TEXAS STATE UNIVERSITY
SAN MARCOS
The rising STAR of Texas

Department of Mathematics
601 University Drive | Elliot Hall 302B
San Marcos, Texas 78666
melhuish@txstate.edu | 512.245.2551

Kathleen (Kate) Melhuish

Curriculum Vitae

Education

Certification	2023	**Data Science**. Cornell University
Ph.D.	2015	**Mathematics Education.** Portland State University.
M.S.	2010	**Applied Mathematics.** Western Carolina University.
B.S	2007	**Mathematics.** Gwynedd Mercy University.

University Experience

Professor and Assistant Chair, Department of Mathematics. Texas State University.
September 2025 - present

Associate Professor, Department of Mathematics. Texas State University. September 2021 -August 2025

Assistant Professor, Department of Mathematics. Texas State University. August 2016- August 2021

Postdoctoral Research Fellow, Teachers Development Group. August 2015 - July 2016

Instructor of Record/Research Assistant, Fariborz Maseeh Department of Mathematics and Statistics, Portland State University July 2010 - August 2015

Instructor of Record/Teaching Assistant, Department of Mathematics and Statistics, Western Carolina University. August 2008 - August 2010

Scholarly / Creative Grants

External Grants – Funded

Melhuish, Kathleen Mary (Principal), Ellis, Brittney (Co-Principal), Patterson, Cody (Co-Principal), Strickland, Sharon (Co-Principle). Structuring Equitable Participation in Undergraduate Proof, NSF IUSE, Federal, $600,000 (Funded: January 2023 – December 2025). Grant.

Dawkins, Paul Christian (Principal), **Melhuish, Kathleen Mary (Co-Principal),** Lew, Kristen Marie (Co-Principal), Roh, Kyeong Hah (Co-Principal). Generating a research-informed Transition to Mathematical Proof curriculum focused on reading and appreciating mathematical proofs, NSF IUSE, Federal, $600,000.00. (Funded: August 2022 - August 2025). Grant.

Melhuish, Kathleen Mary (Principal), Heaton, Ruth (Co-Principal), Thanheiser, Eva (Co-Principal), Strickland, Sharon K (Supporting). Using Technology to Capture Classroom

Interactions: The Design, Validation, and Dissemination of a Formative Assessment of Instruction Tool for Diverse K-8 Mathematics Classrooms, NSF DRK-12, Federal, $1,984,657.00. (Submitted: November 2, 2017, Funded: September 4, 2018 – August 31, 2024). Grant.

Mejía-Ramos, Juan Pablo (Principal), Lew, Kristen Marie (Co-Principal), **Melhuish, Kathleen Mary (Co-Principal)**, Weber, Keith (Co-Principal), Gitomer, Drew (Co-Principal). Developing and Validating Proof Comprehension Tests in Real Analysis, NSF IUSE Federal, $600,000.00. (Submitted: December 13, 2017, Funded: October 1, 2018 – September 30, 2024). Grant.

Melhuish, Kathleen Mary (Principal), Lew, Kristen Marie (Co-Principal), Paul Christian (Co-Principal), Dawkins, Paul Christian. Orchestrating Discussions Around Proof, NSF IUSE, Federal, $299,847.00. (Submitted: May 1, 2018, Funded: November 1, 2018 – October 31, 2022). Grant.

Foreman, Linda (Principal), Fredericks, Julie (Co-Principal), **Melhuish, Kathleen Mary (Co-Principal)**,Thanheiser, Eva (Co-Principal), Shaughnessy, J.Michael (Co-Principal). Enhancing Mathematics Teaching and Learning in Urban Elementary Schools: A Cluster-Randomized Efficacy Trial of a Novel Professional Development Approach, NSF DRK-12, Federal, $2,488,354.00. (Funded: September 1, 2013 – August 31, 2017). Grant.

External Grants – Under Review

Melhuish, Kathleen Mary (Principal), Lew, Kristen Marie (Co-Principal), Paul Christian (Co-Principal), Dawkins, Paul Christian, Weber, Keith (Supporting). Advancing Methods for Analyzing Mathematical Proof Language. NSF EDU CORE, Federal, $287,744

Internal Grants - Funded

Melhuish, Kathleen Mary (Principal). Scaling Up Research in Advanced Undergraduate Mathematics Education, Texas State University, $8,000.00. (Submitted: October 2016, Funded: January 2017 - June 2018).

Supporting Roles

- External Evaluator: Investigating the Uptake of Research Based Instructional Strategies – Post-COVID Update (NSF # 2416742)
- Co-Lead on Synthesis of Measures in Undergraduate Mathematics Education: Validity Evidence for Measurement in Mathematics Education (NSF # 1920619)
- Invited Written Instructional Protocol Author: Conference on Building a Shareable Knowledge Base for Teaching College Mathematics (NSF # 1938949)
- Advisory Board: Undergraduate Students' Reasoning about Equivalence in Multiple Mathematical Domains: Exploration and Theory-Building (NSF # 2055590)

* indicates graduate student co-author

Publications/Presentations

Journal Articles

[Invited] Thoma, A., Florensa Ferrando, I., & **Melhuish, K**. (accepted / in press). The next decade of undergraduate mathematics education scholarship: Communities, collaboration, and dialogue. *International Journal of Research in Undergraduate Mathematics Education*.

Melhuish, K. M., Apkarian, N., & Johnson, E. (2025). Whose Experiences Are We Capturing? A Critical Reflection on Classroom Observation Measures. Expected Submission Date: January 2025. Invited Journal: *Current Opinions in Behavioral Sciences*.

Melhuish, K.M., Dawkins, P.C., & Patterson, C. (2025). Broadening Views of Inquiry in Advanced Mathematics Through the Lens of Transformation. *For the Learning of Mathematics*.

RAMP Authorship Team (2025). Humanizing proof-based mathematics instruction through experiences reading rich proofs and mathematician stories. *Canadian Journal of Science, Mathematics and Technology Education*

Melhuish, K., Patterson, C., Dawkins, P., & Lew, K. (2025) Expanding What Students Learn - And Who Learns It - by Diversifying Proof-Related Activity. *Notices of the American Mathematical Society*.

Lew, K. M., Guajardo, L. R.*, Gonzalez, M. A.*, & **Melhuish, K. M.** (2025). Using Extant Proofs in the Classroom: A Comprehension Activity. *PRIMUS*.

Melhuish, K. M., Strickland, S. K., Han, S.*, & Sorto, M. A. (2024). Why Ask Why? An Analysis of Teachers' Why-Questions in Elementary and Middle Grade Mathematics Classrooms. *Journal of Mathematics Teacher Education*, 1-27.

Uscanga, R., **Melhuish, K. M.,** & Cook, J. P. (2024). Students' Productive Techniques for Approaching Defining Properties of Functions. *Educational Studies in Mathematics*., 1-28.

Patterson, C., Dawkins, P., Zolt, H.*, Tucci, A.*,, & **Melhuish, K.** (2024) Adapting the proof of Lagrange's Theorem into a sequence of group-work tasks. *PRIMUS.,* 1-15.

Czocher, J. A., **& Melhuish, K. M.** (2024). Attending to Coherence in Qualitative Coding Studies. *Journal for Research in Mathematics Education*, *55*(3), 148-155.

Cook, J. P., **Melhuish, K. M.,** & Uscanga, R. (2023). Examining the Concept of Inverse: Students Develop a Coordinated Way of Reasoning. *The Journal of Mathematical Behavior*, *72*.

Cook, J. P., Strand, S., Reed, Z., Richardson, A.*, & **Melhuish, K. M.** (2023). Reasoning about inverses across algebraic contexts: Theory-building via a standalone literature review. *The Journal of Mathematical Behavior, 72*.

Melhuish, K. M., Guajardo, L. R. *, Dawkins, P. C., Zolt, H. M. *, & Lew, K. M. (2023). The Role of Quotient Group Meanings in a Theorem and Proof Comprehension Task. *Educational Studies in Mathematics*.

Thanheiser, E., & **Melhuish, K. M**. (2023). Teaching routines and student-centered mathematics instruction: The essential role of conferring to understand student thinking and reasoning. *The Journal of Mathematical Behavior*, *70*.

Weber, K., & **Melhuish, K. M. (2022).** Can We Engage Students in Authentic Mathematical Activity While Embracing Critical Pedagogy? A Commentary on the Tensions Between

* indicates graduate student co-author

Disciplinary Activity and Critical Education. *Canadian Journal of Science, Mathematics and Technology Education*, *22*(2), 305-314.

Melhuish, K. M., Dawkins, P. C., Lew, K. M., & Strickland, S. K. (2022). Lessons learned about incorporating high-leverage teaching practices in the undergraduate proof classroom to promote authentic and equitable participation. *International Journal of Research in Undergraduate Mathematics Education*.

Melhuish, K. M., Vroom, K., Lew, K. M., & Ellis, B. (2022). Operationalizing Authentic Mathematical Proof Activity Using Disciplinary Tools. *The Journal of Mathematical Behavior*, *68*.

Melhuish, K. M., Fukawa-Connelly, T., Dawkins, P. C., Woods, C.*, & Weber, K. (2022). Collegiate Mathematics Teaching in Proof-Based Courses: Updated Evidence About an Important Practice. *The Journal of Mathematical Behavior*, *67*.

Melhuish, K. M., Thanheiser, E., White, A., Rosencrans, B.*, Foreman, L., Shaughnessy, J. M., … Riffel, A.* (2022). The Efficacy of a "Mathematics for All" Professional Development. *Journal for Research in Mathematics Education*, *53*(4), 307–333.

Melhuish, K. M., White, A., Sorto, M. A., & Thanheiser, E. (2021). Two Replication Studies of the Relationships between Mathematical Knowledge for Teaching, Mathematical Quality of Instruction, and Student Achievement. *Implementation and Replication Studies in Mathematics Education*.

Czocher, J. A., **Melhuish, K. M.,** Kandasamy, S. S. S.* , & Roan, E. A.* (2021). Dual Measures of Mathematical Modeling for Engineering and other STEM Undergraduates. *International Journal for Research in Undergraduate Mathematics Education*.

Thanheiser, E., **Melhuish, K. M.,** Sugimoto, A., Rosencrans, B.*, & Heaton, R. (2021). Networking Frameworks: A Method For Analyzing the Complexities of Classroom Cultures Focusing on Justifying. *Educational Studies in Mathematics*.

Melhuish, K. M., & Czocher, J. A. (2021). Division is Pretty Much Just Multiplication. *For the Learning of Mathematics*, *40*(1), 38–43.

Melhuish, K. M., Lew, K. M., & Hicks, M. D.* (2021). Comparing Student Proofs to Explore a Structural Property in Abstract Algebra. *PRIMUS*.

Johnson, E., Andrews-Larson, C., Keene, K., **Melhuish, K. M.**, Fortune, N.*, & Keller, R.* (2020). Inquiry and Inequity in the Undergraduate Mathematics Classroom. *Journal for Research in Mathematics Education, 51(4), 504–516*.

Melhuish, K. M., Lew, K. M., Hicks, M.*, & Kandasamy, S.* (2020). Abstract Algebra Students' Evoked Concept Images for Functions and Homomorphisms . *The Journal of Mathematical Behavior*, *60*. Published.

Melhuish, K. M., Ellis, B., & Hicks, M. D.* (2020). Group Theory Students' Perceptions of Binary Operation. *Educational Studies in Mathematics*, *103*(1), 63–81.

Czocher, J., **Melhuish, K. M.**, & Kandasamy, S. S.* (2019). Building mathematics self-efficacy of STEM undergraduates through mathematical modelling. *International Journal of Mathematical Education in Science and Technology*, 1–28.

Melhuish, K. M., Larsen, S., & Cook, S. (2019). When students prove a theorem without explicitly using a necessary condition: Digging into a subtle problem from practice. *International Journal of Research in Undergraduate Mathematics Education*, *5*(2), 205–227.

* indicates graduate student co-author

Melhuish, K. M., Thanheiser, E., & Fagan, J.* (2019). The Student Discourse Observation Tool: Focusing Teachers on Justifying and Generalizing. *Mathematics Teacher Educator*, *7*(2), 57–74.

Thanheiser, E., & **Melhuish, K. M.** (2019). Leveraging variation of historical number systems to build understanding of the base-ten place-value system. *ZDM*, *51*(1), 39–55.

Melhuish, K. M. (2019). The Group Theory Concept Assessment: Measuring Conceptual Understanding in Introductory Group Theory. *International Journal of Research in Undergraduate Mathematics Education*, *5*(3), 359–393.

Melhuish, K. M., Thanheiser, E., & Guyot, L.* (2018). Elementary teachers' noticing of mathematical reasoning forms. *Journal of Mathematics Teacher Education*, 1–33.

Melhuish, K. M., & Thanheiser, E. (2018). Reframing Replication Studies as Studies of Generalizability: A Response to Critiques of the Nature and Necessity of Replication. *Journal for Research in Mathematics Education*, *49*(1), 104–110.

Melhuish, K. M. (2018). Conceptual Replications in Group Theory. *Journal for Research in Mathematics Education*, *49*(1), 9–38.

Fasteen, J., **Melhuish, K. M.**, & Thanheiser, E. (2015). Multiplication by 10 base-5: Making Sense of Place Value Structure Through an Alternate Base. *Mathematics Teacher Educator*, *3*(2), 83–98.

Journal Articles Under Review or In Preparation

Revisions (Revise & Resubmit Status)

Melhuish, K. M., Guajardo, L. R.*, Lew, K. M., Dawkins, P. C., Diaz-Lopez, A., Garcia, R., Harris, P. E., Jones, E., Patel, P., Roh, K. H., Walker, S., Williams II, D. A., Winger, A. (Under Review) Diverse Storylines of Entering the Mathematics Professoriate. *Educational Studies in Mathematics.*

Melhuish, K. M., Wrightsman, E. M.*, Gonzalez, M. A.*, Guajardo, L. R.*, Lew, K. M. (Under Review) An Analysis of Gendered Linguistic Features in Textbook Proofs. Intended Journal: *Educational Studies in Mathematics.*

Sugimoto, A., Pham, A.*, Thanheiser, E., **Melhuish, K. M.** (Under Review) A Framework for Creating Common Ground through a Meaning Making Routine Focused on Mathematical Tasks, Language, and Concepts. *International Journal of Science and Mathematics Education.*

Under Review

Melhuish, K. M., and UTCCI project team (under review). Validating a Mathematics Classroom Observation Tool Involving Complex Time Stamped Data. *Investigations in Mathematics Learning.*

Melhuish, K. M., Austin, C., Gleason, J., Lai, Y. (Under Review) The Landscape of Quantitative Measures Used by Researchers in Undergraduate Mathematics Education. *International Journal of Undergraduate Mathematics Education*

Melhuish, K. M., Cook, J.P. (Under Review) Students' Understanding of Abstract Algebra Concepts: A Scoping Review. *International Journal of Undergraduate Mathematics Education*

* indicates graduate student co-author

In Preparation

Melhuish, K.M, Roan, E., Patterson, C., Strickland, S., Acevedo, C., & Ashby, J.. Fidelity of Task Implementation and Professional Learning in Undergraduate Mathematics: Insights from a Collaborative Proof Task Design Intervention Expected Submission Date: December 2025. Extended Abstract Accepted into Special Issue of *International Journal of Undergraduate Mathematics Education*

Melhuish, K.M, Bass, A., Roan, E., Gonzalez, M., & Devlekar, O. A Computational Linguistics Analysis of Proofs to Test Author and Authority Relationships. Expected Submission Date: Spring 2026. Intended Journal: *Journal for Research in Mathematics Education*.

Melhuish, K. M., Czocher, J.A., & Strickland, S.K. (In Preparation). Analyzing Argumentation as a Means to Establish Validity of Coder Reconciliation Processes. Intended Journal: *Journal for Research in Mathematics Education*. Expected Submission Date: Spring 2026

Mejía-Ramos, J. P., **Melhuish, K. M.**, Guajardo, L., Weber, K., Lew, K. & Austin, C. The Design and Validation of a Series of Real Analysis Proof Comprehension Tests. Expected Submission Date: Spring 2026. Intended Journal: *Journal for Research in Mathematics Education*.

Roh, K.H., Lee, Y. H, **Melhuish, K.M**, & Austin, C.. Students' Logical Consistency and the Formal Proof. Intended Journal: *The Journal of Mathematical Behavior*. Submission Date: Nov 2025

Book Chapters

Melhuish, K. M., Lew, K. M., Hicks, M. D.*, Guajardo, L. R.*, Dawkins, P. C., & Morey, S. (2023). Proving, Analyzing, and Deepening Understanding of a Structural Property in Abstract Algebra. In D. Corey & S. Jones (Eds.), *Sharing and Storing Knowledge about Teaching Undergraduate Mathematics An Introduction to a Written Genre for Sharing Lesson-specific Instructional Knowledge*. MAA Press.

Melhuish, K. M., & Hicks, M.* (2019). A Validity Argument for an Undergraduate Mathematics Concept Inventory. In J. Bostic, E. Krupa, & J. Shih (Eds.), *Quantitative Measures in Mathematics Education (Research in Mathematics Education Series)*. Netherlands: Springer.

Melhuish, K. M., & Fagan, J.* (2018). Connecting Group Theory Concept Assessment Results to Core Concepts at the Secondary Level. In N. Wasserman (Ed.), *Connecting abstract algebra to secondary mathematics, for secondary mathematics teachers (Research in Mathematics Education Series)* (pp. 19–45). Netherlands: Springer.

Melhuish, K. M., & Thanhesier, E. (2017). Using formative evaluation to support teachers in increasing student reasoning. In L. West & M. Boston (Eds.), *Annual perspectives in mathematics education 2017: Reflective and collaborative processes to improve mathematics teaching* (pp. 183–199). National Council of Teachers of Mathematics.

Larsen, S., Glover, E., & **Melhuish, K. M.** (2015). Beyond good teaching: The benefits and challenges of implementing ambitious teaching. In D. Bressoud, V. Mesa, & C. Rasmussen (Eds.), *Insights and Recommendations from the MAA National Study of College Calculus* (pp. 93–105). MAA Press.

* indicates graduate student co-author

Peer-Reviewed Conference Proceedings

Melhuish, K. M., Wrightsman, E. M.*, Guajardo, L. R*., Lew, K. M., & Weber, K. (accepted). A Gendered-Language Analysis of Abstract Algebra, Real Analysis, and Introduction to Proof Textbooks. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K. M., & Czocher, J. A. (accepted). A Preliminary Scoping Literature Review on Mixed Methods in RUME. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Ellis, B. M., Austin, C. K., Hamilton, C. D.*, Dvarishkis, B. C.*, & **Melhuish, K. M.** (accepted). Examining Inequitable Talk and Perceived Status During Group-Worthy Tasks in an Undergraduate Topology Course. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Guajardo, L. R.*, Lew, K. M., & **Melhuish, K. M.** (accepted). Here's What "I" Do: Investigating the Actions Students Take in Proof Comprehension Tasks. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Bruner, O*., Roh, K. H., **Melhuish, K. M.**, Contreras, N.*, & Guajardo, L. R.* (accepted) Students' Proof Comprehension via Set-Based Reasoning in a Transition-to-Proof Course. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Zolt, H. & **Melhuish, K. M**. (accepted). To Whom Are Instructors Obligated?: An investigation of Individual Obligations in Quotient Group Instruction. *In Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education.*

Austin, C., **Melhuish, K.**, Strickland, S., & Acevedo, C.* (2024) Student Perceptions of Group Worthy Tasks in Proof-Based Courses. In *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Melhuish, K., Lew, K., Guajardo, L.*, Dawkins, P., & Roh, K.H. (2024) An Elaboration of Master Narratives in Mathematics and How Undergraduates Relate to Counternarratives. In *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Contreras, N.*, Roh, K.H., Dawkins, P., Lew, K., & **Melhuish, K**. (2024) Symbolic Variations Across Mathematical Subareas: Exploring Challenges in Undergraduate Students' Interpretation of Mathematical Symbols. In *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Melhuish, K., Guajardo, L.*, Contreras, N., Dawkins, P., Diaz-Lopez, A., Garcia, R., ... , Winger, A. (2024). Opposing Dimensions in Mathematicians' Counter Narratives Written for Undergraduate Students. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K., Wrighstman, E.*, Weber, K., & Guajardo, L.* (2024) A Preliminary Investigation of the Language of Proof in Mathematical Textbooks. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

* indicates graduate student co-author

Apkarian, N., Guglielmo, J.*, Ruiz, C.*, Acevedo, C*., **Melhuish, K.**, & Johnson, E. 2024) Estudiante Perceptions of Classroom Inclusion: A Pilot Study. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Zolt, H*., & **Melhuish, K**. 2024). Instructors' Grounding Metaphors for Quotient Groups. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Czocher, J., Bass, A.*, **Melhuish, K.,** & White, A. When Cohen's Kappa Is Not Enough: Exploring Methods for Estimating Inter-Rater Reliability for Time Sequential Data. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Roh, K.H., Lee, Y.H., & **Melhuish, K.** (2024). Factors Influencing Undergraduate Students' Logical (in)Consistency (LinC) in Mathematical Contexts. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Austin, C., **Melhuish, K.,** Gleason, J., & Lai, Y. 2024).An Exploration of Undergraduate Mathematics Education Measures and Their Validity Evidence. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Uscanga, R., **Melhuish, K.,** & Cook, J.P. 2024). Students' Productive Techniques for Approaching Well-Definedness and Everywhere-Definedness. In *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K. M., Ellis, B. M., & Sorto, M. A. (2024). Using a Formative Evaluation Framework to Validate a Teaching Observation Tool. In *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Patterson, C. L., **Melhuish, K. M.,** & Hicks, M. D. (2023). The Role of Ritual and Personalization in Students' Exploration of Subgroup Generation. In *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K. M., Lew, K. M., Dawkins, P. C., Strickland, S. K., & Patterson, C. L. (2023). Engineering Instructional Practices to Better Support Access and Participatory Equity in Authentic Proof Activity. In *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education.*

Guajardo, L. R., **Melhuish, K. M**., Zolt, H. M., Gonzalez, M. A., Tucci, A. A., Patterson, C. L., & Curtin, E. (2023). Beliefs and Rationales For Instructor Questioning Choices During Class Discussion of the First Isomorphism Theorem. In *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education.*

Zolt, H. M.*, Tucci, A. A.*, **Melhuish, K. M**., & Fukawa-Connelly, T. (2023). What Do Students Do To Develop Understanding of Definitions in Proof-Based Courses? In *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K. M., White, A., Strickland, S. K., & Wrightsman, E. M.* (2023). Exploring the Relationship Between Qualitative Lesson Scores and Quantitative Qualities of Individual Codes. In *Proceedings of the forty-fourth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Zolt, H. M.*, Tucci, A. A.*, & **Melhuish, K. M.** (2023). Relationships Between Dimensions Of Authenticity During An Inquiry-Oriented Abstract Algebra Activity. In *Proceedings of the forty-fourth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Fukawa-Connelly, T., **Melhuish, K. M.,** Weber, K., Dawkins, P. C., & Orr-Woods, C.* (2022). The Teaching of Proof-Based Mathematics Courses. In *24th Annual Conference on Research in Undergraduate Mathematics Education.*

* indicates graduate student co-author

Cook, J. P., Richardson, A*., Strand, S., Reed, Z., & **Melhuish, K. M.** (2022). How do students think about inverses across contexts? Theory-building via a standalone literature review. In *24th Annual Conference on Research in Undergraduate Mathematics Education*.

Tucci, A. A.*, & **Melhuish, K. M.** (2020). Comparing Authenticity in Proof Activity in an In-Person and Online Setting. In *24th Annual Conference on Research in Undergraduate Mathematics Education*.

Melhuish, K. M., & Czocher, J. A. (2022). Research questions & framework studies. In *24th Annual Conference on Research in Undergraduate Mathematics Education*.

Melhuish, K. M., Byeonguk Han, S*., Sorto, M. A., & Strickland, S. K. (2021). An exploration of teachers' why-questions in the mathematics classroom. In *Proceedings of the Forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Melhuish, K. M., Vroom, K., Lew, K. M., & Ellis, B. (2021). Operationalizing authentic and disciplinary activity for the undergraduate context. In *Olanoff, D., Johnson, K., & Spitzer, S.M. (2021). Proceedings of the forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.* (pp. 349–358).

Guajardo, L. R.*, **Melhuish, K. M.,** & Zolt, H. M.* (2021). Semiotic Conflicts in Students' Collective Proof Comprehension Activity. In S. S. Karunakaran & A. Higgins (Eds.), *2021 Research in Undergraduate Mathematics Education Reports.*

Hicks, M. D., Tucci, A. A.*, Koehne, C*. R., **Melhuish, K. M.,** & Bishop, J. L. (2021). Examining the Distribution of Authority in an Inquiry-Oriented Abstract Algebra Environment. In S. S. Karunakaran & A. Higgins (Eds.), *2021 Research in Undergraduate Mathematics Education Reports.*

Melhuish, K. M., Byeonguk Han, S.*, Sorto, M. A., & Strickland, S. K. (2021). An exploration of teachers' why-questions in the mathematics classroom. In *Proceedings of the Forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).*

Melhuish, K. M., Lew, K. M., Baumgard, T. B*., & Ellis, B.* (2020). Adapting K-12 Teaching Routines to the Advanced Mathematics Classroom. In the *Proceedings of The XXIII Annual Conference on Research on Undergraduate Mathematics Education.*

Lew, K. M., **Melhuish, K. M.,** & Dawkins, P. C. (2020). Proving Activities of Abstract Algebra Students in a Group Task-based Interview. Proceedings of the 23nd Annual Conference on Research in Undergraduate Mathematics Education.

Sorto, M. A., **Melhuish, K**. M., Thanheiser, E., Zied, K*., Koehne, C.*, Sugimoto, A., … Strickland, S. K. (2019). Components of High-Quality Mathematics Classrooms: Attending to Learning Opportunities for English Language Learners. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.), Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA) (pp. 1594–1603).

Melhuish, K. M., Lew, K. M., Kandasamy, S. S.*, & Hicks, M. D.* (2019). Function Coherence in Advanced Mathematics. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.) *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (PME-NA) (pp. 961–966).

Melhuish, K. M., & Strickland, S. K. (2019). Abstract Algebra Instructors' Noticing of Students' Mathematical Thinking. In Weinberg, A., Moore-Russo, D., Soto, H., & Wawro, M.

* indicates graduate student co-author

(Eds.). (2019). *Proceedings of the 22nd Annual Conference on Research in Undergraduate Mathematics Education*. (pp. 428– 436).

Melhuish, K. M., Lew, K. M., Hicks, M.*, & Kandasamy, S.* (2019). Abstract Algebra Students' Function-Related Understanding and Activity. In Weinberg, A., Moore-Russo, D., Soto, H., & Wawro, M. (Eds.). (2019). *Proceedings of the 22nd Annual Conference on Research in Undergraduate Mathematics Education*. Oklahoma City, Oklahoma. (pp. 419–427).

Johnson, E., Andrews-Larsen, C., Keene, K., **Melhuish, K. M**., Keller, R.*, & Fortune, N.* (2019). Inquiry Does Not Guarantee Equity. In Weinberg, A., Moore-Russo, D., Soto, H., & Wawro, M. (Eds.). (2019). *Proceedings of the 22nd Annual Conference on Research in Undergraduate Mathematics Education*. (pp. 154–163).

Kandasamy, S. S.*, Czocher, J. A., & **Melhuish, K**. **M**. (2019). Participation in a Mathematical Modelling Competition as an Avenue for Increasing STEM Majors' Mathematics Self-Efficacy. In *Proceedings of 22nd Annual Conference on Research in Undergraduate Mathematics Education.*

Melhuish, K. M., & Hicks, M.* (2018). Student Understanding of the General Binary Operation Concept. In Hodges, T.E., Roy, G. J., & Tyminski, A. M. (Eds.). (2018). *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 548–555).

Fagan, J.*, & **Melhuish, K**. M. (2018). Proof norms in introduction to proof textbooks. In In (Eds.) A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, and S. Brown, *Proceedings of the 21st Annual Conference on Research in Undergraduate Mathematics Education* (pp. 743–751).

Fagan, J.*, **Melhuish, K**. M., Thanheiser, E., Fasteen, J., Guyot, L.*, & Rosencrans, B.* (2017). Connecting teachers' buy-into professional development with classroom habits and practices. 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. 459– 462). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Melhuish, K. M., Bergman, A., & Czocher, J. A. (2018). Revisiting Reducing Abstraction in Abstract Algebra. In *Proceedings of the the twenty-first annual Conference on Research in Undergraduate Mathematics Education*.

Melhuish, K. M., & Fagan, J.* (2017). Exploring Student Conceptions of Binary Operation. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the 20th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 166–180). San Diego, CA.

Thanheiser, E., Rosencrans, B.*, **Melhuish, K. M**., Fagan, J.*, & Guyot, L.* (2017). Increasing student cognitive engagement in the math classroom through sustained professional development. 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. 478– 482). Hoosier Association of Mathematics Teacher Educators.

Melhuish, K. M., & Fagan, J.* (2017). Reducing Abstraction in the Group Concept Inventory. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the 20th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1577–1578). San Diego, CA.

Melhuish, K. **M.,** & Fasteen, J. (2016). Results from the Group Concept Inventory: Exploring the Role of Binary Operation in Introductory Group Theory Task Performance. In T.

Fukawa-Connelly, N. Infante, M. Wawro, & S. Brown (Eds.), 19th Annual Conference on Research in Undergraduate Mathematics Education (pp. 1098–1103). Pittsburgh, PA.

Riffel, A.*, **Melhuish, K. M**., & Thanheiser, E. (2016). The language of professional development leaders. In M. B. Wood, E. E. Turner, M. Civil, & J. A. Eli (Eds.), Proceedings of the 38th Conference of the Psychology of Mathematics Education-North America (pp. 391–394). Tucson, AZ: The University of Arizona.

Melhuish, K. M. (2015). Determining What To Assess: A Methodology For Concept Domain Analysis As Applied To Group Theory. In T. Fukawa-Connelly, N. Infante, K. Keene, & M. Zandieh (Eds.), Proceedings of the 18th Annual Conference on Research in Undergraduate Mathematics Education (pp. 753–761). Pittsburgh, PA.

Fasteen, J., Thanheiser, E., **Melhuish, K**. M., & Dominguez, H. (2015). Teacher Buy-In for Profession Development: 4 Distinct Profiles. In T. G. Bartell, K. N. Bieda, R. T. Putnam, & K. Bradfield (Eds.), 37th Conference of the Psychology of Mathematics Education-North America (pp. 960–9063). East Lansing, MI: Michigan State University.

Melhuish, K. M., Fasteen, J., Thanheiser, E., & Fredericks, J. (2015). Teacher Noticing of Justification: Attending to the Complexity of Mathematical Content and Practices. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), Proceedings of 37th Conference of the Psychology of Mathematics Education-North America (pp. 748– 755). East Lansing, MI: Michigan State University.

Melhuish, K. M. (2014). An Investigation Into Students' Use Of Given Hypotheses When Proving. In T. Fukawa-Connelly, G. Karakook, K. Keene, & M. Zandieh (Eds.), Proceedings of the 17th Conference on Research in Undergraduate Mathematics Education, Denver, CO (pp. 868–874). Denver, CO.

Melhuish, K. M., Larsen, S., Glover, E., Johnson, E., Fukawa-Connelly, T., Karakook, G., … Zandieh, M. (2014). Characteristics of successful programs in college calculus at bachelor's granting universities. In Proceedings of the 17th Conference on Research in Undergraduate Mathematics Education, Denver, CO (pp. 880–883). Denver, CO.

Melhuish, K. M., Johnson, E., Glover, E., Fukawa-Connelly, T., Karakook, G., Keene, K., & Zandieh, M. (2014). Instructors' Beliefs On The Role Of Calculus. In Proceedings of the 17th Conference on Research in Undergraduate Mathematics Education, Denver, CO (pp. 875–879). Denver, CO.

Melhuish, K. M., & Glover, E. (2014). Investigating Instructors' Views on the Role of Calculus. In P. Liljedahl, C. Nicol, S. Oesterle, & D. Allan (Eds.), Proceedings of the 38th Conference of the International Group for the Psychology of Mathematics Education and the 36th Conference of the North American Chapter of the Psychology of Mathematics Education (Vol. 6, p. 172). Vancouver, Canada: PME.

Melhuish, K. M. (2013). Bringing the familiar to the unfamiliar: The use of knowledge from different domains in the proving process. In S. Brown, G. Karakok, K. H. Roh, & M. Oehrtman (Eds.), Proceedings of the 16th Annual Conference on Research in Undergraduate Mathematics Education (Vol. 2, pp. 580–584). Denver, CO.

Other Works in Print

Melhuish, K. M., & Lew, K. M. (2019). The Dysfunction of Functions in Abstract Algebra. In AMSBlog: On Teaching and Learning Mathematics. Retrieved from https://blogs.ams.org/matheducation/2019/11/21/the-dysfunction-offunctions-in-abstract-algebra/#more-2879

* indicates graduate student co-author

Invited Plenary, Colloquia, and Talks

(Colloquium) **Mathematics. K. M.,** "A Group Theory Education Research Story," Michigan State University (January 2023).

(Colloquium) **Mathematics. K. M.,** "Authentic Mathematical Proof Activity: What is it and how might we study it?," Virginia Tech, (September 2023).

(Colloquium) **Mathematics. K. M.,** "A Group Theory Education Research Story," Arizona State University (March 2023).

(Plenary) **Melhuish, K. M.,** Lew, K. M., Dawkins, P. C., Oklahoma-Texas RUME Conference, "Just Add Group Work and Stir?: Lessons Learned about Student-Centered Instruction in Proof Classes," Oklahoma State University, Stillwater, OK. (October 2022).

(Colloquium) **Melhuish, K. M.,** Adapting High-Leverage Teaching Practices to the Undergraduate Proof Classroom, UC Long Beach (October 2021).

(Module Expert) **Melhuish, K. M.,** Research in Undergraduate Mathematics Education for Emerging Scholars: Worldview. https://sites.google.com/view/openclassrumes/modules/worldview

(Colloquium) **Melhuish, K. M**., "The Math Habits Tool," UT Stem Education Center, Austin, TX. (December 2019).

(Plenary) **Melhuish, K. M.**, Oklahoma-Texas Conference on Research in Undergraduate Mathematics Education, "An Introduction to the Group Theory Concept Assessment: The Design Process and Preliminary Results Comparing Class Types," Stillwater, OK. (April 21, 2018).

(Invited Panel) **Melhuish, K. M.,** Connecting Secondary and Advanced Mathematics (CASM), "Connecting the Secondary to Advanced Level in Mathematics: Issues facing the field in the next years," NSF, MN. (May 20, 2019).

(Colloquium) **Melhuish, K. M.,** Mathematics Colloquium, "Introducing the Group Theory Concept Inventory," University of Portland. (April 2016).

Other Seminar and Conference Presentations

Melhuish, K. M., & Lew, K. M., 2022 SIAM Annual Meeting (AN22), "Teaching and Operationalizing Authentic Proof-Based Activity in the University Classroom," Society for Industrial and Applied Mathematics, Philadelphia, PA. (July 2022).

Melhuish, K. M., Shaughnessy, M., Fagan, J., White, A., 2018 Research Conference, "The Efficacy of the Mathematics Studio Model Professional Development," National Council of Teachers of Mathematics, Washington, DC, United States. (April 25, 2018).

Melhuish, K. M., Thanheiser, E., White, A., Fagan, J., Rosencrans, B., Twenty-Second Annual Conference of the Association of Mathematics Teacher Educators, "The Impact of a Sustained Professional Development Model in Third- Fifth Grade Mathematics Classrooms," Houston, TX. (February 2018).

Musgrave, S., Ellis, J., **Melhuish, K. M.**, Thanheiser, E., Wawro, M., Joint Math Meetings, "MPWR-ing Women in RUME: Continuing Support.," San Diego, CA. (January 2018).

Shaughnessy, M., **Melhuish, K. M**., Thanheiser, E., Fredericks, J., TDG Leadership Seminar, "The Math Habits & Routines Classroom Observation Tool: connecting teacher moves and student reasoning," Teachers Development Group, Portland, OR. (March 2017).

Melhuish, K. M., Fasteen, J., NCTM Research Conference for Mathematics Educator, "Teacher Conceptions on Justifying and Generalizing in the Classroom.," San Antonio, TX. (April 2017).

* indicates graduate student co-author

Melhuish, K. M., Rosencrans, B., 21st Annual Conference of the Association of Mathematics Teacher Educators, "Elementary Teachers' Conceptions of Generalizing," Orlando, FL. (February 2017).

Melhuish, K. M., Thanheiser, E., 13th International Congress on Mathematical Education, "Teacher noticing of justifying and Generalizing in the Elementary Classroom.," Hamburg. (July 2016).

Vroom, K., **Melhuish, K. M.**, Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America and the Northwest Undergraduate Mathematics Symposium, "Student Conceptions of Isomorphism," Corvallis, OR, United States. (April 2016).

Shaughnessy, M., **Melhuish, K. M.**, Fredericks, J., Teachers Development Group Leadership Seminar, "Learning targets: A lens for examining the cognitive level of student reasoning in classrooms.." (March 2016).

Rosencrans, B., **Melhuish, K. M.**, Thanheiser, E., 21st Annual Conference of the Association of Mathematics Teacher Educators, "The Mathematically Productive Habits and Routines Tool: Connecting Teacher Moves and Student Reasoning (Discussion Session)," Orlando, FL. (February 2016).

Melhuish, K. M., Joint Meetings, "The State of Student Understanding in Introductory Group Theory: Results from the Group Concept Inventory," MAA. (January 2016).

Thanheiser, E., **Melhuish, K. M.**, Foreman, L., Shaughnessy, M., National Council for Supervisors of Mathematics, "Teacher "Buy- In" and Its Relation to Professional Development. Presentation." (2015).

Fredericks, J., **Melhuish, K. M.**, Thanheiser, E., Shaughnessy, M., Foreman, L., Teachers Development Group Leadership, "Teacher Noticing of Justification: Attending to the Complexity of Mathematical Content and the Habits of Mind." (March 2015).

Melhuish, K. M., Fasteen, J., Thanheiser, E., The Nineteenth Annual Conference of the Association of Mathematics Teacher Educators (AMTE), "Teacher Noticing of Mathematical Practices in a Sustained Professional Development.," Orlando, FL. (February 14, 2015).

Melhuish, K. M., MAA Southeastern Section, "Galois Groups of Quartic Polynomials.." (2010).

Melhuish, K. M., MAA Southeastern Section, "The Equation x^n = e and Cyclic Groups." (2009).

Panels

Hsu, E., White, N., Ellis, J., **Melhuish, K**. M., Mathfest, "Lessons from Successful Calculus Programs," MAA. (2014).

Rasmussen, C., Hsu, E., Burn, H., **Melhuish, K**. M., Network for Academic Renewal Conference, "Features and Practices of Successful Calculus Programs: Insights from Case Studies at Seventeen Institutions," AAC&U. (2013).

Teaching Experience

Texas State University:

- Math 2311 - Principles Of Math I
- Math 2312 - Informal Geometry
- Math 2407 – Pre-Calculus
- Math 2471 - Calculus I

* indicates graduate student co-author

- Math 2472 - Calculus II
- Math 3315 - Modern Geometry
- Math 4307 - Modern Algebra
- Math 7306 – Current Research In Math Ed
- Math 7324 - Curriculum Design & Analysis
- Math 7342 - RUME I
- Math 7366a - Teaching Post-Secondary Students
- Math 7366g – RUME II
- Math 7358 - Advanced Quantitative Methods

Portland State University:

- Mth 111 - College Algebra
- Mth 211 - Elementary Mathematics for Teachers
- Mth 251 - Calculus I
- Mth 252 - Calculus II
- Mth 254 - Multivariable Calculus

Western Carolina University:

- Math 101 - Mathematical Concepts

Directed Student Learning

- **Postdoctoral Mentor,** Austin, Christine. Focus: Quantitative Methods (September 2023 – August 2025).
- **Postdoctoral Mentor,**, Roan, Elizabeth. Focus: Proof-Based Mathematics, Language of Proofs (September 2025 - present).
- **Dissertation Chair**, Wrightsman, Elizabeth. "Student narratives of inquiry-based introduction to proof courses" Status: Mathematics Education Ph.D. (August 2023 – July 2025)
- **Dissertation Chair,** Tucci, Anthony. "Coherence between Instructors' Intentions and Students' Experiences with Examinations in Undergraduate Proof-based Courses", Mathematics Education Ph.D. (January 2023 – March 2025).
- **Dissertation Co-Chair**, Guajardo, Lino. "Student strategies in proof comprehension: Investigating the strategies students use to enhance their understanding when reading proof," Status: Mathematics Education Ph.D. (July 2023 – June 2025).
- **Dissertation Chair**, Acevedo, Carlos. "Interpretative Phenomenological Analysis: Examining Asset Perceptions And Persistence Of First-Generation Stem Students In Precalculus And Calculus Courses," Status: Mathematics Education Ph.D. Candidate (August 2024 - Current).
- **Dissertation Chair,** Zolt, Holly. "An Investigation of Instructors' Obligations and Pedagogical Choices During Instruction of Quotient Groups", Status: Completed Mathematics Education Ph.D. (January 2023 –June 2024).

* indicates graduate student co-author

- **Dissertation Chair,** Hicks, Michael. "The Creation of Mathematical Structure Through Reasoning by Analogy", Status: Completed Mathematics Education Ph.D. (May 2019 – May 2021).
- **Dissertation Co-Chair,** Fagan, Joshua. "Proof Validation at the Introduction to Proof Level: Framing and Designing a Multiple-Choice Assessment", Status: Mathematics Education PhD. Completed. (January 2017 – July 2019).
- **Dissertation Committee**, Buber, Zafer. "Slowing Down The Instructional Pace: Investigating The Impact Of A Low-Time Commitment Active Learning Strategy On Students' Participation And Achievement In College Precalculus Classes", Status: Mathematics Education Ph.D. Candidate. (August 2022 – current).
- **Dissertation Committee**, Kirmizi, Mehmet. "The Mediating Role Of Teacher Expectancy On Participation In Mathematics Whole Class Discussions," Status: Mathematics Education PhD. Completed. (January 2022 – July 2023).
- **Dissertation Committee**, Kirmizi, Mehmet.
- **Dissertation Committee**, Kirmizi, Mehmet.
- **Master's Thesis Committee,** Bicak, Zeliha. "Modeling a causal relationship between Poisson process", Status: Statistics, M.S. Completed (July 2020).

Awards and Fellowships

- Run to R1 Catalyst Postdoc Mentor (2023-2025)
- CRMSE Distinguished Lecturer (2024)
- NSF SIARM Fellow (2021-2023)
- College Achievement Award for Excellence in Service (2023)
- Department of Mathematics Service Excellence Award (2022)
- Texas State University Presidential Seminar Award (2020-2021)
- Texas State University Presidential Award in Scholar/Creative Activities, Assistant Rank (2020)
- College Achievement Award for Excellence in Scholarly/Creative Activities (2018; 2020)
- Department of Mathematics Research Excellence Award (2018; 2019)
- NSF Summer Institute for Advanced Research Methods Fellow - UChicago (2021- 2023)
- STaR Fellow, Association of Mathematics Teacher Educators (2018)

Professional Development and Continuing Education

- "Data Science Certificate," Cornell. (August 2023 - December 2023).
- "Advanced Measurement". SIARM Fellows Program (Summer 2021-2023)
- "Process Mining in Action," Eindhoven University of Technology. (March 2021 - July 2021).
- "Competing for Funding at the National Science Foundation." (January 12, 2017)
- Seminar, "College Mathematics Instructor Development Source." (July 12, 2018 - July 14, 2018).

* indicates graduate student co-author

- Program for Excellence in Teaching and Learning. (August 2016 - April 2017).
- "Allies Training." (April 10, 2017).
- "The Guide on the Side: Strategies for Mentoring Graduate Students." (March 8, 2017).

Professional Service

Editorial Panels

- **Member,** *The Journal of Mathematical Behavior* (Oct 2025 - present)
- **Member,** *International Journal of Research in Undergraduate Mathematics Education* (Sept 2025 - present)
- **Member,** *Journal for Research in Mathematics Education* (Oct 2021 – Oct 2024)

Conference and Organization Committees

- **Secretary,** RUME Executive Committee (2023 - present)
- **Coordinator / Organizer,** TX-OK RUME, March 2024
- **Member,** Program Committee, RUME (2021-2024)
- **Coordinator / Organizer,** TX-OK RUME, April 2020
- **Member,** Ad-Hoc Committee for the Advancement of LGBTQIA+ Inclusion in the RUME Community. (September 2018 – April 2019).
- **Coordinator / Organizer**, Mentoring & Partnerships for Women in RUME. (August 2016 – May 2018).
- **Coordinator / Organizer**, AMTE Conference (Task Force for Equity). (2017).
- **Strand Leader**, PME-NA. (2017).

Reviewer

Journals

- *Journal for Research in Mathematics Education*
- *Educational Studies in Mathematics*
- *The Journal of Mathematical Behavior*
- *Journal of Mathematics Teacher Education*
- *International Journal of STEM Education*
- *International Journal of Research in Undergraduate Mathematics Education*
- *PRIMUS*
- *Mathematics Teacher Educator*
- *For the Learning of Mathematics*

Conferences

- North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)
- SIGMAA on Research in Undergraduate Mathematics Education (RUME)
- National Council of Teachers of Mathematics Research Conference (NCTM)
- Association of Mathematics Teacher Educators (AMTE)

NSF Panel (2017, 2020, 2022)

* indicates graduate student co-author

Mentoring

- Led Mentoring Table on Publishing, SIGMAA on RUME, Omaha, NE. (February 2024)
- Led Mentoring Table on NSF Funding SIGMAA on RUME, Omaha, NE. (February 2023)
- Led Mentoring Session on NSF Funding SIGMAA on RUME, virtual. (February 2021).
- Led Mentoring Table on Supporting LGBTQIA+ Students, SIGMAA on RUME, Boston, MA. (February 28, 2020).

Institutional Service

College and University

- **College Representative,** Presidential Award for Excellence in Scholarly/Creative Activity Selection Committee (2023 – present)
- **Member,** RFP Grant Management Software Selection Committee, Texas State University (Jan 2025 - present)
- **Presidential Leadership Fellow,** Division or Research. Texas State University (2024-2025)
- **Co-Chair, Research Security Task Force,** Texas State University (Spring 2025)
- **Member,** Hiring Committee for COSE Pre-Award Support. (June 2023 – July 2023)
- **Department Representative**, Research Enhancement Program Review Panel (2022- 2023)
- **Doctoral Marshal,** Commencement (August 2022, December 2022)
- **Member,** Faculty Student Affairs Committee (Fall 2021 –Spring 2022)
- **Member,** PI Council. (September 2017 – June 2018; September 2023- Present).
- **Facilitator,** Allies Training **/ Member,** Alliance (May 2020/August 2016 – Present)

Department

- **Faculty Advisor**, Supporting Undergraduates For Powerful Equitable Results In Math (SUPER) (Summer 2021 – present)
- **Organizer,** Pre-Calculus Improvement and Development (August 2022-December 2023)
- **Member,** Graduate Committee. (August 2021- present)
- **Member,** Grad Expo Committee. (April 2021 – present)
- **Member,** PreCalculus Textbook Adoption Committee. (December 2022 – March 2023).
- **Chair,** Ad Hoc Mathematics Department Diversity Equity and Inclusion Committee, (Fall 2021- Spring 2022)
- **Organizer**, Mathematics Education Seminar. (Fall 2017 – Fall 2021).
- **Member**, Library Committee. (2016 – 2019).
- **Member**, Colloquium Committee. (August 2018 – May 2019).
- **Member**, Awards Committee (June 2020-May 2021)
- **Organizer**, Revamping the Curriculum Qualifying Exam Questions. (July 2018 – December 2018).
- **Member,** Committee on Committees. (September 2017 –May 2020)

* indicates graduate student co-author

Service to the Community

- **Workshop Leader,** Project NExT, Teaching Proof Session, Indianapolis, IN. (August 2024).
- **Workshop Leader,** Project NExT, Teaching Proof Session, Tampa, FL. (August 2023).
- **Workshop Leader,** Designing Groupwork for Equitable Participation in Proof Courses (May 2023; August 2024)
- **Workshop Leader,** SA COMmunity for Mathematics Inquiry in Teaching, San Antonio, TX. (September 24, 2022).
- **Workshop Leader,** SA COMmunity for Mathematics Inquiry in Teaching, San Antonio, TX. (April 23, 2022).

* indicates graduate student co-author