Meghan Riling

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Current Position

Assistant Professor of the Practice, Department of Teaching and Learning, Peabody College, Vanderbilt University
Specialization: Secondary Mathematics Education

Education

Ph.D. in Curriculum & Teaching, emphasis in Mathematics Education, Spring, 2021
Boston University, Boston, MA

M.Ed. in Secondary Mathematics Education, 2010
Harvard Graduate School of Education, Cambridge, MA

B.A. in Mathematics and Hispanic Language and Literature, 2009
Boston University, Boston, MA

Research experience

Social Justice Mathematics Lessons (2021-present)
- Co-Primary Investigator, with Leslie Dietiker
- Successfully applied for grants funding research program. Developed process of analyzing mathematical and social justice aspects of mathematics lessons. Directed research team in analysis and interpretation of findings.

Mathematically Captivating Lesson Experiences (MCLE) Project (2017-2021)
- Primary Investigator: Leslie Dietiker
- Participated in development student surveys and interview protocols, collaborated on aesthetics- and narrative-driven lesson design with practitioners and researchers, and engaged in lesson observation and data collection. Analyzed data using both quantitative and qualitative approaches. Developed approaches for analyzing teacher learning through the project. Published and presented research findings.

Reading Diagrams Geometrically (2016-2017)
- Primary Investigator: Leslie Dietiker
- Engaged in coding of diagrams from a range of mathematics textbooks and collaborated on disseminating findings, including presenting at conferences.

Enhancing the Potential of Implemented Curriculum (EPIC) Project (2016-2017)
- Primary Investigator: Leslie Dietiker
- Coded enacted lessons, analyzed data using quantitative methods, and participated in disseminating findings.

Publications

Riling, M. (in review). Social aspects of mathematical creativity in the secondary classroom. *Journal of Mathematical Behavior*.

Scheitlin, K., Dietiker, L., & **Riling**, M. (2023). Teaching secondary mathematics lessons for joy and wonder. *Mathematics Teaching, Accepted for publication*.

Kaufman, B., & **Riling**, M. (2023). Balance and integration of content within early childhood and elementary social justice mathematics lessons. *Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education*.

Dietiker, L., Singh, R., **Riling**, M.. (2023). The aesthetic effects of a new lesson design approach: Mathematical stories. *Journal of Educational Research* *16*(1), 33-47.

Dietiker, L., Singh, R., **Riling**, M., Nieves, H., & Barno, E. (2022). Narrative characteristics of captivating secondary mathematics lessons. *Educational Studies in Mathematics*.

Riling, M. (2022). Aesthetic dimensions of student mathematical creativity. *Proceedings of the Forty-Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. PME-NA 44, Nashville, TN.

Riling, M., Dietiker, L., Yu, X., & Barno, E. (2022). The integration of mathematical and social content in secondary lessons for social justice. *Proceedings of the Forty-Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. PME-NA 44, Nashville, TN.

Han, J., **Riling**, M., Nieves, H., Singh, R., & Dietiker, L. (2020*). Characterizing coherence within enacted mathematics lessons. Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, 418-422. https://doi.org/10.51272/pmena.42.2020

Dietiker, L., Singh, R., **Riling**, M., & Nieves, H. (2020). What makes a mathematical lesson interesting to students? *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, 391–399. https://doi.org/10.51272/pmena.42.2020

Riling, M. (2020). Recognizing mathematics students as creative: Mathematical creativity as community-based and possibility expanding. *Journal of Humanistic Mathematics* special issue: Mathematical Creativity. DOI: 10.5642/jhummath.202002.04

Dietiker, L., **Riling**, M., & Gates, M. (2019). The impact of mathematically captivating learning experiences. *Annual meeting of the Psychology of Mathematics Education, North American Chapter (PME-NA)*, St. Louis, MO.

Riling, M., Dietiker, L., Gibson, K., Tukhtakhunov, I., & Ren, C. (2018). Factors that influence student mathematical dispositions [Poster]. *Annual meeting of the Psychology of Mathematics Education, North American Chapter (PME-NA)*, Greenville, South Carolina.

Riling, M. (2018). Cognitive agency and computer-based tasks [Poster]. *Annual meeting of the Psychology of Mathematics Education, North American Chapter (PME-NA)*, Greenville, South Carolina.

Dietiker, L., & **Riling**, M. (2018). Design (in)tensions in mathematics curriculum. *International Journal of Educational Research*, *92*, 43–52. https://doi.org/10.1016/j.ijer.2018.09.001

Richman, A., Dietiker, L., & **Riling**, M. (2018). The plot thickens: The aesthetic dimensions of a captivating mathematics lesson. *Journal of Mathematical Behavior*. DOI: 10.1016/j.jmathb.2018.08.005

Riling, M., & Dietiker, L. (2018). Given a traditional textbook... Now what? *Mathematics Teacher*, *112*(3), 192–199. https://doi-org.ezproxy.bu.edu/10.5951/mathteacher.112.3.0192

Dietiker, L., Brakoniecki, A., & **Riling**, M. (2017). The changing expectations for the reading of geometric diagrams. In *Proceedings of the 39th annual meeting of the North American chapter of the International Group for the Psychology of Mathematics Education (PME-NA)* (pp. 136–143). Indianapolis, IN: Hoosiers Educators Group.

Workshops and Presentations

Riling, M. (2023). *Secondary students are mathematicians: Taking non-canonical student ideas seriously*. NCTM Annual Meeting & Exposition, Washington, DC.

Riling, M., & Heath, A. L. (2023). *The individual and the group in the mathematical creative process*. Creativity Conference at SOU, Ashland, OR.

Riling, M. (2023). *The influence of social interactions on student mathematical creativity in the high school classroom*. 2023 Southeastern STEM Education Research Conference, Cookeville, TN.

Satyam, V. R., Dietiker, L., & **Riling**, M. (2022). *Aesthetic and affective dimensions of mathematics learning.* Working group at PME-NA 44, Nashville, TN. http://www.pmena.org/pmenaproceedings/PMENA%2044%202022%20Proceedings.pdf

Riling, M. (2022). *Creating new mathematical possibility: Types of student actions with creative potential.* Annual Meeting of the American Educational Research Association (AERA), San Diego, CA.

Dietiker, L., Singh, R., Barno, E., & **Riling**, M. (2022). Improving the learning experiences of high school mathematics students. Poster at the Annual Meeting of the American Educational Research Association (AERA)*,* San Diego, CA.

Riling, M., Dietiker, L., & Nieves, H. (2021). Captivating students WITH mathematics: High school lesson plans designed as stories. *NCTM 2020 Virtual Annual Meeting.*

Riling, M., & Starks, R. (2020). "A coming of age story for the diagonals": Mathematics teacher learning via collaborative lesson design. *2020 Annual AMTE Conference*, Phoenix, AZ.

Riling, M., Dietiker, L., & Gates, M. (2019). How do students experience mathematics? Designing and testing a lesson-specific tool to measure student perceptions. *Annual Meeting of the American Educational Research Association (AERA),* Toronto, ON, Canada.

Dietiker, L., **Riling**, M., and Gates, M. (2019). Captivating students WITH mathematics: Boston area teachers share their lesson designs. *National Council of Teachers of Mathematics Regional Conference & Exposition*, Boston, MA.

Dietiker, L., **Riling**, M., Nieves, H. I., & Singh, R. (2019). What are the mathematical story characteristics that appear related to student interest? [Poster]. *Annual meeting of the International Society for the Design and Development of Education*, Pittsburgh, PA.

Dietiker, L & **Riling**, M. (2018). So I've got a traditional textbook… Now what?. Workshop presented at the *National Council of Teachers of Mathematics Regional Conference & Exposition*, Hartford, CT.

Dietiker, L., Miller, E., Brakoniecki, A., & **Riling**, M. (2018). Inside the envelope: Describing the influence of curriculum materials on enacted lessons. *Annual Meeting of the American Educational Research Association (AERA),* New York, NY.

Dietiker, L., **Riling**, M., & Brakoniecki, A. (2017). Reading geometrically: Changing expectations across K-12 for reading diagrams in textbooks. *2nd International Conference on Mathematics Textbook Research and Development*.

Pre-presentation

Dailey, A., & **Riling**, M. (2024). *Integrating art and mathematics: Designing for student mathematical aesthetic appreciation*. 2024 CPM Teachers Conference, Los Angeles, CA.

Metts, E., & **Riling**, M. (2024, Accepted for). *Supporting pre-service teachers' developing pedagogical judgment through co-inquiry*. AMTE Annual Conference, Orlando, FL.

Kaufman, B., **Riling**, M., Nephew, A., & McCoy, N. (In review). *The impact of prohibitive legislation on elementary social justice mathematics lesson plans*. AERA 2024 Annual Meeting, Philadelphia, PA.

Other Media

Riling, M. (2017, April 21). Four mathematicians you should know [Blog post]. Retrieved from http://blog.cambridgecoaching.com/four-mathematicians-you-should-know

Riling, M. (2017, January 9). How to help your child with math homework: 5 Easy questions you can ask [Blog post]. Retrieved from http://blog.cambridgecoaching.com/how-to-help-your-child-with-math-homework-5-easy-questions-you-can-ask

Riling, M. (July, 2012 – 2018). Let's Talk About Math [Blog]. Retrieved from https://letstalkaboutmath.wordpress.com/

Teaching Experience

University Teaching Experience

Assistant Professor of the Practice, Vanderbilt University (2022-present):

Course Instruction

- MTED 3320, 7330: Introduction to Literacies in Mathematics (combined graduate and undergraduate pre-service mathematics teachers and education students)
- MTED 3370, 6370: Teaching Mathematics in Secondary Schools (graduate pre-service mathematics teachers)
- MTED 2200: Mathematics for Elementary Teachers (undergraduate pre-service elementary teachers)
- MTED 4963: Student Teaching Seminar: Secondary Mathematics (graduate pre-service mathematics teachers)

Advising

- Undergraduate: seventeen advisees, primarily in the Secondary Eduation Mathematics program
- Masters: three advisees; first-year masters students in Secondary Education Mathematics program

Instructor in Mathematics Education, Boston University (2018-2022):

- Introduction to Research Methods (Online; graduate students in education and human development)
- Methods of Teaching Mathematics: High School (graduate pre-service 6-12 mathematics teachers)
- Problem-Solving in Mathematics (graduate pre- and in-service 6-12 mathematics teachers)
- Assessment in Mathematics (graduate in-service 6-12 mathematics teachers)

Online Facilitator in Mathematics Education, Boston University (2019):

- Mathematical Problem Solving in Mathematics (graduate in-service 6-12 mathematics teachers)
- Mathematical Reasoning in the Elementary Grades – Number Systems (graduate in-service elementary teachers)

Teaching Assistant in Mathematics Education, Boston University (2016-2019):

- Mathematical Reasoning in the Elementary Grades – Number Systems (undergraduate pre-service elementary teachers)
- Problem Solving in Mathematics (undergraduate and graduate, pre- and in-service K-12 mathematics teachers)

K-12 Teaching Experience

Mathematics and Computer Science Teacher, Watertown High School, Watertown, MA (September 2010 – June 2017)
- Taught Algebra 1, Algebra 2, and Precalculus at the college preparatory and honors levels.
- Piloted and taught Introduction to Computer Science and AP Computer Science A courses.
- Advised clubs including the Gender-Sexuality Alliance and the Feminist Coalition.

Professional Development as a Secondary Mathematics Teacher

Focus on Mathematics *(2011-2012)*
PROMYS *(2013)*
Park City Math Institute – Teacher Leadership Program *(2014)*

Service

Teaching Committee*, Vanderbilt University (upcoming)*

VUcept Faculty Leader, *Vanderbilt University (2023-present):* Leading freshman orientation group during fall semester alongside an undergraduate student leader

Tap That! Advisor, *Vanderbilt University (2023-present):* Advise a student tap dance club that includes 25 students and hosts 5 rehearsals a week, plus social gatherings, and 2 performances each year

Secondary Education Mathematics Team Captain, *Vanderbilt University (2022-present)*: Work with other team captains to make program decisions; Review student applications; Communicate with Mathematics Department to ensure students have coherent experience

Committee Member, *SEC Mathematics Educator Network (2022-present)*: Collaborate on issues relating to recruitment and retainment of pre-service mathematics teachers

Math Education Support and Study Group, *Vanderbilt University (2022-present)*: Host weekly in-person meetings for those in the Secondary Education Mathematics program, or taking related coursework. Facilitate students in supporting each other in work on class content, or any academic problems they are experiencing, such as nerves about intimidating classes, or how to approach professors.

Board Member, *Jean Appolon Expressions (2022-present)*: Mentor and guide dance teachers in instructing STEAM lessons, develop math-dance curricula, lead professional development about STEAM teaching practices, support educators in developing dance-based workshops for adult learners, develop staff and performer evaluation process.

Academic Peer Reviewer: Publications include: Journal of Education, Journal of Creativity, Journal of Humanistic Mathematics, Mathematics Teacher: Learning and Teaching PK-12, Mathematics Teacher, International Journal of Educational Research. Conferences include: PME-NA, AERA, AMTE.

Director of Media + Marketing, Company Dancer, *Jean Appolon Expressions (2014-2022)*: Collaborate to develop and support community programming and concert performance for non-profit Haitian-contemporary dance company. Key tasks include stage performance as a trained dance artist, developing and enacting curriculum for teen and community programming, producing video and audio content, and managing media and marketing communications.

Tutor *(2017-2021)*: Provide individualized computer science and mathematics instruction to students in grades 8-12, including students with diagnosed learning needs.

PROMYS, *Boston University (2019)* – Co-developed and enacted a sequence of workshops for in-service secondary mathematics teachers to learn about lessons as stories and design individually-driven curriculum projects.

Treasurer, *Boston University School of Education Graduate Student Association (2018-2019)*: Collaborate to develop fundraising activities and determine organizational priorities.

High School Teacher Representative, *Watertown Public School's Strategy and Development Team (2018-2019)*: Participate in monthly meetings with administrators, teachers, and parents analyzing school data and developing targets for the district.

Math Literacy Workshop Leader, *Boston University Initiative for Literacy Development (BUILD)'s All Tutor Training (2016)*: Conducted a workshop about interpreting arithmetic and fractions for undergraduate students preparing to work as tutors for elementary-aged students.

Awards and Honors

Glenn Fellow, Boston University (2017-2021)
Education Fellow, Boston University (2016-2017)
Education, Health and Art Fellow, Harvard Graduate School of Education (2009-2010)