**Kristen N. Bieda**
Associate Professor - Teacher Education
Michigan State University
www.kbiedamathed.com

317 Erickson Hall
East Lansing, MI 48824
517-432-9925
kbieda@msu.edu

## EDUCATION

| | |
|---|---|
| 2008 | **Ph.D., Curriculum and Instruction (Mathematics Education)**<br>University of Wisconsin - Madison |
| 2004 | **M.S., Mathematics**<br>Missouri State University |
| 2001 | **Teacher Certification, Secondary Mathematics (9 – 12)**<br>Missouri State University |
| 1998 | **B.S., Administrative Management**<br>Missouri State University |

## PROFESSIONAL EXPERIENCE

| | |
|---|---|
| 2014 – | **Associate Professor**, Michigan State University Department of Teacher Education and Program in Mathematics Education (PrIME) |
| 2014 – | **Associate Director of Mathematics,** CREATE for STEM Institute Michigan State University College of Education |
| 2008–2014 | **Assistant Professor,** Michigan State University Department of Teacher Education |
| 2007–2014 | **Research Affiliate,** *Thought Experiments in Mathematics Teaching (ThEMaT)* PIs : Dr. Daniel Chazan, University of Maryland – College Park, and Dr. Patricio Herbst, University of Michigan |
| 2007–2008 | **Research Assistant,** *Does Visual Scaffolding Facilitate Students' Mathematics Learning? Evidence From Early Algebra (funded by IES)* PIs: Dr. Martha Alibali, Dr. Mitchell Nathan, and Dr. Eric Knuth University of Wisconsin - Madison |
| 2005–2007 | **Research Assistant,** *Understanding the Transition from Arithmetic to Algebraic Reasoning (funded by IERI).* PIs: Dr. Mitchell Nathan, Dr. Martha Alibali, and Dr. Eric Knuth University of Wisconsin – Madison |
| 2004–2007 | **Research Assistant,** *Understanding and Cultivating the Development of Students' Competencies in Justifying and Proving (funded by NSF)* PI: Dr. Eric Knuth, University of Wisconsin - Madison |
| 2006–2008 | **Teaching Assistant,** Secondary Mathematics Teaching Methods University of Wisconsin – Madison |
| 2007 | **Instructor,** Secondary Mathematics Teaching Methods Courses Concordia University – Wisconsin, Madison, WI |
| 2005–2006 | **Adjunct Instructor,** Intermediate and College Algebra Madison Area Technical College, Madison, WI |

| | |
|---|---|
| 2003–2004 | **Adjunct Instructor,** Business Math/Intermediate Algebra/College Algebra Ozarks Technical Community College, Springfield, MO |
| 2002-2003 | **Teacher,** Pre-College Program for Middle School Students Drury University, Springfield, MO |
| 2002–2003 | **Teaching Assistant,** Intermediate Algebra Missouri State University, Springfield, MO |
| 2002 | **Summer School Teacher,** Pre-Algebra Prep Springfield Public Schools, Springfield, MO |

## FUNDED RESEARCH

2020-2023 **Enhancing the Teacher-Curriculum Relationship in Problem-based Mathematics Classrooms by Connecting Teacher and Student Digital Collaborative Environments** (co-PI, with E. Phillips, A. Edson, C. Dorsey; $1,887,825). Funded by NSF DRK-12 program.

2017-2021 **Collaborative Research: Investigating Early Field Experiences for Prospective Mathematics Teachers through the UTE Model** (PI, with Michelle Cirillo, University of Delaware, and Fran Arbaugh, Pennsylvania State University; $1,975,640 - $805,895 to Michigan State University). Funded by NSF IUSE program.

2017-2020 **Promoting Productive Disciplinary Engagement and Learning with Open Problems and "Just-in-Time" Supports in Middle School Mathematics.** (Co-PI with E. Phillips, C. Dorsey, A. Edson & J. Krajcik, $1,497,294). Funded by NSF EHR CORE program.

2017-2018 **Advancing Students' Mathematical Understanding in Chemistry with Pedagogical Content Knowledge.** (Co-PI with L. Posey, $46,074). Funded by the Discretionary Funds Initiative at Michigan State University.

2016-2019 **Collaborative Research: Enhancing Middle Grades Students' Capacity to Develop and Communicate Their Mathematical Understanding of Big Ideas Using Digital Inscriptional Resources** (Co-PI with E.Phillips, C. Dorsey, A. Edson & Joe Krajcik, $1,497,275). Funded by NSF DRK-12 program.

2014–2018 **How novice elementary teachers' social networks affect ambitious math instruction in the current evaluation climate** (Co- PI with K. Frank, S.Salloum & P.Youngs; $1,499,472)**.** Funded by NSF REAL program.

2014–2018 **How beginning elementary teachers' social networks affect ambitious math instruction in the current evaluation climate** (Co-PI with K.

Frank, S. Salloum & P.Youngs; $599,604). Funded by the WT Grant Foundation.

2016–2017 **Building mathematics understanding through integration with chemistry.** (Co-PI with L. Posey; $25,000). Funded by CREATE for STEM LPF Seed Grant award.

2014-2017 ***LessonSketch* Research and Development Fellow**. Funded by NSF DRK-12 program to PIs Daniel Chazan and Patricio Herbst (Total fellowship: $20,000 over three years).

2013-2015 **Transforming developmental mathematics education in partnership with teacher preparation** (PI with R.McCrory, B. Herbel-Eisenmann and P. Sikorskii; $194,717). Funded by the NSF TUES program.

2012–2015 **Strengthening developmental mathematics education at MSU through strategic partnership with teacher education** (PI; $207,324). MSU Lappan-Phillips- Fitzgerald Endowment Grant.

2011–2012 **Impact of mentor-guided lesson study on development of prospective teachers' mathematical knowledge for teaching.** (PI; $14,00). MSU Lilly Teaching Fellowship.

2010–2011 **Mentors and interns engaged in lesson study.** (PI; $4,534). MSU College of Education In-House Grant.

2008–2009 **Understanding the role of context in students' proving practices.** (PI; $2,625). MSU College of Education In-House Grant.

## PROPOSALS RECOMMENDED OR UNDER REVIEW

2021 **Collaborative Research: Leveraging Justification to Advance Equity Goals in Secondary Mathematics Classrooms.** (PI; $382,009). Recommended for funding by National Science Foundation EHR Core Research program.

**Using Problem-Based Learning Analytics to Investigate Individual and Collaborative Mathematics Learning in a Digital Environment Over Time.** (co-PI; $2,996,714). Submitted to National Science Foundation Discovery Research K-12 program.

## PUBLICATIONS

### *Peer-Reviewed Journals*

Voogt, K. & Bieda, K. (In press). Filling a "void": The mathematical quality in planning protocol. To be published in *Mathematics Teacher Educator.*

Cirillo, M., LaRochelle, R., Berk, D., Bieda K., & Arbaugh, F. (Accepted with minor revisions). What COVID-19 revealed about two innovative mathematics education teaching and learning models. To be published in *International Journal of Research on Undergraduate Mathematics Education.*

Kim, J., Frank, K., Youngs, P., Salloum, S. & Bieda, K. (2022). Teacher evaluation, ambitious instruction, and mathematical knowledge for teaching: Evidence from early career teachers. *Journal for Research in Mathematics Education, 53*(3), pp.181-203. https://doi.org/10.5951/jresematheduc-2020-0093

Bieda, K. N., Lane, J., Evert, K., Hu, S., Opperman, A., & Ellefson, N. (2020). A large-scale study of how districts' curriculum policies and practices shape teachers' mathematics lesson planning. *Journal of Curriculum Studies*, 1-30, DOI: 10.1080/00220272.2020.1754921.

Bieda, K. N., Salloum, S. J., Hu, S., Sweeny, S., Lane, J., & Torphy, K. (2020). Issues with, and insights for, large-scale studies of classroom mathematical instruction. *The Journal of Classroom Interaction*, *55*(1), 41-63.

Bieda, K. N., & Staples, M. (2020). Justification as an equity practice. *Mathematics Teacher: Learning and Teaching PK-12*, *113*(2), 102-108.

Bieda, K. N., Visnawathan, A., McCrory, R., & Sikorskii, P. (2020). The UTE model: Enhancing learning in developmental mathematics and preparing mathematics teachers of the future. *PRIMUS*, *30*(7), 750-761.

Cirillo, M., LaRochelle, R., Arbaugh, F., & Bieda, K. N. (2020). An innovative early field experience for secondary teachers: Early results from shifting to an online model. *Journal of Technology and Teacher Education*, *28*(2), 353-363.

Frank, K. A., Kim, J., Salloum, S. J., Bieda, K. N., & Youngs, P. (2020). From interpretation to instructional practice: A network study of early-career teachers' sensemaking in the era of accountability pressures and Common Core State Standards. *American Educational Research Journal*, DOI: 0002831220911065.

Bieda, K. & Huhn, C. (2017). Investigating problem-solving perseverance through lesson study. *Mathematics Teacher, 111*(3), 207-212. DOI: 10.5951/mathteacher.111.3.0207 (*Focus Issue on Perseverance when Problem Solving)*

Bieda, K., Sela, H., & Chazan, D. (2015). "You are learning very well my dear": How student teaching influences intern teachers' talk about teaching. *Journal of Teacher Education, 66*(2), 150-169. DOI: 10.1177/0022487114560645

Bieda, K., Cavanna, J., & Ji, X. (2015). Enhancing learning in field experiences through mentor- guided lesson study. *Mathematics Teacher Educator, 4*(1), 20-31. DOI: 10.5951/mathteaceduc.4.1.0020

Bieda, K., & Lepak, J. (2014). Show and tell: Middle school students' evaluations of mathematical arguments. *School Science and Mathematics, 114,* 166-177. DOI: 10.1111/ssm.12066

Bieda, K., Ji, X., Drwencke, J., & Picard, A. (2014). Reasoning-and-proving opportunities in elementary mathematics textbooks. *International Journal for Education Research, 64,* 71- 80. DOI: 10.1016/j.ijer.2013.06.005

Herbel-Eisenmann, B., Bartell, T., Bieda, K., Crespo, S., Dominguez, H., Drake. C., & Breyfogle,M.L. (2013). Strong is the silence: Challenging systems of privilege and oppression in mathematics teacher education. *Journal for Urban Mathematics Education, 6*(1), 6-18.

Bieda, K., & Lepak, J. (2012). Examples as tools for constructing justifications. *Mathematics Teaching in the Middle School, 17*, 520-523. DOI: 10.1111/ssm.12066

Bieda, K. (2010). Enacting proof in middle school mathematics: Challenges and opportunities. *Journal for Research in Mathematics Education, 41*, 351-382.

Bieda, K. (2010). The whole is the sum of its parts. *Mathematics Teaching in the Middle School, 15*, 540-546.

Knuth, E., Choppin, J., & Bieda, K. (2009). Proof: Examples and beyond. *Mathematics Teaching in the Middle School, 15*, 206-211.

Bieda, K., & Nathan, M. (2009). Representational disfluency in algebra: Evidence from student gestures and speech. *ZDM – An international journal of mathematics education, 41*, 637- 650.

***Books***

Bieda, K., Conner, A., Kosko, K. & Staples, M. (Eds). (2022). *Conceptions and consequences of mathematical argumentation, justification, and proof.* Springer. All co-editors contributed equally.

Koestler, C., Felton, M., Bieda, K., & Otten, S. (2013). *Connecting the NCTM process standards with the Common Core State Standards for mathematical practice.* NCTM. Note: All authors contributed equally.

Ellis, A., Bieda, K., & Knuth, E. (2012). *Essential understandings for proof and proving in 9-12 mathematics.* NCTM.

***Book Chapters***

Kosko, K. & Bieda, K. (2022). Conclusion: Considering the consequences of our definitions of argumentation, justification, and proof. In K. Bieda, A. Conner, K. Kosko & M. Staples (Eds.), *Conceptions and Consequences of Mathematical Argumentation, Justification and Proof* (pp. 313-323). Springer.

Ellis, A., Staples, M. & Bieda, K. (2022). Justification across the grade bands. In K. Bieda, A. Conner, K. Kosko & M. Staples (Eds.), *Conceptions and Consequences of Mathematical Argumentation, Justification, and Proof* (pp.287-296). Springer.

Posey, L., Bieda, K., Mosley, P., Fessler, C. & Küchle, V. (2019). Mathematical knowledge for teaching in chemistry: Identifying opportunities to advance instruction. In M. Towns (Ed.) *Symposium Series for the American Chemical Society* (pp. 135-155). American Chemical Society.

Bieda, K. (2016). Understanding white privilege: When a good task is not enough. In D. White, S. Crespo & M. Civil (Eds.), *Cases for Mathematics Teacher Educators: Facilitating Conversations about Inequities in Mathematics Education* (pp. 39-46). Information Age Publishers.

Stylianides, A. J., Bieda, K. N., & Morselli, F. (2016). Proof and argumentation in mathematics education research. In A. Gutiérrez, G. Leder & P. Boero, *The Second Handbook of Research on the Psychology of Mathematics Education* (pp. 315-351). Sense Publishers.

Knuth, E., Choppin, J., & Bieda, K. (2009). Middle school students' production of mathematical justifications. In D. Stylianou, E. Knuth, & M. Blanton (Eds.), *Teaching and Learning Proof Across the Grades* (pp. 153-170). Erlbaum.

***Works Submitted or Under Review***

Bieda, K., Luczak, R., Orr, S., Arbaugh, F. & Cirillo, M. (Under review). Preservice teachers' navigation of instructional dilemmas in whole-class discussions during an early field experience. Submitted to *Journal for Research in Mathematics Education.*

Bieda, K., Going, T., Kursav, M., Edson, AJ., Phillips, E. (Revise and resubmit). Productive disciplinary engagement in technologically-enhanced mathematics classrooms. Submitted to *Cognition and Instruction.*

Lilly, S., Bieda, K. & Youngs, P. (Revision under review). How early career elementary teachers with different ratings of mathematics instructional quality vary in planning and enacting mathematics instruction. Submitted to *Journal for Mathematics Teacher Education.*

Orr, S., & Bieda, K. (Revise and resubmit). Eliciting student thinking: The relationship between PSTs planning and enacting of eliciting practices. Submitted to *Journal for Mathematics Teacher Education.*

***Refereed Conference Proceedings***

Arbaugh, F., LaRochelle, R., Do, S., Cunningham, A., & Voogt, K., Cirillo, M., & Bieda, K. N. (2020). Real-time coaching with secondary preservice teachers: The practices of mathematics teacher educators. In A.I. Sacristán, J.C. Cortés-Zavala, & P.M. Ruiz-Arias (Eds.), *Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1567-1571). Mazatlán, Sinaloa, Mexico: Cinvestav/AMIUTEM/PME-NA.

Cirillo, M. & Bieda, K. (2020). Conceptions and consequences of what we call argumentation, justification and proof. In A.I. Sacristán, J.C. Cortés-Zavala, & P.M. Ruiz-Arias (Eds.), *Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 156-158). Mazatlán, Sinaloa, Mexico: Cinvestav/AMIUTEM/PME-NA.

Gregg, J., LaRochelle, R., Cunningham, A., Do, S., Bieda, K., & Arbaugh, F. (2020). The UTE Model: Animating Pre-Service Teachers' Visions for Student Engagement. In A. I. Sacristán, J. C. Cortés-Zavala, & P. M. Ruiz-Arias (Eds.), *Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1718-1719). Mazatlán, Sinaloa, Mexico: Cinvestav/AMIUTEM/PME-NA.

Orr, S. & Bieda, K. N. (2020). Preparing to elicit student thinking: Supporting PST questioning in an university teaching experience. In A. I. Sacristán, J. C. Cortés-Zavala, & P. M. Ruiz-Arias (Eds.), *Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1672-1676). Mazatlán, Sinaloa, Mexico: Cinvestav/AMIUTEM/PME-NA.

Bieda, K., Arbaugh, F. & Cirillo, M. (2019). The UTE model: Developing pre-service teachers' visions of high-quality mathematics instruction. In S.Otten, A.G.Candela, Z. de Araujo, C. Haines & C. Munter (Eds.), *Proceedings of the 41st annual conference for the North American chapter of the International Group for the Psychology of Mathematics Education conference* (p. 1376). St. Louis, MO: University of Missouri.

Bieda, K. & Voogt, K. (2019). Mathematical errors when teaching: A case of secondary mathematics prospective teachers' early field experiences. Published in A. Weinberg, D. Moore-Russo, H. Soto & M. Wawro (Eds)., *Proceedings of the 22nd Annual Conference on Research in Undergraduate Education* (p. 859-865). Oklahoma City, Oklahoma.

Edson, AJ, Phillips, E.D., & Bieda, K. (2018). Transitioning a problem-based curriculum from print to digital: New considerations for task design. In H-G

Weigand, A. Clark-Wilson, A. Donevska-Todorova, E. Faggiano, N. Gronbaek & A. Trgalova (Eds.), *Proceedings of the Fifth ERME Topic Study on Mathematics in the Digital Age* (p. 59-67). Copenhagen, Denmark: University of Copenhagen.

Going, T., Kursav, M., Slanger-Grant, Y., Bieda, K., Edson, AJ. (2018). Understanding the nature of uncertainty in problem solving situations. In Hodges, T.E., Roy, G.J., & Tyminski, A.M. (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, SC: University of South Carolina & Clemson University.

Conner, AM., Gomez, C., Park, H., Foster, J., Zhuang, Y., Staples, M., Cirillo, M., Bieda, K., & Newton, J. (2018). Conceptions and consequences of what we call argumentation, justification, and proof. In Hodges, T.E., Roy, G.J., & Tyminski, A.M. (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1402-1411*).* Greenville, SC: University of South Carolina & Clemson University.

Bieda, K., Dillman, B., Gundlach, M. & Voogt, K. (2017). Supporting learning to teach in early field experiences: The UTE model. In E. Galindo and J. Newton (Eds.) *Proceedings of the 39th annual meeting of the North American Chapter of the Psychology of Mathematics Education* (pp. 853-861), Indianapolis, IN.

Bieda, K., Opperman, A., Lane, J., Jansen, K., Hu, S. & Ellefson, N. (2017). Mathematics lesson planning practices of novice elementary teachers. In E. Galindo and J. Newton (Eds.), *Proceedings of the 39th annual meeting of the North American Chapter of the Psychology of Mathematics Education* (pp. 1234-1238), Indianapolis, IN.

Conner, A., Kosko, K., Staples, M., Cirillo, M. Bieda, K. & Newton, J. (2017). Conceptions and consequences of what we call argumentation, justification and proof. In E. Galindo and J. Newton (Eds.), *Proceedings of the 39th annual meeting of the North American Chapter of the Psychology of Mathematics Education* (pp. 1464-1474). Indianapolis, IN.

Staples, M., Newton, J., Kosko, K., Conner, A., Cirillo, M. & Bieda, K. (2016). Conceptions and consequences of what we call argumentation, justification, and proof. In *Proceedings of the 38th annual meeting of the North American Chapter of the Psychology of Mathematics Education* (pp. 1704-1712). Tucson, AZ.

Cirillo, M., Kosko, K., Newton, J., Staples, M., Weber, K., Bieda, K., Mejía-Ramos, P., Otten, S., Creager, M. & Hummer, J. (2015). Conceptions and consequences of what we call argumentation, justification, and proof. In *Proceedings of the 37th*

*annual meeting of the North American Chapter of the Psychology of Mathematics Education* (pp. 1343-1351). East Lansing, MI.

Bradfield, K., McCrory, R., Viswanathan, A. & Bieda, K. (2015). Learning in one classroom: Developmental mathematics students and prospective mathematics teachers (pp. 388- 391). In T. Fukawa-Connelly, N. Infante, K. Keene & M. Zandieh (Eds.), *Electronic Proceedings of the 18th Annual Conference on Research in Undergraduate Mathematics Education,* Pittsburgh, PA.

Bieda, K., McCrory, R. & Wolf, S. (2014). Transforming remedial mathematics instruction with high-quality peer teaching.(pp.402-407). In T. Fukawa-Connelly, G. Karakok, K. Keene, and M. Zandieh (Eds.), *Electronic Proceedings of the 17th Annual Conference on Research in Undergraduate Mathematics Education*, Denver, CO.

Bieda, K., Wolf, S., & McCrory, R. (2013). One solution to two problems: Teacher education students as teachers of undergraduate developmental mathematics. In A. Castro Superfine & M. Martinez (Eds.), *Proceedings of the 25th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 737-740). Chicago, IL: University of Illinois at Chicago.

Bieda, K., Cavanna, J., & Ji, X. (2013). Developing mathematical knowledge for teaching through mentor-guided lesson study. In A. Castro Superfine & M. Martinez (Eds.), *Proceedings of the 25th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 589-596). Chicago, IL: University of Illinois at Chicago.

Bieda, K., & Ji, X. (2012). Prospective teachers' mathematical knowledge for teaching algebra and geometry. In L. Van Zoest, J.J. Lo, & J. Kratky (Eds.), *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp 781-782). Kalamazoo, MI: Western Michigan University.

Bieda, K., Drwencke, J., & Picard, A. (2010). Proof is in the eye of the beholder: Middle school students' conceptions of convincing arguments. In P. Brosnan, D. Erchick, & L. Flevares (Eds.), *Proceedings of the 32nd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. VI, pp. 880-881). Columbus, Ohio: The Ohio State University.

Bieda, K. (2009). Enacting proof in middle school mathematics. In F.L. Lin, F.J. Hsieh, G. Hanna, & M. deVilliers (Eds.), *Proceedings of the ICMI Study 19 conference:*

*Proof and proving in mathematics education* (Vol. 1, pp. 65-70). Taipei, Taiwan: National Taiwan Normal University.

Bieda, K., Holden, C., & Knuth, E. (2006). Does proof prove?: Students' emerging beliefs about generality and proof in middle school. In S. Alatorre, J.L. Cortina, M. Sáiz, & A. Méndez (Eds.), *Proceedings of the 28th Annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 395-402). Mérida, México: Universidad Pedagógica Nacional.

Bieda, K., & Nathan, M. (2006). Speech and gesture in pattern generalization tasks involving graphs: Evidence that perceptions influence conceptions. In S. Alatorre, J.L. Cortina, M. Sáiz, & A. Méndez (Eds.), *Proceedings of the 28th Annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 139-142). Mérida, México: Universidad Pedagógica Nacional.

Hostetter, A., Bieda, K., Alibali, M., Nathan, M., & Knuth, E. (2006). Don't just tell them, show them! Teachers can intentionally alter their instructional gestures. In R. Sun & N. Miyake (Eds.), *Proceedings of the 28th Annual Conference of the Cognitive Science Society* (pp.1523-1528). Vancouver, British Columbia: Cognitive Science Society.

***Invited Book Reviews***

Bieda, K., Byun, S., Going, T. & Orr. S. (2020). Becoming a metacognitive teacher: A guide for early and preservice teachers. *Teachers College Record*, Date Published: October 19, 2020. https://www.tcrecord.org ID Number: 23471, Date Accessed: 2/18/2021 10:24:36 AM

***Outreach, Non-refereed Publications***

Bieda, K., Bowers, D., Küchle, V. (2019). The genre(s) of argumentation in school mathematics. *Michigan Reading Journal, 51*(2), 41-52.

Rubenstein, R. N., & Bieda, K. (2014). Lesson study: A format for on-going professional development. *Newsletter of the Michigan Mathematical Association of Two-Year Colleges.*

**Editorials**

Crespo, S. & Bieda, K. (2018). Developing a reading habit: Preparing for and contributing to a research community. *Mathematics Teacher Educator,* 7(1), 3-7.

Bieda, K. & Crespo, S. (2018). What's your evidence? Making evidence-based claims and why this matters. *Mathematics Teacher Educator, 6*(2), 4-7.

Crespo, S., Martínez, J., Dubbs, C. & Bieda, K. (2017). Too little, too much, just right!

Articulating shared problems in the practice of mathematics teacher educators. *Mathematics Teacher Educator, 6*(1), 3-8.

Crespo, S. & Bieda, K. (2017). So you want to be an MTE author? A tool for writing your next MTE manuscript. *Mathematics Teacher Educator, 5*(2), 85-93.

Bieda, K. (2016). Taking stock: MTE's contribution to building a knowledge base for the practice of mathematics teacher education. *Mathematics Teacher Educator, 5*(1), 3-7.

***Commissioned Papers***

Youngs, P., Kim, J. & Bieda, K. (2019). Teacher induction programs associated with retention in the STEM teaching workforce. American Association for the Advancement of Science – Advancing Research & Innovation in the STEM Education of Pre-Service Teachers in High Needs School Districts Commissioned Paper Series. Available online at https://aaas-arise.org/commissioned-papers/

***Reports and White Papers***

Cirillo, M., Kosko, K. W., Newton, J., Staples, M., Weber, K., Bieda, K., Conner, A-M., Mejia- Ramos, P., Otten, S., Creager, M., Hummer, J., Singh, R. & Strachota, S. (2016). *Conceptions and Consequences of What We Call Argumentation, Justification, and Proof.* Retrieved November 1, 2016 from https://www.researchgate.net/profile/Karl_Kosko/publication/300088457_White_Paper_2016_Conceptions_and_Consequences_of_What_We_Call_Argumentation_Justification_ and_Proof/links/5709162d08ae2eb9421e2a8e.pdf.

Nathan, M., & Bieda, K. (2006). *What gesture and speech reveal about students' interpretations of Cartesian graphs: Perceptions can bound thinking*. WCER Working Paper No. 2006 – 2. Madison, WI: Wisconsin Center for Education Research.

## PRESENTATIONS

***Peer-Reviewed Scholarly Presentations***

2022 **Conceptions and consequences of what we call argumentation, justification, and proof: Interrogating our frameworks.** Working Group with A. Conner, M. Cirillo, K. Kosko, and M. Staples accepted for presentation at the 43rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Nashville, TN.

**Learning to elicit student thinking in an early field experience.** Presented with B. Tyburski at the 2022 Meeting of the Association of Mathematics Teacher Educators. Henderson, NV.

**Supporting preservice teachers in attending to relational and disciplinary aspects of teaching in lesson plans**. Presented with S. Orr and R. Luczak at the 2022 Meeting of the Association of Mathematics Teacher Educators. Henderson, NV.

2021 **Understanding preservice teachers' (PSTs') attention to disciplinary and interpersonal obligations while navigating classroom dilemmas in early field placements.** Paper presented with R. Luczak and S. Orr in symposium session at the 2021 Annual Meeting of the American Education Research Association, virtual presentation.

**Preservice teachers and the obligations of mathematics teaching: Exploring a promising model of teacher education**. Paper presented with N. Ortiz in symposium session at the 2021 Annual Meeting of the American Education Research Association, virtual presentation.

**Exploring early career teachers' use of supplemental materials in mathematics instruction.** Paper presented with S. Salloum in symposium session at the 2021 Annual Meeting of the American Education Research Association, virtual presentation.

2020 **Real-time coaching with secondary preservice teachers: The practices of mathematics teacher educators.** Brief Research Report presented with F. Arbaugh, R. LaRochelle, S. Do, A. Cunningham and M. Cirillo, for the 42nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Mazatlan, Sinaloa, MX. * Conference postponed to June 2021

**The UTE Model: Animating Pre-Service Teachers' Visions for Student Engagement.** Poster presented with J. Gregg, R. LaRochelle, A. Cunningham, S. Do, and F. Arbaugh at the 42nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Mazatlan, Sinaloa, MX. * Conference postponed to June 2021

**Preparing to elicit student thinking: Supporting PST questioning in a university teaching experience**. Brief Research Report presented with S. Orr at the 42nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education: Mazatlan, Sinaloa, MX. * Conference postponed to June 2021

**The university teaching experience: Cross-Institutional partnership to develop a new model of early field experience**. Session presented with K. Voogt, J. Gregg and S. Orr at the 2020 Michigan Association for Mathematics Teacher Educators Conversations among Colleagues Virtual Conference, Ann Arbor, MI.

**Real-time coaching during secondary PSTs' teaching episodes: The practices of mathematics teacher educators.** Presentation with F. Arbaugh, M. Cirillo, R. LaRochelle and S. Do at the Association of Mathematics Teacher Educators Annual Conference, Phoenix, AZ.

**Pre-service teachers' understandings of the professional obligations of mathematics teaching.** Session presented with N. Ortiz at the Association of Mathematics Teacher Educators Annual Conference, Phoenix, AZ.

Practicing purposeful questioning: Alignment between secondary prospective teachers' planned and enacted questions. Session presented with S. Orr at the Association of Mathematics Teacher Educators Annual Conference, Phoenix, AZ.

2019 **The UTE model: Developing pre-service teachers' visions of high-quality mathematics instruction**. Poster presentation with M. Cirillo, F. Arbaugh, J. Gregg and R. LaRochelle at the 41st annual conference for the North American chapter of the International Group for the Psychology of Mathematics Education conference, St. Louis, MO.

**Mathematical errors when teaching: A case of secondary mathematics prospective teachers' early field experiences.** Research report session with K. Voogt at the 22nd Annual Conference on Research in Undergraduate Education, Oklahoma City, Oklahoma.

2018 **Transitioning a problem-based curriculum from print to digital: New considerations for task design.** Presenter with A.J. Edson and B. Phillips at ERME Topic Study on Mathematics in the Digital Age, Copenhagen, Denmark.

**ECTs' mathematics lesson planning practices: Unpacking the teacher-intended curriculum.** Chair and presenter in symposium at the annual meeting of the American Educational Research Association, New York City, NY.

2017 **Supporting learning to teach in early field experiences: The UTE model.** Lead presenter in paper session with B. Dillman and K. Voogt at the Psychology of Mathematics Education – North American chapter conference, Indianapolis, IN.

**Mathematics lesson planning practices of novice elementary teachers.** Presented with A. Opperman in Brief Research Report session at the Psychology of Mathematics Education – North American chapter conference, Indianapolis, IN.

**The ICALC2 project: Integrating chemistry and algebra in college courses**. Poster presentation for the Transforming Research on Undergraduate STEM Education conference, Minneapolis, MN.

2016 ***Supporting prospective secondary teachers' understanding of the Common Core Standards for Mathematical Practice.*** Lead presenter in session with L. Males, O. Buchbinder, and S. Otten at annual conference of the Association for Mathematics Teacher Educators, Irvine, CA.

***Conceptions and consequences of what we call justification, argumentation, and proof.*** Co-organizer of working group on justification, argumentation and proof in K-16 education research, annual conference for the North American chapter of the International Group for the Psychology of Mathematics Education, Tucson, AZ.

***Capturing early career teachers' enactment of ambitious practice at scale.*** Paper co-authored with S. Salloum, S. Sweeny, S. Hu, J. Lane and K. Torphy in symposium presented at the annual conference of the American Education Research Association, Washington, DC.

2015 ***Using the LessonSketch platform to infuse a practice-based orientation throughout our university-based teacher education programs.*** Session with D. Chazan, J. Amidon, E. Alibegovic, J. Walkoe and B. Zahner at annual conference of the Association for Mathematics Teacher Educators, Orlando, FL.

2014 ***An overview of lesson study: Ongoing work on instruction.*** Workshop co-presentation with. J. Lewis presented at the 2014 Michigan Council for Teachers of Mathematics, Holland, MI.

***Transforming remedial mathematics instruction with high-quality peer teaching.*** Paper presented at the 2014 Research on Undergraduate Mathematics Education conference, Denver, CO.

***Using rich media to infuse a practice-based orientation throughout our university-based teacher education programs.*** Co-presented discussion session with E. Alibegovic, D. Chazan and L. Clark at the Association of Mathematics Teacher Educators conference, Irvine, CA.

***Cases for teacher educators: Facilitating conversations with prospective teachers about inequities in mathematics classrooms.*** Co-presented with J. Aguirre, M. Civil, S. Crespo, M. Felton-Koestler, J. Spencer, and D. White at the Association of Mathematics Teacher Educators conference, Irvine, CA.

2013 ***One solution to two problems: Teacher education students as teachers of undergraduate developmental mathematics.*** Paper presented at the annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.

***Developing mathematical knowledge for teaching through mentor-guided lesson study.*** Paper presented at the annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.

***Lesson study as a means of building capacity for implementing the Common Core State Standards for mathematical practice.*** Paper presented at the annual meeting of the World Association for Lesson Studies conference, Gothenburg, Sweden.

***Mentor-guided lesson study: Voices from the field.*** Paper presented at the annual meeting of the National Council for Teachers of Mathematics, Denver, CO.

***Exploring the Common Core practices in secondary classrooms.*** Paper presented at the annual meeting of the National Council for Teachers of Mathematics, Denver, CO.

***Innovations in MTH 100E.*** Presentation for CREATE for STEM at Michigan State University, East Lansing, MI.

2012 ***Prospective teachers' mathematical knowledge for teaching algebra and geometry.*** Poster presented at the annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

***Mentor-guided lesson study in secondary mathematics teacher preparation.*** Symposium chair and presenter at the World Association of Lesson Studies conference, Singapore.

***Investigations into Common Core State Standards for Mathematics (CCSSM).*** Interactive paper session presentation at the National Council of Teachers of Mathematics Research Pre-session, Philadelphia, PA.

***Reasoning and proving in mathematics textbooks across the grades.*** Symposium organizer and presenter at the annual meeting of the American Educational Research Association, Vancouver, British Columbia.

***Collaboration during mentor-guided lesson study: Mentors and interns sharing mathematical knowledge for teaching.*** Paper presentation at the

annual meeting of the American Educational Research Association, Vancouver, British Columbia.

2011 ***Comparing intern and mentor teachers' arguments about teaching algebra.*** Poster presented at the 2011 Representations of Mathematics Teaching conference, Ann Arbor, MI.

***Toward a practice-based focus on the teaching of reasoning and proof.*** Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

***Analyzing teacher discussions about representations of teaching.*** Symposium participant at the National Council for Teachers of Mathematics Research Pre- session, Indianapolis, IN.

***Collaborative lesson study in early field experiences***. Paper presentation at the annual meeting of the Association for Mathematics Teacher Educators, Irvine, CA.

2010 ***Proof is in the eye of the beholder: Students' use of examples when producing mathematical justifications***. Presented at the 32nd Annual conference for the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH.

***Students' use of givens when proving: Context matters.*** Roundtable presentation at the NCTM Research Pre-session, San Diego, CA.

2009 ***Enacting proof in middle school mathematics.*** Paper presentation at ICMI Study 19: Proving and Proving in Mathematics Education, Taipei, Taiwan.

***Proof in secondary mathematics classrooms.*** Presenter in symposium as at the National Council of Teachers of Mathematics Research Pre-session, Washington, D.C.

***Understanding norms of teaching solving equation through comparisons of interns' and mentors' talk about practice.*** Paper presentation at the annual meeting of the American Educational Research Association conference, San Diego, CA.

2008 ***Justifying and proving in the middle school mathematics classroom: A study of the intended and enacted curriculum.*** Paper discussion at the annual meeting of the American Educational Research Association conference, New York City, NY.

2007 ***Going beyond: What gesture shows us about students' notions of graphs.*** Poster presentation at the International Society for Gesture Studies conference, Northwestern University, Evanston, IL.

***Using Transana in gesture studies.*** Data Session co-presentation with D. Woods for the International Society for Gesture Studies conference, Northwestern University, Evanston, IL.

2006 ***Does proof prove?: Students' emerging beliefs about generality and proof in middle school.*** Paper co-presentation for the North American Chapter of the International Group for the Psychology of Mathematics Education conference, Mérida, Yucatan, Mexico.

***Speech and gesture in pattern generalization tasks involving graphs: Evidence that perceptions influence conceptions.*** Paper presentation for the North American Chapter of the International Group for the Psychology of Mathematics Education conference, Mérida, Yucatan, Mexico.

***Invited, Non-Refereed Presentations***

2021 ***How much uncertainty should novice teachers grapple with?*** Virtual talk presented for the University of Georgia Mathematics Education Student Association colloquium.

***The good, the bad, and the satisficed: Orchestrating observations to measure quality of mathematics teaching practice at scale.*** Virtual talk presented with Dr. Serena Salloum as part of the Quality in Nordic Teaching Observation Seminar hosted by the University of Oslo.

2020 ***MathEd (mathed.podomatic.com) Podcast Episode 2007.*** Invited guest on the MathEd Podcast to discuss the paper "An innovative early field experience for secondary teachers: Early results from shifting to an online model" published in *Journal of Technology and Teacher Education.*

***Productive Disciplinary Engagement: A Framework to Support Equitable Opportunities to Learn Challenging Mathematics.*** Presentation for Teachers' Development Group Seminar, Portland, OR, March 2020.

2018 ***Supporting Early Career Elementary Teachers' Enactment of Ambitious Mathematics Practice.*** Plenary for the Michigan Association of Mathematics Teacher Educators, Ypsilanti, MI, March 2018.

2018 ***Supporting Novice Teachers to Enact Ambitious Mathematics Instruction: The Role of School-Based Social Networks.*** Session

presenter for Teachers Development Group Leadership Seminar, Portland, OR, March 2018.

2017 ***Materials for Practice-Based Teacher Education.*** Invited panelist for Association of Mathematics Teacher Educators webinar, October 2017.

2017 ***CCSS & Next Generation Science Standards: Synergy and Intersections in Middle Grades Mathematics.*** Co-presented workshop with Dr. Joseph Krajcik, Michigan Council for Teachers of Mathematics conference, Traverse City, MI, July 2017.

2017 ***CCSS & Next Generation Science Standards: Synergy and Intersections in Middle Grades Mathematics.*** Co-presented pre-conference institute with Dr. Joseph Krajcik, Michigan Council for Teachers of Mathematics conference, Traverse City, MI, July 2017.

2017 ***Engaging Students in Justification Is Teaching for Equity!*** Plenary talk at Teachers' Development Group Seminar, Portland, OR, January 2017.

2016 ***Early Field Experiences That Prepare Teachers for the Demands of Teaching Math in Schools***. Invited speaker for mathematics education seminar series, University of Delaware, September 2016.

2016 ***Early Field Experiences That Prepare Teachers for the Demands of Teaching Math in Schools***. Invited speaker for Co-Integrate mathematics education seminar series, Michigan State University, October 2016.

2016 ***Early Field Experiences That Prepare Teachers for the Demands of Teaching Math in Schools***. Invited speaker for mathematics education seminar series, Washington State University, October 2016.

2015 ***Conceptions and Consequences of What We Call Justification, Argumentation, and Proof.*** Invited panelist for working group on justification, argumentation and proof in K-16 education research, annual conference for the North American chapter of the International Group for the Psychology of Mathematics Education, East Lansing, MI.

2015 ***MathEd (mathed.podomatic.com) Podcast Episode 1511***. Invited guest on the MathEd Podcast to discuss my paper "You are learning well my dear: Shifts in novice teachers' talk about teaching during their internship" published in *Journal of Teacher Education.*

2013 ***Bringing the standards for mathematical practice to life: Strategies for the mathematics classroom***. Invited speaker for pre-conference institute at

the annual conference for the Michigan Council of Teachers of Mathematics, Traverse City, MI.

2013 ***Transforming teaching and learning through lesson study: Innovation through collaboration.*** Invited speaker for the MSU Lilly Teaching Seminar Series, Michigan State University, East Lansing, MI.

2011 ***Enacting the standards for mathematical practice from the Common Core State Standards: Challenges and opportunities.*** Invited speaker for the Maseeh Colloquium Series, Portland State University, Portland, OR.

2010 ***The power of proof.*** Detroit Area Council of Teachers of Mathematics Fall Conference, Detroit, MI.

2009 ***Developing student reasoning using CMP***. CMP Users' Conference. Michigan State University, East Lansing, MI.

## HONORS AND AWARDS

2022 **MSU College of Education Summer Research Enhancement Award,** $1,027

2019 **Equity and Inquiry Fellow, NSF-funded Center for Equity and Inquiry in Mathematics**

2018 **Michigan State University Graduate Mentoring Award nominee**
2019 - Nominated two years in a row

2014 **Michigan State University Teacher-Scholar Award**
2013 **AERA Special Interest Group for Research in Mathematics Education Early Career Publication Award**

2012 **Michigan State University International Travel Award**

2011 **Michigan State University Lilly Teaching Fellow**

2009 **Michigan State University International Travel Award**

2005 **Wisconsin Doctoral Research Program Fellow**

## TEACHING

***Courses***

TE 407 Teaching Mathematics to Diverse Learners (FS 2008-2009, FS 2011, FS 2013, FS 2018-2019)
TE 408 Crafting Teaching Practice (SS 2010, SS 2012, SS 2014)

| | |
|---|---|
| TE 501 | Internship in Teaching Diverse Learners I (FS 2015) |
| TE 502 | Internship in Teaching Diverse Learners II (SS 2016) |
| TE 802 | Reflection and Inquiry in Teaching Practice I (FS 2010, FS 2012, FS 2021) |
| TE 804 | Reflection and Inquiry in Teaching Practice II (SS 2011, SS 2013, SS 2022) |
| TE 855 | Teaching School Mathematics (FS 2008, FS 2010, FS 2020) |
| TE 857 | Teaching Mathematical Problem Solving (SS 2022) |
| TE 921 | Learning to Teach (FS 2021) |
| MTHE 840 | Critical Content of School Mathematics: Number and Operations (SS 2009) |
| MTHE 841 | Critical Content of School Mathematics: Algebra (SS 2010, SS 2013) |
| MTHE 927 | Proseminar in Mathematics Education II (SS 2021) |
| MTHE 954 | Design of Research in Mathematics Education (FS 2017, FS 2019) |
| SME 997 | Topics in Mathematics Education: Teaching and Learning Reasoning and Proof (SS 2011, Summer 2018) |
| TE 990 | Independent Study (various semesters) |
| TE 994 | Laboratory and Field Experience in Curriculum, Instruction and Teacher Education (various semesters) |
| MTH 100E | Enrichment for Intermediate Algebra (SS 2014). |
| MTH 103A | College Algebra I (FS 2019) |

***Non-credit Teaching***

| | |
|---|---|
| 2016 | College of Education Early Start Scholars Mathematics Intensive |

## SERVICE

***Journal Editorship***

| | |
|---|---|
| 2014 – 2018 | *Co-editor, Mathematics Teacher Educator.* Online journal jointly published by NCTM and AMTE. |

***Elected and Appointed Office***

| | |
|---|---|
| 2022 – 2025 | *President-Elect*, Michigan Association of Mathematics Teacher Educators |
| 2019 – 2022 | *Member, Professional Development Committee,* Association of Mathematics Teacher Educators |
| 2016 – 2019 | *Member at Large,* Board of the Michigan Association of Mathematics Teacher Educators |
| 2013 – 2015 | *Electronics Board member*, AERA Special Interest Group for Research in Mathematics Education |
| 2012 - 2015 | *Steering Committee at-large member*, North American Chapter of the Psychology of Mathematics Education Group |

***Advisory***

2021 Mentor, Professional Future Faculty Program, University of Nebraska – Lincoln

2020 – 2023 Advisory board member, *Investigation of Beginning Teachers' Expertise to Teach Mathematics via Reasoning and Proof.* Funded by the NSF CAREER program to O. Buchbinder (University of New Hampshire)

2019 - 2023 Advisory board member, *Visualizing Teaching*. Funded by the NSF DRK-12 program. PIs, T. Lara-Meloy, J. Knudsen, K. Rafanan, and H.Stevens, TERC, Cambridge, MA

2016 – 2020 Advisory board member, *Gestures and Mathematical Proof Practices project*. Funded by IES to M. Nathan (University of Wisconsin), M. Alibali (University of Wisconsin), C. Walkington (Southern Methodist University), P. Steiner (University of Wisconsin)

2014 – 2018 Advisory board member, *Preparing Urban Middle Grades Mathematics Teachers to Teach Argumentation Throughout the School Year: Bridging from Workshop to School,* funded by NSF DRK-12 program., PIs J. Knudsen, N. Schectman, T. Lara-Meloy and H. Stevens, SRI International, Inc., Menlo Park, CA

2015 – 2016 External faculty mentor, Shiv Karunakaran. *Funded by External Faculty Mentor Fellowship from Western Washington University*

***Consultant***

2022 Reviewer, Michigan Department of Education program applications

2019 American Association for the Advancement of Science working group participant on teacher retention in high needs-schools

2015 Mathematics education presenter, MSU University Connect program for visiting Indonesian teacher educators. Funded by USAid.

2015 Knowledgeable Other, lesson study with mathematics teachers at Troy High School, Troy, MI.

2015 Mathematics Education consultant, Common Core Standards meeting hosted by Dr. William Schmidt, San Diego, CA.

2012 *NEA grant: Building Capacity through Lesson Study to Support Students in Persevering during Problem Solving*. Wrote the grant proposal and

served as a consultant for lesson studies with teachers from Holt Public Schools during the project's duration.

2010 *EMATHS Lesson Study project*. Served as a knowledgeable other on a lesson study team with algebra teachers from Holt High School

***Discussant***

2013 Symposium entitled: *What do elementary preservice teachers notice and discuss in one-cycle lesson study?*
AMTE Conference, Orlando, FL

2012 Symposium entitled: *The notion of proof in mathematics teaching: Is it changing?*
NCTM Research Pre-session, Philadelphia, PA

2011 Paper session entitled: *Sequences and transitions in grades K–12 geometry textbooks*
NCTM Research Pre-session, Indianapolis, IN

2009 Paper session entitled: *Mathematical cognition and the curriculum*
AERA Annual Meeting, San Diego, CA

***Invited Panelist***

2017 What's the M in STEM Education?
Michigan Council for Teachers of Mathematics annual conference, July 2017

2015 *Literacy Across the Disciplines*
MSU Language and Literacy Colloquy, November 2015

2015 *Mentoring Strategies for Graduate Students discussion table panelist,*
AMTE conference, Orlando, FL

2014 MSU Office of Sponsored Research Research "Coffee Break" panelist: *Going to Washington to Meet with Federal Funding Agencies.*
East Lansing, MI

2014 Panel session entitled: *Graduate student and junior faculty mentoring*
NCTM Research Conference, New Orleans, LA

2013 Discussion table entitled: *Professional development addressing the mathematical practices of the common core: Focus on the middle-school grade bands*
AMTE conference, Orlando, FL

2012 Panel session entitled: *Graduate student and junior faculty mentoring*
NCTM Research Pre-session, Philadelphia, PA

2011 Journal for Research in Mathematics Education session
entitled*: From dissertation to JRME publication*
NCTM Research Pre-session, Indianapolis, IN

2009 Panel session entitled: *Graduate student and junior faculty mentoring*
NCTM Research Pre-session, Washington, DC

***University Service – Committees***

2021-2022 Department of Teacher Education ICEC Committee, Recorder
Department of Teacher Education CAEP Site Visit and Self-Study Report Writing Team
PrIME Executive Committee
College of Education Faculty Advisory Committee (elected; unable to serve in 2020-2021 due to scheduling conflict with UCFA)
University Council on Faculty Affairs
Secondary Mathematics Licensure Area Leader

2020-2021 PriME Homeroom: Bi-weekly seminar to support PriME graduate students and early career faculty in navigating life and work in academia
PriME Executive Committee
Department of Teacher Education CAEP Self-Study Report Writing Team
Department of Teacher Education Michigan Department of Education Accreditation Report Writing Team
University Council on Faculty Affairs committee member
Secondary Mathematics Licensure Area Leader

2019-2020 PriME Homeroom: Bi-weekly seminar to support PriME graduate students and early career faculty in navigating life and work in academia
PriME Executive Committee
Department of Teacher Education Reappointment, Tenure and Promotion Committee – Tenure Review Sub-Committee
College of Education Faculty Advisory Committee (appointed)
Secondary Mathematics Licensure Area Leader

2018-2019 PriME Homeroom: Bi-weekly seminar to support PriME graduate students and early career faculty in navigating life and work in academia
PriME Executive Committee
Department of Teacher Education Reappointment, Tenure and

Promotion Committee – Tenure Review Sub-Committee
College of Education Undergraduate Scholarship Committee
Judge, MidSURE Undergraduate Research Symposium, MSU, July 2018

2017–2018 Department of Teacher Education Reappointment, Promotion and Tenure Committee – Tenure Review Sub-Committee
Department of Mathematics/ Program in Mathematics Education search committee member

2016-2017 College of Natural Science Global Impact Initiative Position Search Committee member. (During sabbatical year)

2014-2016 College of Education Undergraduate Student Success Task Force member.
Program in Mathematics Education (PrIME) Admissions Committee member. Secondary Mathematics Subject Area Leader (on leave October – December 2016).
Program in Mathematics Education Comprehensive Exams Committee (spring 2015 only)

2013-2014 Secondary Mathematics Subject Area Leader
PrIME Admissions Committee
Department of Teacher Education Mathematics Education Search Committee College of Education Undergraduate Scholarships Award Committee

2012-2013 Secondary Mathematics Subject Area Leader College of Education Curriculum Committee College of Education Faculty Advisory Committee
PrIME Admissions Committee
Department of Teacher Education Chinese/Second Language Education Search Committee

2011 - 2012 Secondary Mathematics Subject Area Co-leader
Department of Teacher Education Faculty Advisory Committee College of Education Curriculum Committee
PrIME Colloquium Committee

2010 - 2011 Secondary Mathematics Subject Area Co-leader
Department of Teacher Education Mathematics Education Search Committee Division of Science and Mathematics Education Colloquium Committee Woodrow Wilson/Kellogg Teaching Fellows Planning Committee
College of Education Undergraduate Scholarships Committee

| | |
|---|---|
| 2009 - 2010 | Co-chair, Teacher Preparation Task Force<br>Induction and Continuing Education (Master's Programs)<br>Committee Division of Science and Mathematics Education<br>Colloquium Committee |
| 2008 – 2009 | Department of Teacher Education Master's Programs<br>Committee Division of Science and Mathematics Education<br>Mathematics Education Graduate Admissions Committee<br>Division of Science and Mathematics Education Comprehensive<br>Exams Committee<br>College of Education Graduate Scholarships Committee |

***Funded Service Projects***

| | |
|---|---|
| 2015 | **Supporting diversity and inclusiveness in mathematics education.** (co-PI with T. Bartell, $3,500). MSU Creating Inclusive Excellence Grant. |
| 2012 | **Building capacity through lesson study to support students in persevering during problem solving**. (PI). Funded by NEA ($5,000) awarded to Holt Public Schools. |

***Tenure Review Requests***

| | |
|---|---|
| 2021 | University of Washington – Bothell, Boise State University |
| 2020 | University of Nebraska, University of Minnesota, Western Michigan University |

***Peer Reviewing***

*Cognition and Instruction*
*Educational Studies in Mathematics*
*Instructional Science*
*Journal for Research in Mathematics Education*
*Journal for Mathematics Teacher Education*
*Journal of Mathematical Behavior*
*Journal of Teacher Education*
*Mathematical Thinking and Learning*
*Mathematics Teacher*
*Mathematics Teacher Educator*
*School Science and Mathematics*
*Science*
Israel National Science Foundation
U.S. National Science Foundation DRK-12 program
U.S. National Science Foundation EHR CORE program
U.S. National Science Foundation CAREER program
AMTE

AERA
NCTM Research Conference
PME-NA

## ADVISING

***Advisees***

**As an advisor, I serve on the student's practicum and dissertation committees unless otherwise noted.*

Curriculum, Instruction, and Teacher Education
Amy Scheerhorn

Graduate Program in Mathematics Education
Ashley Fabry
Sunyoung Park
Brady Tyburski
Michael Quail
Jane Zimmerman
Taren Going (PhD, 2021)
- Post-Doctoral Researcher at Michigan State University

Amanda Opperman (M.S., 2019)
Nicholas Gilbertson (PhD, 2017)
- Assistant Professor at Winona State University

Jamie Wernet (PhD, 2015)
Jerilynn Lepak (PhD, 2013)
- Assistant Professor at Seattle Pacific University

***Dissertation Committees***

Curriculum, Instruction, and Teacher Education
Kenneth Bradfield
Jiwon Kim (PhD, 2020)
May Lee (PhD,2020)
Xueying Ji (PhD, 2016)

Graduate Program in Mathematics Education
Chuck Fessler
Jihye Hwang
Jon Gregg
Kevin Voogt (PhD, 2021)
Sunghwan Byun (PhD, 2021)
Michael Morrisette (PhD, 2020)
Darlene Kohrman (PhD, 2018)
Jennifer Nimtz (PhD, 2017)
Joanne Philhower (PhD, 2017)
Jillian Cavanna (PhD, 2016)

Funda Gonulates (PhD, 2016)
Jia He (PhD, 2015)
Sihua Hu (PhD, 2016)
Lorraine Males (PhD, 2012)
Amanda Milewski (PhD, 2012)
Samuel Otten (PhD, 2012)
Kimberly Rogers (PhD, 2012)

Educational Psychology and Educational Technology
Brittany Dillman (PhD, 2021)
Julie Nurnberger-Haag (PhD, 2015)

***Guidance Committees***
Graduate Program in Mathematics Education
Sarah Castle
Isabel Perez

**Undergraduate Research Assistants**
2015-2017 Andy Jurasek, Maggie Keech, and Anna Esenther
- worked with Study of Elementary Mathematics Instruction project funded by NSF REAL program and W.T. Grant Foundation

2014-2016 Kayla Cotter
- awarded first prize for her research poster at the 2015 University Undergraduate Research and Arts Forum

2013-2014 Alexandra Sanchez
- awarded first prize for her research poster at the 2014 University Undergraduate Research and Arts Forum

2009-2012 Andrew Picard, Justin Drwencke
- Co-authored paper published in *International Journal for Education Research* in 2014

**OTHER PROFESSIONAL EXPERIENCE**

2017 **Item writer** for Mathematical Knowledge for Teaching exam item pool re-fresh. Invited by Dr. Heather Hill (PI), funded by NSF grant awarded to Harvard Graduate School of Education.

2016 **Standards alignment** for AlgebraNation curriculum.

2015 **Co-organizer, annual conference for the North American Chapter of the Psychology of Mathematics Education.** Hosted with Dr. Tonya

Bartell and members of the local organizing committee at Michigan State.

2012 **Member, Privilege and Oppression in the Mathematical Preparation of Teacher Educators (PrOMPTE) conference organizing committe**. Co-organizer with Drs. Herbel-Eisenmann, Bartell, Breyfogle, Crespo, Dominguez, Drake. Kellogg Biological Station, Gull Lake, MI.

2010 - 2012 **Member, Facilitating Representations of Mathematics Teaching in Teacher Education Working Group.** Co-organizer with Dr. Patricio Herbst. Annual meetings of the North American Chapter of the Psychology of Mathematics Education conference, Kalamazoo, MI.

2010 **Fellow, Project STaR (**PIs: Drs. Robert and Barbara Reys)**.** Park City Mathematics Institute, Park City, UT.

2007 **Fellow**, **ThEMaT Summer Academy for Researchers** (PIs: Dr. Patricio Herbst and Dr. Daniel Chazan). University of Michigan, Ann Arbor, MI.

2006 - 2017 **External state assessment and standards alignment reviewer** (PI: Dr. Norman Webb). Wisconsin Center for Education Products and Services.

2005 – 2006 **Survey administrator**. *Thinking about Mathematics Instruction project,* (PI: Dr. Barbara Scott Nelson). Education Development Center, Newton, MA.

## PROFESSIONAL AFFILIATIONS

American Educational Research Association (AERA), Divisions C and K
AERA Special Interest Group for Research in Mathematics Education
Association of Mathematics Teacher Educators
North American Chapter for the International Group for the Psychology of Mathematics Education
National Council for Teachers of Mathematics
World Association of Lesson Studies