



**MARSAL FAMILY
SCHOOL OF EDUCATION**
UNIVERSITY OF MICHIGAN

AMANDA BROWN

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EDUCATION

- 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

Assistant Research Scientist, University of Michigan, Educational Studies, 2018 - present
Research Investigator, University of Michigan, Educational Studies, 2015 - 2018
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 T³ Instructor, Texas Instruments, 2003 - 2013
Secondary Mathematics Teacher, Clintondale High School, 2000 - 2008

AWARDS

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

ARTICLES IN PEER-REVIEWED JOURNALS

- [15a] Brown, A. M., Bardelli, E., Herbst, P. G., & Dimmel, J. K. (2023). Examining the potential of cartoon-based simulations for studying mathematics teachers' handling of student emotions: A replication study. *Implementation and Replication Studies in Mathematics Education*, 3(2), 243-274. <https://doi.org/10.1163/26670127-bja10013>

- [14a] Herbst, P. G., Brown, A. M., Chazan, D., Boileau, N., & Stevens, I. (2023). Framing, responsiveness, serviceability, and normativity: Categories of perception teachers use to relate to students' mathematical work in problem-based lessons. *School Science and Mathematics*. <https://doi.org/10.1111/ssm.12600>
- [13a] Brown, A. M., & Herbst, P. (2023) On designing better structures for feedback in practice-based professional development: Using “failure” to innovate. *Journal of Mathematics Teacher Education Special Issue: What went wrong? Learning from less successful professional development for mathematics teachers*. <https://doi.org/10.1007/s10857-023-09588-1>
- [12a] Herbst, P., Brown, A. M., Ion, M., & Margolis, C. (2023). Teaching Geometry for Secondary Teachers: What are the Tensions Instructors Need to Manage? *International Journal of Research in Undergraduate Mathematics Education*, 1-28. <https://doi.org/10.1007/s40753-023-00216-0>
- [11a] Brown, A. M., Herbst, P., & Hanby, K. (2022). Assessing the potential of innovative pedagogies of teaching: An analytic model for gauging the kinds of instructional practices made available for novice to practice through various forms of approximation. *Mathematics Teacher Education and Development*, 24(2), 57 – 85.
- [10a] Herbst, P., Shultz, M., Bardelli, E., Boileau, N., & Brown, A. (2021). How can teaching simulations help us study at scale the tensions mathematics teachers have to manage when considering policy recommendations? *Educational Studies in Mathematics*, 110(1), 1-21. <https://doi.org/10.1007/s10649-021-10118-0>
- [9a] Milewski, A., Erickson, A., & Herbst, P. (2021). “It Depends ...”: Using Ambiguities to Better Understand Mathematics Teachers' Decision-making. *Can. J. Sci. Math. Techn. Educ.* 21, 123–144 (2021). <https://doi-org/10.1007/s42330-021-00141-x>
- [8a] Milewski, A., & Strickland, S. (2020). Building on the work of teachers: Augmenting a functional lens to a teacher-generated framework for describing the instructional practices of responding. *Linguistics and Education*. 57, (June 2020) 100816. <https://doi.org/10.1016/j.linged.2020.100816>
- [7a] Milewski, A. M., & Frohardt, D. (2020). Seeing Algebraic Structure & Solving the Rubik's Cube. *Mathematics Teacher: Learning and Teaching Pre-K–12*, 113(5), 397-403. <https://doi.org/10.5951/MTLT.2019.0075>
- [6a] Herbst, P., Ko, I., & Milewski, A. (2020). A heuristic approach to assess change in mathematical knowledge for teaching geometry after a practice-based professional learning intervention. *Research in Mathematics Education*. 22(2), 188-208, <https://doi.org/10.1080/14794802.2019.1704851>
- [5a] Dimmel, J. K., & Milewski, A. M. (2019). Scale, Perspective, and Natural Mathematical Questions: Rethinking representations of the world in real-life problems. *For the Learning of Mathematics*, 39(3), 34 - 40.
- [4a] 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. Retrieved from <https://www.learntechlib.org/primary/p/182990/>
- [3a] 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. Retrieved from <https://www.learntechlib.org/p/181094/>

- [2a] Milewski, A. M., & Strickland, S.K. (2016). (Toward) Developing a common language for describing instructional practices of responding: A teacher-generated framework. *Mathematics Teacher Educator*. 4(2), 126 - 144. <https://doi.org/10.5951/mathteaceduc.4.2.0126>
- [1a] Hawkins, A., & Sinclair, N. (2008). Explorations with *Sketchpad* in Topogeometry. *International Journal of Computers for Mathematical Learning* 13, 71–82. <https://doi.org/10.1007/s10758-008-9126-6>

ARTICLES IN PEER-REVIEWED CONFERENCE PROCEEDINGS

- [19d] Brown, A. M., Herbst, P. G., & Schwarts, G. (2024, Fall). Gauging professional growth: Moving beyond binary assessments by examining teachers' practical arguments in simulations of practice. *Paper to be included in the proceedings of the 46th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Cleveland, OH.
- [18d] Jeon, S. B., Brown, A. M., Savuran, R., & Herbst, P. G. (2024, Fall). Secondary mathematics teachers' justifications for sequencing student work. *Paper to be included in the proceedings of the 46th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Cleveland, OH.
- [17d] Stevens, I., Hardison, H., & Brown, A. M. (2024, Fall). High school students' figurative and operative thought when reasoning about distances. *Paper to be included in the proceedings of the 46th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Cleveland, OH.
- [16d] Schwarts, G., Herbst, P., & Brown, A. M. (2024, July). Illustrating a method for analyzing multimodal artifacts used in transactions of practice. In Evans, T., Marmur, O., Hunter, J., Leach, G., & Jhagroo, J. (Eds.) *Proceedings of the 47th Conference of the International Group for the Psychology of Mathematics Education (Vol. 3, pp. 26 - 33)*. Auckland, New Zealand: PME <https://www.igpme.org/wp-content/uploads/2024/06/Vol-3-PME-47-27-06-2024.pdf>
- [15d] Brown, A. M., Herbst, P. G., & Ion, M. (2023, Fall). How instructors of undergraduate mathematics courses manage tensions related to teaching courses for teachers? In Lamberg, T., & Moss, D. (Eds). *Proceedings of the 45th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (Vol. 1, pp. 467 - 476)*. University of Nevada, Reno. <https://doi.org/10.51272/pmena.45.2023>
- [14d] Schwarts, G., Jeon, S., Herbst, P., & Brown, A. M. (2023, October). What does it mean for geometry teachers to improve a lesson? A multimodal analysis. In Lamberg, T., & Moss, D. (Eds). *Proceedings of the 45th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (Vol. 1, pp. 782 - 790)*. University of Nevada, Reno. <https://doi.org/10.51272/pmena.45.2023>
- [13d] Schwarts, G., Herbst, P., & Brown, A. M. (2023, July). How do mathematics teachers learn to create a mathematical storyline in problem-based lessons? In M. Ayalon, B. Koichu, R. Leikin, L. Rubel., & M. Tabach (Eds.) *Proceedings of the 46th Conference of the International Group for the Psychology of Mathematics Education, (Vol. 4, pp. 187-202)*.

University of Haifa. <https://www.igpme.org/publications/current-proceedings/>

- [12d] Schwarts, G., Stevens, I., Herbst, P., & Brown, A. M. (2022, November). "It's a different mindset here": Facilitation challenges in a practice-based professional development. In Lischka, A. E., Dyer, E. B., Jones, R. S., Lovett, J., Strayer, J., & Drown, S. (Eds). *Proceedings of the 44th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1461-1469). Middle Tennessee State University. <https://doi.org/10.51272/pmna.44.2022>
- [11d] Milewski, A., Strickland, S., Buchbinder, O., Chazan, D., & Herbst, P. (2021, Fall). Managing students' non-canonical approaches to solving equations: Linguistic resources teachers' use to respond to students' mathematical work. In Olanoff, D., Johnson, K. & Spitzer, S.M. (Eds). *Proceedings of the forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1411 – 1419). Philadelphia, PA. <http://www.pmena.org/pmenaproceedings/PMENA%2043%202021%20Proceedings.pdf>
- [10d] Milewski, A., Dimmel, J. K., Hetrick, C., Silver, E.A., & Brown, C. (2021, Fall). Persistence of playing school: Examining an immersive 90-day semester-program for shaping students' mathematical perceptions and practices. In Olanoff, D., Johnson, K. & Spitzer, S.M. (Eds). *Proceedings of the forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 556 – 560). Philadelphia, PA. <http://www.pmena.org/pmenaproceedings/PMENA%2043%202021%20Proceedings.pdf>
- [9d] Margolis, C., Ion, M., Herbst, P. G., Shultz, M., & Milewski, A. M. (2020, Fall). Understanding Instructional Capacity for High School Geometry as a Systemic Problem Through Stakeholder Interviews. In Sacristán, A.I., Cortés-Zavala, J.C. & Ruiz-Arias, P.M. (Eds.). *Proceedings of the 42nd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 620 – 627). Mazatlan, Sin. Mexico. <https://doi.org/10.51272/pmna.42.2020>
- [8d] Herbst, P. G., & Milewski, A. M. (2020, February). Using StoryCircles to inquire into the social and representational infrastructure of lesson-centered teacher collaboration. In Borko, H. & Potari, D. (Eds) *Proceedings of the 25th meeting of the International Congress Mathematics Instruction*. (pp. 629 – 636). <http://icmistudy25.ie.ulisboa.pt>
- [7d] Milewski, A., Bardelli, E., & Herbst, P. (2019, Fall). The role of emotions in simulations of practice. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.). *Proceedings of 41st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 470-479). St Louis, MO: University of Missouri. <http://www.pmena.org/pmenaproceedings/PMENA%2041%202019%20Proceedings.pdf>
- [6d] Ion, M., Herbst, P., Margolis, C, Milewski, A., & Ko, I. (2019, Fall). Developing practical measures to support the improvement of geometry for teachers' course. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.). *Proceedings of the 41st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 352 - 359). St Louis, MO: University of Missouri. <http://www.pmena.org/pmenaproceedings/PMENA%2041%202019%20Proceedings.pdf>
- [5d] Herbst, P., Milewski, A., Ion, M., & Bleecker (2018, Fall). 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 40th annual meeting of the North*

American Chapter of the International Group for the Psychology of Mathematics Education (pp. 239-246). Greenville, SC: University of South Carolina & Clemson University.

<http://www.pmena.org/pmenaproceedings/PMENA%2040%202018%20Proceedings.pdf>

- [4d] Milewski, A. M., Gürsel, U., & Herbst, P. (2017, Fall). 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 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 112 – 119). Indianapolis, Indiana.
<http://www.pmena.org/pmenaproceedings/PMENA%2039%202017%20Proceedings.pdf>
- [3d] Herbst, P., Boileau, N., Clark, L., Milewski, A. M., Chieu, V., Gürsel, U., & Chazan, D. (2017, October). Directing focus and enabling inquiry with representations of practice: Written cases, storyboards, and teacher education. 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. 789 – 796). Indianapolis, Indiana.
<http://www.pmena.org/pmenaproceedings/PMENA%2039%202017%20Proceedings.pdf>
- [2d] Herbst, P., Chazan, D., Milewski, A. M., Gürsel, U., Amidon, J. Buchbinder, O., Walkoe, J., & Wieman, R. (2015, November). 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 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1404 – 1410). East Lansing, Michigan: Michigan State University.
<https://www.pmena.org/pmenaproceedings/PMENA%2037%202015%20Proceedings.pdf>
- [1d] Milewski, A. M., Erickson, A., Herbst, P., & Dimmel, J. (2015, November). 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 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1130 – 1133). East Lansing, Michigan: Michigan State University.
<https://www.pmena.org/pmenaproceedings/PMENA%2037%202015%20Proceedings.pdf>

PEER REVIEWED BOOK CHAPTERS

- [10r] Acre, S., Atzema, E., Brown, A. M., Markinson, M., & Tracey, M. (forthcoming). The Role of the Two-Column Proof Format in Developing Prospective Teachers' Capacity for Teaching Proof in High School Geometry. In A. Brown, P. Herbst, N., Miller, & L. Pyzdrowski (Eds.) *The GeT course: Resources and Objectives for the Geometry Courses for Teachers. Volume to be submitted to MAA Notes in August 2023*.
- [9r] An, T., Boyce, S., Brown, A. M., Cohen, S., Escudro, H., Herbst, P., Krupa, E., Miller, N., Pyzdrowski, L.J., Sears, R., Szydlik, S., & Vestal, S. (2024). Student Learning Objectives for Teaching Geometry Content for Prospective Secondary Teachers. In B. Benken (Ed.). *AMTE Professional Book Series, Volume 5: Reflection on Past, Present and Future: Paving the Way for the Future of Mathematics Teacher Education* due out in Summer 2023 from Information Age Publishing.
- [8r] An, T., Berzina-Pitcher, I., Brown, A. M., Bigelow, V., Buchbinder, O., Herbst, P.,

Miller, N., Prasa, P.V., Pyzdrowski, L.J., St Goar, J., Sears, R., Szydluk, S., & Vestal, S. (2023). A Cross-Institutional Faculty Online Learning Community: Community-Guided Faculty Development in Teaching College Geometry for Teachers. In S. Linder, C. Lee, & K. High (Eds.) *The Handbook of STEM Faculty Development*. (pp. 325 – 336). Information Age Publishing.

- [7r] Brown, A., Stevens, I., Herbst, P., & Huhn, C. (2021). Confronting teachers with contingencies to support their learning about situation-specific pedagogical decisions in an online context. In Hollebrands, K., Anderson, R., & Oliver, K. (Eds). *Online Learning in Mathematics Education*. (pp. 291-316). Springer Cham. https://doi.org/10.1007/978-3-030-80230-1_15
- [6r] Milewski, A. M., Herbst, P. G., & Stevens, I. (2020). Managing to collaborate with secondary mathematics teachers at a distance: Using storyboards as a virtual place for practice and consideration of realistic classroom contingencies. In Ferdig, R.E., Baumgartner, E., Hartshorne, R., Kaplan-Rakowski, R. & Mouza, C. (Eds.) *Teaching, technology, and teacher education during the COVID-19 pandemic: Stories from the field*. (pp. 623 - 630). Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/p/216903/>
- [5r] Herbst, P., Boileau, N., Shultz, M., Milewski, A., Chieu, VM. (2020). What Simulation-Based Mentoring May Afford: Opportunities to Connect Theory and Practice. In: Bradley, E. (Eds) *Games and Simulations in Teacher Education. Advances in Game-Based Learning*. (pp. 91 – 114). Springer, Cham. https://doi.org/10.1007/978-3-030-44526-3_7
- [4r] Herbst, P., Chazan, D., & Milewski, A. (2020). Technology Tools for Mathematics Teacher Learning: How Might They Support the Development of Capacity for Specific Teaching Assignments? In D. Potari & O. Chapman (Eds), *International Handbook of Mathematics Teacher Education: Volume 2* (pp. 223-251). Brill Sense. https://doi-org.proxy.lib.umich.edu/10.1163/9789004418967_009
- [3r] 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*. (pp. 321 - 364). Advances in Mathematics Education. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-62692-5_15
- [2r] 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. <https://doi.org/10.4018/978-1-5225-0120-6.ch004>
- [1r] 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.

NON-PEER REVIEWED ARTICLES, BOOK CHAPTERS, BOOK REVIEWS, PROCEEDINGS, AND WHITE PAPERS

- [3n] Brown, A. (2023, April). Embracing a Developmental Review Process: Fostering community and supporting contributions to the GeT Course Book. *GeT: The News!*,

(4)2. <https://www.gripumich.org/v4-i2-wi2023/#embracing-a-developmental-review-process-fostering-community-and-supporting-contributors-to-the-get-course-book>

- [2n] Brown, A. M. (2021, November). Developing and Stewarding the Get: A Pencil Community *GeT: The News!*, 3(1).
<https://www.gripumich.org/v3-i1-f2021/#developing-and-stewarding-the-get-a-pencil-community>
- [1n] Brown, A. (2021, February). 2021: Looking Back, Looking Forward. *GeT: The News!*, (2)2. <https://www.gripumich.org/v2-i2-w2021/#2021:-looking-back-looking-forward>

CONFERENCE PAPERS

- [32c] Brown, A., Savuran, R., & Herbst, P.G. (2024). StoryCircles 2.0: Leveraging Peer Feedback for Collective Knowledge Building in Mathematics Education. *Paper to be presented at Annual Meeting of the National Council of Teachers of Mathematics Research Conference. (NCTM-R, October 2024).*
- [31c] Brown, A., Jeon, S., Herbst, P., Schwartz, G. (2024). Investigating the potential for the annotation of less desirable lessons to serve as a low floor/high ceiling task for lesson-centered professional development. *Proceedings of the 2024 International Congress on Mathematics Education. Sydney, Australia. (ICME-15, July 2024).*
- [30c] Herbst, P., Ko, I., & Brown, A. (2024). Assessing prospective teachers' growth in mathematical knowledge for teaching geometry. *Proceedings of the 2024 International Congress on Mathematics Education. Sydney, Australia. (ICME-15, July 2024).*
- [29c] Schwartz, G., Herbst, P., & Brown, A. (2024). Designing virtual simulations to support mathematics teachers' approximations of problem-based instruction. *Proceedings of the 2024 International Congress on Mathematics Education. Sydney, Australia. (ICME-15, July 2024).*
- [28c] Schwartz, G., Herbst, & Brown, A. (2024). Navigating the complexities of promoting student voice and agency through collaborative design of problem-based lessons. *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association. Philadelphia. (AERA, April 2024).*
- [27c] Schwartz, G., Herbst, P., & Brown, A. (2023). StoryCircles: A process-oriented approach for teacher learning about problem-based lessons. *Paper presented at Annual Meeting of the National Council of Teachers of Mathematics Research Conference. Washington, D.C. (NCTM-R, January 2023).*
- [26c] Hetrick, C., Herbst, P.G., Brown, A.M., Ion, M. (2023). Contention and Coalescence in Mathematical Knowledge: Undergraduate Geometry Instructors' Cooperative Design of Student Learning Objectives. *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association. San Diego, CA. (AERA, April 2023).*
- [25c] Schwartz, G., Herbst, P., Stevens, I., & Brown, A. (2023). Beyond correctness: What do teachers notice about student work produced in problem-based lessons? *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association. San Diego, CA. (AERA, April 2023).*
- [24c] Herbst, P., Chazan, D., Brown, A., & Mesa V. (2023). Professional Obligations in

Mathematics Courses for Teachers. *Paper presented at the Annual Meeting of Research on Undergraduate Mathematics Education*. Omaha, NB. (RUME, February 2023).

- [23c] Hetrick, C., Herbst, P., Ion, M., & Brown, A. (2023). Building Instructional Capacity Across Difference: Analyzing Transdisciplinary Discourse in a Faculty Learning Community focused on Geometry for Teachers (GeT) Courses. *Paper presented at the Annual Meeting of Research on Undergraduate Mathematics Education*. Omaha, NB. (RUME, February 2023).
- [22c] An, T., Berzina-Pitcher, I., Buchbinder, O., Brown, A. M., Herbst, P., Ion, M., Miller, N., Prasad, P., Pyzdrowski, L.J., Sears, R., St. Goar, J., Szydlik, S., & Vestal, S. (2022). Learning and Participating in Scholarship of Teaching and Learning through a Faculty Online Learning Community. *Paper presented at Annual Meeting of the American Educational Research Association, Div. J – Postsecondary Education*. San Diego, CA. (AERA, April 2022).
- [21c] Stevens, I., Boileau, N., Bridge, S., Brown, A. M., & Herbst, P. G. (2022). Timing as a Complexity in Teaching. *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association, Div. C - Learning and Instruction*. San Diego, CA. (AERA, April 2022).
- [20c] Herbst, P., Brown, A. M., Stevens, I. E. (2022). The evolution of StoryCircles: An online professional learning approach to attend to practice in context. *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association, Div. K – Teaching and Teacher Education*. San Diego, CA. (AERA, April 2022).
- [19c] Brown, A. M., Strickland, S., Buchbinder, O., Chazan, D., & Herbst, P. (2021). Managing students' non-canonical approaches to solving equations: Linguistic resources teachers use to respond to students' mathematical work. *Paper presented at Annual Meeting of the National Council of Teachers of Mathematics Research Conference*. Virtual. (NCTM-R, January 2021).
- [18c] Boileau, N., Herbst, P., & Milewski, A. (2020). Framing Novel Tasks as Familiar: Some Reasons Why and a Resulting Tension. *Paper accepted to be presented at Annual Meeting of Annual Meeting of the American Educational Research Association-Roundtable*. San Francisco, CA. (AERA, April 2020, Conference cancelled).
- [17c] Milewski, A., Ion, M., Herbst, P., Shultz, M., Ko, I., & Bleecker, H. (2019, April). Tensions in teaching mathematics to future teachers: Understanding the practice of undergraduate mathematics instructors. *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association, Div. K – Teaching and Teacher Education*. Toronto, CANADA. (AERA, April 2019).
- [16c] Shultz, M., Bardelli, E., Milewski, A., Boileau, N., & Herbst, P. (2019, April). What can we learn about the differences between experts and novices from a teaching simulation? *Paper presented at Annual Meeting of Annual Meeting of the American Educational Research Association, Div. K – Teaching and Teacher Education*. Toronto, CANADA. (AERA, April 2019).
- [15c] Milewski, A., Bardelli, E., & Herbst, P. (2019, April). 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 Research Conference*. San Diego, CA. (NCTM-R, April 2019).

- [14c] Buchbinder, O., Milewski, A., Chazan, D., & Herbst, P. (2019, April). Teachers dealing with non-standard student solutions to linear equations. *Paper presented at the Annual Meeting of the National Council of Teachers of Mathematics Research Conference*. San Diego, CA. (NCTM-R, April 2019).
- [13c] 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, SIG-RME*. San Antonio, TX. (AERA, April 2017).
- [12c] 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*. San Antonio, TX. (AERA, April 2017).
- [11c] Chieu, V. M., Boileau, N.M., Huisinga, M., Milewski, A. M., Herbst, P. G. (2017). Can a teaching simulation predict novice and expert teachers' decision making? *Paper presented at the Annual Meeting of the American Educational Research Association, Div. C— Learning and Instructions*. San Antonio, TX. (AERA, April 2017).
- [10c] 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*. San Antonio, TX. (AERA, April 2017).
- [9c] Dimmel, J. K., Herbst, P. G., Gürsel, U., Milewski, A. M., & Erickson, A. (2016). The LessonSketch environment: A platform for online teacher education and research on teaching. *Proceedings of the 2016 International Congress on Mathematics Education*. Hamburg, Germany: Universität Hamburg. (ICME-14, July 2016).
- [8c] Erickson, A.W., Milewski, A. M., Dimmel, J. K., & Herbst, P. G. (2016). "It depends ...": (When) Does a student's mistake become a teacher's dilemma? *Proceedings of the 2016 International Congress on Mathematics Education*. Hamburg, Germany: Universität Hamburg. (ICME-14, July 2016).
- [7c] Milewski, A. M., Herbst, P. G., Gürsel, U. (2016). Teachers' opportunities to learn through collaborative storytelling and visualization. *Proceedings of the 2016 International Congress on Mathematics Education*. Hamburg, Germany: Universität Hamburg. (ICME-14, July 2016).
- [6c] Strickland, S.K. & Milewski, A. M. (2016). (Toward) A functional framework for describing teachers' practices of reacting. *Proceedings of the 2016 International Congress on Mathematics Education*. Hamburg, Germany: Universität Hamburg. (ICME-14, July 2016).
- [5c] 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, Washington DC*. (AERA, April 2016).
- [4c] Milewski, A. M. & Strickland, A. M. with Humphrey, C. (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. Washington DC. (AERA, April 2016).*

- [3c] 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 Conference. Boston, MA. (NCTM-R, April 2015).*
- [2c] 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. Chicago, IA. (AERA, April 2015).*
- [1c] 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. Chicago, IA. (AERA, April 2015).*

SELECTED PRESENTATIONS

- [26p] Brown, A. & Herbst, P. (2023). Examining an Online, International Exchange Professional Development Program for High School Teachers. *Poster presented at 2023 DRK-12 PI Meeting Conference, Washington D.C. (DRK-12 PI, June 2023)*
- [25p] Brown, A., Herbst, P., & Hetrick, C. (2023). Teaching Geometry for Secondary Teachers. *Working Group at the Annual Meeting of Research on Undergraduate Mathematics Education. Omaha, NB. (RUME, January 2023).*
- [24p] Herbst, P., Milewski, A., Stevens, I. E., Huhn, C., Lorenz, R. & Strickland, S. (2022). Supporting synchronous and asynchronous study of secondary mathematics lessons among colleagues: Designs, technologies, and facilitation. *Presented at the Twenty-Fifth Annual Conference of the Association of Mathematics Teacher Educators. New Orleans, LA. (AMTE, January 2022).*
- [23p] An, T., Boyce, S., Brown, A. M., Cohen, S., Escudro, H., Herbst, P., Krupa, E., Miller, N., Pyzdrowski, L.J., Sears, R., Szydlik, S., & Vestal, S. (2022). Knowledge for teaching high school geometry: Examining student learning objectives of the undergraduate geometry course. *Presented at the Twenty-Fourth Annual Meeting of the Association of Mathematics Teacher Education. New Orleans, LA. (AMTE, January 2022).*
- [22p] Herbst, P. G., Milewski, A. M., Ion, M., & Ko, I. (2021). Preparing Teachers for Secondary Geometry: Helping Shape the Geometry Course for Teachers. *Presented at Annual Meeting of the National Council of Teachers of Mathematics, Virtual. (NCTM, April 2021).*
- [21p] Milewski, A. M., Herbst, P. G., & Stevens, I. (2021). Collaborating with teachers through COVID-19: Using storyboards to enable virtual approximations of realistic classroom contingencies. *Presented at the Twenty-Third Annual Meeting of the Association of Mathematics Teacher Education. Virtual. (AMTE, January 2021).*
- [20p] Milewski, A. M., & Herbst, P. G. (2021). *Panel on the Undergraduate Geometry Course for Secondary Teachers.* Madden, J., Lai, Y., Alvarez, J., & Whitfield,

- J. (Organizers). AMS Special Session on Mathematics Courses Designed to Develop Mathematical Knowledge for Teaching High School, II. *Presented at the Annual Joint Math Meetings*, Virtual. (*JMM*, January 2021).
- [19p] Stevens, I., Herbst, P.G, Bardelli, E., & Milewski, A. M. (2020). Supporting Discussions About Teachers' Practical Knowledge via StoryCircles. *Presented at Annual Meeting of the Michigan Association of Mathematics Teacher Education*. University of Michigan, School of Education. (*MI-AMTE Conversations amongst Colleagues*, March 2020)
- [18p] Herbst, P. G., Stevens, I., Milewski, A. M., Ion, M., & Ko, I. (2020, January). State of Undergraduate Geometry Courses for Secondary Teachers: Curriculum, Instructional Practices, and Student Achievement. *Joint Mathematics Meetings*. Denver, CO. (*JMM*, January 2020).
- [17p] Milewski, A. M. (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*. (April 2019)
- [16p] Milewski, A., Herbst, P., Bleecker, H., & Ion, M. (2019). Preparing Teachers for Secondary Geometry: Understanding the Tensions in Teaching. *Presented at the Twenty-Second Annual Meeting of the Association of Mathematics Teacher Education*. Orlando, FL. (*AMTE*, February 2019).
- [15p] Milewski, A. M., Herbst, P. G., Margolis, C., Ion, M., Ko, I., & Abugka, E. (2019). What do we know about courses in Geometry for Secondary Teachers? *Presented at the Annual Joint Mathematics Meetings*. Baltimore, MD. (*JMM*, January 2019)
- [14p] Milewski, A., Amidon, J., Bardelli, E., & Boileau, N. (2018). Using Virtual Spaces to Enable Teacher Professional Growth: Acting to Believing. *Presented at the Twenty-First Annual Meeting of the Association of Mathematics Teacher Education*. Houston, TX. (*AMTE*, January 2018).
- [13p] 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. *Presented at the Twentieth Annual Meeting of the Association of Mathematics Teacher Education*. Orlando, FL. (*AMTE*, January 2017).
- [12p] 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. *Presented at the Twentieth Annual Meeting of the Association of Mathematics Teacher Education*. Orlando, FL. (*AMTE*, January 2017).
- [11p] Milewski, A., & Herbst, P. (2016). StoryCircles in Mathematics Teacher Education: Their Role in Supporting Beginning Teachers Learning to Practice *Presented at the Nineteenth Annual Meeting of the Association of Mathematics Teacher Education*. Irvine, CA. (*AMTE*, January 2016).
- [10p] Milewski, A. M., Gürsel, U., & Herbst, P. G. (2016) .Engaging teachers with the SMPs through online practice-based modules. *Conversations amongst Colleagues*,

Western Michigan University, Mathematics Department. (CAC, March 2016).

- [9p] Milewski, A. M., Chieu, V. M., & Herbst, P. G. (2015). How can StoryCircles support the study of teaching practices? *University of Michigan, School of Education, Educational Studies Colloquium*. (November 2015).
- [8p] Milewski, A. (2014). Transforming Teachers' Professional Vision: Using LessonSketch to Broaden Teachers' Imaginations, *Presented at Annual meeting of the National Council of Supervisors of Mathematics*. New Orleans, LA. (NCSM, April 2014).
- [7p] Milewski, A. M., Dunn, T., Anderlite, A., Schneider, K., & McAllister, L. (2013). Exploring Teachers' Practices of Responding. *Presented at Annual meeting of the National Council of Supervisors of Mathematics*. Denver, CO. (NCSM, April 2013).
- [6p] Milewski, A. M. (2013). Hot Topics: Exploring Teachers' Practices of Responding to Students' Ideas. *Featured Speaker at National Council of Supervisors of Mathematics*, Denver, CO. (NCSM, April 2013).
- [5p] Milewski, A. M. (2012). *University of Michigan Rackham Centennial Lecture Series Panel*, Invited Panelist, Ann Arbor, Michigan. (October 2012).
- [4p] Milewski, A. M., & Dykema, K. (2012). MiCTM Book Talk: The 5 Practices for Orchestrating Productive Mathematical Discussions, Presented at Michigan Council of Teachers of Mathematics, Online, Michigan. (August 2012).
- [3p] Milewski, A. M. (2012). Introduction to the CCSSI Mathematics Materials, *Invited Speaker for MAISA Collaboration Project Seminar Mathematics Roll Out*, Gratiot Isabella RESD, Michigan. (August 2012).
- [2p] Milewski, A. M. (2012). Exploring Teachers' Practices of Responding, *Invited Speaker for 2012 RTI-MTSS Summer Institute*, Macomb Intermediate School District, Michigan. (August 2012).
- [1p] Hawkins, A. M., Strickland, S., & Star, J. (2006) What is mathematical literacy? Exploring the relationship between literacy and content learning in middle and high school mathematics. *Presented at Literacy Achievement Research Center annual conference*. East Lansing, Michigan State University. (November 2006).

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.

GRANTS, SPECIAL PROJECTS, AND FELLOWSHIPS

SUBMITTED AND FUNDED

- 2022 - 2027 NSF: DRK-12: PI, *Examining an On-line, International Exchange Professional Development Program for High School Teachers*. (\$2,651,320).
PI: Amanda Brown
Co-PI: Pat Herbst
- 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. Schnepf
- 2017 - 2022 NSF: EHR: IUSE, Co-PI, *GeT Support: An online professional learning Community to support the geometry course for teachers*. (\$2,999,597)
PIs: Patricio Herbst
Co-PI: 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*
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

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

Member, Professional Development Committee, MI-AMTE
 Member, Research Advisory Council Representative, Faculty Senate, University of Michigan
 Representative, Faculty Senate Assembly, School of Education, University of Michigan
 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- Teaching and Teacher Education, 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

POST-DOCTORAL SCHOLAR

2024; YIĞIT SAVURAN
2024; JAINISHA CHAVADA
2023; RÜYA SAVURAN

UROP STUDENTS

2013; XINZHU CHEN
2013; MARANDA DISCENNA
2015; KEITH CHEUNG
2015; YASMINE ABUSHUKUR
2016; CORIN COONEY
2017; JASON VAN DE VELDE
2018; KIRSTEN BIRMAN
2020; TOTTIONNA BUSHELL
2021; HANNAH CONNELL
2021; ANDREW SPITERI
2021; JORGE LUNA
2021; ROBERT BECKEMEYER
2022; NATALYNN KAPNER
2023; CHRISTINE QUI
2023; EDGAR ZHANG

SOE MASTERS INTERNS

2016; JOEL MAIDENS
2023; CHRISTOPHER BREZNAU
2023; ANTHONY DAVIS

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
