

July 1st, 2025

DANA MILLER - COTTO, Ph.D.

Curriculum Vitae

University of California, Berkeley
Berkeley School of Education
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Berkeley, CA 94720
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ACADEMIC POSITIONS

- 2024 - **Assistant Professor**, Berkeley School of Education (BSE)
Learning Sciences and Human Development
University of California, Berkeley, Berkeley, CA
- 2022 - 2024 **Assistant Professor**, Department of Psychological Sciences
Kent State University, Kent, OH

EDUCATION & TRAINING

- 2020 - 2022 **Postdoctoral Researcher**, College of Education and Human Development
University of Delaware, Newark, DE
- 2017 - 2019 **Postdoctoral Researcher**, Learning Research and Development Center (LRDC)
University of Pittsburgh, Pittsburgh, PA
- 2017 **Ph.D., Educational Psychology**
Temple University, Philadelphia, PA
- 2014 **M.Ed., Educational Psychology**
Temple University, Philadelphia, PA
- 2011 **B.A., Psychology (with honors), cum laude**
Lehman College CUNY, Bronx, NY

FUNDING

EXTERNAL FUNDING

- 2024 - 2026 Principal Investigator (MPI: Andrew Ribner)
Examining Effects of Assessor Identity and Context on Children's Executive Function Performance
Brady Education Foundation
[\$105,742]
- 2023 - 2024 Principal Investigator
The role of assessor identity on children's executive function performance
Society for Research in Child Development (SRCD) Black Caucus Early Career Grant
[\$1,500]

- 2020 – 2023 Co-Investigator (PIs: David Purpura and Caroline Hornburg)
My Math Stories: Taking Place in Our Mathematical World
 EF+Math Program, Advanced Education Research and Development Fund (AERDF)
 [\$2,000,000]
- 2019 - 2020 Recipient
 Inclusive Mathematics Environments Early Career Fellowship
 Mindset Scholars Network/Bill and Melinda Gates Foundation
 [\$10,000]
- 2010 Principal Investigator
Memory Illusions: Fonts and Serial Position Assignments of Word Lures
 Psi Chi/ Association for Psychological Science
 [\$5,000]

INTERNAL FUNDING

- 2025 – 2026 Principal Investigator
Examining the Early Math Education Landscape in California's Transitional Kindergarten
 Barbara White Fund, Berkeley School of Education
 University of California, Berkeley
 [\$7,908]
- 2025 Recipient
 Course Improvement Grant, Teaching Excellence Colloquium (TEC)
 Center for Teaching and Learning
 University of California, Berkeley
 [\$2,000]
- 2024 – 2025 Principal Investigator
Working Memory in Math Learning: Offloading or Interference?
 Division of Research and Economic Development
 Kent State University
 [two-course releases]
 Declined; Left the University
- 2023 – 2024 Principal Investigator
What is the role of assessor's racial identity on Black children's executive function performance?
 Applied Psychology Center (APC) Under Researched Population Award
 Kent State University
 [\$2,500]
- 2018 - 2019 Co- Investigator (PI: Dr. Armin Schikorra)
Aligning Teaching Methods and Students' Learning Needs: Active Learning vs. Traditional Classrooms
 Provost's Personalized Education Grant Program
 University of Pittsburgh

[\$26,306]

KEY PERSONNEL

2023 – 2025 Steering Committee (PIs: Prasad Ram, Teomara Rutherford, Jessica Hunt)
*Research Infrastructure for the Development, Implementation, and Assessment of
 Mathematics Interventions at Scale: An Incubator Project*
 National Science Foundation
 [\$499,898]

AWARDS, HONORS, FELLOWSHIPS

2024	Rising Star Award, Association for Psychological Science (APS)
2024	Early Career Symposium, Cognitive Development Society (CDS)
2023 -	Founding Member, Communicating and Expanding Research on Adversity (CERA) Network
2023 -	Founding Member, Global Executive Function Initiative
2023	Publication Productivity Award, Applied Psychology Center, Kent State University
2023	Early Career Fellowship, Applied Psychology Center, Kent State University
2020	Institute on Statistical Analysis: Development of Mathematics Competencies in Early Childhood via American Education Research Association/NSF, Laguna Beach, CA
2019 - 2020	Inclusive Mathematics Environments Early Career Fellowship, Mindset Scholars Network
2018	Meta-Analysis Training Institute, via Institute for Education Sciences, Chicago, IL
2017	Diversity Travel Award, Cognitive Development Society (CDS)
2014 - 15	The Future Faculty Fellowship, Temple University
2011	Kay Wilson Officer Team Leadership Award, CUNY Lehman College chapter, Psi Chi
2011	The Lehman College Foundation Scholarship
2010 - 11	Recipient, Louis Stokes Alliance for Minority Participation (LS-AMP) in STEM via the National Science Foundation (NSF)
2008	Psi Chi International Honor Society in Psychology

JOURNAL ARTICLES

[^] = Shared First-Authorship; *Published with students/postdocs/mentees

1. **Miller-Cotto, D.**, Ribner, A., Ahmed, S., Ellis, A., & Czerwiński, S. (accepted). Examining ethnic/racial measurement invariance in fourth-grade executive function: A registered report of data from the ECLS-K. *Journal of Educational Psychology*. [[Pre-Registration](#)]. doi: 10.1037/edu0000985
2. *Medrano, J., & **Miller-Cotto, D.** (accepted). Testing the Opportunity-Propensity model of achievement in Asian American subgroups. *Early Education and Development*.
3. Scalise, N.R., Gladstone, J.R., & **Miller-Cotto, D.** (2025). Maximizing math achievement: Strategies from the science of learning. *Journal of Experimental Child Psychology*, 257, 106281. doi: 10.1016/j.jecp.2025.106281
4. ***Miller-Cotto, D.**, & Medrano, J. (2025). Does working memory moderate the effect of fading on math performance? *British Journal of Educational Psychology*, 00, 1–19. doi: 10.1111/bjep.12781

5. **Miller-Cotto, D., & Gordon, R. (2025).** Revisiting working memory fifty years after Baddeley and Hitch: A review of field-specific conceptualizations, use and misuse, and paths forward for studying children. [[Pre-Print](#)] *Quarterly Journal of Experimental Psychology*, 78, 2, 425 - 435. doi: 10.1177/17470218241301701
6. *Medrano, J., & **Miller-Cotto, D. (2025).** Understanding working memory as a facilitator of math problem solving: Offloading as a potential strategy. *British Journal of Educational Psychology*. doi: 10.1111/bjep.12767
7. Bauer, C., **Miller-Cotto, D.**, Silverman, D.M., & Frankenhuys, W. (2025). Recognizing people's agency amidst disadvantage: How to study inequality using a holistic approach that is accurate and non-stigmatizing. *Social and Personality Psychology Compass*, 19. doi: 10.1111/spc3.70035
8. *Gesuelli, K., **Miller-Cotto, D.**, & Barbieri, C.A. (2025). Variability in math achievement growth for students with math learning difficulties and the role of school supports. *Journal of Educational Psychology*. doi: 10.1037/edu0000928
9. Del Toro, J., Legette, K., Christophe, N.K., Pasco, M., **Miller-Cotto, D.**, & Wang, M.T. (2024). When ethnic-racial discrimination from math teachers spills over and predicts the math adjustment of nondiscriminated adolescents: The mediating role of math classroom climate perceptions. *Developmental Psychology*. doi:10.1037/dev0001833
10. Devlin, B. L., Zhang, H., Beliakoff, A., **Miller-Cotto, D.**, Klein, A. & Jordan, N.C. (2024). Profiles of preschoolers' numerical abilities across quantity representations. *Canadian Journal of Experimental Psychology*. doi:10.1037/cep0000339
11. *Clerjuste, S., Guang, C., **Miller-Cotto, D.**, & McNeil, N.M. (2024). Unpacking the challenges and predictors of students' use of the distributive property. *Journal of Experimental Child Psychology*, 244, 105. doi: 10.1016/j.jecp.2024.105922
12. **Miller-Cotto, D.**, Ribner, A.D., & Smith, L.V. (2024). Understanding working memory and mathematics development for ethnically/racially minoritized children through an Integrative Theory lens. *Behavioral Sciences*, 14, 390. doi: 10.3390/bs14050390
13. ^DeJoseph, M., ^Ellwood-Lowe, M., **Miller-Cotto, D.**, Silverman, D., Shannon, K. A., Reyes, G., Rakesh, D., & Frankenhuys, W.E. (2024). The promise and pitfalls of a strengths-based approach to child poverty and neurocognitive development: Implications for policy. *Developmental Cognitive Neuroscience*, 66, 101. doi: 10.1016/j.dcn.2024.101375
14. Viegut, A. A., Resnick, I., **Miller-Cotto, D.**, Newcombe, N.S., & Jordan, N.C. (2023). Tracking informal fraction knowledge and its correlates across first grade. *Developmental Psychology*, 59, 1739 – 1756. doi: 10.1037/dev0001581
15. Byrnes, J.P., & **Miller-Cotto, D. (2023).** A historical, methodological, and philosophical analysis of the working memory construct. *American Journal of Psychology*, 136, 193-208. doi: 10.5406/19398298.136.2.08

16. Ribner, A.D., Ahmed, S., **Miller-Cotto, D.**, & Ellis, A.E. (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. doi: 10.1016/j.ecresq.2023.02.004
17. Barbieri, C.A., **Miller-Cotto, D.**, *Chawla, K., & *Clerjuste, S. (2023). A meta-analysis of the worked example effect on mathematics performance. *Educational Psychology Review*, 35, 11. doi: 10.1007/s10648-023-09745-1
18. *Zhang, H., **Miller-Cotto, D.**, & Jordan, N.C. (2023). Estimating the co-development of executive functions and math achievement using cross-lagged panel model with fixed effects. *Contemporary Educational Psychology*, 72, 102-126. doi: 10.1016/j.cedpsych.2022.102126
19. Hall, G., *Putzeys, S., & **Miller-Cotto, D.** (2022). Early experiences and school readiness: A within and between exploration of the Opportunity Propensity Model. *Cognitive Development*, 65, 101 – 226. doi: 10.1016/j.cogdev.2022.101226
20. Prather, R.W., Benitez, V., Kendall Brooks, L.K., Dancy, C. L., Dilworth, D., Faison, M.O., Figueroa, M., Holden, L.T.R., Johnson, C., Medrano, J., **Miller-Cotto, D.**, Matthews, P.G., Manly, J.J., & Thomas, A. (2022). What can cognitive science do for people? *Cognitive Science*, 46. doi: 10.1111/cogs.13167
21. **Miller-Cotto, D.**, Booth, J. L., & Newcombe, N. S. (2022). Sketching and verbal self-explanation: Do they help middle school children solve science problems? *Applied Cognitive Psychology*, 40, 919-935. doi: 10.1002/acp.3980
*Recognized by Wiley for being a Top Cited Article in 2023.
22. **Miller-Cotto, D.**, Smith, L.V., Wang, A.H., & Ribner, A.D. (2022). Changing the conversation: A culturally responsive perspective on executive functions, minoritized children, and their families. *Infant and Child Development*. doi: 10.1002/icd.2286
*Recognized by Wiley for being a Top Downloaded Article in 2022.
23. **Miller-Cotto, D.**, & Schunn, C. (2022). Mind the gap: How a large-scale course re-design in economics reduced performance gaps. *Journal of Experimental Education*, 90, 783-796. doi: 10.1080/00220973.2020.1805717
24. Barbieri, C.A., & **Miller-Cotto, D.** (2021). The importance of adolescents' sense of belonging to mathematics for algebra learning. *Learning and Individual Differences*, 87, 101993. doi: 10.1016/j.lindif.2021.101993
25. **Miller-Cotto, D.**, & Auxter, A. E. (2021). Testing the ecological validity of faded worked examples in algebra. *Educational Psychology*, 41, 191-205. doi: 10.1080/01443410.2019.1646411
26. **Miller-Cotto, D.**, & Byrnes, J. P. (2020). What's the best way to characterize the relationship between working memory and achievement?: An initial examination of competing theories. *Journal of Educational Psychology*, 112, 1074 –1084. doi: 10.1037/edu0000395
27. Wang, M.T., Smith, L.V., **Miller-Cotto, D.**, & Huguley, J.P. (2020). Parental ethnic-racial socialization practices and children of color's academic outcomes: A meta-analytic review. *Child*

Development. doi: 10.1111/cdev.13254

**Recognized by Wiley for being a Top Cited Article in 2020-2021.*

28. Byrnes, J.P., Wang, A. H., & **Miller-Cotto, D.** (2019). Children as mediators of their own cognitive development in kindergarten. *Cognitive Development*, 50, 80-97. doi: 10.1016/j.cogdev.2019.03.003
29. Barbieri, C. A., **Miller-Cotto, D.**, & Booth, J. L. (2019). Lessening the load of misconceptions: Design-based principles for algebra learning. *Journal of the Learning Sciences*, 28, 1-37. doi: 10.1080/10508406.2019.1573428
30. Byrnes, J. P., **Miller-Cotto, D.**, & Wang, A. H. (2018). Children as mediators of their own development: The case of learning science in kindergarten and first grade. *Journal of Cognition and Development*, 19, 248 – 277. doi: 10.1080/15248372.2018.1470975
31. **Miller-Cotto, D.**, & Byrnes, J. P. (2016). Ethnic/racial identity and academic achievement: A meta-analytic review. *Developmental Review*, 41, 51-70. doi: 10.1016/j.dr.2016.06.003
32. Byrnes, J. P., & **Miller-Cotto, D.** (2016). The growth of mathematics and reading skills in segregated and diverse schools: An opportunity-propensity analysis of a national database. *Contemporary Educational Psychology*, 46, 34-51. doi: 10.1016/j.cedpsych.2016.04.002

BOOK CHAPTERS

^ = Shared First-Authorship; *Published with students/mentees

*Guo, Q., Silva Chelles, E., **Miller-Cotto, D.**, & Leyva, D. (forthcoming). The language of food: Family food routines and Latino children's reading and motivation.

Jordan, N.C., **Miller-Cotto, D.**, & Gesuelli, K. (forthcoming). Mathematics learning difficulties. In Okolo, Patton Terry & Cutting (Eds.), *Handbook of Learning Disabilities, Third Edition*.

Booth, J. L., McGinn, K. M., Barbieri, C., Begolli, K. N., Chang, B., **Miller-Cotto, D.**, Young, L. K., & Davenport, J. L. (2017). Evidence for cognitive science principles that impact learning in mathematics. In D. C. Geary, D. B. Berch, R. J. Ochsendorf & K. M. Koepke (Eds.), *Acquisition of complex arithmetic skills and higher-order mathematics concepts Vol 3* (pp. 297–325). Oxford, UK: Elsevier.

MANUSCRIPTS UNDER REVIEW/IN REVISION

^ = Shared First-Authorship; *With students/mentees

***Miller-Cotto, D.**, Chawla, K., Botello, M., & Barbieri, C.A. (revise, resubmit). A meta-analysis examining the relations between executive function and motivation. Revision invited from *Educational Psychologist*.

Miller-Cotto, D., & Byrnes, J.P. (revise, resubmit). Identifying individual cognitive and motivational profiles predictive of academic growth: A combined machine learning and person-centered approach. Revision invited to *Learning and Individual Differences*.

Miller-Cotto, D. & Lewis Jr., N. (invited; under review). Am I a "Math Person"? Considering context in shaping mathematics identity among Black students. *Child Development Perspectives*.

***Miller-Cotto, D.**, Borriello, G., Medrano, J., & Zaborowski, S. R. (under review). When training is inconclusive: Making a case for supporting executive functions through instruction. *Educational Psychology Review*.

***Miller-Cotto, D.**, Devlin, B., Gesuelli, K.A., & Jordan, N.C. (under review). Does fluency mediate the relationship between working memory and math achievement? *Applied Cognitive Psychology*.

[^]Ribner, A.D., [^]**Miller-Cotto, D.**, Merkley, R., Rivera, L., & Rosenberg-Lee, M. (under review). Growth in elementary grade working memory and mathematics differs by family income. *Journal of Applied Developmental Psychology*.

*Del Toro, J., **Miller-Cotto, D.**, Phillips, K., Huang, Q., Hashim, M., & Burfoot, K. (under review). Growing up fast, thinking faster: Structural racism, pubertal timing, and executive function in African American adolescents. *Developmental Psychology*.

*Owusua, T., Fitzsimmons, C. J., **Miller-Cotto, D.**, Coifman, K. G., Taber, J. M., Sidney, P. G., & Thompson, C. A. (revise, resubmit). Identities at the intersection of gender and race/ethnicity: Interrelations with math anxiety, math attitudes, and math performance. Revision invited to *Journal of Numerical Cognition*.

*Medrano, J., Devlin, B., Shingledecker, M., Thompson, C.A., & **Miller-Cotto, D.** (under review). Executive function and spatial/relational reasoning relate to individual differences in fraction understanding. [[Pre-Registration](#)]. *Journal of Experimental Child Psychology*.

MANUSCRIPTS IN PREPARATION

[^] = Shared First-Authorship; *With students/mentees

***Miller-Cotto, D.**, Chan, J.Y.-C., & Medrano, J. (in revision). Identifying challenging aspects in mathematics: An analysis of students' performance across topics and knowledge type. [[Pre-Registration](#)].

***Miller-Cotto, D.**, Guba, T., Silla, E.M., Morra, G., & Barbieri, C.A. (in prep). Do signaling cues and metacognitive prompts support students' attention when learning fractions?

***Miller-Cotto, D.**, Gesuelli, K.A., & Hall, G. (in prep). Testing working memory theories in early math with children with math learning difficulties using random intercept cross-lagged panel modeling.

***Miller-Cotto, D.**, Medrano, J., Devlin, B., Thompson, C.A., & Shingledecker, M. (in prep). Testing working memory theories with whole number bias: A developmental analysis.

Merkley, R., **Miller-Cotto, D.**, Miller-Singley, A., Brunner, M., Buschkuehl, M., Jaeggi, S., Mills, C., Francisco, A., & Uncapher, M. (in prep). Improving the study of executive function and math through advanced R&D.

*Silla, E.M., Botello, M., **Miller-Cotto, D.**, Barbieri, C.A. (in prep). The productive price of learning: How perceived cost, self-beliefs, and motivation relate to mathematical engagement and understanding.

Ribner, A.D., Ahmed, S.F., Ellis, A., & **Miller-Cotto, D.** (in prep). Exploring relations between EF and math: Implications of modeling on research, theory, and practice.

PRE-REGISTRATIONS

^ = Shared First-Authorship; *With students/mentees

Miller-Cotto, D., & Ribner, A.D. (in prep). Do classroom tools support children's working memory when learning math? A propensity score matching analysis.

Miller-Cotto, D., Ribner, A.D., & Medrano, J. (in prep). The role of assessor identity on executive function performance: An experiment. [[Pre-Registration](#)].

Miller-Cotto, D., & Medrano, J. (in prep). The utility of offloading in mathematical problem solving: An Experiment. [[Pre-Registration](#)].

INVITED TALKS

Miller-Cotto, D. (February 2025). *Using theories and assumptions of executive function to support children's learning in early schooling*. Invited talk for the Institute for Social and Health Equity. University at Albany, SUNY. Albany, NY.

Miller-Cotto, D. (March 2024). *Understanding ethnic/racial differences in executive function performance: The case of the dimensional change card sorting task*. Cognitive Development Society (CDS) Early Career Symposium, Pasadena, CA.

Miller-Cotto, D. (March 2024). *Testing the role of executive function in fraction comparisons*. Human Development and Family Studies and the Center for Early Learning Colloquium series. Purdue University. West Lafayette, IN.

Miller-Cotto. (January 2024). *Determining predictors of school readiness and academic achievement: An ecological approach*. Visiting Scholar Speaker Series. Graduate School of Education, University of Pennsylvania. Philadelphia, PA.

Miller-Cotto, D. (October 2023). *Testing assumptions of assessment in diverse groups of young children*. Invited talk for the Equity, Diversity, and Inclusion Speaker Series at Vanderbilt University – Peabody College, Nashville, TN.

Miller-Cotto, D. (April 2023). *Measurement invariance of working memory in early childhood*. Invited talk to the Midwestern Psychological Association (MPA) Meeting, Chicago, IL.

Miller-Cotto, D. (February 2023). *Assumptions of assessment across diverse groups*. Invited talk for the Cognitive Science Program. Northwestern University. Evanston, IL [Virtual].

Miller-Cotto, D. (January 2023). *Individual Differences in Executive Function and Math Skills. Testing Competing Theories*. Invited talk to the Developmental Science Brown Bag Series. University of California – Davis. Davis, CA [Virtual].

Miller-Cotto, D. (November 2022). *Executive Functions and Math Learning Difficulties: Testing Competing Theories*. Invited talk to the Applied Psychology and Human Development Colloquium. University of Toronto. Toronto, ON [Virtual].

Miller-Cotto, D. (November 2022). *Mathematics learning difficulties and executive functions: Testing*

competing theories. Invited talk to the Centre for Educational Neuroscience. University College London. London, UK [Virtual].

Miller-Cotto, D. (March 2022). *The Role of Executive Function Skills in Mathematics for Children Living in Poverty*. Developmental Psychology Colloquium. University of California – Merced. Merced, CA [Virtual].

Miller-Cotto, D. (March 2022). *Executive Function and Academic Outcomes*. Crane Center for Early Childhood Research and Policy. The Ohio State University. Columbus, OH [Virtual].

Miller-Cotto, D. (February 2022). *Working Memory and Mathematics Skills: A Culturally Responsive Lens Interpretation through Family Socialization Practices*. University of Massachusetts at Amherst Developmental Science Colloquium. Amherst, MA [Virtual].

Miller-Cotto, D. (October 2021). *What Can I Do with My Ph.D.? Insights from My Year in the Nonprofit World*. The University of Illinois—Chicago Psychology Department presents the Black Scholar Speaker Series—Special Session. Chicago, IL [Virtual].

Miller-Cotto, D. (October 2021). *Working memory and early math skills: A culturally sensitive Perspective on ethnic minority children's development*. University of Illinois – Chicago Psychology Department Presents the Black Scholar Speaker Series. Chicago, IL [Virtual].

Miller-Cotto, D. (November 2020). *The development of executive functions and mathematics: An Integrative Theory Perspective*. Occidental College Cognitive Science Speaker series [Virtual].

Miller-Cotto, D. (October 2020). *Understanding working memory and mathematics development for ethnic/racial minority children through family practices*. Kent State University Cognitive Science Brown Bag series [Virtual].

Miller-Cotto, D. (September 2020). *Applying the Integrative Theory to mathematics and executive function: Predicting school readiness for Asian-American, Black, and Latinx children*. University of Maryland Developmental Science Colloquium series [Virtual].

Miller-Cotto, D. (October 2019). *Examining sketching as a tool to offload working memory in math*. Scholars of Color Lecture Series, Rossier School of Education, University of Southern California.

Miller-Cotto, D. (May 2019). *Toward an understanding of working memory and math performance inside and outside the classroom*. Carl A. Grant Scholars Lecture Series, Wisconsin Center for Education Research, University of Wisconsin – Madison.

Miller-Cotto, D. (October 2018). *In and outside the classroom: How is working memory related to math ability?* Educational Psychology Colloquium, Department of Human Development and Quantitative Methods, University of Maryland.

SELECTED PAPER PRESENTATIONS

[^] = Co-First Author; ^U = Undergraduate Author; ^G = Graduate student Author; ^P = Postdoc Author

Maiden name: Miller

Miller-Cotto, D., & Medrano, J. (June 2025). *How does working memory “work” in math problem*

solving?: An aptitude by treatment interaction investigation. In Dumontheil, I. (Chair) Neuroimaging and behavioural studies of the role of executive functions in mathematical skills over the course of development [Symposium]. The 2025 Mathematical Cognition and Learning Society (MCLS) Conference, Hong Kong S.A.R., China.

Portilla, X.A., **Miller-Cotto, D.**, & Hanno, E. (April 2025). *Understanding, fostering, and assessing executive functions in preschool: Voices from the field*. Paper presented at the Society for Research in Child Development (SRCD) 2025 Biennial Meeting, Minneapolis, MN, USA.

Miller-Cotto, D., Lewis Jr., N., Barbieri, C.A., Booth, J.L. (April 2025). *Developing an ecological model for studying math identity for Black students*. Paper presented to the American Educational Research Association (AERA) 2025 Annual Meeting, Denver, CO.

Miller-Cotto, D., Chan, J.Y-C., ^PMedrano, J. (April 2025). *Cracking the code: Identifying challenging math topics and knowledge types through students' problem-solving performance*. Paper presented to the American Educational Research Association (AERA) 2025 Annual Meeting, Denver, CO.

Miller-Cotto, D., & ^PMedrano, J. (June 2024). *Testing the role of executive functions in fraction comparisons*. Paper presented at the Mathematical Cognition and Learning Society (MCLS), Washington, D.C.

Miller-Cotto, D., & Ribner, A.D. (November 2023). *Equity Considerations in Executive Function Assessment*. Association for Public Policy and Management Annual Meeting. Atlanta, GA.

Miller-Cotto, D., Ribner, A.D., Ahmed, S., & Ellis, A. E. (August 2023). *Studying executive function in young children: The case of the dimensional change card sort*. Paper presentation for American Psychological Association 2023 Convention. Washington D.C.

Miller-Cotto, D., Barbieri, C.A., ^CClerjuste, S., ^CChawla, K., ^ULe, P.H., ^UDeLuca, L., & ^ULandy, J. (April 2023). *A Meta-Analysis exploring the effect of worked examples on mathematics performance*. Paper presentation for the American Educational Research Association (AERA) 2023 Annual Meeting. Chicago, IL.

Miller-Cotto, D. & ^CZhang, H. (March 2023). *Testing theories of working memory for students with math learning difficulties*. Paper presentation for the 2023 Bader-Kaufman Conference on Special Education Research. Kent, OH.

Miller-Cotto, D., Ribner, A.D., Ahmed, S., & Ellis, A.E. (March 2023). *Measurement Invariance of Working Memory in Early Childhood: A Registered Report*. Paper presentation for the 2023 Society for Research in Child Development (SRCD) biennial meeting. Salt Lake City, Utah.

Miller-Cotto, D., Griffin, C., Barbieri, C.A., & Booth, J.L. (April 2022). *Mathematics identity and sense of belonging to mathematics: Unique or overlapping constructs? Paper presented to the Cognitive Development Society Biennial Meeting*. Madison, WI.

Miller-Cotto, D., Smith, L.V., & Wang, A.H. (April 2021). *Understanding Executive Function and Mathematics Development for Racially Minoritized Children through Family Academic Socialization Practices*. Presented to the 2021 Society for Research in Child Development Biennial Meeting, Virtual Meeting.

Miller-Cotto, D. & Wang, A. H. (2020, Apr 17 - 21) *Testing the Integrative Theory in Predicting School Readiness and Executive Function Skills for Minority and Other Kindergarten Children Using Structural Equation Modeling* [Poster Session]. AERA Annual Meeting San Francisco, CA <http://tinyurl.com/u66rtwk> (Conference Canceled due to COVID-19).

Miller-Cotto, Booth, J. L., Chang, B. L., Cromley, J. G., Newcombe, N. S., & Williams, T.A. (March 2019). *A comparison of sketching and self-explanation when solving math and science problems*. Paper presented to the Society for Research in Child Development (SRCD), Baltimore, MD.

Miller-Cotto, D., Barbieri, C., & Booth, J. L. (2018, April). *Examining the impact of signaling cues and self-explanations on algebraic knowledge and learning*. Paper presented at the 2018 Annual Meeting of the American Educational Research Association, New York, NY.

Miller-Cotto, D., Auxter, A. E., Byrnes, J. P., & Newton, K. J. (2017, April). *Too much of a good thing: When faded worked examples decrease performance in algebra*. Poster presented at the Society for Research in Child Development Biennial Meeting, Austin, TX.

Miller-Cotto, D., & Menzies, C. M. (2015, April). *Student-teacher racial incongruence and teacher perceptions of student achievement: Testing ethnic identity as a buffer*. Paper presentation at the American Educational Research Association annual meeting, Chicago, IL.

Miller, D. & Prohaska, V. (2010, November). *Memory illusions: Serial position assignments of word lures*. Paper presented to the 22nd Greater New York Conference on Behavioral Research, New York, NY.

SELECTED POSTER PRESENTATIONS

[^] = Co-First Author; ^U = Undergraduate Author; ^G = Graduate student Author; ^P = Postdoc Author

Miller-Cotto, D., & Ribner, A. (June 2025). *Do classroom tools support children's working memory?* A pre-registered poster to be presented at the Mathematical Cognition and Learning Society (MCLS) 2025 Annual Meeting, Hong Kong, SAR, China.

^G Guo, Q., ^P Gesuelli, K.A., **Miller-Cotto, D.** (May, 2025). *Profiles of Parenting and their Associations with Kindergarteners' Early Outcomes*. Poster to be presented at the Society for Research in Child Development (SRCD) 2025 Biennial Meeting, Minneapolis, MN, USA.

Miller-Cotto, D., & ^P Gesuelli, K. (April 2025). *Testing theories of working memory and math for students with math learning difficulties*. Poster to be presented for the 2025 American Educational Research Association (AERA). Denver, CO.

Miller-Cotto, D., & Gordon, R. (June 2024). *Working memory and early child development: A theoretical and practical conundrum*. Poster presented to the 4th International Conference on Working Memory (ICWM). Leeds, UK.

^G Zaborowski, S.R., & **Miller-Cotto, D.** (April 2024). *Executive function and attention-deficit/hyperactivity disorder: A meta-analysis*. Poster presented to the Midwestern Psychological Association 2024 Conference. Chicago, IL.

^G Clerjuste, S., ^G Guang, C., **Miller-Cotto, D.**, & McNeil, N. (March 2024). *Unpacking the challenges and predictors of students' use of the distributive property*. Poster presented to the Cognitive Development Society (CDS) Biennial Meeting. Pasadena, CA.

^PMedrano, J., Thompson, C.A, **Miller-Cotto, D.**, Delvin, B., ^UShingledecker, M. (March 2024). *Individual differences in third and sixth graders' fraction understanding and relations to executive function and spatial/relational reasoning*. Poster presented to the Cognitive Development Society (CDS) Biennial Meeting. Pasadena, CA.

^UShingledecker, M., ^UAnokhina V., ^UFlowers, A., ^UGest, S., ^UMcClary, T., ^UMirhaidari, N., & **Miller-Cotto, D.** (April 2023). *Testing Whole Number Bias*. Poster presentation for the Midwestern Psychological Association 2023 Conference, Chicago, IL.

Miller-Cotto, D., Kassan, E., Wambach, D., Resnick, I., Newcombe, N., & Jordan, N.C. (April, 2022). *Assessing early informal fraction knowledge*. Poster presented to the Cognitive Development Society (CDS) Biennial Meeting. Madison, WI.

^GClerjuste, S.C., Chawla, K., **Miller-Cotto, D.**, Barbieri, C.A. (April, 2022). *A meta-analysis of the Worked examples effect on mathematics performance*. Poster presented to the Cognitive Development Society Biennial Meeting. Madison, WI.

^GChawla, K., ^GClerjuste, S., **Miller-Cotto, D.**, Barbieri, C.A., McKinney, G., & O'Neill, L. (September 2021). *A Meta-analysis on the worked examples effect in mathematics*. Presented to the Society for Research in Educational Effectiveness (SREE) 2021 Conference. Washington, D.C.

^GZhang, H., **Miller-Cotto, D.**, & Jordan, N.C. (April 2021). *Exploring Co-development of Executive Functions and Math Achievement Using Cross-lagged Panel Model with Fixed Effects*. Presented to the 2021 Society for Research in Child Development Biennial Meeting, Virtual Meeting.

**Special recognition by SRCD as exemplifying interdisciplinary research related to children's development*

Miller-Cotto, D., & Lewis Jr., N. (April 2021). *Mathematics identity for Black and Latinx Students: A literature synthesis*. Presented to the 2021 American Educational Research Association 2021, Virtual meeting.

Miller-Cotto, D., Hallinen, N.R., & Booth, J.L. (July 2019). *The role of sketching and visuo-spatial working memory in science accuracy*. Presented to the Cognitive Science Society 2019 Meeting, Montreal, QB.

Miller-Cotto, D. (June 2019). *Working memory: Reliability analysis of measures within Mathematics in grade school age children in the United States*. Pre-registration presented to the 2nd annual Mathematical Cognition & Learning Society, Ottawa, ON.

Miller-Cotto, D., & Schunn, C.D. (2018, June). *Examining flipping in a calculus class: Does it work, and for whom?* Poster presented to the International Workshop on Advanced Learning Sciences 2018, Pittsburgh, PA.

Miller-Cotto, D., & Byrnes, J. P. (2018, April). *Examining additional constructs to test the guidance fading effect*. Poster presented at the 2018 Annual Meeting of the American Educational Research Association, New York, NY.

Miller-Cotto, D. (2017, October). *Testing the faded worked example effect with cognitive*

load theory: It works, but for whom? Poster presented at the Cognitive Development Society Conference, Portland, OR.

Miller-Cotto, D., Barbieri, C., & Booth, J. L. (2016, May). *Increasing spatial contiguity to reduce students' misconceptions about algebra.* Poster presented at the Fourth Annual Mathematical Cognition Conference, Fort Worth, TX.

Miller-Cotto, D., Chang, B. L., Booth, J. L., Cromley, J. G., & Newcombe, N. S. (2016, April). *The effects of sketching and self-explanation on students' monitoring use in problem-solving.* Poster presentation at the Bringing Cognitive Science Research to the Classroom Conference, Arlington, VA.

Miller-Cotto, D., David, S., Booth, J. L., Cromley, J. G., & Newcombe, N. S. (2016, April). *Self-explaining encourages student monitoring in math and science problem-solving.* Poster presentation at the National Consortium for Instruction and Cognition Annual Meeting, Washington, D.C.

Miller-Cotto, D., Auxter, A. E., Byrnes, J. P., & Newton, K. J. (2016, March). *Examining the use of faded worked examples in real world classrooms.* Poster presentation at the Eastern Psychological Association Conference, New York, NY.

Miller-Cotto, D., & Booth, J. L. (2015, March). *Contiguity and self-explanations: Reducing student misconceptions about algebra.* Poster presentation for the Society for Research on Child Development Biennial Meeting, Philadelphia, PA.

Miller-Cotto, D., & Byrnes, J. P. (2015, March). *Ethnic/racial identity and academic achievement: A meta-analysis.* Poster presentation at the Society for Research on Child Development Biennial Meeting, Philadelphia, PA.

Miller-Cotto, D., & Byrnes, J. P. (2013, April). *Diversity and academic achievement in American schools.* Poster presentation at the Society for Research in Child Development Biennial Meeting, Seattle, WA.

Miller, D., & Prohaska, V. (2011, March). *Memory illusions: Fonts and serial position assignments for word lures.* Poster presentation at the Eastern Psychological Association Conference, Cambridge, MA.

DEPARTMENTAL TALKS AND LECTURES

Miller-Cotto, D. (September 2025). *Examining theories and assumptions of executive function to support children's learning in early schooling.* Invited talk for the Institute for Personality and Social Research. University of California, Berkeley. Berkeley, CA.

Miller-Cotto, D. (February 2025). *Using theories and assumptions of executive function to support children's learning in early schooling.* Invited talk for the Institute for Social and Health Equity. University at Albany, SUNY. Albany, NY.

Miller-Cotto, D. (October 2024). *Cultural considerations in measuring and interpreting executive functions.* Invited lecture in Developmental Psychology at Occidental College, Los Angeles, CA.

Miller-Cotto, D. (November 2024). *Testing the role of executive function in fraction comparisons*. The Graduate Group in Science and Math Education (SESAME) Colloquium, at the University of California, Berkeley, Berkeley, CA.

Miller-Cotto, D. (February 2023). *Am I a math person? The importance of sense of belonging and math identity for underrepresented students*. Invited talk for the Research and Sponsored Programs (RASP) Forum and the Science of Learning and Education (SOLE) Center at Kent State University, Kent, OH.

Miller-Cotto, D. (May 2019). *Introduction to Systematic Review and Meta-Analysis*. Advanced Statistics and Causal Inference, University of Delaware.

Miller-Cotto, D. (November 2018). *Working memory and achievement: An exploration of competing theories*. Developmental Psychology Brown Bag, Department of Psychology, University of Pittsburgh.

Miller-Cotto, D. (January 2018). *Sketching and self-explanation: A comparison of two cognitive-based strategies used to improve sixth graders' problem solving in math and science*. Pitt Cognitive Brown Bag Series, Learning Research & Development Center, University of Pittsburgh.

Miller-Cotto, D. (October 2017). *Sketching and verbal self-explanation: Do they help middle school children solve math and science problems?* School of Education Graduate Colloquium Series, University of Pittsburgh.

Miller-Cotto, D. (March 2017). *Characteristics of students who benefit from faded worked examples in geometry*. Educational Research Seminar series, Temple University.

Miller-Cotto, D. (February 2017). *Testing the ecological validity of faded worked examples in a developmental mathematics classroom*. Temple Institute for Learning and Education Sciences (TILES) series, Temple University.

RESEARCH EXPERIENCE

2020 – 2022	Postdoctoral Researcher , Early Fractions Project College of Education and Human Development, University of Delaware PIs: Drs. Nancy Jordan and Nora Newcombe
2017 – 2019	Postdoctoral Research Associate , Schunn Lab Learning Research & Development Center, University of Pittsburgh PI: Dr. Christian D. Schunn
2015 - 2017	Research Assistant , Sketching and Self-Explanation in Math and Science Psychological Studies in Education, Temple University PIs: Drs. Julie L. Booth, Jennifer Cromley, Nora Newcombe
2011- 2014	Research Assistant , Cognitive and Social Predictors of Achievement, Mathematical Performance and Problem Solving Psychological Studies in Education, Temple University Advisor: Dr. James P. Byrnes
2010 - 2011	Research Assistant , Parenting and Executive Function Study Department of Psychology, Lehman College CUNY PI: Dr. Keith R. Happaney

2009 - 2011 **Research Assistant**, Learning and Memory Lab
Department of Psychology, Lehman College CUNY
PI: Dr. Vincent Prohaska

TEACHING EXPERIENCE

University of California, Berkeley

Mathematical Thinking and Problem Solving (EDUC 224A; Fall 2025)
Early Childhood Policy – Children, Contexts, and Politics (EDUC C264; Spring 2025)
Early Development and Education (EDUC 114A; Spring 2025; Fall 2025)

Kent State University

Children's Thinking (PSYC-30655; Fall 2023, Spring 2024)
Child Psychology (PSYC-20651; Fall 2022, Spring 2023, Fall 2023, Spring 2024)

Temple University

Early Childhood Development: Birth to Nine Years (ECE 2101; Spring 2017)
Cognition and Learning in the Classroom (ECE 2105; Spring 2014)

ALT-AC/INDUSTRY EXPERIENCE

2019 – 2020 **Research Scientist**, [EF+Math Program](#)
Oakland, CA

MENTORING & SUPERVISING

Postdoctoral Researcher Mentees

Dr. Josh Medrano, Kent State University/UC - Berkeley, 2023 - present

Doctoral Student Mentees

Aija Simmons, LEAD Program, Berkeley School of Education (BSE),
UC Berkeley, 2025 -
Jetta McPhee, Learning Sciences and Human Development,
Berkeley School of Education (BSE), UC Berkeley, 2025 -
Qianjin Guo, Cognitive Development Society (CDS) Diversity Mentoring Program, 2024
Samantha Zaborowski, Psychological Sciences, Kent State University, 2023 – 2024

Master's Student Mentees

Lynna Chang, Learning Sciences and Human Development,
Berkeley School of Education (BSE), UC Berkeley, 2025 -
Ziyan Ani, Learning Sciences and Human Development,
Berkeley School of Education (BSE), UC Berkeley, 2025 -

Doctoral Dissertation Proposal Committees

Prince Estanislao, Berkeley School of Education (BSE), UC Berkeley (Fall 2025)
Ivon Gomez Vargas, Berkeley School of Education, UC Berkeley (Spring 2025)
Courtney Dress, '24, M.A., Kent State University, Sociology (Spring 2024)

Master's Thesis Committees

Alexis McGhee-Dinvaut, '24, M.S., Kent State University, Clinical Psychology (Spring 2024)
Daniel Byrnes, '24, M.S., Kent State University, Psychological Sciences (Spring 2024)

Oral Qualifying Exam Committees

Kayla Thomas, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)
Emily Springhart, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)
Kyla Kemble, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)
Ivon Gomez Vargas, Berkeley School of Education, UC Berkeley (Spring 2025)
Prince Estanislao, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)
Julien Putz, Berkeley School of Education (BSE), UC Berkeley (Fall 2024)

Pre-Qualifying Committees

Kayla Thomas, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)
Kyla Kemble, Berkeley School of Education (BSE), UC Berkeley (Spring 2025)

Undergraduate Senior Honors Thesis Committees

[Hannah Fender](#), '24, B.A., Psychological Sciences, Kent State University (Spring 2024)
Samantha Zaborowski, '23, B.S., Psychological Sciences, Kent State University (Spring 2023)

UC Berkeley Summer Undergraduate Research Fellows (SURF)

Abigail Villa, Summer 2025

UC Berkeley Undergraduate Research Apprentice Program (URAP), and otherwise

Helen Bui
Kyla Burfoot
Kiara Eng
Mira Patel
Fakhrunnesa Samim
Aly Turfler
Ysabelle Valdez
Shiyu Hu (2025 -
Ella Rho (2024 - 2025)
Emily Moberly (2024 - 2025)
Ayanna Belle Lee (2024 -)
Cheyenne Paw (2024 -)
Katie Torres-Romero (2024 -)
Andie Liu (2024)
Dayton Duy Tuong Phan (2024)

Kent State University Undergraduate Advisees

Angel Johnson, Research Assistant, Kent State University, 2023 – 2024

Logan Ernst, Research Assistant, Lab Manager, Kent State University, 2022 – 2024
 Veronica Anokhina, Research Assistant, Kent State University, 2022 – 2024
 Morgan Shingledecker, Lab Manager, Kent State University, 2022 - 2023

EDITORIAL AND REVIEW EXPERIENCE

2025 – present Editorial Board, *Journal of Experimental Child Psychology*

2025 Special Issue Editor, Early Experiences and Executive Function, *Developmental Psychology*

2020 – 2025 Editorial Board, *Contemporary Educational Psychology*

2025 Panelist, National Science Foundation

2024 Ad hoc Reviewer, National Science Foundation

2024 Program Reviewer, American Educational Research Association Division C: Learning and Instruction/1c Mathematics

2019 – 2023 Editorial Board, *Journal of Experimental Education*

2023 Panelist, National Science Foundation

2021 Panelist, National Science Foundation

2020 Reviewer, Bill and Melinda Gates Foundation, Balancing the Equation: A Grand Challenge for Algebra

2020 Reviewer, Spencer Foundation

2020 Panelist, National Science Foundation

2019 Panelist, National Science Foundation

2019 Program Reviewer, American Educational Research Association Division C: Learning and Instruction/1c Mathematics; SIG Early Education and Child Development

2018 Program Reviewer, American Educational Research Association Division C: Learning and Instruction/1c Mathematics

2018 Program Reviewer, Society for Research in Child Development (SRCD)

Ad-Hoc Reviewer

American Psychologist, Applied Cognitive Psychology, Behavioral Sciences, British Journal of Educational Psychology, Child Development, Cognitive Research: Principles and Implications, Contemporary Educational Psychology, Developmental Psychology, Early Childhood Research Quarterly, Educational Psychology Review, Frontiers in Psychology, Journal of Applied Developmental Psychology, Journal of Experimental Education, Journal of

Experimental Child Psychology, Journal of the Learning Sciences, Journal of Experimental Psychology: Learning, Memory, and Cognition, Journal of Numerical Cognition, Journal of Research in Education, Learning and Instruction, Mathematics Education Research Journal, PLOS One

SERVICE TO THE FIELD

2024	Cognitive Development Society (CDS) Diversity Award Mentor
2024	Program Chair, Executive Committee, Division 7 (Developmental Psychology), American Psychological Association (APA)
2023	Cognitive Development Society (CDS) Conference Proposal Reviewer
2023	Program Co-Chair, Executive Committee, Division 7 (Developmental Psychology), American Psychological Association (APA)
2020 – 2021	Policy and Practice Co-Chair, Mathematical Cognition and Learning Society (MCLS)
2019 – 2022	Committee Member, American Psychological Association Division 15: Educational Psychology, Early Career Educational Psychologists Committee
2019	Panelist, Professional Development Workshop: Rock the Postdoc: How to Find, Obtain, and Thrive in a Postdoctoral Position, Society for Research in Child Development Biennial Meeting, March 2019.
2019	Symposium organizer and co-chair, <i>2019 International Convention of Psychological Science</i> , Symposium (March 2019): Cross-cultural Factors Relating to the Mathematical Cognition of Diverse Populations Across the Globe.

SERVICE TO THE UNIVERSITY

2023	Judge, Three-Minute Thesis Presentations, Summer Undergraduate Research Experience (SURE), Kent State University
2011	Chair, Proposal Review Board, Lehman College Scholarship Day, Lehman College CUNY

SERVICE TO DEPARTMENT

2024 - 2025	Personnel Committee, Berkeley School of Education, University of California, Berkeley
2023 - 2024	Applied Psychology Center Committee, Department of Psychological Sciences, Kent State University
2022 – 2024	Undergraduate Committee, Department of Psychological Sciences, Kent State University
Fall 2023	Chair Search Committee, Department of Psychological Sciences, Kent State University

- 2018 – 2019 Committee member, Diversity and Inclusion Committee, Learning Research and Development Center (LRDC), University of Pittsburgh
- 2015 Panelist, Tactics 101: Surviving and Thriving in Your PhD Program, Temple University

RELEVANT CONSULTING

- 2023 – Executive Function Expert Consultant, MDRC
- 2022 – 2023 Executive Function Expert Consultant, WestEd
- 2021 – 2022 Equity in Education Expert Consultant, EmancipatED LLC
- 2020 Executive Function Expert Consultant and Workshop Facilitator, Teach for America (TFA)
- 2019 - Executive Function in Math Expert Consultant, EF+Math Program, Advanced Education Research & Development Fund (AERDF)

PRESS, MEDIA & OUTREACH

[“Our Mathematical World”](#). October 2024.

[“How To Make Someone Not Hate Math”](#) - October 3rd, 2024, *EdSurge*

[“The Marshmallow Test and other predictors of success have bias built in, researchers say”](#) – August 29th, 2024, *Washington Post*

“Ask090”. April 2023. Podcast – *Ask Psych Sessions*.

“Episode 13.” September 2022. Podcast – *Agility in Bloom*.

“Season 1 Episode 18”. March 2021. Podcast – *Let’s Grab Coffee*.

Invited Speaker (May 2020): “What are executive functions, and what do they have to do with how my child learns?” TeenSHARP Parent Night, [Virtual].

Invited Speaker (April 2020) “Using Educational Psychology to Improve Academic Habits” TeenSHARP Student Hours, [Virtual]

PROFESSIONAL AFFILIATIONS

American Educational Research Association (AERA)
Cognitive Development Society (CDS)
Mathematical Cognition and Learning Society (MCLS)
Society for Research in Child Development (SRCD)
SPARK Society