A., Hornburg, C., Schmitt, S., Dobbs-Oates, J. (June 2023; Paper) Unique and combined effects of quantitative language and numeracy instruction: Findings and reflections on a Registered Report. *Mathematical Cognition and Learning Society*. Loughborough, United Kingdom
- Westerberg, L.*, Devlin, B., Zippert, E., **Ellis, A.**, Bryant, L., King, Y., Geer, E., Duncan, R., Schmitt, S., Purpura, D. J. (June 2023; Paper). Examining the factor structure of mathematical language. *Mathematical Cognition and Learning Society*. Loughborough, United Kingdom
- Varnell, S.*, Ehrman, P. E.*, **Ellis, A.**, Purpura, D. J. (June 2023; Poster). Gender differences in parents' beliefs and engagement in home mathematics activities. *Mathematical Cognition and Learning Society*. Loughborough, United Kingdom

- Ellis, A.,** O'Rear, C. D., Cosso, J., Purpura, D. J. (June 2023; Paper) Parents engage in home mathematics activities the least! Examining the frequency of four home learning environment subdomains. *Mathematical Cognition and Learning Society*. Loughborough, United Kingdom.
- Ellis, A.** (March 2023; Session Chair). Are We Encouraging Open, Reproducible, and Inclusive Science? The Metascience of Developmental Science," *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Kim, M., Buford, J., **Ellis, A.,** Davis-Kean, P., Antony, C., Braun, C., Hurst, T., Todd, J. (March 2023; Paper). "Inclusive, open, and replicable developmental science: A descriptive study. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Ehrman, P.*, **Ellis, A.,** Purpura, D. J. (March 2023; Poster). Parent Report of Home Math Activities that are 'Just Right' for their Children. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Ellis, A.,** O'Rear, C. D., Cosso, J., Purpura, D. J. (March 2023; Paper) A Preregistered Study Examining the Factor Structure of the Home Learning Environment. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Woten, C.*, O'Rear, C. D., Clark, E., Donegan, S., **Ellis, A.,** Eason, S. H., Purpura, D. J. (March 2023; Paper) Parents' Preferences for Mathematics Content in Children's Picture Books. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Purpura, D. J., O'Rear, C., **Ellis, A.,** Logan, J., Westerberg, L., King, Y., Vander Tuin, M., Ehrman, P., Nordgren, I., Anderson, K., Cosso, J., Zippert, E., Napoli, A., Hornburg, C., Schmitt, S., Dobbs-Oates, J. (March 2023; Paper) Quantitative Language and Numeracy Instruction: Contrasting Picture Book Interventions in Preschool. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Ellis, A.** (March 2023; Session Chair) The Home Learning Environment: Where Are We Now? *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Beltran-Grimm, S., O'Rear, C., Ehrman, P., **Ellis, A.,** Paes, T., Eason, S. H., Purpura, D. J. (March 2023; Paper). US Latine Parents' Perceptions and Preferences for Using Digital Devices to Read to Young Children *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Westerberg, L.*, **Ellis, A.,** Schmitt, S., Eason, S. H., Purpura, D. J. (March 2023; Paper) The Factor Structure of the Early Home Science Environment. *Society for Research on Child Development*. Salt Lake City, UT, United States.
- Devlin, B. L., **Ellis, A.,** Day, E., Elicker, J. G., Duncan, R. J., Schmitt, S. A., Purpura, D. J. (June 2022, Paper). Identifying preschool predictors of kindergarten low mathematics performance with classification and regression tree analysis. In B. Devlin (Chair), Predicting early mathematics difficulties. *The Mathematical Cognition and Learning Society*. Antwerp, Belgium.
- Cosso, J., **Ellis, A.,** O'Rear, C.D., & Purpura, D.J. (June 2022; Paper). Replication and Extension of the Factor Structure of Parents' Math Anxiety. *The Mathematical Cognition and Learning Society*. Antwerp, Belgium.

- Purpura, D.J., Cosso, J., Beltran Grimm, S., **Ellis, A.**, & Schmitt, S.A. (May 2022; Poster). Exploring the Association of the Home Math Environment Items and Math Performance in Preschool-Aged Dual Language Learners. *SRCD Special Topics*. Rio Grande, Puerto Rico, USA.
- Ellis, A.**, Cosso, J.*, Duncan, R. J., Susperreguy, M. I., Simms, V., & Purpura, D. J. (March 2022; [Paper](#)). Assessing the Measurement of the Home Mathematics Environment Across Countries in the TIMSS 2019. *The Mathematical Cognition and Learning Society*. Conference virtual due to COVID-19.
- King, Y. A.*, Zippert, E., **Ellis, A.**, O'Rear, C. D., Lin, J., & Purpura, D. J. (February 2022; [Paper](#)). Accuracy of Parent and Teacher Ratings of Preschoolers' Specific Mathematics Skills. *The Mathematical Cognition and Learning Society*. Conference virtual due to COVID-19.
- Cosso, J.*, **Ellis, A.**, O'Rear, C. D., Zippert, E. L., Schmitt, S. A., & Purpura, D. J. (October 2021; [Paper](#)). Conceptualizing the Factor Structure of Parents' Math Anxiety and Associations with Children's Mathematics Skills. *The Mathematical Cognition and Learning Society*. Conference virtual due to COVID-19.
- Ellis, A.** & Davis-Kean, P.E. (April 2021; Paper). Examining the measurement and contribution of kindergarten mathematics instruction. *Society for Research in Child Development*. Twin Cities, MN, USA. Conference virtual due to COVID-19.
- Westerberg, L.*, Zippert, E., **Ellis, A.**, O'Rear, C.D., Cosso, J., King, Y., Purpura, D.J. (April 2021; Poster) Talk Spatial to Me: Developing a Broad Measure of Receptive Spatial Vocabulary. *Society for Research in Child Development*. Twin Cities, MN, USA. Conference virtual due to COVID-19.
- Ellis, A.**, Ahmed, S. F., Zeytinoglu, S., Isbell, A., Calkins S. D., Leerkes E. M., Grammer, J. K., Gehring, W., Morrison, F. J. & Davis-Kean, P. (April 2021; Paper). Reciprocal associations between executive function and math achievement: A conceptual replication of Schmitt et al. (2017). *Society for Research in Child Development*. Twin Cities, MN, USA. Conference virtual due to COVID-19.
- Kapustka, J.* & **Ellis, A.** (October 2020; [Poster](#)). Exploring the Relations Between the Home Mathematics Environment and Direct and Indirect Numeracy Assessments. *Home Mathematics Environment Virtual Conference Funded by the National Science Foundation*. West Lafayette, IN, USA. Conference virtual due to COVID-19.
- Kim, M.H., Davis-Kean, P.E., **Ellis, A.**, Woods, A.D. (June 2020; [Unconference](#)). Teaching and Mentoring Open Science. *Society for Improving Psychological Science*. Victoria, BC, Canada. Conference virtual due to COVID-19.
- Addie, A.*, **Ellis, A.**, & Davis-Kean, P.E. (May 2020; [Poster](#)). How Do Kindergarten Teachers Use Emotional Prosody in Their Classrooms? *32nd Annual Association for Psychological Science Convention*. Chicago, IL, USA. Conference virtual due to COVID-19.
- Kapustka, J.*, **Ellis, A.**, & Davis-Kean, P.E. (May 2020; Poster). The Contribution of Integrated Math Instruction in Kindergarten Classrooms. *32nd Annual Association for Psychological Science Convention*. Chicago, IL, USA. Conference virtual due to COVID-19.

- Ellis, A., & Davis-Kean, P.E.** (June 2019; [Data Blitz Presentation](#)). What are we missing in math assessments? Validating an IRT based math assessment in kindergarteners. *The Math Cognition and Learning Society*. Ottawa, ON, Canada.
- Ellis, A.** (June 2019; [Preregistered Poster](#)). The Utility of Audio Recordings for Examining Kindergarten Math Instruction. *The Math Cognition and Learning Society*. Ottawa, ON, Canada.
- Luboyeski, A. *, **Ellis, A.**, & Davis-Kean, P.E. (April 2019; [Poster](#)). Teacher Beliefs and Practices in Teaching Mathematics in Kindergarten. *Undergraduate Research Opportunity Program Research Symposium*. Ann Arbor, MI, USA.
- Ellis, A.**, Ahmed, S.F., Davis-Kean, P.E., & Morrison, F.J. (September 2018; [Poster](#)). Which Comes First? Causal Relations Between Early Executive Function and Math Achievement. *International Mind, Brain, Education Society Conference*. Los Angeles, CA, USA.
- Davis-Kean, P.E., Domina, T., Kuhfield, M., **Ellis, A.**, & Gershoff, E.T. (April 2018; [Poster](#)) Preschool Math Skills Impact Future Achievement. *The Math Cognition and Learning Society First Conference*. Oxford, England.
- Ahmed, S. F., **Ellis, A.**, Waters, N. E., Wang, Y., & Morrison, F. J. (October 2017; Poster) Understanding the structure of executive function in young children using lab, classroom-based and electrophysiological assessments. *The Cognitive Development Society*. Seattle, WA, USA.
- Mason, S. *, Shaik, A. *, Bullen, J. *, **Ellis, A.**, Smith, C., Kovelman, I., & Davis-Kean, P. (April 2017; Poster) Children's use of quantitative reasoning in sharing. *Undergraduate Research Opportunity Program Research Symposium*. Ann Arbor, MI, USA.
- Ellis, A.**, Hu, X., Armstrong, M. *, Bullen, J. *, Smith, C.E., Davis-Kean, P.E., & Kovelman, I. (October 2016; Poster) Shining light on the brain bases of division and mathematical competence. *International Mind Brain and Education Society*. Toronto, ON, Canada.
- Miller, A. L., **Ellis, A.**, Domoff, S.E. (May 2016; Paper) Food Talk in Families, *Association for Psychological Science*. Chicago, IL, USA.
- Tighe, L., **Ellis, A.** (May 2016; [Poster](#)) Where Are You Now? The Impact of High School STEM Interest on Later Life Outcomes. *Association for Psychological Science*. Chicago, IL, USA.
- Ellis, A.**, Davis-Kean, P.E., Kovelman, I. (May 2016; [Poster](#)) Sharing and Division: An fNIRS Study. *Math Cognition Conference*. Fort Worth, TX, USA.
- Couvreur, R. *, Bullen, J. *, Armstrong, M. *, **Ellis, A.**, Smith, C., Davis-Kean, P., & Kovelman, I. (April 2016; Poster) Is sharing related to children's emerging math abilities? *Undergraduate Research Opportunity Program Research Symposium*. Ann Arbor, MI, USA.
- Bullen, J. *, Couvreur, R. *, Armstrong, M. *, **Ellis, A.**, Smith, C., Davis-Kean, P., & Kovelman, I. (April 2016; Poster) Children's emergent math and sharing abilities. *Psychology Research Forum*. Ann Arbor, MI, USA.
- Ellis, A.**, Armstrong, M. *, Ip, K., Hsu, L., Smith, C.E., Kovelman, I., & Davis-Kean, P. E. (May 2015; [Poster](#)) fNIRS Study of an Innovative Social Division Task in Adults. *Association for Psychological Science*. New York, NY, USA.

Metwally, C.*, McMann, C.*, **Ellis, A.**, Armstrong, M.*, Ip, K., Smith, C.E., Kovelman, I., Davis-Kean, P. E. (April 2015; Poster) The Developing Math Brain. *Undergraduate Research Opportunity Program Research Symposium*. Ann Arbor, MI, USA.

Ellis, A., Armstrong, M.*, Ip, K., Hsu, L., Rivera Quiñones, R.*, Smith, C.E., Kovelman, I., & Davis-Kean, P. E. (March 2015; [Poster](#)) The Developing Math Brain: Social Division for Children. *Society for Research in Child Development*. Philadelphia, PA, USA.

Ellis, A., Armstrong, M.*, Ip, K., Hsu, L., Smith, C.E., Davis-Kean, P. E., & Kovelman, I. (October 2014; [Poster](#)) fNIRS Study of Numerical Cognition in Adults. *Society for Functional Near-Infrared Spectroscopy Conference*. Montréal, ON, Canada.

Rivera Quiñones, R.*, **Ellis, A.**, Ip, K., Hsu, L., Armstrong, M.*, Smith, C.E., Davis-Kean, P. E., & Kovelman, I. (July 2014; Poster) Early division ability as a strong indicator for later mathematical ability. *Summer Research Opportunity Program Research Roundtable and Symposium*. Ann Arbor, MI, USA.

Desai, N.*, Bullen, J.*, **Ellis, A.**, Armstrong, M.*, Ip, K., Hsu, L., & Kovelman, I. (May 2014; Poster) Who's Nicer? Allocation sharing task revealed early signs of division skills in preschoolers. *Undergraduate Research Opportunity Program Research Roundtable and Symposium*. Ann Arbor, MI, USA.

INVITED PRESENTATIONS

Ellis, A. (2026, February). Growing Math Minds: How Kids Learn Math and What Shapes It. Lecture given at Discourse BHAM. Birmingham, AL, USA. <https://www.discoursebham.com/event-details/growing-math-minds-how-kids-learn-math-and-what-shapes-it>

Ellis, A. (2025, September) Examining the Methods and Contexts that Shape Children's Mathematical Development. Lecture given at Research and Development Seminar. Tuscaloosa, AL, USA.

Ellis, A. (2024, February) The Importance of Conversational Turns in Early Childhood. Lecture given at The Children's Program Professional Development Day. Tuscaloosa, AL, USA.

Ellis, A. (2023, October) Preregistration in Practice. Ulster University, Belfast, Northern Ireland.

Ellis, A. (2023, August) Preregistration in Practice. Millennium Nucleus for the Study of the Development of Early Math Skills (MEMAT) Workshop. <https://mileniomemat.cl/>

Ellis, A. (2023, August) Math Development. Lecture given at RISE Professional Development Day. Tuscaloosa, AL, USA.

Ellis, A. (2023, January) Examining the Methods and Contexts Behind Children's Mathematical Development. Tuscaloosa, AL, USA.

Ellis, A. (2020, November) Introduction to Cross-Lagged Panel Models. Guest Lecture in HDFS 961 at Michigan State University. East Lansing, MI, USA.

Ellis, A. (2019, November). Math Acquisition. Guest Lecture in Psych 454 at the University of Michigan. Ann Arbor, MI, USA.

Ellis, A. (2019, March). Examining Reciprocal Relations between Early Executive Function Components and Math Achievement. Combined Program in Education and Psychology Colloquium. Ann Arbor, MI, USA.

Ellis, A. (2018, February). Math Acquisition. Guest Lecture in Psych 454 at the University of Michigan. Ann Arbor, MI, USA.

Ellis, A. (2017, February). Shedding Light on Precursors to Division. Combined Program in Education and Psychology Colloquium. Ann Arbor, MI, USA.

TEACHING EXPERIENCE

Instructor of Record

HDFS 601: Advanced Child Development, UA

HDFS 327: Assessment of Young Children, UA

HDFS 202: Infant and Toddler Development, UA

HDFS 406: Mathematics in Preschool and Primary Grades, PURDUE

Educ 391: Educational Psychology and Human Development, UMICH

Graduate Course Teaching Assistant

Educ 803: Structural Equation Modeling, UMICH

Educ 707: Psychometrics, UMICH

Graduate Student Instructor

Psych 111: Introduction to Psychology, UMICH

Psych 303: Research Methods in Psychology, UMICH

Psych 250: Introduction to Developmental Psychology, UMICH

Psych 240: Introduction to Cognitive Psychology, UMICH

MENTORING AND SUPERVISING

*denotes main advisor

DOCTORAL DISSERTATION COMMITTEE

Ashley Bragg (School Psychology- University of Alabama) – “Families’ perspectives of access to child development resources, barriers and facilitators.” Expected April 2027

Mona Anchan (Educational Psychology and Neuroscience- University of Alabama) – “Understanding neural and behavioral correlates of math cognition in bilinguals and monolinguals.” Expected May 2026

MASTER’S THESIS COMMITTEE

*Eliana Bachrach (Human Development and Family Studies- University of Alabama) – “Sibling Differences in the Home Numeracy Environment.” Expected April 2027

Mahtab Haghshenas (Psychology- University of Alabama) – “Children’s understanding of God, considering age and gender differences in a muslim population.” M.S. 2026

Ramya Manikkan (Psychology- University of Alabama) – “Connections between motor-language cascades in autistic children.” M.S. 2025

PROFESSIONAL SERVICE

TO THE FIELD

Associate Editor

Journal of Numerical Cognition

2025-Present

Editorial Boards

British Journal of Educational Psychology

2023-2026

Journal of Educational Psychology

2023-2026

Co-President

Mathematical Cognition and Learning Society Trainee Board

2021-2023

Communications Chair

International Mind Brain and Education Society

2018-2020

Special Issue EditorRegistered Reports with Secondary Developmental Data in *Infant and Child Development*

2021-2023

Grant Reviewer

National Science Foundation Conference Grant

2023

National Science Foundation DRK-12

2024

National Science Foundation GRFP

2025

Conference Reviewer

Society for Research in Child Development

2025

Mathematical Cognition and Learning Society

2024

Society for Research on Adolescence

2023

Society for Research in Child Development

2021

Conference Organizer

International Mind Brain and Education Society 2021 Virtual Conference

Summer 2021

Ad-Hoc Reviewer

Child Development; Developmental Psychology; Journal of Experimental Child Psychology;

Journal of Applied Developmental Psychology; Early Childhood Research Quarterly;

Mathematical Thinking and Learning Journal; Journal for Research on Adolescence; Pediatrics;

PLOS One

TO THE UNIVERSITY OF ALABAMA

Faculty Search Committee Member

Fall 2023, 2024, 2025

Early Childhood Education Committee Member

Spring 2023 - Present

TO PURDUE UNIVERSITY

ReproducibiliTea Journal Club

2020-2022

*Founder and Co-organizer***TO THE UNIVERSITY OF MICHIGAN**

Combined Program in Education and Psychology, University of Michigan

2018-2019

Admissions Committee Member

Testing Accommodations Center, Ann Arbor, Michigan

2016-2020

Proctor for neurodiverse students

Combined Program in Education and Psychology, University of Michigan

2016-2018

Recruitment Committee Member

FELLOWSHIPS, AWARDS, AND HONORS

Capstone International Center Funding (\$400)	2025
AERA NSF Statistical Institute Award (Travel and Accommodation)	2020
Dissertation Writing Group Leader at the Sweetland Center for Writing (\$300)	2019
Pillsbury Graduate Research Award (\$2,000)	2019
Math Cognition Conference Travel Award (\$300)	2016
fNIRS Workshop Travel Award (\$500)	2015
The Michael J. Vizas Graduate Practicum Fund (\$2,000)	2014