

Amanda L. Cullen (née Miller)

4520 Mathematics Department
Illinois State University
Normal, IL 61790-4520
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EDUCATION

Ph.D., Mathematics Education, Illinois State University, May 2013.

Dissertation: *Investigating Conceptual, Procedural, and Intuitive Aspects of Area Measurement with Non-Square Area Units*

Dissertation Committee: Drs. Jeffrey Barrett (Chair), Thomas Critchfield, Nerida Ellerton, Saad El-Zanati, and Jennifer Tobias

M.S., Mathematics, Illinois State University, December 2009.

Master's Project: *Mobius Inversion as a Generalization of Difference Calculus*

Master's Project Committee: Drs. Fuson Akman (Advisor) and Papa Amar Sissokhu

B.A., Elementary Education, Millikin University, May 2004.

James Millikin Scholar Honors Project: *The Collective Action Dilemma of Millikin University*

James Millikin Scholar Honors Project Committee: Drs. Brian Posler (Advisor) and David Kirshner

Illinois Teaching Certification: K–9 Self-contained; Middle school endorsement: Language Arts, Mathematics, Social Studies

TEACHING

Associate Professor: Illinois State University

2020–present

Courses taught:

Algebraic Reasoning for Middle School Teachers (MAT 202)

Current Research in School Mathematics (MAT 401)

Dissertation (MAT 599)

Independent Study (MAT 299; MAT 500)

Number Theory for Middle School Teachers (MAT 309)

Professional Projects in Mathematics Education (MAT 583)

Teaching Mathematics in the Middle School (MAT 302)

Assistant Professor: Illinois State University 2014–2020

Courses taught:

- Current Research in School Mathematics (MAT 401)
- Dimensions of Numerical Reasoning (MAT 130)
- Dissertation (MAT 599)
- Independent Study (MAT 490; MAT 500)
- Number Theory for Middle School Teachers (MAT 309)
- Professional Projects in Mathematics Education (MAT 583)
- Teaching Mathematics in the Middle School (MAT 302)
- Topics in Mathematics Education Seminar (MAT 585)

Instructional Assistant Professor: Illinois State University 2013–2014

Courses taught:

- Dimensions of Numerical Reasoning (MAT 130)
- Teaching Mathematics in the Elementary School (MAT 201)

Mathematics Instructor: Illinois State University 2008–2009, 2011–2012

Courses taught as Lead Instructor:

- Teaching Mathematics in the Elementary School (MAT 201)
- Structure of Number Systems II (MAT 152)

Course Taught as Assistant Instructor:

- Elements of Mathematical Reasoning (MAT 113)

Adjunct Mathematics Instructor: Illinois Central College 2012

Course taught:

- Mathematics for Elementary Teachers II (MATH 201)

Mathematics Instructor: Richland Community College 2006–2008

Courses taught:

- Pre-Algebra (MATH 090)
- Basic Algebra (MATH 091)
- Basic Geometry (MATH 095)
- Intermediate Algebra (MATH 098)

Mathematics Teacher: Decatur Public Schools 2004–2006

Courses taught:

- Grade 6 Mathematics
- Grade 7 Mathematics
- Grade 8 Mathematics
- Grade 8 Pre-Algebra

Grade 4 Student Teacher: Decatur Public Schools 2003

RESEARCH

Co-Principal Investigator with Faculty Colleagues

Transforming School Mathematics from the Inside out (Co-PI Allison Kroesch, Agnes Hatch Cassandra Mattoon)	2021–present
Students’ Reasoning About Areas of Right Triangles (Co-PIs Jeffrey Barrett, Craig Cullen, Cheryl Eames, and Jennifer Talbot)	2020–present
Students’ Reasoning About Angle Measure (Co-PI Craig Cullen)	2018–present
Promoting Understanding of Angle Measurement: A Microgenetic Study (Co-PIs Craig Cullen and Wendy O’Hanlon)	2014–2017

Co-Principal Investigator with Doctoral Students

Mindset Study (Co-PI Yolanda Rush)	2020–present
Multiplicative Comparison Study (Co-PI Carrie Lawton)	2018–present
Middle School and Elementary School Students’ Strategies When Solving Surface Area Tasks (Co-PIs Pamela Beck and Cynthia Langrall)	2016–present

External Evaluator

STEM Satellites: A Mobile Mathematics and Science Initiative for Orlando Metropolitan Area Children’s Hospitals (PI JoAnn Newman; Co-I Brandan Lanman and Megan Nickels)	2018–present
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Graduate Research Assistant: Illinois State University 2009–2011, 2012–2013

Projects worked:

- Learning Trajectories to Support the Growth of Measurement Knowledge: Pre-K through Middle School (Co-PIs Jeffrey Barrett, Craig Cullen, Douglas Clements, and Julie Sarama)
- Formative Assessment in Elementary Mathematics (Co-PIs Jeffrey Barrett, Jennifer Tobias, Craig Cullen, and Jae Baek)
- A Longitudinal Examination of Children’s Developing Knowledge of Measurement: Mathematical and Scientific Concept and Strategy Growth from Pre-K to Grade 5 (Co-PIs Jeffrey Barrett, Douglas Clements, and Julie Sarama)

Independent Contractor, National Center for Teacher Effectiveness 2011–2012

Projects worked:

- Mathematical Quality of Instruction (PI Heather Hill)
- Mathematical Quality of Instruction, Generalizability Study (PI Heather Hill)

JOURNAL EDITORIAL TEAM MEMBER

Associate Editor: Mathematics Teacher: Learning and Teaching PK-12 2020–present
Angela Barlow, Editor-in-Chief

Assistant Editor: Journal for Research in Mathematics Education 2013–2015
Cynthia Langrall, Editor-in-Chief

****All publications and presentations are listed in reverse chronological order.****

PUBLICATIONS

Odell, J., **Cullen, A. L.**, & Langrall, C. W. (in press). Challenging students to experience mathematics as mathematicians. *Mathematics Teacher: Learning and Teaching PK-12*.

Cullen, A. L., & Anderson, R. (2021). Finding, growing, or restoring your pod (Editorial). *Mathematics Teacher: Mathematics Learning and Teaching PreK-12*, 114(7), 494–495.

Cullen, A. L., Lawton, C. A., Patterson, C. S., & Cullen, C. J. (2020). All the way around a circle. *Mathematics Teacher: Mathematics Learning and Teaching PreK-12*, 113(8), 637–642.

Cullen, A. L., & Barrett, J. E. (2020). Area measurement: Structuring with nonsquare units. *Mathematical Thinking and Learning*, 22(2), 85–115.
doi:10.1080/10986065.2019.1608619

Barrett, J. E., Wickstrom, M. H., Tobias, J. M., Cullen, C. J., **Cullen, A. L.**, & Baek, J. M. (2019). Children's measurement project: Sharing trajectories with teachers. In P. Sztajn & P. H. Wilson (Eds.), *Learning trajectories for teachers: Designing effective professional development for math instruction* (pp. 48–74). New York, NY: Teachers College Press.

Cullen, A. L., Eames, C. L., Cullen, C. J., Barrett, J. E., Sarama, J., Clements, D. H., & Van Dine, D. W. (2018). Effects of three interventions on children's spatial structuring and coordination of area units. *Journal for Research in Mathematics Education*, 49(5), 533–574.

Clements, D. H., Sarama, J., Van Dine, D. W., Barrett, J. E., Cullen, C. J., Hudyma, A., . . . [**Cullen, A. L.**], Eames, C. L. (2018). Evaluation of three interventions teaching area measurement as spatial structuring to young children. *Journal of Mathematical Behavior*, 50, 23–41. doi:10.1016/j.jmathb.2017.12.004

Cullen, A. L., Cullen, C. J., & O'Hanlon, W. A. (2018). Effects of an intervention on children's conceptions of angle measurement. *International Journal of Research in Education and Science*, 4(1), 136–147. doi:10.21890/ijres.382941

- Baek, J. M., Wickstrom, M. H., Tobias, J. M., **Miller, A. L.**, Safak, E., Wessman-Enzinger, N. M., & Kirwan, J. V. (2017). Preservice teachers' pictorial strategies for a multistep multiplicative fraction problem. *Journal of Mathematical Behavior*, 45(1), 1–14. doi:10.1016/j.jmathb.2016.10.005
- Barrett, J. E., Clements, D. H., Sarama, J., **Miller, A. L.**, Cullen, C. J., Van Dine, D. W., . . . Klanderma, D. (2017). Integration of results: A new learning trajectory for area. In J. E. Barrett, D. H. Clements, & J. Sarama (Eds.), *Children's measurement: A longitudinal study of children's knowledge and learning of length, area, and volume. Journal for Research in Mathematics Education monograph series* (Vol. 16, pp. 129–148). Reston, VA: National Council of Teachers of Mathematics.
- Barrett, J. E., Cullen, C. J., **Miller, A. L.**, Eames, C. L., Kara, M., & Klanderma, D. (2017). Area in the middle and later elementary grades. In J. E. Barrett, D. H. Clements, & J. Sarama (Eds.), *Children's measurement: A longitudinal study of children's knowledge and learning of length, area, and volume. Journal for Research in Mathematics Education monograph series* (Vol. 16, pp. 105–127). Reston, VA: National Council of Teachers of Mathematics.
- Clements, D. H., Sarama, J., & **Miller, A. L.** (2017). Area. In J. E. Barrett, D. H. Clements, & J. Sarama (Eds.), *Children's measurement: A longitudinal study of children's knowledge and learning of length, area, and volume. Journal for Research in Mathematics Education monograph series* (Vol. 16, pp. 71–81). Reston, VA: National Council of Teachers of Mathematics.
- Cullen, A. L.**, Cullen, C. J., & O'Hanlon, W. A. (2017). Elementary students' reasoning about angle constructions. In E. Galindo & J. Newton (Eds.), *Proceedings of the 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 347–354). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
- Cullen, A. L.**, Tobias, J. M., Safak, E., Kirwan, J. V., Wessman-Enzinger, N. M., Wickstrom, M. H., & Baek, J. M. (2017). Preservice teachers' algebraic reasoning and symbol use on a multistep fraction word problem. *International Journal for Mathematics Teaching and Learning*, 18(1), 109–131.
- Cullen, C. J., Barrett, J. E., Kara, M., Eames, C. L., **Miller, A. L.**, & Klanderma, D. (2017). Integration of results: A new learning trajectory for volume. In J. E. Barrett, D. H. Clements, & J. Sarama (Eds.), *Children's measurement: A longitudinal study of children's knowledge and learning of length, area, and volume. Journal for Research in Mathematics Education monograph series* (Vol. 16, pp. 181–201). Reston, VA: National Council of Teachers of Mathematics.
- Nickels, M. (with Cullen, C. J., **Cullen, A. L.**, & Joe, R.). (2017). Separate and unequal: Students with HIV/AIDS and mathematics education. *Journal of Urban Mathematics Education*, 10(2), 39–51.

- Miller, A. L., & Barrett, J. E.** (2016). Surveying current research on young children's mathematical learning [Book review]. *Journal for Research in Mathematics Education*, 47(3), 312–316. doi:10.5951/jresmetheduc.47.3.0312
- Kara, M., Eames, C. L., **Miller, A. L.**, & Chieu, A. (2015). Staircases, skeleton towers, and castles. *Mathematics Teacher*, 108(9), 663–670. doi:10.5951/mathteacher.108.9.0663
- Martin, T. S., & **Miller, A. L.** (2014). Editorial: I received a “revise and resubmit” decision: Now what? *Journal for Research in Mathematics Education*, 45(3), 286–287. doi:10.5951/jresmetheduc.45.3.0286
- Eames, C. L., **Miller, A. L.**, Kara, M., Cullen, C. J., & Barrett, J. E. (2013). The longitudinal development of unit concepts in area and volume measurement contexts: A case study. In M. Martinez & A. Castro Superfine (Eds.), *Proceedings of the 35th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 171–178). Chicago, IL. Retrieved from http://pmena.org/2013/files/PMENA2013_Conference_Proceedings.pdf
- Miller, A. L.** (2013). *Investigating conceptual, procedural, and intuitive aspects of area measurement with non-square area units* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (Order No. 3572989)
- Kara, M., **Miller, A. L.**, Cullen, C. J., Barrett, J. E., Sarama, J., & Clements, D. H. (2012). A retrospective analysis of students' thinking about volume measurement across grades 2-5. In L. R. Van Zoest, J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1016–1023). Kalamazoo, MI.
- Miller, A. L.**, Kara, M., Eames, C. L., Cullen, C. J., & Barrett, J. E. (2012). A comparison of three students' responses to area invariance tasks across grades 2-5. In L. R. Van Zoest, J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1042). Kalamazoo, MI.
- Barrett, J. E., Cullen, C. J., Sarama, J., Clements, D. H., Klanderma, D., **Miller, A. L.**, & Witkowski Rumsey, C. (2011). Children's unit concepts in measurement: A teaching experiment spanning grades 2 through 5. *ZDM: The International Journal on Mathematics Education*, 43(5), 637–650. doi:10.1007/s11858-011-0368-8
- Cullen, C. J., **Miller, A. L.**, Barrett, J. E., Clements, D. H., & Sarama, J. (2011). Unit eliciting task structures: Verbal prompts for comparative measures. In B. Ubez (Ed.), *Proceedings of the 35th Conference of the International Group for the Psychology of Mathematics Education* (Vol. II, pp. 249–256). Ankara, Turkey.

Kara, M., Eames, C. L., **Miller, A. L.**, Cullen, C. J., & Barrett, J. E. (2011). Developing an understanding of area measurement concepts with triangular units. In L. R. Wiest & T. Lamberg (Eds.), *Proceedings of the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1015–1023). Reno, NV.

Cullen, C. J., Witkowski, C., **Miller, A. L.**, Barrett, J. E., Sarama, J. A., & Clements, D. H. (2010). The key components for measurement tasks. In P. Brosnan, D. B. Erchick, & L. Flevares (Eds.), *Proceedings of the 32nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. VI, pp. 599–606). Columbus, OH.

PRESENTATIONS: NATIONAL

Eames, C., **Cullen, A. L.**, & Talbot, J. (2021, September). *Reasoning about area formulas: From rectangles to triangles and back again*. Presentation to be presented at the National Council of Teachers of Mathematics Annual Meeting and Exposition. Atlanta, GA. Canceled due to COVID-19.

Langrall, C., & **Cullen, A. L.** (2020, April). *Mathematics education research and mathematics instruction: Parallel or intersecting domains?* Invited presentation to be presented at the National Council of Teachers of Mathematics Centennial Annual Meeting and Exposition. Chicago, IL. Canceled due to COVID-19.

Miller, A. L., Cullen, C. J., & O’Hanlon, W. A. (2016, April). *Third graders’ development of quantitative reasoning about angle measure*. Brief research report presented at the 2016 Research Conference of the National Council of Teachers of Mathematics, San Francisco, CA.

Cullen, C. J., Barrett, J. E., Clements, D. H., Sarama, J., Eames, C. L., **Miller, A. L.**, & Klanderma, D. (2014, April). *Supporting children’s learning of area measurement: A microgenetic study*. Paper presented at the 2014 Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Kara, M., Eames, C. L., & **Miller, A. L.** (2014, April). *Exploring functions in 3-D*. Gallery workshop presented at the 2014 Annual Conference of the National Council of Teachers of Mathematics, New Orleans, LA.

Miller, A. L. (2014, April). *Area measurement: Non-square units and new connections*. Interactive Paper Session presented at the 2014 Research Conference of the National Council of Teachers of Mathematics, New Orleans, LA.

Miller, A. L., Eames, C. L., & Cullen, C. J. (2014, April). *Thinking deeply about area measurement*. Session presented at the 2014 Annual Conference of the National Council of Teachers of Mathematics, New Orleans, LA.

- Eames, C. L., **Miller, A. L.**, Kara, M., Van Dine, D., Cullen, C. J., Barrett, J. E., . . . Sarama, J. (2013, June). *The longitudinal development of children's conceptions of spatial measurement*. Paper presented at the 43rd Annual Meeting of the Jean Piaget Society, Chicago, IL.
- Van Dine, D., Kara, M., **Miller, A. L.**, Eames, C. L., Sarama, J., Clements, D. H., . . . Cullen, C. J. (2013, June). *Validating a learning trajectory for volume measurement with Rasch modeling*. Poster presented at the 43rd Annual Meeting of the Jean Piaget Society, Chicago, IL.
- Barrett, J. E., Cullen, C. J., **Miller, A. L.**, Van Dine, D. W., Eames, C. L., Kara, M., . . . Clements, D. H. (2013, April). *Framing and revising a hypothetical learning trajectory for area measurement*. Research symposium conducted at the Research Pre-session of the National Council of Teachers of Mathematics, Denver, CO.
- Barrett, J. E., Van Dine, D. W., Cullen, C. J., Eames, C. L., Kara, M., & **Miller, A. L.** (2013, April). *Using Rasch modeling to support validation of a developmental progression for area*. Paper presented at the 2013 Annual Meeting of the American Educational Research Association, San Francisco, CA.
- Miller, A. L.** (2013, April). *Investigating conceptual, procedural, and intuitive aspects of area measurement with non-square area units*. Paper presented at the Society for Research in Child Development Biennial Meeting, Seattle, WA.
- Miller, A. L.**, Eames, C. L., Kara, M., & Cullen, C. J. (2013, January). *Hypothetical learning trajectories as works-in-progress tools: Insights into the revising and refining process*. Individual session presented at the 17th Annual Conference of the Association of Mathematics Teacher Educators, Orlando, FL.
- Kara, M., **Miller, A. L.**, Cullen, C. J., Barrett, J. E., Sarama, J., & Clements, D. H. (2012, November). A retrospective analysis of students' thinking about volume measurement across grades 2-5. Paper presented at the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.
- Cullen, C. J., **Miller, A. L.**, & Van Dine, D. W. (2012, April). *Reaching the measurement objectives in the CCSSM*. Individual session presented at the Annual Meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Miller, A. L.**, Eames, C. L., Kara, M., Barrett, J. E., & Cullen, C. J. (2012, April). *Trajectories of three students' learning of area measurement: Grades 2 – 5*. Poster presented at the Research Pre-session of the National Council of Teachers of Mathematics, Philadelphia, PA.

- Miller, A. L.**, Kara, M., & Eames, C. L. (2012, April). *Area measurement: What's the square got to do with it?* Individual session presented at the Annual Meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Eames, C. L., Kara, M., Cullen, C. J., & **Miller, A. L.** (2012, February). *Implications for the integration of learning trajectories in teacher preparation.* Individual session presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Fort Worth, TX.
- Kara, M., Eames, C. L., **Miller, A. L.**, Cullen, C. J., & Barrett, J. E. (2011, October). *Developing an understanding of area measurement concepts with triangular units.* Paper presented at the 33rd Annual Meeting of the North American Chapter of International Group for the Psychology of Mathematics Education, Reno, NV.
- Barrett, J. E., Cullen, C. J., **Miller, A. L.**, & Witkowski-Rumsey, C., & Klanderma, D. (2011, April). *Designing integrative learning tasks for unit concepts through length, area, and volume measurement (grades 2-5).* Poster presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Cullen, C. J., **Miller, A. L.**, & Barrett, J. E. (2011, April). *Connecting length, area, and volume tasks through units and comparison.* Individual session presented at the Annual Meeting of the National Council of Teachers of Mathematics, Indianapolis, IN.
- Cullen, C. J., **Miller, A. L.**, Witkowski-Rumsey, C., Barrett, J. E., & Sarama, J. (2011, April). *Area hypothetical learning trajectory: Relating square units to non-rectilinear regions.* Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Miller, A. L.**, Cullen, C. J., & Tobias, J. M. (2011, January). *Using empirical classroom results to inform modifications on a hypothetical learning trajectory for area.* Individual session presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Cullen, C. J., Witkowski, C., **Miller, A. L.**, Barrett, J. E., Sarama, J. A., & Clements, D. H. (2010, October). *The key components for measurement tasks.* Paper presented at the 32nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.

PRESENTATIONS: REGIONAL

- Talbot, J., Lawton, C., & **Cullen, A. L.** (2022, March 17). Daily data: Collecting, analyzing, and interpreting data grades 5–8 [workshop]. To be presented at NCTM 2022 Indianapolis Regional Conference.

- Talbot, J., Lawton, C., & **Cullen, A. L.** (2021, June). *Venn diagrams in the math classroom*. Accepted presentation for the 2021 ISU New Teacher Conference (canceled due to COVID-19).
- Talbot, J., Lawton, C., & **Cullen, A. L.** (2020, June). *Venn diagrams in the math classroom*. Accepted presentation for the 2020 ISU New Teacher Conference (canceled due to COVID-19).
- Talbot, J., **Cullen, A. L.**, & Lawton, C. (2019, October). *Math warm-up routines in grades 5–8*. Individual session presented at the 2019 Annual Conference of the Illinois Council of Teachers of Mathematics, Peoria, IL.
- Martin, T., Day, R., & **Miller, A.** (2017, November). *Motivating meaningful mathematics connections in social and social justice contexts*. Session presented at the 2017 Regional Conference of the National Council of Teachers of Mathematics, Chicago, IL.
- Miller, A. L.** (2013, December). *Drawing development: A lens into children’s development of geometric and spatial thinking*. Invited presentation at Illinois State University, Normal, IL
- Barrett, J. E., Cullen, C. J., Eames, C. E., & **Miller, A. L.** (2013, November). *Promoting growth in measuring and structuring rectangular regions: A microgenetic study*. Invited presentation at the Fifth Annual Measurement Mini-Center Conference, Chicago, IL.
- Miller, A. L.** (2013, November). *Piaget’s work: Vexingly obsolete or enduringly applicable?* Invited presentation for Learning and Cognition course at Illinois State University, Normal, IL.
- Miller, A. L.**, Eames, C. L., & Kara, M. (2013, November). *Key characteristics of learning trajectory-based measurement tasks*. Individual session presented at the 2013 Regional Conference of the National Council of Teachers of Mathematics, Louisville, KY.
- Eames, C. L., **Miller, A. L.**, & Kara, M., (2013, October). *Making the most of measurement with learning trajectories*. Individual session presented at the 2013 Annual Conference of the Illinois Council of Teachers of Mathematics, Peoria, IL.
- Barrett, J. E., Cullen, C. J., Eames, C. L., & **Miller, A. L.** (2013, April). *Promoting spatial structuring: A microgenetic study*. An invited presentation to the Group for Research in Mathematics Education, Illinois State University, Normal, IL.
- Miller, A. L.** (2013, March). *Investigating conceptual, procedural, and intuitive aspects of area measurement with non-square area units*. Dissertation defended at Illinois State University, Normal, IL.

Miller, A. L., Cullen, C. J., & Barrett, J. E. (2012, November). *Extending length measurement into the middle school with CCSSM*. Individual session at the Regional Meeting of the National Council of Teachers of Mathematics, Chicago, IL.

Barrett, J. E., Clements, D. H., **Miller, A. L.,** & Van Dine, D. W. (2012, October). *Cultivating a hypothetical learning trajectory for area measurement: Pre-K to grade 8*. Invited presentation at the Fourth Annual Measurement Mini-Center Conference, East Lansing, MI.

Miller, A. L., Eames, C., Kara, M., & O'Hanlon, W. (2011, October). *Mathemagic and skeleton towers: Utilizing open-ended tasks to foster algebraic reasoning*. Workshop facilitated at the Annual Conference of the Illinois Council of Teachers of Mathematics, Springfield, IL.

Miller, A. L. (2011, July). *Unit eliciting task structures: Verbal prompts for comparative measures*. Professional project presented at Illinois State University, Normal, IL.

Miller, A. L. (2009, November). *Mobius inversion as a generalization of difference calculus*. Unpublished Master's project presented at Illinois State University, Normal, IL.

GRANTS

NASA-funded project, titled *STEM Satellites: A Mobile Mathematics and Science Initiative for Orlando Metropolitan Area Children's Hospitals*. PI of subcontract to serve as external evaluator 2018–2022* (1-year no-cost extension due to COVID-19), \$108,663.

College of Arts and Sciences University Research Grant (NFIG), titled *Drawing development: A lens into children's development of geometric and spatial thinking* was funded for 2015–2016, \$3500.

New Faculty Start-up Support Grant funded for Spring 2016, \$1088.

DOCTORAL DISSERTATION COMMITTEES

Dissertation Chair

Lawton, C. (2020–present). *Middle school students' knowledge elements related to proportion word problems*.

Dissertation Co-Chair

Beck, P. (2016–2021). *Exploring middle school children's strategies and ability to solve surface area tasks*.

Heller, B. (2018–2021). *Students' concept image of triangle attributes*.

Dissertation Committee Member

Heller, B. (2018–2021). *Students' concept image of triangle attributes*.

Ssebagala, L. (2017–2019). *Back to the future: Investigating pre-service secondary mathematics teachers' reasoning when learning trigonometry using the line-segment definition*.

O'Dell, J. (2016–2017). *Beyond problem solving: Elementary students' mathematics dispositions when faced with the challenge of unsolved problems*.

Nickels, M. (2014–2015). *Mathematics in the charmed world: Creating a mathematical environment through robotics play*.

UNDERGRADUATE HONORS AND GRADUATE PROJECT ADVISING

Warden, E. (2021). *Mathematizing young adult literature*. (MAT 299 Independent Honors Study.)

Rush, Y. (2020–2021). *The experiences of African American students in mathematics: A road to mindset intervention*. (MAT 583 professional project.)

Lawton, C. (2018–2020). *Multiplicative comparison study*. (Dissertation pilot study.)

Lawton, C. (2019). *Methods course comparison and design*. (MAT 500 independent study.)

Lawton, C. (2019). *Research in the K–8 school setting*. (MAT 500 independent study.)

Rutledge, N. (2016–2018). *Increasing student motivation, discussion, and perseverance through task selection and implementation*. (Three-semester research in mathematics education experience for Master's Project.)

VanMeenen, E. (2017). *The teaching and learning of probability, randomness, and sample space*. (Doctoral student course project for MAT 302 graduate credit.)

Peterson, K., & Ringo, A. (2016). *Elementary and middle school students' thinking about area units*. (Undergraduate research supervision.)

Brauer, M. (2016). *Mathematical routines for the high school mathematics classroom*. (MAT 302 undergraduate honors project.)

Flynn, M. (2016). *Applying properties and exponent rules game*. (MAT 309 undergraduate honors project.)

Kanbir, S. (2015). *The practice of teaching mathematics and teaching the practice of teaching in a methods course*. (MAT 500 independent study.)

Krick, J. (2015). *Effective practices in the middle school mathematics classroom*. (MAT 302 undergraduate honors project.)

O'Dell, J. (2014). *Preservice teachers' conceptions and misconceptions of zero*. (Doctoral student course project for MAT 309 graduate credit.)

Zangari, L. (2014). *Division with remainders and modular arithmetic: A review of the literature and an instructional unit*. (Master's student course project for MAT 309 graduate credit.)

MANUSCRIPT AND CONFERENCE PROPOSAL REVIEWER

Association of Mathematics Teacher Educators Annual Conference
International Journal for Mathematics Teaching and Learning
Journal for Research in Mathematics Education
Journal of Mathematical Behavior
Mathematics Education Research Journal
Mathematics Teacher Educator
Mathematical Thinking and Learning
Mathematics Teacher: Mathematics Learning and Teaching PK-12
National Council of Teachers of Mathematics' Research Conference
North American Chapter of the International Group for the Psychology of Mathematics Education's Conference Proceedings

PROFESSIONAL MEMBERSHIPS

Association of Mathematics Teacher Educators
Illinois Council of Teachers of Mathematics
North American Chapter of the International Group for the Psychology of Mathematics Education
National Council of Teachers of Mathematics

PROFESSIONAL DEVELOPMENT FACILITATOR

Florida

Making Sense of Mathematics for Teaching: Grades 3-5; Lake County, FL

June 2016, 3-day workshop in Lake County, FL

Illinois

Teaching and Learning Measurement Concepts in Math and Science; Normal, IL
June 2017, 3-day workshop
June 2016, 4-day workshop

Mathematics of Measurement using Learning Trajectories; Normal, IL
June 2013, 1-day seminar

Illinois Mathematics and Science Partnership; Peoria, IL
June 2012, 7-day workshop
June 2011, 7-day workshop

New York

Race to the Top: District Initiative; Middletown, NY
February 2015, 4-day follow up observations
October 2014, 4-day follow up observations
July 2014, 5-day workshop
June 2014, 5-day workshop
March 2014, 4-day follow up observations
December 2013, 4-day follow up observations
June 2013, 10-day workshop

Oklahoma

Making Sense of Mathematics for Teaching: PreK–Grade 5; Yale, OK
August 2016, 2-day workshop
October 2016, 2-day workshop
January 2017, 1-day workshop

Tennessee

Creating Mathematical Routines for K–Grade 8 Classrooms; Memphis, TN
July 2016, 2-day seminar

AWARDS/ ACHIEVEMENTS

Outstanding University Teaching Award: Teaching Initiative Award (Pre-Tenure Faculty),
University Awardee (2016)

Outstanding University Teaching Award: Teaching Initiative Award (Pre-Tenure Faculty),
College of Arts and Sciences Nominee (2016)

Outstanding University Teaching Award: Teaching Initiative Award (Pre-Tenure Faculty),
Mathematics Department Nominee (2016)

Impact Award (2014)
Outstanding University Teaching Award: Graduate Student Teaching Award, Department
Nominee (2010)
TRIO Faculty Appreciation Award (2008)
Presidential Scholar, Full Tuition Scholarship (1999–2004)
Scovill Award (2002, 2003)
Millikin Achievement/ Service Award (2001)

COMPUTER SKILLS

Skilled at using a variety of software and programs in instruction and assessment, including but not limited to the following:

ReggieNet	Jamboard	Zoom	Screencast-O-Matic
Kahoot!	Desmos	Padlet	Geometer's Sketchpad
Nvivo	GeoGebra Classroom		