

## *Curriculum Vitae*

**Megan Hope Wickstrom**  
Montana State University  
Department of Mathematical Sciences  
Bozeman, MT 59717-2400  
**email:** [megan.wickstrom@montana.edu](mailto:megan.wickstrom@montana.edu)  
**website:** [www.meganwickstrom.com](http://www.meganwickstrom.com)  
**phone:** (406) 994-5026

### **Professional Preparation**

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#### **Ph.D. Mathematics Education**

Illinois State University, Normal, Illinois May 2014  
Dissertation: *An Examination of Teachers' Perceptions and Implementation of Learning Trajectory Based Professional Development*  
Ph.D. Advisor: Dr. Cynthia W. Langrall

#### **M.S. Elementary and Middle School Mathematics Education**

Illinois State University, Normal, Illinois May 2009  
Thesis: *The Effects of Playing Board Games on Pre-Probability Knowledge of Fourth-Grade Students*  
Advisor: Dr. Edward Mooney

#### **B.A. Mathematics**

Saint Mary's College, Notre Dame, Indiana May 2007

**Mathematics Teaching Certification (Grades 6 – 12)** May 2007  
State of Indiana and State of Illinois

### **Professional Experience**

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#### **Montana State University: Department of Mathematical Sciences**

Professor of Mathematics Education July 2025 – Present  
Associate Professor of Mathematics Education July 2020 – Present  
Assistant Professor of Mathematics Education August 2014 – June 2020

#### **Illinois State University: Department of Mathematics**

Course Instructor January 2013-May 2014  
Graduate Research Assistant August 2011-September 2013  
Graduate Research Assistant August 2007-May 2009

#### **Holy Trinity Junior High School, Bloomington, Illinois**

Middle School Mathematics Teacher August 2009-May 2011

**Mishawaka High School, Mishawaka, Indiana**

Student Teacher - High School Mathematics

August 2006-May 2007

**Awards and Honors**

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- 2025 **James and Mary Ross Provost's Award for Excellence**, Montana State University, Office of the Provost. Description: This award recognizes excellence in teaching and scholarship.
- 2023 **Alumni Education Award**. Illinois State University, Department of Mathematics. Description: Each year, this award recognizes the accomplishments of a Mathematics alumnus or alumna who has made significant contributions to mathematics education during his or her career.
- 2023 **Early Career Award**. Association of Mathematics Teacher Educators. The purpose of the Early Career award is to recognize a mathematics teacher educator who, while early in their career, has made distinguished contributions and shows exceptional potential for leadership in one or more areas of teaching, service, and/or scholarship.
- 2019 **Montana State University Teaching Innovation Award**. Montana State University, Office of the Provost. Description: This award is designed to honor faculty who have incorporated outstanding innovative teaching practices into their classes at Montana State University.
- 2018 **Faculty/Staff Award for Excellence**. Montana State University, Alumni Association. Description: Forty graduating seniors are chosen by the university for this award and they chose a mentor to accompany them. Awarded January 2018 by the Montana State University Alumni Association
- 2017 **Linking Research and Practice Outstanding Publication Award**. National Council of Teachers of Mathematics. Description: This award honors a publication that connects research to practice in meaningful ways.

**Publications**

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Order of authorship denotes the level of contribution to the scholarly work, unless noted otherwise.

\*Undergraduate Student, \*\*Graduate Student, + Practicing Teacher

**Refereed Books**

Arnold, E., Burroughs, E., Carlson, M. A., Fulton, E., **Wickstrom, M. H.** (2021). *Becoming a Teacher of Mathematical Modeling, K-6*. Reston, VA: National Council of Teachers of Mathematics. All authors contributed equally to this work.

Arnold, E., Burroughs, E., Carlson, M. A., Fulton, E., **Wickstrom, M. H.** (2021). *Becoming a Teacher of Mathematical Modeling, 7-12*. Reston, VA: National Council of Teachers of Mathematics. All authors contributed equally to this work.

Suh, J., **Wickstrom, M. H.**, & English, L (Eds.). (2021) *Exploring the Nature of*

*Mathematical Modeling in the Early Grades*. New York, NY: Springer.

### **Referred Book Chapters (Peer Reviewed)**

Jung, H., & **Wickstrom, M. H.** (2022). Modeling library funding. In T. G. Bartell, C. Yeh, M. D. Felton-Koestler, & R. Q. Berry III (Eds.), *Upper elementary mathematics lessons to explore, understand, and respond to social injustice*. Corwin and the National Council of Teachers of Mathematics.

**Wickstrom, M. H.** & \*Yates, A. (2021). Mathematical Modeling: Analyzing Elementary Students' Perceptions of What it means to Know and Do Mathematics. In Suh, J., Wickstrom, M. H., English, L (Eds.). *Exploring the Nature of Mathematical Modeling in the Early Grades* (pp. 209-233). Springer.

Barrett, J., **Wickstrom, M. H.**, Tobias, J. M., Cullen, C., Cullen, A., Baek, J. (2019) Chapter 3: Children's Measurement Project: Sharing Trajectories with Teachers. In Paola Sztajn & P. Holt Wilson (Eds.) *Designing Professional Development for Mathematics Learning Trajectories* (pp. 48-74). New York, NY: Teachers College Press.

\*\*Fulton, E. W., **Wickstrom, M. H.**, Carlson, M. A., Burroughs, E. A. (2019). Chapter 7: Teachers as Learners: Engaging Communities of Learners in Mathematical Modelling through Professional Development. In G. A. Stillman & J. Brown (Eds.), *Lines of Inquiry in Mathematical Modelling Research in Education*. New York, NY: Springer

Carlson, M. A., **Wickstrom, M. H.**, Burroughs, E. A., & \*\*Fulton, E. W (2016). A case for mathematical modeling in the elementary classroom. In C. Hirsch (Ed.), *Annual Perspectives in Mathematics Education: Mathematical Modeling and Modeling Mathematics* (pp.121-129). Reston, VA: National Council of Teachers of Mathematics.

### **Refereed Journal Articles (Peer-Reviewed)**

\*\*Meyer, E. S, Green, J., Arnold, E., **Wickstrom, M. H.** (2025). Understanding how and when graduate student instructors break through challenges with active learning. *International Journal of Research in Undergraduate Mathematics Education*, 11, 241-273. <https://doi.org/10.1007/s40753-024-00240-8>

+\*\*Carlisle, W. R., Jung, H., **Wickstrom, M. H.**, \*Sutcliffe, K., Kim, H. (2025). Insights into pothole damage: Exploring culturally responsive mathematical modeling. *International Journal of Science and Mathematics Education*, 23, 1013-1032. <https://doi.org/10.1007/s10763-024-10492-0>

**Wickstrom, M. H.**, \*\*Lopez-Mercado, C., Jung, H. (2024). Cultivating K-8 Teachers' Critical Consciousness through Social Justice Mathematical Modeling: The Teacher Pay Task. *Mathematics Teacher Educator*, 13(1), 257-281.

**Wickstrom, M. H., & Jung, H.** (2024). Understanding pre-service teachers as mathematical modelers and their perceptions of the process. *Journal for Research in Mathematics Education*, 55(4), 182-209.

\*\*Theobald, A. S., **Wickstrom, M. H.**, Hancock, S. A. (2023). Coding code: Qualitative methods for investigating data science skills. *Journal of Statistics and Data Science Education*, 32(2), 161–173. <https://doi.org/10.1080/26939169.2023.2277847>

+\*\*Amarel, T. L. & **Wickstrom, M. H.** (2023). Math metaphors: Windows into mathematical experiences. *Mathematics Teacher Learning and Teaching PK12*, 116(4), 273-280. <https://doi.org/10.5951/MTLT.2022.0138> All authors contributed equally to this work.

Jung, H. & **Wickstrom, M.H.** (2023). Teachers creating mathematical models to fairly distribute school funding. *Journal of Mathematical Behavior*, 70, 1-18. <https://doi.org/10.1016/j.jmathb.2023.101041>

**Wickstrom, M. H., & Arnold, E.** (2023). Investigating secondary pre-service teachers as teachers and learners of mathematical modeling. *Teaching Mathematics and its Applications*, 42 (1), 86-107. <https://doi.org/10.1093/teamat/hrab031>

Arnold, E. G., Burroughs, E. A., Carlson, M. A., Fulton, E. W., **Wickstrom, M. H.** (2022). Mathematical modeling as a tool for empowerment. *Mathematics Teacher: Learning and Teaching PK-12*, 115(5), 380-382. All authors contributed equally to this work.

**Wickstrom, M. H.** (2022) Developing Pre-Service Teachers' Understanding of Area through a Units Intervention. *Mathematics Teacher Educator*, 10(2), 143-170.

Jung, H., **Wickstrom, M. H.**, +\*\* Piasecki, C. (2021) Bridging modeling and environmental issues. *Mathematics Teacher: Learning and Teaching PreK-12*, 114(11), 845-852.

**Wickstrom, M. H., & Roscoe, M.** (2020) Geometric Modeling: Determining the Largest Lake. *Mathematics Teacher: Learning and Teaching Pre-K-12*, 113(8), 643-650.

**Wickstrom, M. H., & Langrall, C. W.** (2020). The case of Mrs. Purl: Using a learning trajectory as a tool for teaching. *Journal of Mathematics Teacher Education*, 23, 97-125.

Feldman, Z., **Wickstrom, M. H.**, Ghosh Hajra, S., & Gupta, D. (2020). The role of uncertainty in mathematical tasks for prospective elementary teachers. *The Mathematics Enthusiast*, 17 (2-3), 641-672.

\*Dardis, E. & **Wickstrom, M. H.** (2019) Emphasizing the M in STEAM activities. *Teaching Children Mathematics*, 25(7), 436-438.

**Wickstrom, M. H.**, \*\*Fulton, E.W., & + Lackey, D. (2019). Legos: Linking Fractions, Operations, and Area. *Mathematics Teaching in the Middle School*, 24(6), 339-346.

**Wickstrom, M. H.**, & + Aytes, T. (2018). Elementary modeling: Connecting counting and sharing. *Teaching Children Mathematics*, 24(5), 300-307. (cover article)

**Wickstrom, M. H.**, \*Wilm, S., \*Johnson, A., \*Mills, E., \*Leonard, N., and \*Larberg, R. (2018). Learning from our own lessons. Pre-service teachers' narratives of teaching as an experiment. *Educational Action Research*, 26(1), 1-17.

**Wickstrom, M. H.**, \*\*Fulton, E.W., Carlson, M. A. (2017). Pre-service teachers' conceptions of tiling and relating area units. *Journal of Mathematical Behavior*, 48, 112-136.

**Wickstrom, M. H.**, + Carr, R., & + Lackey D. (2017). Exploring Yellowstone national park with mathematical modeling. *Mathematics Teaching in the Middle School*, 22(8), 462-470. (cover article)

Baek, J. M., **Wickstrom, M. H.**, Tobias, J., Wessman-Enzinger, N. M., Miller, A. L., Safak, E., & Kirwan, J. V. (2017) Elementary preservice teachers' pictorial strategies for representing fractions as operators. *Journal of Mathematical Behavior*, 45, 1-14

Miller, 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 multi-step fraction word problem. *International Journal for Mathematics Teaching and Learning*, 18(1), 109-131.

**Wickstrom, M. H.**, & Gregson, S. A. (2017). Responding to inequities in mathematics education: Opening spaces for dialogue. *Journal of Urban Mathematics Education*, 10(1), 16-31.

**Wickstrom, M. H.**, & + Jurczak, L. M., (2016). Inch by inch, we measure. *Teaching Children Mathematics*, 22(8), 468-475. (Cover Article).

**Wickstrom, M. H.** (2015) Volume is a Treat. *Teaching Children Mathematics*, 22(4), 264.

**Wickstrom, M. H.** (2015). Challenging a teacher's perceptions of mathematical smartness through reflections on student's thinking. *Equity & Excellence in Education*, 48(4), 589-605.

**Wickstrom, M. H.**, + Nelson, J., & + Chumbley, J. (2015). Area conceptions sprout on earth day. *Teaching Children Mathematics*, 21(4), 466-474. (Cover Article).

**Wickstrom, M. H.** (2014). Piecing it together. *Teaching Children Mathematics*, 21(4), 220-227.

**Wickstrom, M. H., & Wessman-Enzinger, N. M.** (2014). A new spin on fair sharing. *The Wisconsin Mathematics Teacher*, 66(1), 16-20

### **Invited (Non-Peer Reviewed) Articles**

Wickstrom, M. H. (2023). Cultivating community and belonging in mathematics education. *AMTE Connections*.  
<https://amte.net/connections/2023/05/feature-article-2023-amte-early-career-award-recipient>

Jansen, A., **Wickstrom, M. H.**, Williams, D. (2020) Rough Drafts in Online Math Class. The Stenhouse Blog: <https://blog.stenhouse.com/rough-drafts-in-online-math-class>

### **Invited Practitioner Resources (Editor-Reviewed)**

**Wickstrom, M. H.** (2018). Using quilts to investigate area and perimeter: Lesson plans and resources. In S. McMillen (Ed.) *Integrating Math Across the K-6 Curriculum*. Reston, VA: National Council of Teachers of Mathematics.  
(<https://www.nctm.org/Publications/Microsites/Integrating-Math-K-6/Welcome-to-Integrating-Math-across-the-K-6-Curriculum/>)

**Wickstrom, M. H.** (2018). Gardening as a context to investigate area and perimeter: Lesson plans and resources. In S. McMillen (Ed.) *Integrating Math Across the K-6 Curriculum*. Reston, VA: National Council of Teachers of Mathematics.  
(<https://www.nctm.org/Publications/Microsites/Integrating-Math-K-6/Welcome-to-Integrating-Math-across-the-K-6-Curriculum/>)

### **Refereed Conference Proceedings (Peer-Reviewed)**

**Wickstrom, M.H. & Jung, H.** (2022), Effect, emotions, and attitudes in mathematical modeling. In C. Fernández, S. Llinares, A. Guitérrez, and N. Planas (Eds.). *Proceedings of the 45<sup>th</sup> Conference of the International Group for the Psychology of Mathematics Education*, (Vol. 4, p. 317), Alicante, Spain: PME.

**Wickstrom, M. H.** (2018). Self-reflection as a pedagogical tool for pre-service elementary teachers' growth in reasoning about measurement. In E. Bergqvist, M. Österholm, C. Granberg, & L. Sumpter (Eds.). *Proceedings of the 42nd Conference of the International Group for the Psychology of Mathematics Education* (Vol. 5, p. 192). Umeå, Sweden: PME.

Suh, J., Matson, K., Carlson, M., Levy, R., **Wickstrom, M. H.**, Roth McDuffie, A., Jamieson, S., Turner, E., Seshaiyer, P., Anhalt, C. (2018). Exploring the Nature of Mathematical Modeling in the Early Grades. *Proceedings of the 40<sup>th</sup> Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, South Carolina.

Suh, J., Seshaiyer, P., Matson, K., Levy, R., Carlson, M. A., **Wickstrom, M. H.**, Jamieson, S. (2017). Mapping the learning progression in early mathematical modeling. 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. 1533-1540). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

**Wickstrom, M. H.** (2017). Mathematical modeling: Challenging the figured worlds of elementary mathematics. 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.685-692). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Carlson, M. A., Burroughs, E. A., \*\*Fulton, E. W., & **Wickstrom, M. H.** (2016). Teachers' uses of the term "model" in classroom settings. Paper presented at the 13<sup>th</sup> International Congress on Mathematical Education 2016, Hamburg, Germany.

\*\*Fulton, E. W., **Wickstrom, M. H.**, Carlson, M. A., & Burroughs, E. A. (2016). Teachers as learners: Understanding and valuing mathematical modeling through professional development. Paper to be presented at 13<sup>th</sup> International Congress on Mathematical Education 2016, Hamburg, Germany.

**Wickstrom, M. H.**, (2015). Do you notice what I notice? Productive mediums for teacher noticing. *Proceedings of the 37th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1094-1101). East Lansing, Michigan: Michigan State University.

**Wickstrom, M. H.**, Baek, J., Barrett, J., Cullen, C., & Tobias, J. (2013). The effects of learning trajectory based professional development on teachers' noticing. *Proceedings of the 35th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 970). Chicago, IL: University of Illinois-Chicago.

**Wickstrom, M. H.**, Baek, J., Barrett, J., Cullen, C., Tobias, J. (2012). A teacher's noticing of children's understanding of linear measurement. *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp.488 – 494) Kalamazoo, MI: Western Michigan University.

### **Books and Manuscripts Under Review or Revision**

Jung, H., Brown, T., Hernandez-Zavaleta, E. & **Wickstrom, M. H.** (under review). *Teaching and Learning Justice-Oriented Mathematical Modeling in Community*. Submitted to the National Council of Teachers of Mathematics for Review.

**Wickstrom, M.H.** & Ghosh-Hajra, S. (under review). Bridging measurement and multiplication: Growing elementary prospective teachers understanding of area models. Submitted to the *Mathematics Teacher Educator*.

**Wickstrom, M. H.**, Wessman-Enzinger, N., \*\*Goodarzi, T. (under review). The challenge allows for greater joy: Pre-service teachers' perceptions of joy in mathematics. Submitted to *Investigations in Mathematics Learning* special issue on Defining, Cultivating, and Sustaining Productive Struggle in Mathematics Classrooms.

**Wickstrom, M. H.**, & Green, J. L (revising to resubmit). Elementary teachers' receptiveness to mathematical modeling: Exploring beliefs and classroom practices. Planning to resubmit to *Journal of Mathematics Teacher Education*.

**Wickstrom, M. H.**, \*\*Green, M., Jung, H. (in progress). Pre-Service elementary teachers' emotions in relation to their engagement in the modeling process.

## **Grants**

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### **Internally Funded**

Downey, J., Ewbank, A., Luebeck, J., Versland, T., Waterton, N., **Wickstrom, M. H.**, Wilson, S. *Building Capacity, Collaboration, and Innovation in Rural Education Research and Practice*. Montana State University: MSU Vice President for Research, \$97, 294.

**Wickstrom, M. H.** *Developing Practitioner Resources for Mathematical Modeling*. Center for Faculty Excellence (internally funded), Montana State University, 1/01/2019-6/01/2019, \$5000.

**Wickstrom, M. H.** *Using robotics to explore geometry and angle measures with pre-service teachers*. Instructional Innovation Grant funded by the Center for Faculty Excellence (internally funded), 7/01/2017, \$3,976.

**Wickstrom, M. H.** *Summer course development grant for m133: Geometry and measurement for k-8 teachers*. Office of the Dean (internally funded), Montana State University, 6/01/2016, \$1500.

**Wickstrom, M. H.** *An Investigation of Pre-Service Elementary Teachers' Geometry and Spatial Reasoning*. Center for Faculty Excellence (internally funded), Montana State University, 1/01/2016-6/01/2016, \$5000.

### **Externally Funded**

**Wickstrom, M. H. (Lead PI)** & Jung, H. (PI) *Collaborative Research: Developing and Exploring Mathematical Modeling Curricula for Pre-Service K-8 Teachers*. National

Science Foundation, Montana State University, 10/1/2019-6/01/2024, \$299,646 with \$299,647.

Burroughs, E. (PI), Carlson, M, A. (Co-PI), **Wickstrom, M. H. (Co-PI)**. *IMMERSION: Integrating mathematical modeling, experiential learning and research through a sustainable infrastructure and an online network for teachers in the elementary grades*. National Science Foundation, Montana State University, 9/1/2014-8/30/2017, \$1,200,000.

## **Invited Presentations**

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\*Undergraduate Student, \*\*Graduate Student, + Practicing Teacher

### **National**

Bryant, K., Honey, J., & **Wickstrom, M. H.** (2025, February). Modeling Moments: Connecting Modeling to Practice. Invited Webinar. National Council of Teachers of Mathematics. <https://www.nctm.org/online-learning/Webinars/Details/731>

**Wickstrom, M. H.**, & Jung, H. (2024, May). Understanding and Supporting Pre-Service Elementary Teachers as Mathematical Modelers. Journal for Research in Mathematics Education Webinar.

**Wickstrom, M.H.** (2024, February). Empowering Elementary Teachers: Reflections on Task-Design and Dimensions of Equity. Early Career Award Talk. Association of Mathematics Teacher Educators (AMTE) Annual Meeting: Orlando, Florida.

Theobald, A., **Wickstrom, M. H.**, Hancock, S. (2024, January). Coding Code: Qualitative Methods for Investigating Data Science Skills. Consortium for the Advancement of Undergraduate Statistics Education (CAUSE). Virtual. <https://www.causeweb.org/cause/webinar/jsdse/2024-01>

**Wickstrom, M. H.** (2023, October). Empowering K-8 Teachers through Social Justice Mathematical Modeling: The Teacher Pay Task. Illinois State University, Normal, Illinois.

**Wickstrom, M. H.** (2023, September). Pre-service Teachers' Understanding of Area Measures. University of Florida Doctoral Seminar. Virtual.

**Wickstrom, M. H.** & Amarel, T. (2023, July). Math Metaphors: Windows into Students' Mathematical Experiences. Baylor University Teachers' Academy. Virtual.

**Wickstrom, M.H.** (2022, August). Developing Pre-Service Teachers' Understanding of Area through a Units Intervention. Mathematics Teacher Educator Podcast. <https://mtepodcast.amte.net/>

Fulton, E.W. & **Wickstrom, M.H.** (2022, February). Becoming a Teacher of Mathematical Modeling, Grades K-5. Invited Webinar. National Council of Teachers of Mathematics. <https://www.nctm.org/online-learning/Webinars/Details/601>

**Wickstrom, M.H.** (2019, March). Invited Facilitator for Critical Issues in Mathematics Education 2019: Mathematical Modeling in K-16 Community and Cultural Contexts. Mathematical Sciences Research Institute Workshop. Berkeley, California.

### **State and Local**

**Wickstrom, M. H.** (2024, August). Solving Tasks that Matter: Empowering with Modeling. Montana Math Meet (M-Cubed). Butte, Montana.

**Wickstrom, M. H.** (2023, September). What is Mathematics Education? Montana State University Undergraduate Mathematics Seminar. Bozeman, Montana.

**Wickstrom, M. H.** & Dardis, E. (2019, February). Active and Hands-on Learning Opportunities in Elementary Mathematics Education Courses. Leadership MSU Program. Bozeman, Montana.

**Wickstrom, M. H.** (2019, May). Invited Speaker. Engaging Pre-Service K-8 Teachers in Modeling Tasks. Symposium of Montana Mathematics Teaching (SUMMiT) Workshop, Butte, Montana.

**Wickstrom, M. H.** (2019, August). Invited Speaker. Mathematical Modeling: Making Mathematics Meaningful. Montana Afterschool Alliance.

### **Contributed Conference Presentations (Peer-Reviewed)**

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#### **International**

**Wickstrom, M.H.** (2022) Effect, emotions, and attitudes in mathematical modeling. Oral Communication presented at the 45<sup>th</sup> annual meeting of the International Group for the Psychology of Mathematics Education. Alicante, Spain.

**Wickstrom, M. H.** (2018, July) Self-reflection as a pedagogical tool for pre-service elementary teachers' growth in reasoning about measurement. Brief report presented at the 42<sup>nd</sup> annual meeting of the International Group for the Psychology of Mathematics Education. Umea, Sweden.

Carlson, M. A., Burroughs, E. A., Fulton, E. W., & **Wickstrom, M. H.** (2016, July). Teachers' uses of the term "model" in classroom settings. Paper presented at 13<sup>th</sup> International Congress on Mathematical Education 2016. Hamburg, Germany.

\*\*Fulton, E. W., **Wickstrom, M. H.**, Carlson, M. A., & Burroughs, E. A. (2016, July). Teachers as learners: Understanding and valuing mathematical modeling through

professional development. Paper presented at 13<sup>th</sup> International Congress on Mathematical Education 2016. Hamburg, Germany.

### **National**

Galluzo, B., Hernandez, M., Honey, J., & **Wickstrom, M. H.** (2025). Engage your Students in Meaningful Mathematics through Modeling. National Council of Teachers of Mathematics Virtual Pre-Conference Workshop.

Jung, H. & **Wickstrom, M. H.** (2024, April). Practices for Implementing Social-Justice Modeling: Environmental Justice and Fair Sharing. National Council of Teachers of Mathematics Virtual Conference.

**Wickstrom, M. H.** & +\*\*Amarel, T. (2024, April). Math metaphors: Windows into Students' Mathematical Experiences. National Council of Teachers of Mathematics Virtual Conference.

**Wickstrom, M.H.** & Jung, H. (2024, February). Engaging K-8 Teachers in Social-Justice Mathematical Modeling Tasks. Association of Mathematics Teacher Educators (AMTE) Annual Meeting: Orlando, Florida.

**Wickstrom, M.H.,** Jung, H., & \*\*Greene, M. (2022, February). Promoting Productive Dispositions toward Mathematics through Modeling. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Las Vegas, Nevada.

Jung, H. & Wickstrom, M.H. (2022, February). Designing and Enacting Culturally Responsive Mathematical Modeling Tasks. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Las Vegas, Nevada.

**Wickstrom, M.H.** & Jung, H. (2021, February). *Supporting Elementary Preservice Teachers as Modelers*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Virtual.

Ghosh Hajra, S. & **Wickstrom, M. H.** (2021) *Developing Relationships between the Area Model, Multiplication, and Conceptions of Area*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Virtual.

**Wickstrom, M. H.** & \*Yates, A. (2020, April) *Exploring and Implementing Mathematical Modeling in the Elementary Grades*. National Council of Teachers of Mathematics (NCTM) Annual Meeting and Exposition, Chicago, Illinois (Conference canceled due to COVID-19).

Suh, J. & **Wickstrom, M. H.** (2020, April) *Going beyond Three-Act Math: Engaging in Mathematical Modeling and Empowering Young Mathematicians*. National Council of Teachers of Mathematics (NCTM) Annual Meeting and Exposition, Chicago, Illinois (Conference canceled due to COVID-19).

**Wickstrom, M.H.**, \*\*Fulton, E.W., & +Lackey, D. (2019, April). Presenter, Mathematics Teaching in the Middle School Monthly Twitter Chat

**Wickstrom, M.H.** & Green, J. (2019, February) *Elementary Teachers' Receptiveness to Mathematical Modeling: Identifying and Exploring Beliefs, Practices, and Classroom Structures*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Orlando, Florida.

Fulton, E., Arnold, E. G., Carlson, M. A., & **Wickstrom, M. H.** (2019, February) *Preparing K-12 Teachers of Mathematical Modeling*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Orlando, Florida.

**Wickstrom, M. H.** (2017, October). *Mathematical modeling: Challenging the figured worlds of elementary mathematics*. Paper presented at 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics, Indianapolis, Indiana.

Suh, J., Seshaiyer, P., Matson, K., Levy, R., Carlson, M. A., **Wickstrom, M. H.**, & Jamieson, S. (2017, October). Working group facilitator at 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics, Indianapolis, Indiana.

**Wickstrom, M.H.** & +Aytes, T (2018, April) Presenter, Teaching Children Mathematics Monthly Twitter Chat.

**Wickstrom, M.H.**, +Carr, R., & +Lackey, D. (2017, April) Presenter, Mathematics Teaching in the Middle School Monthly Twitter Chat.

**Wickstrom, M.H.** & \*\*Fulton, E. W. (2016, April) *Explore the national parks through measurement*. National Council of Teachers of Mathematics (NCTM) 2016 Annual Meeting and Exposition, San Francisco, California.

Carlson, M. A., **Wickstrom, M. H.**, Burroughs, E. A., & \*\*Fulton, E. W. (2016, January). *Teaching mathematical modeling in elementary grades: A framework*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Irvine, California.

**Wickstrom, M. H.**, Carlson, M. A., & \*\*Fulton, E. W. (2016, January). *When 1 square foot equals 12 square inches: examining and supporting preservice teachers' geometrical reasoning*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Irvine, California.

**Wickstrom, M. H.** (2015, November). Do you notice what I notice? Productive mediums for teacher noticing. Research paper presented at the 37th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics

Education. East Lansing, Michigan.

Baek, J. M., Tobias, J., **Wickstrom, M. H.**, & Safak, E. (2015, February). *Preservice Teachers' understanding of sizes of wholes in fraction multiplication*. Association of Mathematics Teacher Educators (AMTE) Annual Meeting. Orlando, Florida.

**Wickstrom, M. H.** (2014, April) *Challenging teachers' perceptions of mathematical smartness*. Poster session presented at National Council of Teachers of Mathematics (NCTM 2014) Research Pre-session. New Orleans, LA.

**Wickstrom, M. H.**, Baek, J., Barrett, J., Cullen, C., & Tobias, J. (2013, November). *The effects of learning trajectory based professional development on teachers' noticing*. Poster session presented at the 35th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Chicago, Illinois.

Wessman-Enzinger, N.M., & **Wickstrom, M. H.**, (April 2013). *Write mathematics into the story*. National Council of Teachers of Mathematics (NCTM) 2013 Annual Meeting and Exposition. Denver, CO.

**Wickstrom, M. H.**, & Wessman-Enzinger, N. M., (April 2013). *Take a "chance": Connecting probability to rational number reasoning*. National Council of Teachers of Mathematics (NCTM) 2013 Annual Meeting and Exposition. Denver, CO.

**Wickstrom, M. H.**, Baek, J., Barrett, J., Cullen, C., Tobias, J. (January 2013). *Teachers' noticing of children's understanding of linear measurement*. Association of Mathematics Teacher Educators (AMTE) 2013 Conference. Orlando, FL.

**Wickstrom, M. H.**, Barrett, J., Cullen, C. (October 2012). *Learning trajectory based professional development*. Presented at the Measurement Mini-Center at Michigan State University. East Lansing, MI.

Barrett, J., Cullen, C., Baek, J., Tobias, J., & **Wickstrom, M.** (April 2012). *The role of learning trajectories in professional development*. Presented at National Council of Teachers of Mathematics (NCTM) 2012 Research Pre-session. Philadelphia, PA.

### **State and Local**

\*\*Goodarzi, T., \*Anderson, H., & **Wickstrom, M. H.** (2024). Exploring Food Insecurity through Mathematical Modeling. MFPE Annual Meeting, Bozeman, Montana.

\*\*Mensah, N., **Wickstrom, M. H.**, \*\*Entsie, G. (2024). Cubes, Units and Conversions: Tasks to Conceptualize Volume. MFPE Annual Meeting, Bozeman, Montana.

**Wickstrom, M.H.** (2023). Solving Tasks that Matter: Empowering Students with Mathematical Modeling. MFPE Annual Meeting, Billings, Montana.

**Wickstrom, M.H.** (2023). Empowering Students with Mathematical Modeling. STEM Summer Institute, Bozeman, Montana.

\*Yates, A. & **Wickstrom, M. H.** (2021, October). STEM Activities for Young Learners. MEA-MFT Annual Meeting, Great Falls, Montana.

**Wickstrom, M. H.** & Williams, D. (2021, October). Visualizing, Constructing, and Understanding Mathematics with the Area Model. MEA-MFT Annual Meeting, Great Falls, Montana.

**Wickstrom, M. H.,** +Carr, R., +Lackey, D. (2019, October). Mathematical Modeling: Making Mathematics Meaningful. MEA-MFT Annual Meeting. Belgrade, Montana.

**Wickstrom, M.H.** & Green, J. (2019, February) Teaching Inclusively. Excellence in Teaching Symposium. Bozeman, Montana.

**Wickstrom, M.H.** & Carlson, M. A. (2017, October). *Visualizing the unknown: Using strip diagrams to foster algebraic reasoning.* MEA-MFT Annual Meeting. Missoula, Montana.

**Wickstrom, M.H.** (2017, October). *Garden Plots, Inch Worms, and Quilts: Learning Measurement in Context.* MEA-MFT Annual Meeting. Missoula, Montana.

**Wickstrom, M. H.,** (2016, October) *Legos: Linking Units, Operations, and Area.* MEA-MFT Annual Meeting. Helena, Montana.

\*\*Fulton, E. W. & **Wickstrom, M. H.** (2015, October) *Mathematical modeling in the elementary classroom.* MEA-MFT Annual Meeting. Billings, Montana.

**Wickstrom, M.H.** & Fulton, E. W. (2015, October) *Explore the national parks through measurement.* MEA-MFT Annual Meeting. Billings, Montana.

**Wickstrom, M. H.** (2014, October). *Rethinking what it means to be "smart" at mathematics.* MEA-MFT Annual Meeting. Missoula, Montana.

**Wickstrom, M. H.** (2014, March). *Teacher's perceptions and implementations of learning trajectory based professional development.* Dissertation defended at Illinois State University, Normal, Illinois.

**Wickstrom, M. H.** (October 2012). *AfterMath: Careers using a mathematics degree.* Panel Discussion at Saint Mary's College. Notre Dame, IN.

Cullen, C., & **Wickstrom, M. H.** (March, 2012). *The role of learning trajectories in professional development.* Illinois State University Group for Education and Research in Mathematics. Normal, IL.

## **Mathematics Education Invited Working Groups**

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Mathematics Teacher Preparation Conference: Improving Content Course for K-8 Pre-Service Teachers Using Methods of Data-Based Continuous Improvement. University of Delaware, June 6-8, 2016.

Learning Trajectory Based Professional Development Research Meeting. North Carolina State University, October 9-11, 2016.

## **Courses Taught**

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### **Montana State University**

EDM405 (formally EDU 497): Methods: 9-12 Mathematics  
M121Q: College Algebra  
M132: Number and Operations for K-8 Teachers  
M133Q: Geometry and Measurement for K-8 Teachers  
M234: Higher Mathematics for K-8 Teachers  
M329: Modern Geometry  
M420: Geometry, Measurement, and Data in the Middle Grades  
M424: Algebraic Thinking and Number Sense in the Middle Grades  
M428: Modeling for Teachers  
M491: Mathematical Modeling for K-8 Teachers  
M520: Standards-based Mathematics for Teachers  
M520: Access and Equity in Mathematics Teaching  
M526: Discrete Mathematics for Teachers  
M527: Geometry for Teachers  
M534: Research in Mathematics Education  
M577: Conducting Action Research in Mathematics Education

### **Illinois State University**

Math 130: Dimensions of Numerical Reasoning  
Math 201: Elementary Methods: Teaching Mathematics in the Elementary School

## **Courses and Professional Development Team-Taught and Developed**

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### **Montana State University**

Integrating Math Modeling Practices into Pre-Calculus, Lane County School District, Eugene, Oregon. Co-developed and team-taught a 3-week modeling workshop for high school and community college instructors in Eugene, Oregon. The purpose of the workshop was to unpack modeling practices that instructors could use in their classrooms.

Mathematics Modeling Workshop, NSF *IMMERSION* Project (June 2017, August 2017). Co-developed and team-taught a six-day mathematics modeling workshop for grades k-8 in-service teachers. The purpose of the workshop was to introduce mathematical modeling to elementary and middle-level teachers for use in their classrooms.

Mathematics Modeling Workshop, NSF *IMMERSION* Project (August 2016). Co-developed and team-taught a five-day mathematics modeling workshop for grades k-8 in-service teachers. The purpose of the workshop was to introduce mathematical modeling to elementary and middle-level teachers for use in their classrooms.

Mathematics Modeling Workshop, NSF *IMMERSION* Project (July 2015). Co-developed and team-taught a five-day mathematics modeling workshop for grades k-5 in-service teachers. The purpose of the workshop was to introduce mathematical modeling to elementary teachers for use in their classrooms.

### **Illinois State University**

Learning Trajectories as a Formative Assessment Tool, Formative Assessment in Elementary Mathematics (FAEM) Project (July 2012). Co-developed and team-taught a 10-day workshop for grades k-5 teachers. The purpose of the workshop was to introduce teachers to learning trajectories as tools for formative assessment.

Learning Trajectories as a Formative Assessment Tool, Formative Assessment in Elementary Mathematics (FAEM) Project (July 2011). Co-developed and team-taught a 10-day workshop for grades k-5 teachers. The purpose of the workshop was to introduce teachers to learning trajectories as tools for formative assessment.

### **Advising**

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#### **Ph.D. Chair or Co-Chair**

In Progress	Brooke Gruntowicz (Ph.D., Mathematics Education)
In Progress	Tannaz Goodarzi (Ph.D., Mathematics Education)
In Progress	Nana Mensah (Ph.D., Mathematics Education) <u>Dissertation:</u> Pre-Service Elementary Teachers' Understanding of Volume Measurement
2023	Chor Wan Kong (Ph.D., Mathematics Education) <u>Dissertation:</u> Two-Year Community College Students' Understanding of Rational Expressions

#### **Ph.D. Committee Member**

In Progress	Jeremiah Bass (Ph.D., Statistics)
In Progress	Giden Entsie (Ph.D., Mathematics Education)
In Progress	Sumaila Yakuba (Ed.D., Curriculum and Instruction)
In Progress	Bernard Yeboah (Ph.D., Mathematics Education)

In Progress	Mary Greene (Ph.D., Mathematics Education) <u>Dissertation:</u> Positioning theory as a framework for understanding student engagement in mathematical modeling competencies.
2022	Emmanuel Barton-Odro (Ph.D., Mathematics Education) Dissertation: Student engagement in an online calculus 1 course: Behavioral, cognitive, and social dimensions.
2022	Corinne Day (Ed.D. Curriculum and Instruction) <u>Dissertation:</u> Examining the impact of standards-based learning in an undergraduate math methods course
2022	Elijah Meijer (Ph.D., Statistics) <u>Dissertation:</u> Investigating newer statistics instructors' breakthroughs with and motivations for using active learning: A longitudinal case-study and a multiple-phase approach towards instrument development
2022	Monte Meyerink (Ed.D., Curriculum and Instruction). <u>Dissertation:</u> K-8 Preservice Teachers' Preparedness for Technology Integration in Mathematics: Examining Perspectives, Anticipated Practices, and Abilities.
2020	Allison Theobald (Ph.D., Statistics Education). <u>Dissertation:</u> Supporting data-intensive research in the environmental sciences: Data science skills for scientific practitioners of statistics
2017	Elizabeth Fulton (Ph.D. Mathematics Education) <u>Dissertation:</u> Understanding elementary teachers as teachers of mathematical modeling.
2016	Danielle Pettry (Ph.D. Mathematics Education) <u>Dissertation:</u> The development of specialized content knowledge in beginning algebra among secondary mathematics pre-service teachers

### **Masters Chair**

The Master of Science in Mathematics - Mathematics Education Program (MSMME) is a terminal degree program. Students do not complete a thesis. Instead, they complete a portfolio outlining important connections from research to their classroom practices.

In Progress	Nicolas Bricco (M.S., Mathematics - Mathematics Education)
In Progress	Joseph Nelson (M.S., Mathematics - Mathematics Education)
In Progress	Abigail Mills-Skinner (M.S., Mathematics - Mathematics Education)
In Progress	Eleanor Summers (M.S., Mathematics - Mathematics Education)
2025	Luke Culwell (M.S., Mathematics - Mathematics Education)
2025	Meghan Callaway (M.S., Mathematics - Mathematics Education)
2025	Jessica Beisecker (M.S., Mathematics - Mathematics Education)
2024	Kinsey Vavruska (M.S., Mathematics - Mathematics Education)
2024	Stephen Hancock (M.S., Mathematics - Mathematics Education)
2024	Abigail Stratton (M.S., Mathematics - Mathematics Education)
2023	Toni Amarel (M.S., Mathematics - Mathematics Education)

2023	Ian Lynch (M.S., Mathematics - Mathematics Education)
2023	Kirk Olson (M.S., Mathematics - Mathematics Education)
2023	Jocelyn Short (M.S., Mathematics - Mathematics Education)
2020	Tanya Amys (M.S., Mathematics - Mathematics Education)
2020	Robert Beltrami (M.S., Mathematics - Mathematics Education)
2020	Jeffrey Draper (M.S., Mathematics - Mathematics Education)
2020	Seth Ellis (M.S., Mathematics - Mathematics Education)
2019	Michelle Keller (M.S., Mathematics - Mathematics Education)
2019	Hillary Potuzak (M.S., Mathematics - Mathematics Education)
2019	Rachel Van Wickle (M.S., Mathematics - Mathematics Education)
2018	Nathan Cahoon (M.S., Mathematics - Mathematics Education)
2018	Emalee Cannon (M.S., Mathematics - Mathematics Education)
2017	Aaron Harkins (M.S., Mathematics - Mathematics Education)

## Service

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### Professional - Editorial

Current Editorial Board, *Mathematical Thinking and Learning*

### Professional - Reviewer

Journal Reviewer, *Educational Action Research*  
Journal Reviewer, *Eurasia Journal of Mathematics, Science, and Technology*  
Journal Reviewer, *Investigations in Mathematics Learning*  
Journal Reviewer, *Journal for Research in Mathematics Education*  
Journal Reviewer, *Journal of Mathematical Behavior*  
Journal Reviewer, *Journal of Mathematics Teacher Education*  
Journal Reviewer, *Mathematical Thinking and Learning*  
Journal Reviewer, *School Science and Mathematics*  
Journal Reviewer, *Teaching and Teacher Education*  
Journal Reviewer, *The Journal of Educational Research*

Conference Paper Reviewer, Psychology of Mathematics Education: North America.

Textbook Reviewer, Invited to review Sowder, J., Sowder, L., & Nickerson, S. *Reconceptualizing Mathematics for Elementary School Teachers*.

### State

2021- 2024 **Montana Council of Teachers of Mathematics Board Member**  
I was an elected member of the board that helped to plan and oversee opportunities for professional development in mathematics education in the state of Montana.

### Local

2015-2019 **Presenter, Expanding Your Horizons Conference**

The purpose of Expanding Your Horizons is to introduce middle school girls the STEM fields through a one-day workshop.

2019

**Planning Member Committee, Expanding Your Horizons (2019)**

2014-2017

**Coordinator, MSU Student/Elementary Student Pen Pal Project**

I facilitated a pen-pal project that connected Montana State University students with local elementary school students to discuss math topics.

### National

2022-2025

**NCTM/SIAM Joint Committee on Modeling Across the Curriculum Committee Member.** As a member of this committee, I helped plan and facilitate modeling opportunities for teachers at a national level including pre-conference workshops for the national conference and webinars.

### Montana State University

#### Course Supervisor

2021-Present **M121Q: College Algebra.** I supervise and support instructors teaching college algebra. Duties include writing assessments, meeting with instructors to discuss instructional practices, and conducting teaching observations.

2014- Present **Elementary Education Courses:** I supervise and support instructors teaching various content courses for elementary education majors. Duties include writing assessments, meeting with instructors to discuss instructional practices, and conducting teaching observations.

#### Undergraduate Research/Mentoring

2017-2019 **McNair Scholar's Mentor.** I worked with undergraduate student, Ms. Amber Yates, who was studying to become an elementary teacher. We studied second-grade students' perceptions of the modeling process in relation to their perceptions of what it meant to know and do mathematics. Our work together resulted in a book chapter and several presentations.

2017-2018 **Honors College Mentor.** I worked with undergraduate student, Ms. Emily Dardis, as she facilitated an after-school STEM camp for K-2 students. We studied how to connect STEM and mathematics concepts together and this work resulted in a paper together.

#### Committee Work

2020-2022, Present Member, Department of Mathematical Sciences Promotion and Tenure Committee

2016-Present Member, Undergraduate Advisory Council

2023-Present Undergraduate Teacher Education Committee

2018-2024 Chair, Department of Mathematical Sciences Award Committee

2020-2024 Member, Task Force on Diversity, Equity, and Inclusion

2023-2024 Member, Graduate Program Committee

2018-2020 Member, College of Letter's and Sciences Award Committee  
2017, 2023 Member, Mathematics Education Search Committee (2017; 2023)  
2016 Member, Department of Mathematical Sciences Department Chair  
Search Committee

**Volunteer and Professional Development**

2015-2017 Volunteer, Graduate Student Orientation and Teaching Professional  
Development (2015-2017)

**Professional Memberships**

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Member: Montana Council of Teachers of Mathematics  
Member: National Council of Teachers of Mathematics  
Member: Association of Mathematics Teacher Educators  
Member: The International Group for the Psychology of Mathematics Education