

# Ming C. Tomayko

## *Curriculum Vitae*

Jess and Mildred Fisher College of Science and Mathematics  
Towson University  
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### **EDUCATION**

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- 2007 **Ph.D. in Curriculum and Instruction**  
University of Maryland, College Park, MD  
Dissertation Title: An Examination of the Working Conditions, Challenges, and Tensions Experienced by Mathematics Teachers  
(Dissertation Advisor: James Fey)
- 2002 **Master of Arts in Education**  
University of Maryland, College Park, MD
- 1997 **Bachelor of Arts in Mathematics and Secondary Education**  
Washington University in St. Louis, St. Louis, Missouri.

### **PROFESSIONAL EXPERIENCE**

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- 2024 – present **Associate Dean for Teaching and Student Success**, Fisher College of Science and Mathematics
- 2019 – present **Professor**, Department of Mathematics
- 2014 – 2019 **Associate Professor**, Department of Mathematics
- 2007 – 2014 **Assistant Professor**, Department of Mathematics  
*Towson University, Towson, MD*
- 1998 – 2001 **Mathematics Teacher, Grades 9-12**  
*Montgomery Blair High School, Silver Spring, MD*

### **HONORS & AWARDS**

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- 2018 **Excellence in Teaching Award**, Towson University Fisher College of Science and Mathematics
- 2014 **Excellence in Teaching Award**, Maryland Council of Teachers of Mathematics
- 2001 – 2006 **Doctoral Fellowship**, University of Maryland Mid-Atlantic Center for Mathematics Teaching and Learning

### **LEADERSHIP**

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#### **State Leadership**

- 2024 – present **President**, Association of Maryland Mathematics Teacher Educators
- 2023 – 2024 **President-Elect**, Association of Maryland Mathematics Teacher Educators
- 2011 – 2015 **Member-at-Large**, Association of Maryland Mathematics Teacher Educators

- 2013 – 2019 **Recording Secretary**, Maryland Council of Teachers of Mathematics  
 2008 – 2013 **College Level Representative**, Maryland Council of Teachers of Mathematics  
 2018 – 2021 **Member**, University System of Maryland Associate of Arts in Teaching Math Working Group

### University Leadership

- 2021 – 2023 **Faculty Co-Chair**, Asian Faculty and Staff Association (AFSA)  
 2021 – 2022 **Chair**, Faculty Academic Center of Excellence at Towson (FACET) Advisory Board  
 2019 – 2021 **Vice Chair**, FACET Advisory Board  
 2018 – 2019 **Secretary**, FACET Advisory Board

### College Leadership

- 2014 – 2015 **Chair**, FCSM College Council  
 2013 – 2014 **Vice Chair**, FCSM College Council  
 2013 – 2014 **Chair**, STEM Education Task Force  
 2012 – 2015 **At-Large Representative**, FCSM College Council

### Department Leadership

- 2015 – 2022 **Chair**, Mathematics Education Elementary and Middle School Committee  
 2019 – 2021 **Scheduler**, Mathematics Education Courses

## PUBLICATIONS

(\* Indicates undergraduate student co-author; \*\* Indicates graduate student co-author)

Gibson, W.\*\*, Kovel, R.\*\*, & **Tomayko, M.** (Spring 2023). Scratching beneath the surface: A mathematics and coding task. *Banneker Banner*, Maryland Council of Teachers of Mathematics, 35(1), 23-30.

**Tomayko, M.** (October 24, 2023). The struggle is real: Assessing reading assignments. *Silver Linings: Lessons Learned from Teaching during the Pandemic*. College Park, MD: University System of Maryland Kirwan Center for Academic Innovation. <https://pressbooks.pub/silverlinings/>

**Tomayko, M.** (August 2021). Revealing the story in hydrographs from Hurricane Harvey. *Illuminations: Resources for Teaching Math*. Reston, VA: NCTM.

**Tomayko, M.** (2021). Making meaning of numbers from a historic storm. *Mathematics Teacher: Learning and Teaching PK-12*, 114 (3), 227-237.

Lottero-Perdue, P.S. & **Tomayko, M.** (2020). Kindergartners' engagement in an epistemic practice of engineering: Persisting and learning from failure. Proceedings (peer reviewed) of the 2020 American Society for Engineering Education (ASEE) Annual Conference.

Lottero-Perdue, P. S., & **Tomayko, M. C.** (2019). Kindergartners planning in the design process: Drawn plans and how they relate to first try design attempts. Proceedings (peer reviewed) of the 2019 American Society for Engineering Education (ASEE) Annual Conference.

- Tomayko, M.** (2018). Pre-service teachers self-assessing TPACK using a visual quantitative model. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2018* (pp. 2123-2127). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- Cooper, L., & **Tomayko, M.** (2018). Explore ancient number systems to understand place value. In S. McMillen, E. Friedland, and P. del Prado Hill (Eds.), *Integrating Mathematics across the K-6 Curriculum*. Reston, VA: NCTM.
- Cooper, L., Spitzer, S., & **Tomayko, M.** (2018). Unraveling Escher. In S. McMillen, E. Friedland, and P. del Prado Hill (Eds.), *Integrating Mathematics across the K-6 Curriculum*. Reston, VA: NCTM.
- Corven, J.C.\*\*, & **Tomayko, M.C.** (2017). TPACK radar diagrams: A visual quantitative representation for tracking growth of essential teacher knowledge. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2017* (pp. 2296-2301). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- Tomayko, M.** (Winter 2017). The first day of class: Setting the right tone in an elementary math methods course. *Indiana Mathematics Teacher*, 8-11.
- Tomayko, M.** (2016). Finding the right balance when redesigning a Pre-Calculus course with online software. In *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2016* (pp. 260-264). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- Denhard, T.\*, Dennis, E. \*, & **Tomayko, M.** (2016). Challenging a ‘formula first’ method. *New Jersey Mathematics Teacher*, **74** (1), 26-32.
- Colvin, J.C.\*\*, & **Tomayko, M.C.** (March 2015). Putting TPACK on the radar: A visual quantitative model for tracking growth of essential teacher knowledge. *Contemporary Issues in Technology and Teacher Education*, **15**(1), 68-84.
- Tomayko, M.**, & Fike, S. (Fall 2013). Using art to explore shapes and their properties in the early childhood classroom. *New Jersey Mathematics Teacher*, **71** (2), 21-26.
- Cooper, L., Spitzer, S., & **Tomayko, M.** (2013). Become an Escher sleuth. *Teaching Mathematics in the Middle School*, **18** (6), 378-385.
- Tomayko, M.**, Spitzer, S., & Cooper, L. (2012). Escher unraveled: Using artwork to investigate transformations, *Bridges Towson Proceedings 2012*, 461-462.
- Tomayko, M.**, Cooper, L., & Roberge, M. (Fall/Winter 2012-2013). Algebraic explorations using the city grid as coordinate axes. *Utah Mathematics Teacher*, **5**, 9-20.

Cooper, L., & **Tomayko, M.** (2011). Understanding place value. *Teaching Children Mathematics*, **17** (9), 558–567.

**Tomayko, M.** (Fall/Winter 2008). Working conditions of Maryland mathematics teachers. *Banneker Banner*, Maryland Council of Teachers of Mathematics, **25**(2), 9-11.

### **Under Review**

**Tomayko, M.**, & Almony, J.\* (accepted April 2024). Using mathematics to understand the problem with plastics. *Mathematics Teacher: Learning and Teaching PK-12*.

Brave, K., & **Tomayko, M.** (under review, 2024). An intervention model to promote positive mathematics identities among preservice teachers. *Mathematics Teacher Educator*.

### **SELECTED PROFESSIONAL PRESENTATIONS**

((\* Indicates undergraduate student co-presenter; \*\* Indicates graduate student co-presenter)

**Tomayko, M.**, & Almony, J.\* (April 13, 2024) Making it Personal: Activities to Inspire Agents of Change in the Battle Against Single-Use Plastics. Workshop to be presented at National Council for Teachers of Mathematics 2024 Virtual Conference.

**Tomayko, M.**, & Almony, J.\* (March 15, 2024) Connecting Math and Science Concepts to Investigate the Problem with Plastic Pollution. Workshop to be presented at Association of Mathematics Teachers of New Jersey Spring 2024 Content Conference.

**Tomayko, M.** (February 6, 2023). Making Math Make Sense. Workshop presented at Maryland Council of Teachers of Mathematics Dine and Discuss at Hood College.

Brave, K., & **Tomayko, M.** (December 2, 2022). Count Me In: Strategies for Shaping (and Reshaping) the Math Identities of Elementary Educators. Workshop presented at National Council of Teachers of Mathematics Regional Conference & Exposition.

**Tomayko, M.** (December 1, 2022). Your Mission, Should You Choose to Accept it, is to Break Out! Workshop presented at National Council of Teachers of Mathematics Regional Conference & Exposition.

Kovel, R.\*\*, Gibson, W.\*\*, & **Tomayko, M.** (August 4, 2022). Scratching Beneath the Surface: How a Coding Task Bolsters Mathematical Thinking and Student Leadership. Poster presented at Mathematical Association of America's Mathfest, Philadelphia, PA.

**Tomayko, M.** (October 29, 2021). Math Anxiety: The Impact of Targeted Interventions on Preservice Teachers' Attitudes towards Teaching Mathematics. Roundtable presented at MultiFACETed Research at TU Conference.

**Tomayko, M.** (October 13, 2021). Rethinking Classroom Instruction: Lessons from 2020. Faculty Academic Center of Excellence at Towson (FACET) Panel.

- Tomayko, M.** (October 1, 2021). Reimagining How Reading Assignments Are Assessed. Paper presented at University System of Maryland Center for Academic Innovation Fall Faculty Showcase.
- Lottero-Perdue, P., & **Tomayko, M.** (March 16, 2020). Kindergartners' Engagement in Two Epistemic Practices of Engineering: Making Trade-offs and Applying Science. Paper presented at National Association for Research in Science Teaching Annual International Conference.
- Tomayko, M.** (September 26, 2019). From Clean Water to Flood Water: Illuminating the Mathematics in the News. Workshop presented at National Council of Teachers of Mathematics Regional Meeting.
- Spitzer, S., Cooper, L., & **Tomayko, M.** (April 6, 2019). Unraveling Escher: Discovering the Mathematics Behind M. C. Escher's Tessellations. Workshop presented at National Council of Teachers of Mathematics Annual Meeting & Exposition.
- Tomayko, M.** (October 19, 2018). What's News Got to Do with It? Using Current Events to Teach Mathematics. Workshop presented at Maryland Council of Teachers of Mathematics Annual Conference.
- Tomayko, M.** (March 29, 2018). Pre-Service Teachers Self-Assessing TPACK Using a Visual Quantitative Model. Paper presented at Society for Information Technology and Teacher Education 29<sup>th</sup> International Conference.
- Corven, J.\*\* & **Tomayko, M.** (March 9, 2017). TPACK Radar Diagrams: A Visual Quantitative Representation for Tracking Growth of Essential Teacher Knowledge. Roundtable presented at Society for Information Technology and Teacher Education 28<sup>th</sup> International Conference.
- Tomayko, M.** (November 14, 2016). Finding the Right Balance when Redesigning a Pre-Calculus Course with Online Software. Paper presented at Association for the Advancement of Computing in Education E-Learn 2016 Conference.
- Colvin, J.\*\* & **Tomayko, M.** (August 25, 2016). TPACK Radar Diagrams: A Visual Quantitative Representation for Tracking Growth of Essential Teacher Knowledge. Paper presented at Department of Educational Technology & Literacy invited presentation, Towson University.
- Tomayko, M.** (April 30, 2016). Investigating Equations by Using Cuisenaire Rods. Workshop presented at Maryland Council of Teachers of Mathematics Regional Mini-Conference.
- Tomayko, M.** (November 16, 2015). Using Manipulatives in Middle School Mathematics. Invited workshop at Towson University Math Education Club.

Colvin, J.\*\*, & **Tomayko, M.** (October 29, 2015). Putting TPACK on the Radar: A Visual Quantitative Model for Tracking Growth of Essential Teacher Knowledge. College of Education invited presentation, Towson University.

## **GRANTS**

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2022 - 2023 **Strategies for Shaping the Math Identities of Early Childhood and Elementary Educators**

Tomayko, M., & Brave, K. National Council of Teachers of Mathematics: Mathematics Education Trust Action Research on Mathematics Teaching Practices Grant. Role: PI. Funded: \$6000

2018 - 2019 **A Good Plan**

Lottero-Perdue, P., & Tomayko, M. Towson University Faculty Development & Research Grant. Role: Co-PI. Funded: \$5925

2018 - 2019 **Supporting the Conversion of Face-to-Face to Blended Delivery**

Tomayko, M. Towson University Office of Academic Innovation Graduate Program Redesign Grant. Role: PI. Funded: \$1200

2016 **Mathematics in the Middle: Integers, Fractions, and Proportional Reasoning**

Staley, J., Krach, R., & Tomayko, M. Baltimore County Public Schools. Funded: \$25,661

2015 **Mathematics in the Middle: Problem Solving and Algebra**

Staley, J., Krach, R., & Tomayko, M. Baltimore County Public Schools and Towson University Partnership. Funded: \$24,855

2014 **Summer Institute for Common Core Number and Quantity**

Staley, J., Tomayko, M., & Cheng, D. National Security Agency Mathematics and Engineering Partnership Program. Funded: \$26,393

2013 **Redesign of Math 119, Pre-Calculus**

Yarnevich, M., & Tomayko, M. The University System of Maryland. Funded: \$40,000

2011 **Middle Grades Partnership project: Towson University/Baltimore Civitas School**

Shore, F., & Tomayko, M. Baltimore Community Foundation. Funded: \$50,000

2010 **Middle Grades Partnership project: Towson University/Baltimore Civitas School**

Shore, F., & Tomayko, M. Baltimore Community Foundation. Funded: \$65,210

- 2009      **A College Preparation Intervention for the Geomatics Academy III at Fairmont Heights High School**  
 Roberge, M., Cooper, L., Shore, F., Tomayko, M., Thebpanya, P., & Thompson, V. Maryland Higher Education Commission Grant (CPIP-10-106). Role: Co-PI. Funded: \$88,522
- 2009      **A College Preparation Intervention for the Geomatics Academy at Fairmont Heights High School**  
 Cooper, L., Roberge, M., Tomayko, M., Thebpanya, P., & Morgan, J. Maryland Higher Education Commission Grant (CPIP-08-802). Role: Co-PI. Funded: \$63,026

## **SERVICE**

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- 2022 - present Manuscript reviewer for Mathematics Teacher: Learning and Teaching PK-12.  
 2011 - present Manuscript reviewer for Banneker Banner.  
 2010 - 2019 Manuscript reviewer for Teaching Children Mathematics.  
 2009 - 2019 Book reviewer for Teaching Children Mathematics.

## **PROFESSIONAL AFFILIATIONS**

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National Council of Teachers of Mathematics  
 Association of Maryland Mathematics Teacher Educators  
 Maryland Council of Teachers of Mathematics  
 Howard County Math Advisory Committee

## **COURSES TAUGHT**

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MATH 115 College Algebra  
 MATH 119 Pre-Calculus  
 MATH 204 Mathematical Concepts and Structures I  
 MATH 205 Mathematical Concepts and Structures II  
 MATH 215 Rational Number and Proportional Reasoning for Middle School Mathematics Teachers  
 MATH 225 Algebra and Number Concepts for Middle School Teachers  
 MATH 321 Teaching Mathematics in Early Childhood Education  
 MATH 323 Teaching Mathematics in Elementary School  
 MATH 324 Supervised Participation in Elementary School Mathematics  
 MATH 425 Teaching Mathematics in the Middle School  
 MATH 428 Senior Seminar in Mathematics Education  
 MATH 626 Technology in School Mathematics Teaching and Learning  
 MATH 627 Curriculum Issues in Secondary School Mathematics  
 MATH 680 Special Topics in Mathematics Education: Teaching Mathematics in the Digital Age: Tools, Resources, and Implementation

MATH 681 Special Topics in Mathematics for Teachers: Student Thinking in Ratio and Proportional Reasoning  
MTED 650 Mathematics in Integrated STEM Education  
SEMS 240 Classroom Interactions