

## DANA MILLER - COTTO, Ph.D.

### Curriculum Vitae

Kent State University  
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## ACADEMIC POSITIONS

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2022 - **Assistant Professor**  
Psychological Sciences  
Kent State University

## EDUCATION & TRAINING

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2020 – 2022 **Postdoctoral Researcher**  
College of Education and Human Development  
University of Delaware  
Advisor: Dr. Nancy Jordan

2017 – 2019 **Postdoctoral Research Associate**  
Learning Research & Development Center (LRDC)  
University of Pittsburgh  
Advisor: Dr. Christian Schunn

2017 **Ph.D., Educational Psychology**, Temple University  
Advisor: Dr. James P. Byrnes

2014 **M.Ed., Educational Psychology**, Temple University  
Advisor: Dr. James P. Byrnes

2011 **B.A., Psychology**, City University of New York (CUNY) Lehman College  
Advisor: Dr. Vincent Prohaska

## TRAINING IN ADVANCED QUANTITATIVE METHODS

*Institute on Statistical Analysis: Development of Mathematics Competencies in Early Childhood*, American Educational Research Association in partnership with the National Science Foundation

*The Meta-Analysis Training Institute (MATI)*, IES Instructors: Drs. Terri Pigott, Natasha Beretvas, Elizabeth Tipton, Josh Polanin, and Ryan Williams

*Introduction to Systematic Review and Meta-Analysis*, Instructors: Drs. Tianjing Li and Kay Dickersin

*Item Response Theory Modeling*, Instructor: Dr. Tenko Raykov

*Hierarchical Linear Modeling*, Instructors: Drs. Stephen Raudenbush and Anthony Bryk

*Structural Equation Modeling*, Instructor: Dr. Mark Schmitz

**Statistical Software Knowledge:** SPSS, Stata, R

## RESEARCH INTERESTS

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individual differences, math learning and instruction, executive functions, meta-analyses

## GRANTS

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### EXTRAMURAL FUNDING

- Submitted Co-Principal Investigator (PI: Christina Areizaga Barbieri)  
*TARGET ByExample: Developing a Socio-Cognitive Approach to Enhance Fraction Learning Experiences*  
 National Science Foundation  
 [\$1,761,164]
- 2020 – 2024 Co-Investigator (PI: David Purpura)  
*My Math Stories: Taking Place in Our Mathematical World*  
 EF+Math Program, NewSchools Venture Fund & Advanced Education Research and Development Fund (AERDF)  
 [\$2,018,750]
- 2010 Principal Investigator  
*Memory Illusions: Fonts and Serial Position Assignments*  
 Psi Chi/ Association for Psychological Science  
 [\$5,000]

### INTRAMURAL FUNDING

- 2018 - 2019 Co- Investigator (PI: Armin Schikorra)  
*Aligning Teaching Methods and Students' Learning Needs: Active Learning vs. Traditional Classrooms*  
 University of Pittsburgh Provost's Personalized Education Grant Program  
 [\$26,306]

## HONORS, AWARDS, & FELLOWSHIPS

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- 2023 KSU Applied Psychology Center Early Career Fellowship [one course release, Spring]
- 2019 - 20 Mindset Scholars Network: Inclusive Mathematics Environments Early Career Fellowship [\$10,000]
- 2017 Cognitive Development Society (CDS) Diversity Travel Award
- 2014 - 15 The Future Faculty Fellowship, Temple University
- 2011 Psi Chi Kay Wilson Officer Team Leadership Award, CUNY Lehman College Chapter
- 2011 The CUNY Lehman College Foundation Scholarship
- 2010 - 11 Louis Stokes Alliance for Minority Participation (LS-AMP) in STEM via the National Science Foundation Recipient
- 2008 Psi Chi International Honor Society in Psychology

## REFEREED JOURNAL ARTICLES

<sup>U</sup> Undergraduate Student Collaborator; <sup>G</sup> Graduate Student Collaborator; <sup>P</sup> Postdoc Collaborator

1. Barbieri, C.A., **Miller-Cotto, D.**, <sup>G</sup>Chawla, K., & <sup>G</sup>Clerjuste, S. (accepted). A meta-analysis on the worked example effect on mathematics performance. *Educational Psychology Review*.
2. <sup>G</sup>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*.

3. 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*.
4. **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
5. 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*.
6. **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  
**\*This publication is in the top 5% of all research outputs scored by Altmetric.**
7. 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
8. **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
9. 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 the Top Cited Article in 2020-2021.**
10. **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
11. **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
12. 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
13. 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
14. 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

15. **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
16. 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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17. 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*.
18. 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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Byrnes, J.P., & **Miller-Cotto, D.** (under review). A historical, methodological, and philosophical analysis of the working memory construct. Submitted for peer review.

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

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

**Miller-Cotto, D.**, Smith, L.V, Ribner, A.D., & Wang, A.H. (revised, resubmitted). Understanding working memory and mathematics development for ethnically/racially minoritized children through family academic socialization practices. Second revision submitted to *Journal of Experimental Child Psychology*.

Ribner, A.D., Ahmed, S., **Miller-Cotto, D.**, & Ellis, A.E., (revised, resubmitted). The role of executive function in shaping the longitudinal stability of math achievement during early elementary grades. Second revision submitted to *Early Childhood Research Quarterly*.

Scalise, N.R, Gladstone, J.R, & **Miller-Cotto, D.** (under review). Playful instruction, child interest, and mathematics achievement in elementary school. Submitted for peer review.

Viegut, A. A., Resnick, I., **Miller-Cotto, D.**, Newcombe, N.S., Jordan, N.C. (under review). Tracking informal fraction knowledge and its correlates across first grade. Submitted for peer review.

## MANUSCRIPTS IN PREPARATION [only manuscripts with full drafts are included here]

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<sup>6</sup>Owusua, T., Fitzsimmons, C. J., **Miller-Cotto, D.**, Coifman, K. G., Taber, J. M., Sidney, P. G., &

Thompson, C. A. (in prep). Identities at the intersection of gender and race/ethnicity: Interrelations with math anxiety, math attitudes, and math performance.

\*Ribner, A.D., \***Miller-Cotto, D.**, Merkley, 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 PRESENTATIONS

<sup>U</sup> Undergraduate Student Collaborator; <sup>G</sup> Graduate Student Collaborator; <sup>P</sup> Postdoctoral Researcher

<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.** (accepted). *Testing Whole Number Bias*. Paper to be presented to the Midwestern Psychological Association 2023 Meeting, Chicago, IL.

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. (accepted). Examining Classroom-Based Executive Functioning Tasks and Relations to Elementary Students' Mathematical Word-Problem Solving. Paper accepted to 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. (accepted). Associations between communal socializations and the math identity and performance of minoritized elementary students. Paper accepted to the 2023 Society for Research in Child Development (SRCD) biennial meeting. Salt Lake City, Utah.

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. 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.

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

**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. Accepted for presentation at the American Educational Research Association (AERA) 2023 Annual Meeting, Chicago, IL.

<sup>G</sup>Zhang, H., Devlin, B.L., Beliakoff, A., **Miller-Cotto, D.**, Klein, A., & Jordan, N.C. (2022, June). 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.
- Kassan, E., **Miller-Cotto, D.**, <sup>G</sup>Wambach, D., Resnick, I., Newcombe, N., & Jordan, N.C. (June, 2022). Cognitive Correlates of First Graders' Fraction Knowledge. Poster to be presented to the Mathematical Cognition and Learning Society (MCLS). Antwerp, Belgium.
- Miller-Cotto, D.**, Kassan, E., <sup>G</sup>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.
- <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.
- 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.**, <sup>G</sup>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.
- <sup>G</sup>Chawla, K., <sup>G</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.
- <sup>G</sup>Chawla, K., <sup>G</sup>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.
- <sup>G</sup>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.
- <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.**, 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., & 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.
- Barbieri, C.A., **Miller-Cotto, D.** (April 2021). The relationship between adolescents' sense of belonging to mathematics and learning. Accepted for presentation to the 2021 American Educational Research Association 2021 meeting, Virtual meeting.
- <sup>6</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).
- 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).
- 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.
- 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.
- 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., 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., & 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., 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., 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., 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-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.

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.

## **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. (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.

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.

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.

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.

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

Miller-Cotto, D. (February 2022). *A Culturally Responsive Lens to Understanding Executive Functions*. Cognition and Learning Seminar. Virginia Commonwealth University.

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.

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.

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.

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.

Miller-Cotto, D. (September 2021). *Strategies for Effective Writing*. Writing for Science and Technology, Temple University.

Miller-Cotto, D. (December 2020). *Executive functions and mathematics: An Integrative Theory Lens*. Developmental Psychology and Social Justice, University of Pennsylvania.

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

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. (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 Early Fractions Project  
College of Education and Human Development  
University of Delaware  
Principal Investigators: Drs. Nancy Jordan, Nora Newcombe, Christina A. Barbieri
- 2019 – 2020 **Research Scientist**, EF+Math Program  
Advanced Educational Research and Development Fund (AERDF)
- 2017 – 2019 **Postdoctoral Research Associate**, Schunn Lab  
Learning Research & Development Center, University of Pittsburgh  
Principal Investigator: Dr. Christian D. Schunn
- 2015 - 2017 **Research Assistant**, Sketching and Self-Explanation in Math and Science  
Psychological Studies in Education, Temple University  
Principal Investigators: Drs. Julie L. Booth, Jennifer Cromley, Nora Newcombe
- 2011- 2014 **Research Assistant**, Cognitive and Social Predictors of Achievement, Mathematical Performance and Problem Solving  
Department of Psychological Studies in Education, Temple University  
Advisor: Dr. James P. Byrnes
- 2010 - 2011 **Research Assistant**, Parenting and Executive Function Study  
Department of Psychology, CUNY Lehman College  
Principal Investigator: Dr. Keith R. Happaney
- 2009 - 2011 **Research Assistant**, Learning and Memory Lab  
Department of Psychology, CUNY Lehman College  
Principal Investigator: Dr. Vincent Prohaska

## TEACHING EXPERIENCE

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- Spring 2023 **Instructor of Record**, Child Psychology – Kent State University
- Fall 2022 **Instructor of Record**, Child Psychology – Honors, Kent State University
- Spring 2022 **Assistant Course Developer**, Introduction to Statistical Inference, University of Delaware, Dr. Christina Barbieri, Lead Professor
- Spring 2017 **Adjunct Instructor**, Child Development: Birth to Nine Years, Temple University
- Spring 2014 **Adjunct Instructor**, Cognitive Development, Temple University
- Fall 2013 **Teaching Assistant & Guest Lecturer**, Cognitive Development, Temple University
- Fall 2013 **Assistant Course Developer**, Multivariate Statistics, Temple University,

Dr. Jennifer G. Cromley, Lead Professor

## **MENTORING & SUPERVISING**

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### ***Kent State University***

#### Undergraduate

- Veronica Anokina, Research Assistant, 2022 - present
- Alexandra Flowers, Research Assistant, 2022 - present
- Natalia Frost, Research Assistant, 2022
- Simone Gest, Research Assistant, 2022
- Clare Lavelle, Research Assistant, 2022 - present
- Tierra McClary, Research Assistant, 2022 - present
- Naseem Mirhaidari, Research Assistant, 2022 - present
- Morgan Shingledecker, Lab Manager, 2022 - present
- Rhomie Stewart, Research Assistant, 2022

### ***University of Delaware***

- Kamal Chawla, Graduate Research Assistant, 2020 – present.
- Sarah Clerjuste, Graduate Research Assistant, 2020 – present.
- Emma Kassan, Lab Manager, 2020 – 2022.
- Haobai Zhang, Graduate Researcher, 2020 – 2022.

### ***Temple University***

- Stephanie David, Research Assistant, 2015 – 2017.

## **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 – present Editorial Board, *Journal of Experimental Education*

2021            Review Panelist, National Science Foundation

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

2020            Review Panelist, Spencer Foundation

2020            Review Panelist, National Science Foundation

2019            Review 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

### **Ad-Hoc Reviewer**

Applied Cognitive Psychology, British Journal of Educational Psychology, Child Development, Cognitive Research: Principles and Implications, Contemporary Educational Psychology, 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

### **COMMITTEE SERVICE**

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- 2022 Symposium organizer and co-chair, *2022 Cognitive Development Society Bi-ennial 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.
- 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, CUNY Lehman College

### **OUTREACH**

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

### **PROFESSIONAL AFFILIATIONS**

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Association for Psychological Science (APS)  
Cognitive Development Society (CDS)

Mathematical Cognition and Learning Society (MCLS)  
Midwestern Psychological Association (MPA)