Amanda L. Cullen (née Miller)

4520 Mathematics Department
Illinois State University
Normal, IL 61790-4520
almille@ilstu.edu

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
Assistant Professor: Illinois State University	2014–2020
Instructional Assistant Professor: Illinois State University	2013–2014
Graduate Teaching Assistant: Illinois State University	2008–2009, 2011–2012
Adjunct Mathematics Instructor: Illinois Central College	2012
Mathematics Instructor: Richland Community College	2006–2008
Mathematics Teacher: Decatur Public Schools	2004–2006
Grade 4 Student Teacher: Decatur Public Schools	2003

RESEARCH

Principal Investigator

Transforming Early Childhood Mathematics Through Problem Solving: A Mixed-Method Longitudinal Study	2021–present

(Co-PI: Allison Kroesch; Research Partners: Neet Priya Bajwa, Julien Corven, Beth MacDonald, and Edward Mooney)

Students' Thinking About Areas of Triangles 2020-present
(Co-PI Cheryl Lizano)

Students' Reasoning About Angle Measure 2018–present
(Co-PI Craig Cullen)

Promoting Understanding of Angle Measurement: 2014–2017
A Microgenetic Study (Co-PIs Craig Cullen and Wendy O'Hanlon)

External Evaluator

STEM Satellites: A Mobile Mathematics and Science Initiative 2018–2022
for Orlando Metropolitan Area Children's Hospitals
(PI JoAnn Newman; Co-I Brandan Lanman and Megan Jeune)

Graduate Research Assistant 2009–2011, 2012–2013

Learning Trajectories to Support the Growth of Measurement Knowledge: Pre-K through Middle School (PI Jeffrey Barrett, Co-PIs 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 (PI Jeffrey Barrett, Co-PIs Douglas Clements, and Julie Sarama)

Independent Contractor, National Center for Teacher Effectiveness 2011–2012

Mathematical Quality of Instruction (PI Heather Hill)

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

JOURNAL EDITIORIAL TEAM MEMBER

Associate Editor: Mathematics Teacher: Learning and Teaching PK–12 2020–2023
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

Deal, E., Mooney, E., **Cullen, A. L.**, Kroesch, A., Bajwa, N. P., Corven, J., & MacDonald, B. (in press). Accessing and assessing components of elementary and middle school

students' mathematical disposition through metaphors. *Investingations in Mathematics Learning*. https://doi.org/10.1080/19477503.2024.2419291

Kroesch, A., Bajwa, N. P., MacDonald, B. L., Mattoon, C., Hatch, A. M. G.. **Cullen, A. L.,** Mooney, E. S., & Corven, J. (2024). Kindergarteners as sense makers! *Mathematics Teacher: Learning and Teaching PK–12, 117*(11), 802–812. http://dx.doi.org/10.5951/MTLT.2023.0284

Cullen, C. J., Ssebaggala, L., & **Cullen, A. L.** (2024). Constructing models of relationships. *Mathematics Teacher: Learning and Teaching PK–12, 117*(1), 32–35.

Cullen, A. L. (2023). Access without agency, competence without confidence [Editorial]. *Mathematics Teacher: Learning and Teaching PK–12, 116*(7), 486–487.

MacDonald, B. L., **Cullen, A. L.,** Kroesch, A. M., Bajwa, N. P., Mooney, E., & Corven, J. (2023). Reimagining the emergent perspective within research-practice learning communities. In T. Lamberg, D. Moss, R. Welder, G. Waddell, & L. Wiest (Eds.), *Proceedings of the 45th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 910–914), Reno, NV.

Talbot, J., **Cullen, A. L.,** & Lizano, C. (2023). Fraction as a quantity: Describing students' reasoning. In T. Lamberg, D. Moss, R. Welder, G. Waddell, & L. Wiest (Eds.), *Proceedings of the 45th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 333–341), Reno, NV.

Cullen, A. L. (2022). Recalibrating beliefs and teaching practices [Editorial]. *Mathematics Teacher: Learning and Teaching PK–12, 115*(8), 534–535. https://doi.org/10.5951/MTLT.2022.0123

Odell, J., Langrall, C. W., & **Cullen, A. L.** (2022). Challenging students to experience mathematics as mathematicians. *Mathematics Teacher: Learning and Teaching PK–12, 115*(3), 191–201. https://doi.org/10.5951/MTLT.2021.0160

Rush, Y., & **Cullen, A. L.** (2022). Investigation of mathematical mindset, identity, and self-efficacy of college students. In A. E. Lischka, E. B. Dyer, R. S. Jones, J. N. Lovett, J. Strayer, & S. Drown (Eds.), *Proceedings of the 44th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1718–1719). http://www.pmena.org/pmenaproceedings/PMENA%2044%202022%20Proceedings.pdf

Sears, R., Bay-Williams, J. M., Willingham, J. C., & **Cullen, A. L.** (2022). Symbiosis: Social and emotional learning and mathematics learning. *Mathematics Teacher: Learning and Teaching PK–12, 115*(11), 770–780. https://doi.org/10.5951/MTLT.2022.0081

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

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.

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.

Clements, D. H., Sarama, J., Van Dine, D. W., Barrett, J. E., Cullen, C. J., Hudyma, A., Dolgin, R., **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

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.

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., . . . Klanderman, 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., & Klanderman, 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.**, & Klanderman, 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/jresematheduc.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). I received a "revise and resubmit" decision: Now what? [Editorial]. *Journal for Research in Mathematics Education, 45*(3), 286–287. doi:10.5951/jresematheduc.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., Klanderman, 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

Cullen, A. L., Strawder, S., & Talbot, J. (2024, September). *How young children solve problems from kindergarten through grade 2.* Presented as the National Council of Teachers of Mathematics' 2024 Annual Meeting and Exposition.

Cullen, A. L., & Talbot, J. (2024, March). *Children's choice and use of tools while solving problems.* Paper presented at the 51st Annual Meeting of the Research Council on Mathematics Learning, Columbia, SC.

MacDonald, B. L., **Cullen, A. L.,** Kroesch, A. M., Bajwa, N. P., Mooney, E., & Corven, J. (2023, October). *Reimagining the emergent perspective within research-practice learning communities.* Paper presented at the 45th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Reno, NV.

Talbot, J., **Cullen, A. L.,** & Lizano, C. (2023, October). *Fraction as a quantity: Describing students' reasoning.* Paper presented at the 45th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Reno, NV.

Bay-Williams, J., Sears, R., Willingham, J. C., & **Cullen, A. L.** (2023, January). *Infusing social emotional learning and math practices in our daily teaching* [webinar]. Invited presentation for National Council of Teachers of Mathematics' Professional Development Series. https://www.nctm.org/online-learning/Webinars/Details/632

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.**, & Klanderman, 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., & Klanderman, 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

Deal, E., Mooney, E., & **Cullen, A. L.** (2023, October). *If math were a food, what would it be and why?* [session]. Presented at the 75th Annual Meeting of the Illinois Council of Teachers of Mathematics. Naperville, IL.

Hatch, A., Strawder, S., & **Cullen, A. L.** (2023, October). *Growing and cultivating a learning community* [session]. Presented at the 75th Annual Meeting of the Illinois Council of Teachers of Mathematics. Naperville, IL.

Kroesch, A. M., Mattoon, C., Hatch, A., & **Cullen, A. L.** (2022, October). *Problem solving with number lines* [session]. Presented at the 74th Annual Meeting of the Illinois Council of Teachers of Mathematics.

Hatch, A., Strawder, S., & **Cullen, A. L**. (2023, September). *Growing and cultivating a learning community.* Presented at Thomas Metcalf Laboratory School's Teacher Institute Day. Normal, IL.

Cullen, A. L., Hatch, A., & Mattoon, C. (2022, October). *Learning together: Co-planning and co-teaching early childhood mathematics.* Presented at Metcalf Laboratory School.

Talbot, J., Lawton, C., & **Cullen, A. L**. (2022, March). *Daily data: Collecting, analyzing, and interpreting data grades 5–8* [workshop]. 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

Erwin, A. (2022–2024). *Investigating the impact of content courses on elementary preservice teachers' instructional visions.*

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. (2021–2023). *Students' concept image of triangle attributes.*

Stewart, K. (2024–present). *Experiences of African American Girls Leading to and Throughout Advanced Mathematics Classes.*

Dissertation Committee Member

Rush, Y. (2023-present). *Fostering a growth mindset in mathematics: Faculty and student experiences.*

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

Ssebaggala, 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

Carpenter, C. (2024). *Collecting and analyzing classroom data.* (2 hour MAT 500 independent study.)

Carpenter, C. (2024). *The development of a priori codes to analyze children's problem solving with tools.* (3 hour MAT 500 independent study.)

Miller, J. (2024). *Learning from and through practice as a teacher-scholar.* (1 hour HON 285 honors research study.)

Deal, E. (2023). *A metaphorical analysis of beliefs, mindset, and dispositions toward mathematics*. (2 hour MAT 500 independent study.)

Jegede, K. (2023). *Collecting and analyzing interview data*. (4 hour MAT 500 independent study.)

Talbot, J. (2023). *Analyzing early elementary students' problem solving on an assessment*. (2 hour MAT 500 independent study.)

Hutchison, M. (2023). *Math anxiety and college students: A professional project*. (MAT 583 professional project.) Co-directed with Dr. Julien Corven.

Carpenter, C. (2022). *Comparing MAT 410 and MAT 309 students' approaches to a remainder problem.* (Master's student course project for MAT 309 graduate credit.)

Talbot, J. (2022). *Describing students' thinking as it relates to fraction as arrangement and fraction as quantity.* (MAT 583 professional project).

Eilers, S. (2022). *Mathematical identity and perseverance in grade 6.* (MAT 490 Master's project).

Erwin, A. (2022). *Instructional vision interview protocol.* (MAT 500 independent study).

Eilers, S. (2022, Summer). *Building thinking classrooms: Classroom applications.* (MAT 400 Independent Study).

Eilers, S. (2022, Spring). *Student motivation in the mathematics classroom*. (MAT 400 Independent Study).

Wetzel, C. (2022). Pentominoes in the middle school mathematics classroom. (MAT 202 undergraduate honors project.)

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

Talbot, J. (2020). *Collecting and analyzing interview data.* (MAT 500 Independent 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
Investigations in Mathematics 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

AWARDS/ ACHIEVEMENTS

Influential ISU Faculty/Staff Educator (2024)
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)