

DANA MILLER - COTTO, Ph.D.

Curriculum Vitae

University of California, Berkeley
Berkeley School of Education
2121 Berkeley Way West
Fourth Floor, Office 4210
Berkeley, CA 94720
dmillerc@berkeley.edu
[Personal Website](#) | [Google Scholar](#)

ACADEMIC POSITIONS

- 2024 - **Assistant Professor**, School of Education, University of California, Berkeley
- 2022 - 2024 **Assistant Professor**, Department of Psychological Sciences, Kent State University

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

- 2025 - 2026 Principal Investigator
Examining the role of external aids in supporting children's working memory when learning addition and subtraction
Caplan Foundation for Early Childhood
[\$50,000]
- 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
 The 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]

MENTORING SUPPORT

2025 – 2026 Faculty Mentor
Latinx Research Center Faculty Mentored Undergraduate Research Fellowship
Mentee: Abigail Villa
University of California, Berkeley
[\$9,600]

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, Association for Psychological Science (APS)
2024 Invited Speaker, Early Career Symposium, Cognitive Development Society (CDS)
2023 - Founding Member, [Global Executive Function Initiative](#)
2023 - 2025 Founding Member, [Communicating and Expanding Research on Adversity \(CERA\)
Network](#)
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/National Science
Foundation (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 (IES),
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

REFEREED JOURNAL ARTICLES

underlined indicates mentee during initiation of project

Δ indicates a paper with myself as senior author

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

2. **Miller-Cotto, D.**, & Byrnes, J.P. (2026). Identifying individual cognitive and motivational profiles predictive of academic growth: A combined machine learning and person-centered approach. *Learning and Individual Differences*, 125, 102835. doi: 10.1016/j.lindif.2025.102835
3. **Miller-Cotto, D.**, Ribner, A., Ahmed, S., Ellis, A., & Czerwiński, S. (2026). 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*, 118, 1, 1-11. doi: 10.1037/edu0000985
4. Medrano, J., & **Miller-Cotto, D.** (2026). Examining subgroup differences in school readiness and math achievement in Asian American children through the Opportunity-Propensity Model. *Early Education and Development*, 37, 1, 200-219. doi: 10.1080/10409289.2025.2548596.
5. 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
6. **Miller-Cotto, D.**, & Medrano, J. (2025). Does working memory moderate the effect of fading on math performance? *British Journal of Educational Psychology*, 96, 1, 108-126. doi: 10.1111/bjep.12781
7. **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
8. 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
*Featured in *EduTopia's "The 10 Most Significant Education Studies of 2025"* [[here](#)].
9. 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
10. 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
11. 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
12. 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

13. 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
14. **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
15. ^DeJoseph, M., ^Ellwood-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
^ indicates shared first-authorship
16. 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
17. 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
18. 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
19. 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
20. 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
21. 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
22. 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
23. **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.*
24. **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.*

25. **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
26. 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
27. **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
28. **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
29. 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.*
30. 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
31. 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
32. 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
33. **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
34. 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

underlined indicates mentee during initiation of project

Δ indicates a paper with myself as senior author

Miller-Cotto, D., & McPhee, J. (invited; in prep). Supporting working memory in early elementary mathematics: Applying working memory principles to math fact fluency instruction.

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. (2025). Mathematics learning difficulties. In Okolo, Patton Terry & Cutting (Eds.), *Handbook of Learning Disabilities, Third Edition*. (pp. 53–74). New York, NY: Guilford Press

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.

PRE-REGISTRATIONS

underlined indicates mentee during initiation of project

Δ indicates a paper with myself as senior author

Miller-Cotto, D., & Ribner, A.D. Do classroom tools support kindergarteners' working memory? A propensity score matching analysis.

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

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

INVITED TALKS

Miller-Cotto, D. (February 2026). *Clarifying Executive Function Constructs to Advance Early Learning*. Cognitive Brown Bag Series. University of Illinois- Urbana Champaign, Urbana Champaign, IL.

Miller-Cott, D. (January 2026). *Examining the role of context on young children's executive function performance*. Early Childhood Education Program (ECEP) Speaker Series. University of California, Berkeley, Berkeley, CA.

Panelist, *IHD/Developmental Colloquium: Equity in Early Learning* — Institute of Human Development, University of California, Berkeley, November 2025.

Miller-Cotto, D. (October 2025). *Rethinking Executive Function for Strengthening Learning During the Early School Years*. Developmental Psychology Colloquium Series. University of California, Santa Cruz. Santa Cruz, CA.

Miller-Cotto, D. (October 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. (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. (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. (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.

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 (LRDC), 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 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.

SELECTED PAPER PRESENTATIONS

underlined indicates mentee during initiation of project

Maiden name: Miller

Miller-Cotto, D., Campbell, K., & Vanegas-Grimaud, L. (accepted). *Teachers as Researchers: Developing a Teaching Inquiry Group to Professionalize Early Childhood Educators Knowledge and Practices*. Paper to be presented at the International Association of Laboratory Schools 2026 Annual meeting, Jyväskylä, Finland.

Medrano, J., & **Miller-Cotto, D.** (April 2026). *Executive Function, Math, and Reaction Time: Implications for Task Design and Intervention in Early Childhood*. Paper to be presented at the American Educational Research Association (AERA) 2026 Annual Meeting, Los Angeles, CA.

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., **Medrano, 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., & **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.

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., **Clerjuste, S.**, **Chawla, K.**, **Le, P.H.**, **DeLuca, L.**, & **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. & **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 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

underlined indicates mentee during initiation of project

Miller-Cotto, D., & Ribner, A. D. (April 2026). *Examining the role of classroom tools in supporting kindergarteners' working memory*. Poster to be presented to the Cognitive Development Society (CDS), Montreal, Ontario, Canada.

Villa, A. I., Medrano, J., Ribner, A.D., **Miller-Cotto, D.** (April 2026). *Assessing Executive Function in Context: Examining Assessor-Child Identity Match in Early Childhood*. Poster to be presented to the Cognitive Development Society (CDS), Montreal, Ontario, Canada.

Miller-Cotto, D., & Ribner, A. (June 2025). *Do classroom tools support children's working*

memory? A pre-registered poster presented at the Mathematical Cognition and Learning Society (MCLS) 2025 Annual Meeting, Hong Kong, SAR, China.

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

Miller-Cotto, D., & Gesuelli, K. A. (April 2025). *Testing theories of working memory and math for students with math learning difficulties*. Poster presented to 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.

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.

Clerjuste, S., 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.

Medrano, J., Thompson, C.A, Miller-Cotto, D., Delvin, B., 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.

Shingledecker, M., Anokhina V., Flowers, A., Gest, S., McClary, T., 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., Kassin, 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.

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.

INVITED COURSE LECTURES

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

RESEARCH EXPERIENCE

- 2020 – 2022 **Postdoctoral Researcher**, NSF Funded 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**, NSF Funded Sketching and Self-Explanation in Math/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

Cultivating Cognitive Development (EDUC 203; Spring 2026)

Special Problems in Mathematics, Science, and Technology Education: Research Group in Early

Mathematical Cognition and Executive Function (EDUC 223B, Fall 2025, Spring 2026)

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; Spring 2026)

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)

PROFESSIONAL DEVELOPMENT

2026	Provost's Teaching for Equity & Inclusion Faculty Course, Center for Teaching and Learning, University of California, Berkeley
2024 - 2025	Teaching Excellence Colloquium for New Faculty, Center for Teaching and Learning, University of California, Berkeley
2023	Designing for Equity and Accessibility in the Classroom, Center for Teaching and Learning, Kent State University
2022	Early Career Faculty Program, Center for Teaching and Learning, Kent State University
2018	Meta-Analysis Training Institute (MATI), via Institute for Education Sciences (IES), Chicago, IL
2017	Systematic Review and Meta-Analyses, Coursera
2016	Item Response Theory, Statistical Horizons, Instructor: Tenko Raykov
2014	Hierarchical Linear Modeling, Instructors: Stephen Raudenbush and Anthony Bryk

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

Visiting Scholars

Mengyan Fang, UC Berkeley (via Shaanxi Normal University, China), 2025 - present
 Hamza Zia, UC Berkeley (via Washington and Lee University, USA), Summer 2025

Doctoral Student Mentees

Alicia Arenas, LEAD Program, Berkeley School of Education (BSE),
 UC Berkeley, 2025 -
 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

Doctoral Dissertation Proposal Committees

Prince Estanislao, Berkeley School of Education (BSE), UC Berkeley (Summer 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

Carolina Hamburger, Berkeley School of Education (BSE), UC Berkeley (Fall 2025)
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 Undergraduate Mentees

Kiara Eng, Samir Ali, Kaho Furukawa, Jaymee Cheng, Aly Turfler, Chiara Speakers, Abigail Villa, Emily Moberly, Ayanna Belle Lee, Cheyenne Paw, Katie Torres-Romero, Andie Liu, Dayton Duy Tuong Phan

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 - 2026 Special Issue Editor, Early Experiences and Executive Function, *Developmental Psychology*

2026 Panelist, SBE Directorate, National Science Foundation

2025 Reviewer, LEVANTE, Jacobs Foundation

- 2025 Program Reviewer, American Educational Research Association Division C: Learning and Instruction/1c Mathematics
- 2020 – 2025 Editorial Board, *Contemporary Educational Psychology*
- 2025 Panelist, SBE Directorate, National Science Foundation
- 2024 Reviewer, LEVANTE, Jacobs 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 Journal Reviewer

American Psychologist; Applied Cognitive Psychology; Behavioral Sciences; British Journal of Educational Psychology; Child Development; Child & Youth Care Forum; Cognitive 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; Mind, Brain, and Education; PLOS One

Ad-Hoc Journal Reviewer

Teachers College Press

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, *2019 International Convention of Psychological Science*, 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

- 2025 - Undergraduate Studies Committee, Berkeley School of Education, University of California, Berkeley
- 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 – 2025 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

Documenting as a Pre-School Educator, ECEP Program, UC Berkeley, September 2025

Executive Function Professional Development, ECEP Program, UC Berkeley, August 2025

[“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)
Society for Research in Child Development (SRCD)
SPARK Society