

AMANDA MILEWSKI

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## EDUCATION

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- Ph.D. Michigan State University, Mathematics Education, 2012;  
*Exploring teachers' practices of responding*  
Dr. Raven McCrory;  
Dr. Suzanne Wilson, Dr. Sandra Crespo, Dr. Kristen Bieda, Dr. Ed Roeber
- M.A. Wayne State University, Mathematics, 2005  
*Using permutation groups to understand and solve the Rubik's cube*  
Dr. Daniel Frohardt
- B.S. Evangel University, Mathematics, 2000  
Certificate for secondary mathematics grades 6-12

## PROFESSIONAL

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Assistant Research Scientist, University of Michigan, Educational Studies, 2018 - present  
Research Investigator, University of Michigan, Educational Studies, 2015 - present  
Research Associate, University of Michigan, GRIP Lab, 2013 - 2015  
Mathematics Consultant, Macomb Intermediate School District, 2008 - 2013  
Mathematics Consultant, Michigan State University, PROMS/E Project, 2006 - 2009  
Field Instruction, Michigan State University, Teacher Education, 2012 - 2013  
Teaching Assistant, Michigan State University, Teacher Education, 2007 - 2008  
Research Assistant, Michigan State University, LARC Project, 2006 - 2007  
Field Instruction, Michigan State University, Teacher Education, 2005 - 2006  
Research Assistant, Wayne State University, Mathematics Department, 2005  
Regional T<sup>3</sup> Instructor, Texas Instruments, 2003 - 2013  
Mathematics Teacher, Clintondale High School, 2000 - 2008

## AWARDS

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2017 Nominee for the NTLI Fellowship Award, AMTE Conference  
2006 Teacher of the Year, Clintondale Community Schools  
2005 Featured in Detroit News & MiCTM Address  
2005 Classroom Grant Awardee, Macul & DACTM  
October 2003 Teacher of the Month, Clintondale High School

## PROFESSIONAL WRITING

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### PEER-REVIEWED JOURNAL ARTICLES

Dimmel, J.K., & Milewski, A.M. (In Press). Scale, Perspective, and Natural Mathematical Questions: Rethinking representations of the world in real-life problems  
*Accepted for publication in For the Learning of Mathematics, November 2019.*

Milewski, A.M., Frohardt, D. (In Press). Seeing Algebraic Structure & Solving the Rubik's Cube. *Accepted for publication in Mathematics Teacher: Learning and Teaching Pre-K-12*.

Herbst, P., Chazan, D., & Milewski, A. (In Press). Technology tools in mathematics teacher learning: How might technological advances transform the practice of mathematics teacher education? In O. Chapman, S. Llinares, & et al. (Eds), *International Handbook of Mathematics Teacher Education*.

Sweeney, J., Milewski, A., & Amidon, J. (2018). On-ramps to professional practice: Selecting and implementing digital technologies for virtual field experiences. *Contemporary Issues in Technology and Teacher Education*, 18(4), 670-691.

Milewski, A.M., Herbst, P., Bardelli, E., Hetrick, C. (2018). The role of virtual spaces for professional growth: Teachers' engagement in virtual professional experimentation. *Journal of Technology and Teacher Education*. 26(1), 103-126

Milewski, A.M. & Strickland, A.M. (2016). (Toward) Developing a common language for describing instructional practices of responding: A teacher-generated framework. *Mathematics Teacher Educator*. 4(2)

Hawkins, A. M. & Sinclair, N. (2008). Explorations in Topology with Sketchpad. *International Journal of Computers for Mathematics Learning*. 13(1), 1382-1392.

#### ARTICLES IN REFEREED PROCEEDINGS

Milewski, A., Bardelli, E., Herbst, P. (2019). The role of emotions in simulations of practice. *Paper to be presented at the Annual Meeting of the PME-NA, October 2018, St. Louis, MO*.

Herbst, P., Milewski, A.M., Ion, M., & Bleecker, H. (2018). What influences do instructors of the geometry for teachers course need to contend with? In T.E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.) *Proceedings of the Annual Meeting of the PME-NA, October 2018*. Greenville, South Carolina.

Milewski, A.M., Gürsel, U., Herbst, P. (2017). Working collectively to design online teacher education curriculum: How do teacher educators manage to do it? In E. Galindo & J. Newton (Eds.) *Proceedings of the Annual Meeting of the PME-NA, October 2017*. Indianapolis, Indiana.

Herbst, P., Boileau, N., Clark, L., Milewski, A.M., Chieu, V., Gürsel, U., & Chazan, D. (2017). Directing focus and enabling inquiry with representations of practice: Written cases, storyboards, and teacher education. In E. Galindo & J. Newton (Eds.) *Proceedings of the Annual Meeting of the PME-NA, October 2017*. Indianapolis, Indiana.

Herbst, P., Chazan, D., Milewski, A.M., Gürsel, U., Amidon, J. Buchbinder, O., Walkoe, & J., Wieman, R. (2015). Representations of mathematics teaching and their use in transforming teacher education: Studying pre-service teachers' learning from work with representations of practice working group. In T. G. Bartell, K.N. Bieda, R.T. Putnam, K. Bradfield, & H. Dominguez (Eds.) *Proceedings of the 2015 Annual Meeting of the PME-NA, October 2015*. East Lansing, Michigan: Michigan State University.

Milewski, A.M., Erickson, A., Herbst, P., Dimmel, J. (2015). When mathematics teachers consider acting on behalf of the discipline, what assumption do they make? In T.

G. Bartell, K.N. Bieda, R.T. Putnam, K. Bradfield, & H. Dominguez (Eds.) *Proceedings of the 2015 Annual Meeting of the PME-NA, October 2015*. East Lansing, Michigan: Michigan State University.

## BOOK CHAPTERS

Herbst, P. & Milewski, A. M. (2018). What StoryCircles can do for mathematics teaching and teacher education? In R. Zazkis & P. Herbst (Eds), *Mathematical Dialogue: Scripting approaches in mathematics education research and practice*. Springer Publications.

Herbst, P., Chazan, D., Chieu, V., Milewski, A.M., Kosko, K., Aaron, W. (2016). Technology mediated mathematics teacher development: Research on digital pedagogies of practice. In M. Niess, S. Driskell, & K. Hollebrands (Eds), *Handbook of Research on Transforming Mathematics Teacher Education in the Digital Age*. IGI Global.

Star, J., Strickland, S., & Hawkins, A.M. (2008). What is mathematical literacy? Exploring the relationship between literacy and content learning in middle and high school mathematics. In Conley, M. (Eds.) *Meeting the Challenges of Adolescent Literacy: Research We Have, Research We Need*. New York: Guilford Publications.

## SELECTED INVITED PRESENTATIONS

Milewski, A.M. (April, 2019). *There's no place like home: Re-discovering ourselves by making mindful connections to our community with natural mathematical questions*. University of Michigan, School of Education, Dean's Advisory Council.

Milewski, A.M., Chieu, V.M., & Herbst, P.G. (November, 2015). *How can StoryCircles support the study of teaching practices?* University of Michigan, School of Education, Educational Studies Colloquium.

Milewski, A.M. (April, 2013). *Hot Topics: Exploring Teachers' Practices of Responding to Students' Ideas*. Featured Speaker at National Council of Supervisors of Mathematics, Denver, Colorado.

Milewski, A.M. (October, 2012). *University of Michigan Rackham Centennial Lecture Series Panel*, Invited Panelist, Ann Arbor, Michigan.

Milewski, A.M., Dykema, K. (August 2012). MiCTM Book Talk: The 5 Practices for Orchestrating Productive Mathematical Discussions, Online, Michigan.

Milewski, A.M. (August 2012). *Introduction to the CCSSI Mathematics Materials*, MAISA Collaboration Project Seminar Mathematics Roll Out, Gratiot Isabella RESD, Michigan.

Milewski, A.M. (August 2012). *Exploring Teachers' Practices of Responding*, 2012 RTI-MTSS Summer Institute, Macomb Intermediate School District, Michigan.

Hawkins, A.M., Strickland, S., Star, J. (November 2006) *What is mathematical literacy? Exploring the relationship between literacy and content learning in middle and high school mathematics*. Literacy Achievement Research Center annual conference at Michigan State University.

## SELECTED CONFERENCE PRESENTATIONS

Milewski, A., Ion, M., Herbst, P., Shultz, M., Ko, I., Bleecker, H. (2019). Tensions in teaching mathematics to future teachers: Understanding the practice of undergraduate mathematics instructors. *Paper presented at the Annual Meeting of the American Educational Research Association, Division K-Teaching and Teacher Education, April 2019, Toronto, CANADA.*

Shultz, M., Bardelli, E., Milewski, A., Boileau, N., Herbst, P. (2019). What can we learn about the differences between experts and novices from a teaching simulation? *Paper presented at the Annual Meeting of the American Educational Research Association, Division K-Teaching and Teacher Education, April 2019, Toronto, CANADA.*

Milewski, A., Bardelli, E., Herbst, P. (2019). Framing a task as both construction and proof: How do teachers manage? *Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), April 2019, San Diego, CA.*

Buchbinder, O., Milewski, A., Chazan, D., Herbst, P. (2019). Teachers dealing with non-standard student solutions to linear equations. *Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), April 2019, San Diego, CA.*

Milewski, A., Herbst, P., Bleecker, H., Ion, M. (2019). Preparing Teachers for Secondary Geometry: Understanding the Tensions in Teaching. *Paper presented at the Annual Meeting of the Association of Mathematics Teacher Education (AMTE), February 2019, Orlando, FL.*

Milewski, A., Amidon, J., Bardelli, E., Boileau, N. (2018). Using Virtual Spaces to Enable Teacher Professional Growth: Acting to Believing. *Paper presented at the Annual Meeting of the Association of Mathematics Teacher Education (AMTE), January 2018, Houston, TX.*

Ko, I., Milewski, A., & Herbst, P. (2017). (How) Are Pre-service Teachers' Educational Experiences Related to their Mathematical Knowledge for Teaching Geometry? *Paper presented at the Annual Meeting of the American Educational Research Association, SIG-Research in Mathematics Education, April 2017, San Antonio.*

Milewski, A.M., Herbst, P.G., Gürsel, U. (2017). Teachers' opportunities to learn through collaborative storytelling and visualization. *Paper presented at the Annual Meeting of the American Educational Research Association, Div. K. - Teaching and Teacher Education, April 2017, San Antonio.*

Erickson, A., Milewski, A.M., Herbst, P.G. (2017). "It depends ...": (When) Does a student's mistake become a teacher's dilemma? *Poster presented at the Annual Meeting of the American Educational Research Association, Div. K. - Teaching and Teacher Education, April 2017, San Antonio.*

Milewski, A., Herbst, P., Gürsel, U., Silver, E., Horn, I., Thanheiser, E., Crespo, S. (2017). *StoryCircles: The collective creation of stories of practice by a professional learning community.* Paper presented at the annual meeting of the Association of Mathematics Teacher Education (AMTE), January 2017, Orlando, FL.

Herbst, P., Milewski, A., Davis, T., Earnest, D., Amador, J., Boileau, N., Gürsel, U. (2017). *Technology-mediated practice-based teacher education: Designing, using, and researching digital tools for teacher learning.* Paper presented at the annual meeting of the Association of Mathematics Teacher Education (AMTE), January 2017, Orlando, FL.

Milewski, A.M., Strickland, S.K. (2016). (Toward) A functional framework for describing teachers' practices of reacting. *Proceedings of the 2016 International Congress on Mathematics Education, July 2016*. Hamburg, Germany: Universität Hamburg.

Dimmel, J.K., Herbst, P.G., Gürsel, U., Milewski, A.M., Erickson, A. (2017). The LessonSketch environment: A platform for online teacher education and research on teaching. *Proceedings of the 2016 International Congress on Mathematics Education, July 2016*. Hamburg, Germany: Universität Hamburg.

Milewski, A.M., Herbst, P.G., & Hanby, K. (2016). If at first you don't succeed ...: Using StoryCircles to provide pre-service teachers opportunities to practice. *Paper presented at the Annual Meeting of the American Educational Research Association, Div. K - Teaching and Teacher Education, April 2016, Washington DC*.

Milewski, A.M. & Strickland, A.M. (2016). Maintaining coherence across intersecting worlds of research and practice: A common framework for describing teachers' instructional practices of reacting. *Paper presented at the Annual Meeting of the American Educational Research Association, Div. K - Teaching and Teacher Education, April 2016, Washington DC*.

Milewski, A., Herbst, P. (2016). *StoryCircles in Mathematics Teacher Education: Their Role in Supporting Beginning Teachers Learning to Practice*. Paper presented at the annual meeting of the Association of Mathematics Teacher Education (AMTE), January 2016, Irvine, CA.

Milewski, A., Erickson, A. (2015). *Studying the assumptions teachers make within scenario-based assessments*. Paper presented at the annual meeting of the National Council of Teachers of Mathematics Research Session (NCTM Research), April 2015, Boston, MA.

Dimmel, J., Milewski, A., Herbst, P. (2015). Representing Professional Scenarios: Can nondescript cartoon graphics portray a range of human emotions? *Paper presented at the Annual Meeting of the American Educational Research Association, Div. I. – Education of the Professions, April 2015, Chicago, IA*.

Herbst, P., Chazan, D., Milewski, A. (2015). Multimedia online experiences as research tools to study mathematics teaching knowledge at scale: What is a multimedia experience? *Paper presented at the Annual Meeting of the American Educational Research Association, SIG-RME, April 2015, Chicago, IA*.

Milewski, A. (2014). Transforming Teachers' Professional Vision: Using LessonSketch to Broaden Teachers' Imaginations, April 2014, NCSM, New Orleans, LA.

Milewski, A.M., Dunn, T., Anderlite, A., Schneider, K., McAllister, L. (April, 2013). *Exploring Teachers' Practices of Responding*. Paper presented at the annual meeting of the National Council of Supervisors of Mathematics (NCSM), Denver, CO.

#### **SELECTED PROFESSIONAL DEVELOPMENT**

Herbst, P., Milewski, A., Boileau, N., Ion, M. (2018). *Integrating Geogebra into HS Geometry*. 3 Day Workshop in Ann Arbor Public Schools.

Milewski, A.M. (2015 - 2016). *LessonSketch Online Modules for Implementing the Common Core Standard for Mathematical Practice*. Michigan Department of Education & East Detroit, Dearborn, Charlotte, Woodhaven and Orchard View public school districts.

Milewski, A.M. (2010- 2013). *Transforming Secondary Teachers' Instructional Practices through Action Research 8-Day Workshop*. Macomb ISD & South Lake High School, Clinton Township, Michigan.

Milewski, A.M. (2009- 2013). *Transforming Secondary Teachers' Instructional Practices through Video Clubs 5-Day Workshop*. Macomb ISD, Clinton Township, Michigan.

Milewski, A.M. (2012- 2013). *Transforming Elementary Teachers' Instructional Practices Video Clubs 5-Day Workshop*. Macomb ISD, Clinton Township, Michigan.

Milewski, A.M. & McAllister, L. (2011 - 2012). *Developing Mathematical Ideas: Building a System of Numbers 5-Day workshop*. Macomb ISD, Clinton Township, Michigan.

Hawkins, A.M. & Jones, L. (2009). *Developing Mathematical Ideas: Measuring Space in 1,2, and 3 dimensions 4-Day workshop*. PROMSE: Michigan State University, Michigan & Cincinnati, Cleveland, Ohio.

Strickland, S.K. & Hawkins, A.M. (2006 - 2009). *Proportionality Across the Middle Grades*. PROMSE: Michigan State University, Michigan & Cincinnati, Cleveland, Ohio.

Hawkins, A.M. & Srock, M. (2009–2010). *Secondary Lenses on Learning 7-Day Workshop*. Macomb ISD, Clinton Township Michigan.

Hawkins, A.M. & Srock, M. (2009). *EMATHS Implementing the Algebra I Units 8-Day Workshop*, Clinton Township, Michigan.

Milewski, A.M. (2008 - 2012). *Getting Started with the TI-Nspire*. Traverse City Schools, Oakland Schools, St. Clair ISD, Roscommon ISD, Ionia ISD, Macomb ISD, Michigan State University, Montcalm Community College, Oakland University, Wayne RESA, and Romeo Public Schools, Michigan.

Hawkins, A.M. (2008). *Exploring the TI-Navigator*. Haslett Middle School, L'Anse Creuse High School, St. Clair Community College, Michigan.

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## GRANTS, SPECIAL PROJECTS, AND FELLOWSHIPS

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### SUBMITTED AND FUNDED

- 2018 -2023 James S. McDonnell Foundation, Co-PI, *Managing students' contributions to mathematical work in whole class discussions in high school: How do teachers decide what to do?* (\$2,009,493)  
PI: Pat Herbst  
Co-PIs: Dan Chazan, Amanda Milewski, Ed Silver, and Jon Star with C. Huhn, K. Kildea, M. Macke, and M. Schnepp
- 2017 - 2022 NSF: EHR: IUUSE, Co-PI, *GeT Support: An online professional learning Community to support the geometry course for teachers*. (\$2,999,597)  
PIs: Patricio Herbst & Amanda Milewski

- 2015 - 2017 Michigan Department of Education: MSP, Senior Research Faculty, *Implementing EMATHS through LessonSketch StoryCircles*. (UM contract, \$373,210).  
PI: Debbie Ferry  
with Patricio Herbst & Amanda Milewski
- 2015 - 2016 Michigan Department of Education: Section 99B, Senior Research Faculty, *LessonSketch Online Modules for Implementing the Common Cores Standards for Mathematical Practice*. MDE. (\$23,840).  
PI: Patricio Herbst  
with Amanda Milewski
- 2015 - 2018 NSF: CORE, Senior Research Faculty, “*SIMTEACH: What Can Practical Knowledge Modeled in a Teaching Simulator Contribute to Support Mathematics Teacher Learning?*” (\$515,755)  
PIs: Patricio Herbst & Vu Minh Chieu
- 2013 - 2018 NSF: DRK-12, Senior Research Faculty, *Developing Rich Media-Based Materials for Practice-Based Teacher Education*. (\$2,634,873)  
PIs: Daniel Chazan & Patricio Herbst
- 2009 - 2018 NSF: DRK-12, Senior Research Faculty, *Supports for learning to manage classroom discussions: Exploring the role of practical rationality and mathematical knowledge for teaching*. (\$3,467,721)  
PIs: Patricio Herbst & Daniel Chazan
- 2008 - 2012 Michigan Department of Education: MSP, Assistant Project Director, *Embracing Mathematics, Assessment, and Technology in High School*. (\$1,800,000)  
PI: Debbie Ferry

#### SUBMITTED AND NOT FUNDED

- 2019 NSF: AISL, PI, *Detroit Youth as a Mathematical Resource: How a Longstanding Out-of-School Summer Program Supports the Development of Productive Perceptions about and Engagement in Mathematics*. (\$1,953,017)  
PIs: Amanda Milewski & Patricio Herbst
- 2017 DOE: EIR, PI, *Building and Sustaining a Knowledge Base for Ambitious Mathematics Teaching: Using LessonSketch StoryCircles to Expand the Work of Park City Mathematics*. (UM Contract: \$2,995,195)  
PI: Debbie Ferry  
UM Contract PI: Amanda Milewski with Patricio Herbst & Gail Burrill
- 2017 NSF: DRK-12, Senior Research Faculty, *ANNOTATE: Amplifying Novices’ Noticing and Observation in Teaching and Teacher Education*. (\$449,971)  
PIs: Vu Minh Chieu & Patricio Herbst with Amanda Milewski
- 2017 NSF: Cyberlearning, Senior Research Faculty, *EXP: DEPICT: Develop Expertise for Practice with Information and Communication Technology*. (\$549,988)  
PIs: Vu Minh Chieu & Patricio Herbst with Amanda Milewski
- 2017 W.T. Grant Foundation, PI, *Detroit Youth as a Mathematical Resource: How Math Corps Supports the Development of Productive Mathematical Identities*. (\$604,139)  
PIs: Amanda Milewski & Patricio Herbst

- 2016 NSF: DRK-12, Senior Research Faculty, *StoryCircles: Improving Mathematics Instruction through Collective Online Creation of Lesson Storyboards*.  
PI: Patricio Herbst with [Amanda Milewski](#) & Vu Minh Chieu
- 2016 NSF: EHR:ECR, Senior Research Faculty, *Decision making in high school mathematics teaching: Explorations in practical rationality and mathematical knowledge for teaching*.  
PIs: Patricio Herbst & Daniel Chazan with Vu Minh Chieu, [Amanda Milewski](#), Nicolas Boileau, & Inah Ko
- 2016 Michigan Department of Education: MSP, Senior Research Faculty, *Implementing EMATHS through LessonSketch StoryCircles Year 3*  
PI: Debbie Ferry with Patricio Herbst and [Amanda Milewski](#)
- 2014 NSF DRK-12, Senior Research Faculty, *What Can Online, Practice-Based Professional Development Contribute to the Enactment of the Standards for Mathematical Practice?*  
PIs: Patricio Herbst, Vu Minh Chieu, and [Amanda Milewski](#) with Daniel Chazan, Edward Silver & Karl Kosko

#### OTHER

- 2018 - 2019 Macke Family Foundation, Project Director, *UM\_BHHS Research to Practice Partnership Phase 2* (\$100,000)
- 2017 - 2018 Macke Family Foundation, Project Director, *UM\_BHHS Research to Practice Partnership Phase 1* (\$100,000)
- 2011 - 2012 Michigan State University, Dissertation Fellowship Awardee (\$8000)

#### PROFESSIONAL SERVICE

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NSF Reviewer, Division of Research on Learning  
 2018 Jones-Payne-Coxford Award Committee, University of Michigan, Educational Studies  
 2017 Jones-Payne-Coxford Award Committee, University of Michigan, Educational Studies  
 Member, North American Chapter of the International Group for the PME  
 Member, Association of Mathematics Teacher Educators  
 Member, American Education Research Association  
 Member, Detroit Area Council of Teachers of Mathematics  
 Member, Michigan Council of Teachers of Mathematics  
 Member, National Council of Teachers of Mathematics  
 Member, National Council of Supervisors of Mathematics  
 Reviewer, American Educational Research Journal  
 Reviewer, Journal of Mathematics Teacher Education  
 Reviewer, Teaching and Teacher Education  
 Reviewer, Journal of Teacher Education  
 Reviewer, Journal of Mathematical Behavior  
 Reviewer, Mathematics Teacher Education  
 Reviewer, AERA Division K, Section 5  
 Reviewer, PME-NA  
 Mathematics Leadership Team, MAISA CCSS Initiative, Oakland Schools  
 Advisory Committee, Michigan Assessment Consortium, MDE, Michigan  
 County Curriculum Team Writer, Macomb County Curriculum Committee  
 NCA School-wide Accreditation Chair, Clintondale High School  
 Michigan MEAP Advisory Board, Glencoe Publisher



## **TEACHING**

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### **UNDERGRADUATE**

EDUC 120: Children's Mathematical Thinking and Learning, University of Michigan  
TE 801/802: Professional Roles & Teaching Practices, Michigan State University  
TE 407: Teaching Subject Matter to Diverse Learners, Michigan State University  
TE 408: Crafting Teaching Practice, Michigan State University

### **MASTERS**

EST 651N: Special Issues in Mathematics Education, Oakland University  
EDU 508GA: Transforming Teaching Practices in Mathematics through Action Research, Central Michigan University

### **INVITED LECTURES**

EDUC 737: Introduction to Discourse Analysis, University of Michigan  
EDUC 781: The Study of Mathematics Instruction, University of Michigan  
EDUC 898: Professional Development Seminar, University of Michigan  
EDUC 571: Professional Development Seminar in Teacher Education, University of Michigan  
EDUC 511: Records of Practice, University of Michigan