

# DANA MILLER - COTTO, Ph.D.

## Curriculum Vitae

Kent State University  
301 Kent Hall Annex (KTA)  
Kent, OH 44242  
330-672-2090  
dmillerc@kent.edu

[Personal Website](#) | [OSF Page](#) | [Google Scholar](#)

## EDUCATION

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- 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

## ACADEMIC POSITIONS

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- 2022 -      **Assistant Professor**, Department of Psychological Sciences  
Kent State University, Kent, OH
- 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

## GRANT SUPPORT

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### EXTERNAL FUNDING

- 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 – 2024      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)  
[\$4,000,000]
- 2010      Principal Investigator  
*Memory Illusions: Fonts and Serial Position Assignments of Word Lures*  
Psi Chi/ Association for Psychological Science  
[\$5,000]

**INTERNAL FUNDING**

- 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]
- 2023 Principal Investigator  
*Examining the Role of Working Memory in Mathematics Skills in Early Childhood: Testing Competing Theories*  
Applied Psychology Center (APC) Early Career Fellowship  
Kent State University  
[course release]
- 2018 - 2019 Co- Investigator (PI: 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]

**CONSULTING/KEY PERSONNEL**

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

**HONORS, AWARDS, & FELLOWSHIPS**

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- 2023 Invited Participant, Global Executive Function Initiative, Jacobs Foundation, Zürich, Switzerland
- 2023 Certificate for contributing a top downloaded article in *Infant and Child Development*
- 2023 Publication Productivity Award, 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 - 20 Mindset Scholars Network and Bill and Melinda Gates Foundation: Inclusive Mathematics Environments Early Career Fellowship [\$10,000]
- 2019 Carl A. Grant Lecture Scholar, University of Wisconsin - Madison
- 2018 Meta-Analysis Training Institute, Institute for Education Sciences (IES), Chicago, IL
- 2017 Cognitive Development Society (CDS) Diversity Award
- 2014 - 15 The Future Faculty Fellowship, Temple University
- 2011 Psi Chi Kay Wilson Officer Team Leadership Award, Lehman College CUNY Chapter
- 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

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1. Viegut, A. A., Resnick, I., **Miller-Cotto, D.**, Newcombe, N.S., & Jordan, N.C. (in press). Tracking informal fraction knowledge and its correlates across first grade. *Developmental Psychology*. doi: 10.1037/dev0001581
2. 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. <https://doi.org/10.5406/19398298.136.2.08>
3. 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. <https://doi.org/10.1016/j.ecresq.2023.02.004>
4. Barbieri, C.A., **Miller-Cotto, D.**, Chawla, K., & Clerjoste, S. (2023). A meta-analysis of the worked example effect on mathematics performance. *Educational Psychology Review*, 35, 11. <https://doi.org/10.1007/s10648-023-09745-1>
5. 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. <https://doi.org/10.1016/j.cedpsych.2022.102126>
6. 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. <https://doi.org/10.1016/j.cogdev.2022.101226>
7. **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
8. 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
9. **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.*  
*\*\*This publication is in the top 5% of all research outputs scored by Altmetric.*
10. 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
11. **Miller-Cotto, D.**, & Schunn, C. (2020). Mind the gap: How a large-scale course re-design in economics reduced performance gaps. *Journal of Experimental Education*, 1-14.

doi: 10.1080/00220973.2020.1805717

12. 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.
13. **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
14. **Miller-Cotto, D.**, & Auxter, A. E. (2019). Testing the ecological validity of faded worked examples in algebra. *Educational Psychology*, 41, 191-205. doi: 10.1080/01443410.2019.1646411
15. 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
16. 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
17. 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
18. **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
19. 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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20. Jordan, N.C., **Miller-Cotto, D.**, & Gesuelli, K. (in press). Mathematics learning difficulties. In Okolo, Patton Terry & Cutting (Eds.), *Handbook of Learning Disabilities, Third Edition*.
21. 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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- Scalise, N.R, Gladstone, J.R, & **Miller-Cotto, D.** (revision invited). Playful instruction, child interest, and mathematics achievement in elementary school.

**Miller-Cotto, D.**, Ribner, A.D., Ahmed, S., & Ellis, A.E. (revision invited). Examining measurement invariance in kindergarten of executive function: A registered report from the ECLS-K.

**Miller-Cotto, D.**, & Lewis, N.A. (revision invited). Am I a “Math Person”? Considering context in shaping mathematics identity among Black students. [[Pre-Print](#)].

**Miller-Cotto, D.**, Smith, L.V., & Ribner, A.D. (revision invited). Understanding working memory and mathematics development for ethnically/racially minoritized children through a social capital lens.

**Miller-Cotto, D.** (under review). The role of working memory in the effectiveness of faded worked examples. Submitted for peer review.

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. [[Pre-Registration](#)]. Submitted for peer review.

Chawla, K., Barbieri, C.A., Clerjuste, S., & **Miller-Cotto, D.** (invited). Response to commentary on Barbieri et al worked examples meta-analysis (2023).

## MANUSCRIPTS IN PREPARATION

Only manuscripts with full drafts are listed here.

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DeJoseph, M., Ellewood-Lowe, M., **Miller-Cotto, D.**, Rakesh, D., Reyes, G., Adams Shannon, K., Silverman, D., & Frankenhuis, W.E. (in prep). The promise and pitfalls of a strengths-based approach to child poverty and neurocognitive development: Implications for policy.

Del Toro, J., Legette, K., Christophe, N.K., Pasco, M., **Miller-Cotto, D.**, & Wang, M.T. (in prep). When ethnic-racial discrimination spills over and predicts the school adjustment of non-discriminated adolescent: The mediating role of classroom climate.

Devlin, B.L., **Miller-Cotto, D.**, & Jordan, N.C. (in prep). Profiles of preschoolers’ numerical abilities across quantity representations.

Clerjuste, S., Guang, C., **Miller-Cotto, D.**, & McNeil, N.M. (*invited for submission for special series in Journal of Experimental Child Psychology*). Predicting performance on distributive property problems.

**Miller-Cotto, D.**, Zhang, H., & Jordan, N.C. (in prep). The role of working memory in math learning for children with math learning difficulties: an extension of competing theories.

**Miller-Cotto, D.**, & Chan, J.Y.-C. (in prep). Identifying challenging topics in mathematics: An analysis of student performance across domains.

**Miller-Cotto, D.**, Barbieri, C.A., Chawla, K., Botello, M. (in prep). Executive function and motivation: A meta-analysis to support building a cohesive theory in education.

\*Ribner, A.D., \***Miller-Cotto, D.**, Merkle, R., Rosenberg-Lee, M., & Rivera, L. (in prep). Executive functions predict two times the growth rate in math skills for children living in poverty.

\*Denotes co-first author

## CONFERENCE TALKS

<sup>U</sup> Undergraduate / Post-Bac Trainee; <sup>G</sup> Graduate Trainee; <sup>P</sup> Postdoc Trainee

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Maiden name: Miller

Barbieri, C.A., Griffin, C., **Miller-Cotto, D.**, Booth, J.L., & Silla, E. M. (submitted). Mathematics Identity and Sense of Belonging to Mathematics: Unique or overlapping constructs? Proposal submitted to the American Educational Research Association (AERA) 2024 Annual Meeting. Philadelphia, PA.

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

**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.

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

McElveen, T., Hornburg, C., Mayes, A., **Miller-Cotto, D.**, Andres-Salgarino, M.B., Schmitt, S., Powell, S., & Purpura, D. (March 2023). Associations between communal socializations and the math identity and performance of minoritized elementary students. Paper presentation for the 2023 Society for Research in Child Development (SRCD) biennial meeting. Salt Lake City, Utah.

**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.

Zhang, H., Devlin, B.L., Beliakoff, A., **Miller-Cotto, D.**, Klein, A., & Jordan, N.C. (June 2022). Exploring growth in number competencies among students at-risk for mathematics learning difficulties. In B. Devlin (Chair), *Predicting early mathematics difficulties*. Paper presented at the 2022 Annual Meeting of the Mathematical Cognition and Learning Society. Antwerp, Belgium.

- McElveen, T.L., Hornburg, C.B., Mayes, A.S., **Miller-Cotto, D...** (June 2022). Examining the Factor of Communal Socialization in Mathematics and Associations with Elementary Students' Math Identities. Poster presented to the Mathematical Cognition and Learning Society (MCLS). Antwerp, Belgium.
- Hornburg, C.B., McElveen, T.L., **Miller-Cotto, D...** (June 2022). Relations Among Sense of Belonging to Math, Math Identity, and Math Achievement in the Late Elementary Grades. Poster presented to the Mathematical Cognition and Learning Society (MCLS). Antwerp, Belgium.
- Ribner, A.D., Rosenberg-Lee, M., Rivera, L., Merkley, R., & **Miller-Cotto, D.** (April 2022). The role of EF skills in mathematics skills for children living in poverty. Paper presented to the Cognitive Development Society Biennial Meeting. Madison, WI.
- 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.
- Barbieri, C.A., & **Miller-Cotto, D.** (April 2021). The relationship between adolescents' sense of belonging to mathematics and learning. Presentation to the 2021 American Educational Research Association 2021 meeting, Virtual meeting.
- 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).
- Wang, A. H. & **Miller-Cotto, D.** (2020, Apr 17 - 21) *Family Social Capital, Family Routines, and School-Readiness Skills of Asian American, Black, and Latinx Kindergarten Children* [Paper Session]. AERA Annual Meeting San Francisco, CA <http://tinyurl.com/qvg5x7p> (Conference Canceled due to COVID-19).
- Barbieri, C.A., **Miller-Cotto, D.**, & Booth, J. L. (April 2019) Error prevalence and visual signaling cues: Design-based principles for algebra learning. Paper presented to the American Educational Research Association, Toronto, ON.
- 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.

Barbieri, C.A., & **Miller-Cotto, D.** (March 2019). The relationship between adolescents' sense of belonging to the mathematics community and algebra performance. Paper presented at the 2019 International Convention of Psychological Science (ICPS), Paris, France.

**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.

Prohaska, V., Barbieri, C., **Miller, D.**, Monforte, P., & Orengo, D. (2011, March). Two heads are not always better than one. Paper presented at the Eastern Psychological Association Conference, Cambridge, MA.

**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.

## POSTER PRESENTATIONS

<sup>U</sup> Undergraduate /Post-Bac Trainee; <sup>G</sup> Graduate Trainee; <sup>P</sup> Postdoc Trainee

<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 Meeting, Chicago, IL.

Kim, J., Hornburg, C., McElveen, T., Grose, G., Berry, C., Elardo, G., Mayes, A., **Miller-Cotto, D.**, Andres-Salgarino, M. B., Powell, S., Schmitt, S., Purpura, D. (April 2023). Examining Gender Differences in Children's Math Identity and Representations of Mathematicians Across Elementary Grades. Poster accepted to the 2023 Society for Research in Child Development (SRCD) biennial meeting. Salt Lake City, Utah.

Kassan, E., **Miller-Cotto, D.**, Wambach, D., Resnick, I., Newcombe, N., & Jordan, N.C. (June, 2022). Cognitive Correlates of First Graders' Fraction Knowledge. Poster presented to the Mathematical Cognition and Learning Society (MCLS). Antwerp, Belgium.

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



- 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.
- Chawla, K., <sup>6</sup>Clerjuste, S., **Miller-Cotto, D.**, Barbieri, C.A., <sup>U</sup>McKinney, G., & <sup>U</sup>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.
- Chawla, K., Clerjuste, S., Barbieri, C.A., **Miller-Cotto, D.**, <sup>U</sup>Le, P.H., <sup>U</sup>O'Hara, E., & <sup>U</sup>Landy, J. (August 2021). Meta-analysis on the worked examples effect in mathematics. SOURCE Summer Talk Series, University of Delaware.
- Putzeys, S., **Miller-Cotto, D.**, & Hall, G. (April 2021). Early experiences and school readiness: A within and between exploration of the Opportunity Propensity Model. Presented to the 2021 Society for Research in Child Development Biennial Meeting, Virtual Meeting.
- 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.
- Byrnes, J.P., & **Miller-Cotto, D.** (2018, July). Testing theories of working memory and mathematics achievement. Poster presented to the Cognitive Science Society 2018 Meeting, Madison, WI.
- 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. (2014, October). Cognitive and socio-emotional development in schools that vary in diversity: An opportunity-propensity analysis of a national database. Poster Presentation at the Sixth Annual Temple University Graduate Fellows Research Symposium, 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. Poster presentation at the Eastern Psychological Association Conference, Cambridge, MA.

## **INVITED TALKS AND LECTURES**

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- 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. Chicago, IL.

- 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.
- 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.
- Miller-Cotto, D. (November 2022). *Mathematics learning difficulties and executive functions: Testing competing theories*. Invited talk to the Centre for Educational Neuroscience. University of London. London, UK.
- 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.
- Miller-Cotto, D. (March 2022). *Executive Function and Academic Outcomes*. Crane Center for Early Childhood Research and Policy. The Ohio State University. Columbus, OH.
- Miller-Cotto, D. (February 2022). *A Culturally Responsive Lens to Understanding Executive Functions*. Cognition and Learning Seminar. Virginia Commonwealth University. Richmond, VA.
- 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.
- Miller-Cotto, D. (October 2021). *What Can I Do with My Ph.D.? Insights from My Year in the Nonprofit World*. University of Illinois – Chicago Psychology Department Presents the Black Scholar Speaker Series – Special Session. Chicago, IL.
- 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.
- Miller-Cotto, D. (October 2021). *Mind the gap: How a large-scale course re-design in economics reduced performance gaps*. Vanderbilt University Cognitive Science to the Classroom. Nashville, TN.
- Miller-Cotto, D. (September 2021). *Strategies for Effective Writing*. Writing for Science and Technology, Temple University. Philadelphia, PA.
- Miller-Cotto, D. (December 2020). *Executive functions and mathematics: An Integrative Theory Lens*. Developmental Psychology and Social Justice, University of Pennsylvania. Philadelphia, PA.
- 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.

## DEPARTMENTAL TALKS AND LECTURES

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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**, NSF Funded Early Fractions Project  
College of Education and Human Development, University of Delaware

- 2017 - 2019 PIs: Drs. Nancy Jordan, Nora Newcombe, Christina Areizaga Barbieri  
**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

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Children's Thinking (instructor of record)	1 semester	Kent State University
Child Psychology (instructor of record)	3 semesters	Kent State University
Intro to Statistics (assistant course developer)	1 semester	University of Delaware
Child Development: Birth to Nine years (instructor of record)	1 semester	Temple University
Cognitive Development (instructor of record)	1 semester	Temple University
Cognitive Development (teaching assistant)	1 semester	Temple University
Multivariate Statistics (assistant course developer)	1 semester	Temple University

## MENTORING & SUPERVISING

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### *Graduate Advisees*

Samantha Zaborowski, Psychological Sciences, Kent State, 2023 - present

### *Undergraduate Senior Honors Thesis Committees*

Samantha Zaborowski, '23, B.S., Psychology, "The Real Math Mystery: The Effects of Book-based Interventions on Math Anxiety and Fraction Competency", Kent State University

### *Kent State University Summer Undergraduate Research Experience (SURE) Program*

Logan Ernst, Summer, 2023

Veronica Anokhina, Summer 2023

### *Kent State University Undergraduate Research Experience*

Angel Johnson, Research Assistant, Kent State University, 2023 -

Logan Ernst, Research Assistant, Kent State University, 2023 -

Veronica Anokhina, Research Assistant, Kent State University, 2022 - 2023

Alexandra Flowers, Research Assistant, Kent State University, 2022 - 2023

Morgan Shingledecker, Lab Manager, Kent State University, 2022 - 2023

## **EDITORIAL AND REVIEW EXPERIENCE**

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- 2022 - present Principal Review Board, *Journal of Educational Psychology*
- 2020 – present Editorial Board, *Contemporary Educational Psychology*
- 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, British Journal of Educational Psychology, Child Development, Cognitive Research: Principles and Implications, Contemporary Educational Psychology, Educational Psychology Review, Journal of Experimental Education, Journal of Experimental Child Psychology, Journal of the Learning Sciences, Journal of Research in Education, Learning and Instruction, Mathematics Education Research Journal, PLOS One

## **SERVICE TO THE FIELD**

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- 2024 Program Chair, Executive Committee, Division 7 (Developmental Psychology), American Psychological Association (APA)
- 2023 Program Co-Chair, Executive Committee, Division 7 (Developmental Psychology), American Psychological Association (APA)
- 2022 Symposium organizer and co-chair, *2022 Cognitive Development Society Biennial Conference*, Symposium (April 2022): How and For Whom: The Relations Between Self-Regulation and Academic Success for Children Living in Poverty.
- 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 DEPARTMENT**

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- 2023 - Chair Search Committee, Department of Psychological Sciences, Kent State University
- 2023 - Applied Psychology Center Committee, Department of Psychological Sciences, Kent State University
- 2022 – Undergraduate 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)

### **MEDIA & OUTREACH**

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“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 does it 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 Psychological Association (APA)

Cognitive Development Society (CDS)

Mathematical Cognition and Learning Society (MCLS)

Midwestern Psychological Association (MPA)

Society for Research in Child Development (SRCD)