

# DANA MILLER - COTTO, Ph.D.

## Curriculum Vitae

University of California, Berkeley  
Berkeley School of Education  
2121 Berkeley Way  
Berkeley, CA 94720  
dmillerc@berkeley.edu  
[Personal Website](#) | [Google Scholar](#)

## ACADEMIC POSITIONS

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- 2024 - **Assistant Professor**, Berkeley School of Education (BSE)  
Cluster: 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

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- 2020 - 2022 **Postdoctoral Researcher**, College of Education and Human Development  
University of Delaware, Newark, DE
- 2017 - 2019 **Postdoctoral Research Associate**, Learning Research and Development Center  
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

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### EXTERNAL FUNDING

- Submitted Co-Principal Investigator (PI: Sara Schmitt)  
Collaborative Research: *Co-designing Accessible Research Driven Games Advancing Mathematics & Executive Function Skills*  
National Science Foundation DRK-12  
[UCB Subaward Amount Request: \$700,012]
- Submitted Co-Principal Investigator (PI: Avery Closser)  
*Exploring Factors Associated with Perceptual Scaffolding to Support Elementary Math Learning in Digital Learning Platforms*  
U.S. Department of Education: Institute for Education Sciences

[UCB Subaward Amount Request: \$441,073]

- 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 and 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

- 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 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

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2024 Rising Star, Association for Psychological Science (APS)  
 2024 Invited Presenter, 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 [course  
 release]  
 2020 Institute on Statistical Analysis: Development of Mathematics Competencies in Early  
 Childhood via American Education Research Association/NSF, Laguna Beach, CA  
 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 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

+ = former/current trainee; ^ = Co-First Author; \*last author as project lead

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1. Bauer, C., **Miller-Cotto, D.**, Silverman, D.M., & Frankenhuys, W. (in press). Recognizing the agency and strengths of people in disadvantaged positions: A holistic approach to studying inequality. *Social and Personality Psychology Compass*.
2. Gesuelli, K., **Miller-Cotto, D.**, & Barbieri, C.A. (in press). 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
3. **Miller-Cotto, D.**, Ahmed, S., Ribner, A.D., & Ellis, A.E. (accepted Stage 1 In Principle Acceptance of Registered Report). Examining ethnic/racial measurement invariance in fourth-grade executive function: A registered report of data from the ECLS-K. [[Pre-Registration](#)]. Provisionally accepted at *Journal of Educational Psychology*.
4. **Miller-Cotto, D.**, & Gordon, R. (2024). 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*. doi: 10.1177/17470218241301701

5. 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
6. 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
7. **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
8. + 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
9. ^DeJoseph, M., ^Ellewood-Lowe, M., **Miller-Cotto, D.**, Silverman, D., Shannon, K. A., Reyes, G., Rakesh, D., & Frankenhuis, 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
10. 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
11. 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
12. 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
13. 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
14. + 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
15. 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
16. 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

17. **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.
18. **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.
19. **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
20. 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
21. **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
22. **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
23. 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.
24. 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
25. 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
26. 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
27. **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
28. 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

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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

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+ = former/current trainee; ^ = Co-First Author; \* last author as project lead

**Miller-Cotto, D.**, & +Medrano, J. (revised, resubmitted). Does working memory facilitate the effectiveness of faded worked examples for middle school math? Revision submitted to *British Journal of Educational Psychology*.

Boyd, M., Mims, L.C., & **Miller-Cotto, D.** (under review). "I just don't want his light to be dimmed in the Classroom:" Exploring Black mothers' articulations of contemporary education mis(matches) within their children's learning environments. Submitted for peer review.

Byrnes, J.P., & **Miller-Cotto, D.** (under review). Using machine learning and latent profile transition analysis to identify the most powerful components of the propensity to learn. Submitted for peer review.

Scalise, N.R, Gladstone, J.R, & **Miller-Cotto, D.** (in revision). Maximizing math achievement: Strategies from the science of learning. Revision invited to *Journal of Experimental Child Psychology*.

+Medrano, J., & **Miller-Cotto, D.** (under review). Readiness and Math Achievement in Asian American Children through the Opportunity-Propensity Model. Submitted for peer review.

+Medrano, J., & \***Miller-Cotto, D.** (in revision). Understanding working memory as a facilitator of math learning: Offloading as a potential strategy. Revision invited to *British Journal of Educational Psychology*.

Owusua, T., Fitzsimmons, C. J., **Miller-Cotto, D.**, Coifman, K. G., Taber, J. M., Sidney, P. G., & Thompson, C. A. (under review). Identities at the intersection of gender and race/ethnicity: Interrelations with math anxiety, math attitudes, and math performance. Submitted for peer review.

## PRE-REGISTRATIONS

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**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

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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). *Introduction to Systematic Review and Meta-Analysis*. Advanced Statistics and Causal Inference, University of Delaware.

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

<sup>^</sup> = Co-First Author; <sup>U</sup> = Undergraduate Author; <sup>G</sup> = Graduate student Author; <sup>P</sup> = Postdoc Author

Maiden name: Miller

<sup>G</sup>Guba, T.P., <sup>U</sup>McKinney, G., <sup>U</sup>Morra, G., <sup>G</sup>Silla, E.M., **Miller-Cotto, D.**, & Barbieri, C.A. (April 2025) Metacognitive Monitoring and Calibration During Fraction Arithmetic: Effects of Visual Signaling Cues and Metacognitive Prompts. Paper to be presented the American Educational Research Association (AERA) 2025 Annual Meeting, Denver, CO.

<sup>P</sup>Medrano, J., & **Miller-Cotto, D.** (April 2025). Testing the Opportunity-Propensity Model of achievement in Asian-American subgroups. Paper to be presented the American Educational Research Association (AERA) 2025 Annual Meeting, Denver, CO.

**Miller-Cotto, D.,** Chan, J.Y-C., <sup>P</sup>Medrano, J. (April 2023). Identifying Challenging Math Topics and Knowledge Types through Students' Problem-Solving Performance. Paper to be presented at the American Educational Research Association (AERA) 2025 Annual Meeting, Denver, CO.

**Miller-Cotto, D.,** & <sup>P</sup>Medrano, 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.

<sup>G</sup>Chawla, K., <sup>G</sup>Botello, M., <sup>U</sup>Shingledecker, M., **Miller-Cotto, D.,** & Barbieri, C. A. (April 2024). A Meta-Analysis Exploring Relationship Between Motivation and Executive Function. Paper presentation to the American Educational Research Association (AERA) 2024 Annual Meeting, Philadelphia, PA.

<sup>P</sup>Gesuelli, K., **Miller-Cotto, D.,** Barbieri, C.A. (April 2024). Examining the longitudinal stability of mathematics learning difficulties and disabilities: A latent transition analysis. Paper presented to the Bader-Kauffman Conference on Special Education Research. Kent, OH.

**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., <sup>G</sup>Clerjuste, S., <sup>G</sup>Chawla, K., <sup>U</sup>Le, P.H., <sup>U</sup>DeLuca, L., & <sup>U</sup>Landy, 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.** & <sup>G</sup>Zhang, 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 Bi-ennial 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.

<sup>G</sup>Zhang, H., **Miller-Cotto, D.,** & Jordan, N.C. (2021 February). Exploring co-development of executive

functions and math achievement using cross-lagged panel model with fixed effects. Presentation at Annual Conference, Mathematical Cognition and Learning Society (MCLS), 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., Auxter, A. E., Byrnes, J. P., & Newton, K. J.** (2016, February). Instruction, fading, and self-explanation: Increasing far transfers with schema-based instruction in college algebra. Paper presented at the Eastern Educational Research Association Annual Conference, Hilton Head Island, SC.

**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 22<sup>nd</sup> Greater New York Conference on Behavioral Research, New York, NY.

## SELECTED POSTER PRESENTATIONS

<sup>^</sup> = Co-First Author; <sup>U</sup> = Undergraduate Author; <sup>G</sup> = Graduate student Author; <sup>P</sup> = Postdoc Author

<sup>G</sup>Guo, Q., <sup>P</sup>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.

<sup>P</sup>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., Purpura, D.J., & Hornburg, C.B. (May, 2025). *How children's drawings of mathematicians relate to their gender and math identity*. Poster to be presented at the Society for Research in Child Development (SRCD) 2025 Biennial Meeting, Minneapolis, MN, USA.

**Miller-Cotto, D., & <sup>P</sup>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 4<sup>th</sup> International Conference on Working Memory (ICWM). Leeds, UK.

<sup>G</sup>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.

<sup>G</sup>Clerjuste, S., <sup>G</sup>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.

<sup>P</sup>Medrano, J., Thompson, C.A, **Miller-Cotto, D.**, Delvin, B., <sup>U</sup>Shingledecker, 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.

<sup>U</sup>Shingledecker, M., <sup>U</sup>Anokhina V., <sup>U</sup>Flowers, A., <sup>U</sup>Gest, S., <sup>U</sup>McClary, T., <sup>U</sup>Mirhaidari, 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.

<sup>G</sup>Clerjuste, 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.

<sup>G</sup>Chawla, K., <sup>G</sup>Clerjuste, 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.

<sup>G</sup>Zhang, 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

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- 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. (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

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- 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

- 2010 - 2011     Advisor: Dr. James P. Byrnes  
**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

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Early Childhood Policy – Children, Contexts, and Politics	1 semester	UC Berkeley
Early Development and Education (undergraduate)	1 semester	UC Berkeley
Children’s Thinking (instructor of record)	2 semesters	Kent State University
Child Psychology (instructor of record)	4 semesters	Kent State University
Child Development: Birth to Nine years	1 semester	Temple University
Cognitive Development	1 semester	Temple University

## ALT-AC/INDUSTRY EXPERIENCE

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

## MENTORING & SUPERVISING

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### *Postdoctoral Researcher Advisees*

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

### *Graduate Researcher Advisees*

Qianjin Guo, Cognitive Development Society (CDS) Diversity Mentoring Program, 2024  
 Samantha Zaborowski, Psychological Sciences, Kent State University, 2023 – 2024

### *Doctoral Dissertation Committees*

Courtney Dress, '24, M.A., Kent State University, Sociology

### *Master’s Thesis Committees*

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

### *Qualifying Exam Committees*

Julien Putz, Berkeley School of Education (BSE), UC Berkeley

### *Undergraduate Senior Honors Thesis Committees*

[Hannah Fender](#), '24, B.A., Kent State University, Psychology  
 Samantha Zaborowski, '23, B.S., Kent State University, Psychology

*Kent State University Undergraduate Research Experience 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 – 2023

**EDITORIAL AND REVIEW EXPERIENCE**

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

2022 - present Principal Review Board, *Journal of Educational Psychology*

2020 – present Editorial Board, *Contemporary Educational Psychology*

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**

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**

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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**

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2023	Judge, Three-Minute Thesis Presentations, Summer Undergraduate Research Experience, Kent State University
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### **SERVICE TO DEPARTMENT**

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2024 -	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
- 2011 Chair, Proposal Review Board, Lehman College Scholarship Day, Lehman College CUNY

## **RELEVANT CONSULTING**

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- 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**

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

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

[“The Marshmallow Test and other predicts of success have bias built in, researchers say”](#) – August 29<sup>th</sup>, 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**

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