

## Kevin C. Moore

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### WORK EXPERIENCE

2020-Present	Professor	University of Georgia, Athens, GA
2016-2020	Graduate Coordinator	University of Georgia, Athens, GA Department of Mathematics & Science Education
2015-2020	Associate Professor	University of Georgia, Athens, GA
2010-2015	Assistant Professor	University of Georgia, Athens, GA
2006-2010	Research Assistant	Arizona State University, Tempe, AZ
2007-2008	Adjunct Faculty	Scottsdale Community College, Scottsdale, AZ
2005-2006	Graduate Assistant	The University of Akron, Akron, OH
2007-2011	Volunteer Assistant Coach	The University of Akron Golf Team, Akron, OH

### EDUCATION

Ph.D., Mathematics, Arizona State University, Tempe, Arizona, 2010  
Research emphasis in Mathematics Education.  
Dissertation: The Role of Quantitative and Covariational Reasoning in Developing Precalculus Students' Images of Central Concepts of Trigonometry.  
Committee Members: Marilyn Carlson, Chair; Patrick Thompson; Michael Oehrtman; Luis Saldanha; Kyeong Hah Roh; and Matthias Kawski

M.S. Applied Mathematics, The University of Akron, 2006  
Thesis: Deposition of Coatings Onto Nanofibers.  
Committee Members: Gerald Young, Advisor; Curtis Clemons, Co-Advisor; Kevin Kreider, Faculty Reader; and Joseph Wilder, Department Chair.

B.S. Applied Mathematics, The University of Akron, 2006  
Honor's Thesis: Deposition of Coatings Onto Nanofibers.  
Committee Members: Gerald Young, Advisor; Curtis Clemons, Co-Advisor; and Dale Mugler, Honors Dean.

### RESEARCH INTERESTS

Quantitative reasoning; Covariational reasoning; Precalculus and calculus learning; Algebraic reasoning; Graphing; Student meanings; Teacher meanings; Epistemic subjects.

## PUBLICATIONS

\* identifies an invited publication

### *Articles in Refereed Journals*

- Yoon, H., Byerley, C. O., Joshua, S., Moore, K. C., Park, M. S., Musgrave, S., Valaas, L. & Drimalla, J. (in press). United States and South Korean citizens' interpretation and assessment of COVID-19 quantitative data. *The Journal of Mathematical Behavior*.
- Liang, B. & Moore, K. C. (2020). Figurative and operative partitioning activity: Students' meanings for amounts of change in covarying quantities. *Mathematical Thinking and Learning*. Advanced online publication.
- Moore, K. C., Stevens, I. E., Paoletti, T., Hobson, N. L. F., & Liang, B. (2019). Pre-service teachers' figurative and operative graphing actions. *The Journal of Mathematical Behavior*, 56.
- Moore, K. C., Silverman, J., Paoletti, T., Liss, D., & Musgrave, S. (2019). Conventions, habits, and U.S. teachers' meanings for graphs. *The Journal of Mathematical Behavior*, 53, 179–195.
- Lee, H. Y., Moore, K. C., Tasova, H. I. (2019). Reasoning within quantitative frames of reference: The case of Lydia. *The Journal of Mathematical Behavior*, 53, 81–95.
- Paoletti, T., & Moore, K. C. (2018). A covariational understanding of function: Putting a horse before the cart. *For the Learning of Mathematics*, 38(3), 37-43.
- Paoletti, T., Stevens, I. E., Hobson, N. L. F., Moore, K. C., & LaForest, K. R. (2018). Pre-service teachers' inverse function meanings. *Educational Studies in Mathematics*, 97(1), 93-109.
- Paoletti, T., & Moore, K. C. (2017). The parametric nature of two students' covariational reasoning. *The Journal of Mathematical Behavior*, 48, 137-151.
- Paoletti, T., Stevens, I. E., & Moore, K. C. (2017). Tricks may inhibit students' reasoning. *Mathematics Teacher*, 110(6), 446-453.
- Teuscher, D., Moore, K. C., & Carlson, M. P. (2016). Decentering: A construct to characterize a focus on student thinking. *Journal of Mathematics Teacher Education*, 19(5), 433-456.
- Moore, K. C., LaForest, K. R., & Kim, H. J. (2016). Putting the unit in pre-service teachers' unit circle. *Educational Studies in Mathematics*, 92(2), 221-241.
- Moore, K. C., Paoletti, T., & Musgrave, S. (2014). Complexities in students' construction of the polar coordinate system. *The Journal of Mathematical Behavior*, 36, 135-149.

- \*Moore, K. C. (2014). Re-presentations and conceptual structures of what? *Constructivist Foundations Special Issue – Forty Years of Radical Constructivism in Educational Research*, 9(3), 371-373.
- Moore, K. C., & LaForest, K. R. (2014). The circle approach to trigonometry. *Mathematics Teacher*, 107(8), 616-623.
- Moore, K. C., Silverman, J., Paoletti, T., & LaForest, K. (2014). Breaking conventions to support quantitative reasoning. *Mathematics Teacher Educator*, 2(2), 141-157.
- Moore, K. C. (2014). Quantitative reasoning and the sine function: The case of Zac. *Journal for Research in Mathematics Education*, 45(1), 102-138.
- Castillo-Garsow, C., Johnson, H. L., & Moore, K. C. (2013). Chunky and smooth images of change. *For the Learning of Mathematics*, 33(3), 31-37.
- Moore, K. C., Paoletti, T., & Musgrave, S. (2013). Covariational reasoning and invariance among coordinate systems. *The Journal of Mathematical Behavior*, 32(3), 461-473.
- Moore, K. C. (2013). Making sense by measuring arcs: A teaching experiment in angle measure. *Educational Studies in Mathematics*, 83(2), 225-245.
- Moore, K. C., & Carlson, M. P. (2012). Students' images of problem contexts when solving applied problems. *The Journal of Mathematical Behavior*, 31(1), 48-59.
- Clark, P. G., Moore, K. C., & Carlson, M. P. (2008). Documenting the emergence of "speaking with meaning" as a sociomathematical norm in professional learning community discourse. *The Journal of Mathematical Behavior*, 27(24), 297-310.
- Moore, K., Clemons, C. B., Kreider, K. L., & Young, G. W. (2007). Modeling and simulation of axisymmetric coating growth on nanofibers. *Journal of Applied Physics*, 101(6).

### **Books and Monographs**

Steffe, L. P., Moore, K. C., Hatfield, L. L., & Belbase, S. (Eds.). (2014). *Epistemic algebraic students: Emerging models of students' algebraic knowing*. Laramie, WY: University of Wyoming.

Carlson, M. P., Oehrtman, M., & Moore, K. C. (2018). *Pathways to Calculus: A Problem Solving Approach* (7th ed.): Rational Reasoning.

### **Book Chapters**

\*Moore, K. C. (submitted). Abstracted quantitative structures: A marriage of quantitative reasoning and concept construction. *Quantitative reasoning in mathematics and science education*.

- \*Moore, K. C. (2021). Graphical shape thinking and transfer. In C. Hohensee & J. Lobato (Eds.), In C. Hohensee & J. Lobato (Eds.) *Transfer of learning: Progressive perspectives for mathematics education and related fields* (pp. 145-171). Springer.
- \*Weber, K. & Moore, K. C. (2017). Contemporary perspectives on mathematical thinking and learning. In L. J. Ball & V. A. Thompson (Eds.), *International handbook of thinking & reasoning* (pp. 590-606). Abingdon, Oxon: Routledge.
- \*Carlson, M. P., & Moore, K. C. (2015). The role of covariational reasoning in understanding and using the function concept. In E. A. Silver & P. A. Kenney (Eds.), *Lessons learned from research: Useful and useable research related to core mathematical practices* (Vol. 1) (pp. 279-291). Reston, VA: National Council of Teachers of Mathematics.
- Moore, K. C. (2014). Signals, symbols, and representational activity. In L. P. Steffe, K. C. Moore, L. L. Hatfield, & S. Belbase (Eds.), *Epistemic algebraic students: Emerging models of students' algebraic knowing* (pp. 211-235). Laramie, WY: University of Wyoming.
- \*Moore, K. C. (2012). Coherence, quantitative reasoning, and the trigonometry of students. In R. Mayes & L. L. Hatfield (Eds.), *Quantitative reasoning and mathematical modeling: A Driver for STEM integrated education and teaching in context* (pp. 75-92). Laramie, WY: University of Wyoming.
- \*Moore, K. C. (2011). Participant research foci essay. In S. Chamberlin, L. L. Hatfield & S. Belbase (Eds.), *New perspectives and directions for collaborative research in mathematics education: Papers from a planning conference for WISDOM<sup>e</sup>* (pp. 69-73). Laramie, WY: University of Wyoming.

### ***Refereed Proceedings***

- Waswa, A., & Moore, K. C. (2020). Investigating elementary pre-service teachers' conceptions of mathematical creativity. In A. I. Sacristán, J. C. Cortés-Zavala & P. M. Ruiz-Arias, (Eds.). *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1535–1543). Mexico: Cinvestav/PME-NA
- Tasova, H. I., & Moore, K. C. (2020). Framework for representing a multiplicative object in the context of graphing. In A. I. Sacristán, J. C. Cortés-Zavala & P. M. Ruiz-Arias, (Eds.). *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 210–219). Mexico: Cinvestav/PME-NA
- Drimalla, J., Tyburski, B., Byerley, C., Boyce, S., Grabhorn, J., Roman, C., Moore, K. C. (2020) An invitation to conversation: Addressing the limitations of graphical tasks for assessing covariational reasoning. In A. I. Sacristán, J. C. Cortés-Zavala & P. M. Ruiz-Arias, (Eds.). *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 2270–2278). Mexico: Cinvestav/PME-NA

- Tasova, H. I. & Moore, K. C. (2020). Constructing and representing a quantitative structure: A conceptual analysis. In M. Gresalfi & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 1181–1188). Nashville, Tennessee: International Society of the Learning Sciences.
- Liang, B., Ying, Y., & Moore, K. C. (2020). A conceptual analysis for optimizing two- variable functions in linear programming. In S. S. Karunakaran, Z. Reed, & A. Higgins (Eds.), *Proceedings of the 23rd Annual Conference on Research in Undergraduate Mathematics Education* (pp. 374-381). Boston, MA.
- Moore, K. C., Liang, B., Stevens, I. E., Tasova, H. I., Paoletti, T., & Ying, Y. (2020). A quantitative reasoning framing of concept construction. In S. S. Karunakaran, Z. Reed, & A. Higgins (Eds.), *Proceedings of the 23rd Annual Conference on Research in Undergraduate Mathematics Education* (pp. 743-752). Boston, MA.
- Tasova, H., Liang, B., & Moore, K. C. (2020). The role of lines and points in the construction of emergent shape thinking. In S. S. Karunakaran, Z. Reed, & A. Higgins (Eds.), *Proceedings of the 23rd Annual Conference on Research in Undergraduate Mathematics Education* (pp. 562-570). Boston, MA.
- Moore, K. C., Liang, B., Tasova, H. I., & Stevens, I. E. (2019). Abstracted quantitative structures. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.), *Proceedings of the Forty-First Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1879-1883). St Louis, MO: University of Missouri.
- Tasova, H. I., Liang, B., & Moore, K. C. (2019). Generalizing actions of forming: Identifying patterns and relationships between quantities. In A. Weinberg, D. Moore-Russo, H. Soto, & M. Wawro (Eds.), *Proceedings of the Twenty-Second Annual Conference on Research in Undergraduate Mathematics Education* (pp. 602–610). Oklahoma City, OK.
- Paoletti, T., Silverman, J., Moore, K. C., Vishnubhotla, M., Rahman, Z., Monahan, C., & Germia, E. (2018). Reasoning about quantities or conventions: Investigating shifts in in-service teachers’ meanings after an on-line graduate course. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twenty-first Annual Conference on Research in Undergraduate Mathematics Education* (pp. 508-516). San Diego, CA.
- Liang, B., & Moore, K. C. (2018). Figurative thought and a student’s reasoning about “amounts” of change. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twenty-first Annual Conference on Research in Undergraduate Mathematics Education* (pp. 271-285). San Diego, CA.
- Paoletti, T., Moore, K. C., Silverman, J., Liss, D., Musgrave, S., Vishnubhotla, M., & Rahman, Z. (2018). Conventions or constraints? Pre-service and in-service teachers’ understandings.

In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twenty-first Annual Conference on Research in Undergraduate Mathematics Education* (pp. 87-101). San Diego, CA.

Tasova, H., Stevens, I., & Moore, K. C. (2018). A framework for analyzing written curriculum from a shape-thinking and (co)variational reasoning perspective. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twenty-first Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1527-1533). San Diego, CA.

Liang, B., Stevens, I. E., Tasova, H. I., & Moore, K. C. (2018). Magnitude reasoning: Characterizing a pre-calculus student's quantitative comparison between covarying magnitudes. In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 608-611). Greenville, SC: University of South Carolina & Clemson University.

Tasova, H. I., & Moore, K. C. (2018). Generalization of an invariant relationship between two "quantities". In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 588-595). Greenville, SC: University of South Carolina & Clemson University.

Paoletti, T., & Moore, K. C. (2018). A covariational understanding of function: Putting a horse before the cart. In T.E. Hodges, G. J. Roy, & A. M. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 203-206). Greenville, SC: University of South Carolina & Clemson University.

Ellis, A., Tillema, E., Lockwood, E., Moore, K. C. (2017). Generalization across domains: The relating-forming-extending generalization framework. 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. 677-684). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Lee, H. Y., Tasova, H., & Moore, K. C. (2017). Reasoning within quantitative frames of reference and graphing: The case of Lydia. 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. 753-756). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Hardison, H., Stevens, I. E., Lee, H. Y., & Moore, K. C. (2017). Lydia's circle concept: The intersection of figurative thought and covariational reasoning. 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. 391). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

- Stevens, I. E. & Moore, K. C. (2017). The intersection between quantification and an all-encompassing meaning for a graph. 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. 709-716). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
- Liang, B. & Moore, K.C. (2017). Reasoning with change as it relates to partitioning activity. 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. 303-306). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
- Stevens, I. E., Paoletti, T., Moore, K. C., Hobson, N. L. F., & Hardison, H. (2017). Principles for designing tasks that promote covariational reasoning. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twentieth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 928-936). San Diego, CA.
- Hobson, N. L. F., & Moore, K. C. (2017). Exploring experts' covariational reasoning. In A. Weinberg, C. Rasmussen, J. Rabin, M. Wawro, & S. Brown (Eds.), *Proceedings of the Twentieth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 664-672). San Diego, CA.
- Stevens, I. E., & Moore, K. C. (2016). The Ferris wheel and justifications of curvature. In Wood, M. B., Turner, E. E., Civil, M., & Eli, J. A. (Eds.), *Proceedings of the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 644-651). Tucson, AZ: The University of Arizona.
- Moore, K. C. (2016). Graphing as figurative and operative thought. In Csikos, C., Rausch, A., & Sztányi, J. (Eds.). *Proceedings of the 40th Conference of the International Group for the Psychology of Mathematics Education*, Vol. 3, pp. 323-330. Szeged, Hungary: PME.
- Moore, K. C., Paoletti, T., Stevens, I. E., & Hobson, N. L. F. (2016). Graphing habits: "I just don't like that". In T. Fukawa-Connelly, N. Infante, M. Wawro, & S. Brown (Eds.), *Proceedings of the Nineteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 16-30). Pittsburgh, PA: West Virginia University.
- Paoletti, T., & Moore, K. C. (2016). Covariational and parametric reasoning. In T. Fukawa-Connelly, N. Infante, M. Wawro, & S. Brown (Eds.) *Proceedings of the Nineteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 368-382). Pittsburgh, PA: West Virginia University.
- Moore, K. C., & Silverman, J. (2015). Maintaining conventions and constraining abstraction. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the*

*Psychology of Mathematics Education* (pp. 518-525). East Lansing, MI: Michigan State University.

Stevens, I. E., Hobson, N. L. F., Moore, K. C., Paoletti, T., LaForest, K. R., & Mauldin, K. D. (2015). Changing cones: Themes in students' representation of a dynamic situation. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 363-370). East Lansing, MI: Michigan State University.

Stevens, I. E., LaForest, K. R., Hobson, N. L. F., Paoletti, T., & Moore, K. C. (2015). Undergraduate students' inverse strategies and meanings. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 262). East Lansing, MI: Michigan State University.

Paoletti, T., Mauldin, K. D., Moore, K. C., Stevens, I. E., Hobson, N. L. F., & LaForest, K. R. (2015). Changing cones: Students' images of a dynamic situation. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), *Proceedings of the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 427). East Lansing, MI: Michigan State University.

Moore, K. C., & Thompson, P. W. (2015). Shape thinking and students' graphing activity. In T. Fukawa-Connelly, N. Infante, K. Keene, & M. Zandieh (Eds.), *Proceedings of the Eighteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 782-789). Pittsburgh, PA: West Virginia University.

Moore, K. C., & Paoletti, T. (2015). Bidirectionality and covariational reasoning. In T. Fukawa-Connelly, N. Infante, K. Keene, & M. Zandieh (Eds.), *Proceedings of the Eighteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 774-781). Pittsburgh, PA: West Virginia University.

Paoletti, T., Stevens, I. E., Hobson, N. L. F., Moore, K. C., & LaForest, K. R. (2015). Pre-service teachers' inverse function meanings. In T. Fukawa-Connelly, N. Infante, K. Keene, & M. Zandieh (Eds.), *Proceedings of the Eighteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 853-867). Pittsburgh, PA: West Virginia University.

Moore, K. C., Liss II, D. R., Silverman, J., Paoletti, T., LaForest, K. R., & Musgrave, S. (2013). Pre-service teachers' meanings and non-canonical graphs. In Martinez, M. & Castro Superfine, A. (Eds.), *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 441-448). Chicago, IL: University of Illinois at Chicago.

Moore, K. C., Silverman, J., Paoletti, T., Liss, D., LaForest, K. R., & Musgrave, S. (2013). The primacy of mathematical conventions in student meanings. In Martinez, M. & Castro



Superfine, A. (Eds.), *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 837-840). Chicago, IL: University of Illinois at Chicago.

LaForest, K. R., Moore, K. C., Silverman, J., Paoletti, T., Musgrave, S., & Liss II, D. R. (2013). Common treatments of function: Where's the relationship? In Martinez, M. & Castro Superfine, A. (Eds.), *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 563). Chicago, IL: University of Illinois at Chicago.

Moore, K. C., Paoletti, T., Gammara, J., & Musgrave, S. (2013). Covariational reasoning and graphing in polar coordinates. In (Eds.) S. Brown, G. Karakok, K. H. Roh, & M. Oehrtman, *Proceedings of the Sixteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 351-365). Denver, CO: University of Northern Colorado.

Paoletti, T., Moore, K. C., Gammara, J., & Musgrave, S. (2013). Students' emerging understandings of the polar coordinate system. In (Eds.) S. Brown, G. Karakok, K. H. Roh, & M. Oehrtman, *Proceedings of the Sixteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 366-380). Denver, CO: University of Northern Colorado.

Moore, K. C., LaForest, K., & Kim, H. J. (2012). The unit circle and unit conversions. In (Eds.) S. Brown, S. Larsen, K. Marrongelle, and M. Oehrtman, *Proceedings of the Fifteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 16-31). Portland, OR: Portland State University.

Moore, K. C., Teuscher, D., & Carlson, M. P. (2011). Exploring shifts in a teacher's key developmental understandings and pedagogical actions. In Wiest, L. R., & Lamberg, T. (Eds.), *Proceedings of the 33rd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1673-1681). Reno, NV: University of Nevada, Reno.

Marfai, F. S., Moore, K. C., & Teuscher, D. (2011). The influence of a teacher's decentering moves on students engaging in reflective thinking. In Wiest, L. R., & Lamberg, T. (Eds.), *Proceedings of the 33rd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 138-146). Reno, NV: University of Nevada, Reno.

Moore, K. C. (2011). Relationships between quantitative reasoning and students' problem solving behaviors. *Proceedings of the Fourteenth Annual Conference on Research in Undergraduate Mathematics Education* (pp. 298-313). Portland, OR: Portland State University.

Moore, K. C. (2010). The role of the radius in students constructing trigonometric understandings. In Brosnan, P., Erchick, D. B., & Flevares, L. (Eds.), *Proceedings of the 32nd annual meeting of the North American Chapter of the International Group for the*

*Psychology of Mathematics Education* (pp. 815-822). Columbus, OH: The Ohio State University.

Moore, K. C. (2009). Trigonometry, technology, and didactic objects. In Swars, S. L., Stinson, D. W., & Lemons-Smith, S. (Eds.), *Proceedings of the 31st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1480-1488). Atlanta, GA: Georgia State University.

Clark, P. G., Carlson, M. P., & Moore, K. (2007). Documenting the emergence of "speaking with meaning" as a sociomathematical norm in professional learning community discourse. In T. Lamberg & L. R. Wiest (Eds.), *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 872-874). Stateline (Lake Tahoe), NV: University of Nevada, Reno.

Carlson, M. P., Bowling, S., Moore, K., & Ortiz, A. (2007). The role of the facilitator in promoting meaningful discourse among professional learning communities of secondary mathematics and science teachers. In T. Lamberg & L. R. Wiest (Eds.), *Proceedings of the 29th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 841-848). Stateline (Lake Tahoe), NV: University of Nevada, Reno.

### ***Papers and Published Proceedings***

\*Moore, K. C., & Thompson, P. W. (2016). Ideas of calculus, and graphs as emergent traces. *Paper presented at the 13th International Congress on Mathematical Education*. Hamburg, Germany.

Paoletti, T., Moore, K. C., & Stevens, I. E. (2016). Task-design principles for covariational reasoning. *Paper presented at the 13th International Congress on Mathematical Education*. Hamburg, Germany.

Teuscher, D., Moore, K. C., & Carlson, M. P. (2013). Implementing Pathways curriculum: What are we learning from in-service and pre-service teachers to inform and modify project resources? *Proceedings of the 2013 Math and Science Learning Network Conference*. Washington, D.C.: National Science Foundation.

Carlson, M. P., Nicol, C., Moore, K. C., Teuscher, D., & Milner, F. (2013). An adaptive model for supporting shifts in secondary precalculus instruction and student learning. *Proceedings of the 2013 Math and Science Learning Network Conference*. Washington, D.C.: National Science Foundation.

Carlson, M. P., Moore, K. C., Teuscher, D., Slemmer, G., Underwood, K., & Tallman, M. (2012). Affecting and documenting shifts in secondary precalculus teachers' instructional effectiveness and students' learning. *Proceedings of the 2012 Math and Science Learning Network Conference*. Washington, D.C.: National Science Foundation.

- Moore, K. C., Carlson, M. P., & Teuscher, D. (2011). Using research-based curriculum to support shifts in teachers' key pedagogical understandings. *Proceedings of the 2011 National Science Foundation Math and Science Partnership Learning Network Conference*. Washington, D.C.: National Science Foundation.
- Teuscher, D., Moore, K. C., & Carlson, M. P. (2011). Interaction between teacher's questions and student discourse. *Proceedings of the 2011 National Science Foundation Math and Science Partnership Learning Network Conference*. Washington, D.C.: National Science Foundation.
- Carlson, M. P., Slemmer, G., Moore, K., Teuscher, D., & Joyner, K. (2011). Key variables for establishing and sustaining highly effective professional learning communities. *Proceedings of the 2011 National Science Foundation Math and Science Partnership Learning Network Conference*. Washington, D.C.: National Science Foundation.
- Moore, K. C. (2010). The role of quantitative and covariational reasoning in developing precalculus students' images of angle measure and central concepts of trigonometry. *Proceedings of the Thirteenth Annual Conference on Research in Undergraduate Mathematics Education*. Raleigh, NC: North Carolina State University.
- Moore, K. C., Carlson, M. P., & Oehrtman, M. (2009). The role of quantitative reasoning in solving applied precalculus problems. *Proceedings of the Twelfth Annual Conference on Research in Undergraduate Mathematics Education*. Raleigh, NC: North Carolina State University.
- Moore, K. C. (2009). An investigation into precalculus students' conceptions of angle measure. *Proceedings of the Twelfth Annual Conference on Research in Undergraduate Mathematics Education*. Raleigh, NC: North Carolina State University.
- \*Thompson, P. W., Castillo-Garsow, C., Moore, K., & Carlson, M. P. (2008). *Quantitative reasoning as a foundation for "algebra as modeling"*. Paper presented at the Pathways to Algebra Conference. Evron, France.
- Moore, K. C., & Bowling, S. A. (2008). Covariational reasoning and quantification in a college algebra course. *Proceedings for the Eleventh Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Conference*. San Diego, CA: San Diego State University.
- Clark, P., Moore, K., & Mullen, K. (2008). Speaking with meaning in a college algebra course. *Proceedings for the Eleventh Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Conference*. San Diego, CA: San Diego State University.

### ***Published Abstracts***

- Moore, K. C. (2020). Variation, covariation, and conceptual or experiential time. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 431.
- Ying, Y., & Moore, K. C. (2020). A conceptual analysis of students' abstracted structural reasoning. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 433.
- Moore, K. C., Stevens, I., Liang, B., & Tasova, H. (2019). Concept construction and abstracted quantitative structures. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 39(1), 421.
- Tasova, H., Liang, B., Stevens, I., Moore, K. C. (2019). Characterizing two undergraduate students' quantitative comparisons of covarying quantities' magnitudes. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 421.
- \*Moore, K. C. (2018). Visualization: Constructing what's "out there". In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 40(1), 362.
- Tasova, H., & Moore, K. C. (2018). Justification of an invariant relationship between two quantities: Coordinating quantities vs. steepness of tangent lines. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 39(1), 462.
- Moore, K. C. (2017). Graphing and fostering operative thought. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 38(1), 463.
- Hobson, N., & Moore, K. C. (2017). Exploring experts' reasoning in modeling dynamic situations. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 38(1), 462.
- Liang, B., & Moore, K. C. (2017). Rate of change as a feature of partitioning activity: The case of Lydia. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 38(1), 462.
- Stevens, I. E., & Moore, K. C. (2017). A case study: When graphs contain everything. In C. D. Savage, G. Benkart, B. D. Boe, M. L. Lapidus, & S. H. Weintraub. *Abstracts of Papers Presented to the American Mathematical Society*, 38(1), 461-462.
- Moore, K. C. (2016). Graphing habits and students' thinking about graphs emergently. *Abstracts of Papers Presented to the American Mathematical Society*, 37(1), 434.

- Musgrave, S. M., & Moore, K. C. (2013). Conventions and mathematical meaning—An exploration through functions and inverses. *Abstracts of Papers Presented to the American Mathematical Society*, 34(1), 436.
- Moore, K. C., LaForest, K. R., & Kim, H. J. (2012). A circle of radius one: Pre-service teachers' notions of the unit circle. *Abstracts of Papers Presented to the American Mathematical Society*, 33(1), 451.
- Moore, K. C. (2011). Quantitative reasoning and students' approaches to solving novel problems. *Abstracts of Papers Presented to the American Mathematical Society*, 32(1), 446.
- Moore, K. C. (2010). The role of angle measure and the radius as a unit of measurement in developing coherent understandings of trigonometric functions. *Abstracts of Papers Presented to the American Mathematical Society*. 31(1), 338.
- Moore, K. C. (2009). An investigation of students' problem solving abilities: Where's the quantity? *Abstracts of Papers Presented to the American Mathematical Society*, 30(1), 346.
- Bowling, S. A., Moore, K. C., & Carlson, M. P. (2008). The development of covariational reasoning in a college algebra course. *Abstracts of Papers Presented to the American Mathematical Society*, 29(1), 320.

## GRANT ACTIVITY

### ***External***

- National Science Foundation DUE IUSE RAPID Program, *Creating Opportunities for Visualization of Data: Applying STEM Education Research*. 2020-2021, \$193,101. Co-principal Investigator (Principal Investigator Cameron Byerley).
- National Science Foundation Education and Human Resources Fundamental Research in STEM. *Generalization Across Multiple Mathematical Areas: Classrooms and Teaching*. 2019-2022, \$1,499,857. Co-principal Investigator (Principal Investigator Amy Ellis, Co-principal Investigator Elise Lockwood, and Co-principal Investigator Erik Tillema).
- National Science Foundation REAL, *Generalization Across Multiple Mathematical Areas*. 2015-2019, \$1,499,908. Co-principal investigator (Principal Investigator Amy Ellis, Co-principal Investigator Elise Lockwood, and Co-principal Investigator Erik Tillema).
- National Science Foundation CAREER, *Advancing Secondary Mathematics' Teachers Quantitative Reasoning*. 2014-2019, \$741,491. Principal Investigator.  
<https://goo.gl/2MXpwy>
- American Educational Research Association Research Conference Award, *Developing a framework for professional conduct and high quality in design-based research: Perspectives*

*from two educational design fields*, 2013-2014, \$35,000, Co-principal investigator (Principal Investigator T.J. Kopcha and Co-principal Investigator Cory Buxton).

Project Member, Scottsdale Community College Educational Development Project, *Online Course Materials for Brief Calculus*, 2010, \$1,820. Project director Phillip Clark.

Project Member, Scottsdale Community College Educational Development Project, *Instructional Activities and Tools for Brief Calculus*, 2008, \$1,912. Project director Jenifer Bohart.

### ***Internal***

University of Georgia The Graduate School Recruitment Enhancement Grant, 2019-2020, \$2,000.

University of Georgia The Graduate School Recruitment Enhancement Grant, 2018-2019, \$1,500.

University of Georgia The Graduate School Graduate Program Enhancement Grant, 2018-2019, \$25,000.

University of Georgia The Graduate School Recruitment Enhancement Grant, 2017-2018, \$1,000.

University of Georgia The Graduate School Recruitment Enhancement Grant, 2016-2017, \$1,000.

University of Georgia Provost Summer Research Grant, *Preparing Secondary Mathematics Teachers to Teach for Quantitative Reasoning*, 2014, \$5,000, Principal Investigator.

University of Georgia Summer Research Support Program, *Quantitative Reasoning and Prospective Secondary Teachers' Mathematical Thinking*, 2013, \$5,000, Principal Investigator.

University of Georgia College of Education Early Career Grant, *Exploring Pre-service Secondary Teachers' Understandings of Trigonometric Functions and Polar Coordinates*, 2011-2012, \$5,993, Principal Investigator.

### ***Grant Related Activity***

Advisory Board Member, National Science Foundation, *Scaffolding Strategies for Undergraduate Mathematical Modeling Skill*, 2018-present. Principal Investigator Jennifer Czocher.

Expert Panel, National Science Foundation, *Enhancing Explorations in Functions for Preservice Secondary Mathematics Teachers*, 2016-2018. Principal Investigator James A. Mendoza Álvarez.

Consultant, National Science Foundation, *Project Aspire: Defining and Assessing Mathematical Knowledge for Teaching Mathematics*, 2012. Principal Investigator Patrick W. Thompson.

Research Partner, National Science Foundation Math and Science Partnership Phase II, *Pathways to Calculus: Disseminating and Scaling a Professional Development Model for Precalculus Level Instruction*, 2011-2014, \$2,099,629. Principal Investigator Marilyn Carlson.

### **Grants Submitted**

National Science Foundation ECR DBER DCL Program, *Developing a Partnered Community for research between RUME and PER*. 2020-2022, \$1,500,000. Co-principal Investigator (Principal Investigator Warren Christensen, co-Principal Investigator Steven Jones, co-Principal Investigator Michael Loverude, co-Principal Investigator Michael Oehrtman, co-Principal Investigator Vicki Sealey, co-Principal Investigator John Thompson, and co-Principal Investigator Suzanne White Brahmia). Submitted 2019. Funding denied.

National Science Foundation DRL DRK-12 Program, *Generalization Across Multiple Mathematical Areas: Classrooms and Teaching*. 2019-2023, \$2,999,446. Co-principal Investigator (Principal Investigator Amy Ellis, Co-principal Investigator Elise Lockwood, and Co-principal Investigator Erik Tillema). Submitted 2018. Funding denied.

Spencer Small Grant, *Cultivating Productive Mathematical Generalizing in Classroom Settings*. 2018, \$49,713. Co-principal Investigator (Principal Investigator Amy Ellis). Submitted 2018. Funding denied.

National Science Foundation DRL Core R&D Program, *Collaborative Research: Identifying a Common Cognitive Core Across K-16 Mathematics Education*. 2018, \$97,507. Principal Investigator. Collaborative Principal Investigators Anderson Norton (Virginia Tech) and Ron Tzur (University of Colorado Denver). Submitted 2017. Funding denied.

National Science Foundation Transforming Undergraduate Education in Science Type 2, *Supporting Prospective Teachers Mathematical and Pedagogical Development through a Focus on the Quantitative and Algebraic Foundations of Trigonometry*. 2012-2015, \$222,904. Principal Investigator. Collaborative Principal Investigator Jason Silverman (Drexel University). Submitted 2012. Funding denied.

### **INVITED ADDRESSES**

*\* identifies a Plenary*

\*Byerley, C., Yoon, H., Joshua, S., Moore, K. C., You, S., Drimalla, J., Park, M. S., Valaas, L., Gong, M., & Tasova, H. (2021, March). *Interpreting and Understanding COVID-19 Data*. The Implications of COVID-19 for Science and Mathematics Education. International Consortium for Research in Science & Mathematics Education.

Moore, K. C. (2021, March). *Abstraction and the Graphing Foundations for Collegiate Mathematics*. Connecting Collegiate Mathematics to Secondary Mathematics for Mathematics

Educators. Department of Mathematics Education Center for Research in Mathematics Education, Seoul National University.

Moore, K. C. (2021, March). *A Quantitative Reasoning Approach to Concept Construction*. Virginia Polytechnic Institute and State University Department of Mathematics Mathematics Education Research Seminar. Blacksburg, VA.

Moore, K. C. (2021, January). *Slope and Partitioning Activity: Nuances in Students' Quantitative Reasoning*. Slope Studies Seminar, Autonomous University of Guerrero, Mexico.

Byerley, C., Joshua, S., Yoon, H., Moore, K. C., Park, M. S., Drimalla, J., & You, S. (2020, December). *Citizens' interpretations of the slope of graphs of COVID-19 data*. Slope Studies Seminar, Autonomous University of Guerrero, Mexico.

\*Moore, K. C., Byerley, C., Yoon, H., Joshua, S., Park, M., Valaas, L., Drimalla, J., & You, S. (2020, September). *COVID-19 media Quantitative Data Representations (QDRs)*. Mathematics Education in the Era of COVID-19: The Cases of Korea, Singapore, and USA. Department of Mathematics Education Center for Research in Mathematics Education, Seoul National University.

\*Byerley, C., Joshua, S., Yoon, H., Drimalla, J., Y Park, M., Valaas, L., You, S., & Moore, K. C. (2020, September). *Evidence from a pandemic: The importance of helping students make comparisons of relative size*. Mathematics Education in the Era of COVID-19: The Cases of Korea, Singapore, and USA. Department of Mathematics Education Center for Research in Mathematics Education, Seoul National University.

Moore, K. C. (2020, September). *On covariational reasoning: Covariation of what?* Proof Comprehension Research Group Research Series. Rutgers University, NJ.

Moore, K. C. (2018, October). *Re-presentation and multiple representations*. Sonoma State University Department of Mathematics and Statistics Public Colloquium Series. Rohnert Park, CA.

Moore, K. C. (2018, January). *Visualization: Constructing what's "out there"*. Abstract presented at the AMS Special Session on Visualization in Mathematics: Perspectives of Mathematicians and Mathematics Educators, Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Diego, CA.

Moore, K.C. (2017, October). *Students' graphing activity: Re-presentations of what?* The Michigan State University Program in Mathematics Education Lappan-Phillips-Fitzgerald Mathematics Education Colloquium Series. East Lansing, MI.

Moore, K. C. (2017, February). *Education research at the interface of mathematics and physics: Trigonometry Edition*. Mathematization of Introductory Physics working group contributor at the Twentieth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.



- Moore, K. C., & Stevens, I. E. (2016, October). *Broadening students' graphing experiences*. Invited feature speaker at the 57th Georgia Mathematics Conference. Eagleton, GA.
- Moore, K. C., & Thompson, P. W. (2016, July). *Ideas of calculus, and graphs as emergent traces*. Paper presented at the 13th International Congress on Mathematics Education. Hamburg, Germany.
- Moore, K. C. (2016, February). *Students' ways of thinking about graphs: "I just don't like that"*. Texas State University Department of Mathematics Colloquium Series. San Marcos, TX.
- Moore, K. C. (2015, November). *What does it mean to understand an idea or concept?* University of Georgia Department of Mathematics Precalculus Teaching Seminar. Athens, Ga.
- Langrall, C., Lewis, K. E., Moore, K. C., & Barnes, D. (2015, April). *Crafting a dissertation-based research article for JRME*. National Council of Teacher of Mathematics 2015 Research Conference Symposium. Boston, MA.
- Crespo, S., Moore, K. C., Silverman, J., Smith, M., Van Zoest, L. R., Kersaint, G. (2015, April). *Researchers as Mathematics Teacher Educators: Developing MTE manuscripts from research*. National Council of Teacher of Mathematics 2015 Research Conference Symposium. Boston, MA.
- Moore, K. C. (2015, March). *Conventions shaping students' ways of thinking*. Kennesaw State University Department of Mathematics Colloquium. Kennesaw, GA.
- Moore, K. C. (2015, March). *Notation, function, and conventions*. University of Georgia Department of Mathematics Math Teaching Seminar. Athens, Ga.
- Moore, K. C. (2015, March). *Discrete or integrated – which direction?* Georgia Superintendents Education Policy Advisory Group. Athens, GA.
- Moore, K. C., Stevens, I., LaForest, K. (2014, October). *Functions as relationships and quantitative reasoning*. 55th Georgia Mathematics Conference. Eatonton, GA.
- Moore, K. C. (2014, March). *Conventions, abstraction, and quantitative reasoning*. Arizona State University School of Mathematical and Statistical Science Colloquium. Tempe, AZ.
- Moore, K. C., & Conner, A. (2013, November). *Teaching Analytic Geometry and Coordinate Algebra: Mathematical Practices and the CCGPS*. 2013-2014 Georgia Department of Education RESA Mathematics Mentors Meeting. Warner Robins, GA.
- Moore, K. C. (2013, October). *Breaking conventions and creating learning opportunities*. Virginia Polytechnic Institute and State University Department of Mathematics Colloquium. Blacksburg, VA.

Moore, K. C. (2013, March). *Trigonometry: Just what is the role of angle measure?* Northern Illinois University Department of Mathematics Colloquium. DeKalb, IL.

Moore, K. C. (2013, March). *Decentering and mathematical knowledge for teaching: Exploring links between teachers' knowledge, questioning, and student thinking.* Northern Illinois University Department of Mathematics Colloquium. DeKalb, IL.

Moore, K. C. (2011, September). *Using angle measure to foster connections in trigonometry.* American Mathematical Association of Two-Year Colleges Webinar Series.

Moore, K. C. (2011, April). *Quantitative reasoning: Building foundations for problem solving in mathematics.* Quantitative Reasoning and Mathematical Modeling in the Sciences (QRaMMS) Seminar Series. Laramie, WY.

Moore, K. C. (2009, November). *The role of quantitative and covariational reasoning in understanding key ideas of trigonometry in precalculus.* University of Illinois at Chicago Mathematics, Statistics, and Computer Science Department Colloquium. Chicago, IL.

Carlson, M., & Moore, K. (2008, August). *The role of quantitative reasoning in learning word problems in pre-calculus mathematics. Implications for Teaching of Research on Learning* Symposium of MathFest 2008 hosted by Mathematical Association of America. Madison, WI.

## PRESENTATIONS

Tasova, H. I., & Moore, K. C. (postponed to 2021). *Framework for representing a multiplicative object in the context of graphing.* Paper presented at the 42st Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Mexico.

Drimalla, J., Tyburski, B., Byerley, C., Boyce, S., Grabhorn, J., Roman, C., Moore, K. C. (2020) *An invitation to conversation: Addressing the limitations of graphical tasks for assessing covariational reasoning.* Paper presented at the 42st Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Mexico.

Waswa, A., & Moore, K. C. (2020). *Investigating elementary pre-service teachers' conceptions of mathematical creativity.* Paper presented at the 42st Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Mexico.

Tasova, H. I., & Moore, K. C. (2020, July). *Constructing and representing a quantitative structure: A conceptual analysis.* Paper presented at The International Conference of the Learning Sciences. Nashville, TN.

Tasova, H. I., Liang, B., & Moore, K. C. (2020, February). *The role of lines and points in the construction of emergent shape thinking.* Paper presented at the Twenty-Third Annual Special

Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Boston, MA.

Liang, B., Ying, Y., & Moore, K. C. (2020, February). *A conceptual analysis for optimizing two-variable functions in linear programming*. Paper presented at the Twenty-Third Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Boston, MA.

Moore, K. C., Liang, B., Stevens, I. E., Tasova, H. I., Paoletti, T., & Ying, Y. (2020, February). *A quantitative reasoning framing of concept construction*. Paper presented at the Twenty-Third Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Boston, MA.

Moore, K. C. (2020, January). *Variation, covariation, and conceptual or experiential time*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Denver, CO.

Ying, Y., & Moore, K. C. (2020, January). *A conceptual analysis of students' abstracted structural reasoning*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Denver, CO.

Moore, K. C., Liang, B., Tasova, H. I., & Stevens, I. E. (2019, November). *Abstracted quantitative structures*. Paper presented at the 41st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. St. Louis, MO.

Tasova, H. I., Liang, B., & Moore, K. C. (2019, February). *Generalizing actions of forming: Identifying patterns and relationships between quantities*. Paper presented at the Twenty-Second Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Oklahoma City, OK.

Moore, K. C., Stevens, I., Liang, B., & Tasova, H. (2019, January). *Concept construction and abstracted quantitative structures*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Baltimore, MD.

Tasova, H., Liang, B., Stevens, I., Moore, K. C. (2019, January). *Characterizing two undergraduate students' quantitative comparisons of covarying quantities' magnitudes*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Baltimore, MD.

Liang, B., Stevens, I. E., Tasova, H. I., & Moore, K. C. (2018, November). *Magnitude reasoning: Characterizing a pre-calculus student's quantitative comparison between covarying magnitudes*. Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.

Tasova, H., & Moore, K. C. (2018, November). *Generalization of an invariant relationship between two "quantities"*. Paper presented at the 40th annual meeting of the North American

Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.

Paoletti, T., & Moore, K. C. (2018, November). *A covariational understanding of function: Putting a horse before the cart*. Paper presented at the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.

Paoletti, T., Silverman, J., Moore, K. C., Vishnubhotla, M., Rahman, Z., Monahan, C., & Germia, E. (2018, February). *Reasoning about quantities or conventions: Investigating shifts in in-service teachers' meanings after an on-line graduate course*. Paper presented at the Twenty-First Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Liang, B., & Moore, K. C. (2018, February). *Figurative thought and a student's reasoning about "amounts" of change*. Paper presented at the Twenty-First Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Paoletti, T., Moore, K. C., Silverman, J., Liss, D., Musgrave, S., Vishnubhotla, M., & Rahman, Z. (2018, February). *Conventions or constraints? Pre-service and in-service teachers' understandings*. Paper presented at the Twenty-First Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Tasova, H., Stevens, I., & Moore, K. C. (2018, February). *A framework for analyzing written curriculum from a shape-thinking and (co)variational reasoning perspective*. Paper presented at the Twenty-First Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Tasova, H., & Moore, K. C. (2018, January). *Justification of an invariant relationship between two quantities: Coordinating quantities vs. steepness of tangent lines*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Diego, CA.

Ellis, A., Tillema, E., Lockwood, E., & Moore, K. C. (2017, October). *Generalization across domains: The relating-forming-extending generalization framework*. Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.

Stevens, I. E., & Moore, K. C. (2017, October). *The intersection between quantification and an all-encompassing meaning for a graph*. Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.

Liang, B., & Moore, K. C. (2017, October). *Reasoning with change as it relates to partitioning activity*. Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.

Hardison, H. L., Stevens, I. E., Lee, H. Y., & Moore, K. C. (2017, October). *Lydia's circle concept: The intersection of figurative thought and covariational reasoning*. Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.

Lee, H. Y., Tasova, H. I., & Moore, K. C. (2017, October). *Reasoning within quantitative frames of reference and graphing: The case of Lydia*. Paper presented at the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, IN.

Stevens, I. E., & Moore, K. C. (2017, October). *The role of quantification and operative thought in a students' all-encompassing meaning for a graph*. Presentation at the 11th Annual Georgia Association of Mathematics Teacher Educators. Eatonton, GA.

Moore, K. C. (2017, July). *Broadening students' representational experiences*. Poster presented at the Transforming Research in Undergraduate STEM Education (TRUSE) Conference. St. Paul, MN.

Stevens, I. E., Paoletti, T., Moore, K. C., Hobson, N. L. F., & Hardison, H. (2017, February). *Principles for designing tasks that promote covariational reasoning*. Paper presented at the Twentieth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Hobson, N. L. F., & Moore, K. C. (2017, February). *Exploring experts' covariational reasoning*. Paper presented at the Twentieth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Moore, K. C. (2017, January). *Graphing and fostering operative thought*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Atlanta, GA.

Liang, B., & Moore, K. C. (2017, January). *Rate of change as a feature of partitioning activity: The case of Lydia*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Atlanta, GA.

Stevens, I. E., & Moore, K. C. (2017, January). *A case study: When graphs contain everything*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Atlanta, GA.

Hobson, N. L. F., & Moore, K. C. (2017, January). *Exploring experts' thinking in graphing dynamic situations*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Atlanta, GA.

Stevens, I. E., & Moore, K. C. (2016, November). *The Ferris wheel and justifications of curvature*. Paper presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Tucson, AZ.

Moore, K. C. (2016, July). *Graphing as figurative and operative thought*. Paper presented at the 40th Conference of the International Group for the Psychology of Mathematics Education. Szeged, Hungary.

Paoletti, T., Moore, K. C., & Stevens, I. E. (2016, July). *Task-design principles for covariational reasoning*. Paper presented at the 13th International Congress on Mathematical Education. Hamburg, Germany.

Stevens, I. E., & Moore, K. C. (2016, July). *Undergraduate students' graphing habits*. Poster presented at the 13th International Congress on Mathematical Education. Hamburg, Germany.

Moore, K., C., Silverman, J., & Sword, S. (2016, June). *Problematizing and Assessing Secondary Mathematics Teachers' Ways of Thinking*. National Science Foundation Discovery Research K-12 PI Meeting. Washington, DC.

Moore, K. C. (2016, May). *Graphs as things to do or things to represent*. Abstract presented at the 50 Years of Mathematics Education at University of Georgia Alumni and Faculty Research Conference. Athens, GA.

Moore, K. C. (2016, April). *Generalizing and undergraduate students' ways of thinking for graphs*. Given as part of *Generalizing Across Multiple Mathematical Areas*, a research symposium held at the National Council of Teachers of Mathematics Research Conference. San Francisco, CA.

Hobson, N. L. F., & Moore, K. C. (2016, March). *Providing students experiences to model novel situations*. Abstract presented at the American Mathematics Society Spring Southeastern Sectional Meeting at the University of Georgia. Athens, GA.

Moore, K. C., Paoletti, T., Stevens, I. E., & Hobson, N. L. F. (2016, February). *Graphing habits: "I just don't like that"*. Paper presented at the Nineteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Pittsburgh, PA.

Paoletti, T., & Moore, K. C. (2016, February). *Covariational and parametric reasoning*. Paper presented at the Nineteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Pittsburgh, PA.

Moore, K. C. (2016, January). *Graphing habits and students' thinking about graphs emergently*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Seattle, WA.

Moore, K. C., & Silverman, J. (2015, November). *Maintaining conventions and constraining abstractions*. Paper presented at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI.

Stevens, I. E., Hobson, N. L. F., Moore, K. C., Paoletti, T., LaForest, K. R., & Mauldin, K. D. (2015, November). *Changing cones: Themes in students' representation of a dynamic situation*. Paper presented at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI.

Paoletti, T., Mauldin, K. D., Moore, K. C., Stevens, I. E., Hobson, N. L. F., & LaForest, K. R. (2015, November). *Changing cones: Students' images of a dynamic situation*. Paper presented as a poster at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI.

Stevens, I. E., LaForest, K. R., Hobson, N. L. F., Paoletti, T., & Moore, K. C. (2015, November). *Undergraduate students' inverse strategies and meanings*. Paper presented as a poster at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI.

Moore, K. C., & Thompson, P. W. (2015, February). *Shape thinking and students' graphing activity*. Paper presented at the Eighteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Pittsburgh, PA.

Moore, K. C., & Paoletti, T. (2015, February). *Bidirectionality and covariational reasoning*. Paper presented at the Eighteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Pittsburgh, PA.

Paoletti, T., Stevens, I. E., Hobson, Natalie L. F., LaForest, K. R., & Moore, K. C. (2015, February). *Pre-service teachers' inverse function meanings*. Paper presented at the Eighteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Pittsburgh, PA.

Reys, R., Spangler, D. A., Wanko, J., Moore, K. C., Dollard, C., Jackson, C., & Krupa, E. (2015, February). *STaR: An opportunity for new doctorates and something senior mathematics educators should know about*. Association of Mathematics Teacher Educators Nineteenth Annual Conference. Orlando, FL.

Moore, K. C., Liss II, D. R., Silverman, J., Paoletti, T., LaForest, K. R., & Musgrave, S. (2013, November). *Pre-service teachers' meanings and non-canonical graphs*. Paper presented at the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Chicago, IL.

Moore, K. C., Silverman, J., Paoletti, T., Liss, D., LaForest, K. R., & Musgrave, S. (2013, November). *The primacy of mathematical conventions in student meanings*. Paper presented at

the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Chicago, IL.

LaForest, K. R., Moore, K. C., Silverman, J., Paoletti, T., Musgrave, S., & Liss II, D. R. (2013, November). *Common treatments of function: Where's the relationship?* Paper presented as a poster at the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Chicago, IL.

Moore, K. C., Paoletti, T., Musgrave, S., LaForest, K., Liss, D., & Silverman, J. (2013, June). *Problematizing meanings as a means to engender quantitative reasoning*. Paper presented at the Epistemic Algebraic Students Conference. Athens, GA.

Moore, K. C. (2013, April). *Quantitative reasoning and the teaching and learning of trigonometry*. Annual Meeting of the National Council of Teachers of Mathematics. Denver, CO.

Moore, K. C. (2013, April). *Smooth and chunky trigonometries*. Given as part of *Reasoning with Discrete and Continuous Images of Quantity: Emerging Research*, a research symposium held at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Denver, CO.

Paoletti, T., Moore, K. C., Gammaro, J., & Musgrave S. (2013, February). *Students' emerging understandings of the polar coordinate system*. Paper presented at the Sixteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Denver, CO.

Moore, K. C., Paoletti, T., Gammaro, J., & Musgrave S. (2013, February). *Covariational reasoning and graphing in polar coordinates*. Paper presented at the Sixteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Denver, CO.

Teuscher, D., Moore, K. C., & Carlson, M. P. (2013, February). *Implementing Pathways curriculum: What are we learning from in-service and pre-service teachers to inform and modify project resources?* Paper presented at the 2013 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Carlson, M. P., Nicol, C., Moore, K. C., Teuscher, D., & Milner, F. (2013, February). *An adaptive model for supporting shifts in secondary precalculus instruction and student learning*. Paper presented at the 2013 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Musgrave, S. & Moore, K. C. (2013, January). *Conventions and mathematical meaning—An exploration through functions and inverses*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Diego, MA.



Moore, K.C., & Paoletti, T. (2012, September). *Quantitative reasoning and graphing conventions: A mismatch?* Poster presented at the Studying the Emerging Challenges of the CCSSM Symposium organized by University of Georgia and University of Missouri. Columbia, MO.

Moore, K. C. (2012, April). *Using angle measure as a foundation for trigonometric functions*. Given as part of *Current Research on the Teaching and Learning of Trigonometry*, a research symposium held at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Philadelphia, PA.

Moore, K. C. (2012, April). *The emergent nature of students' quantitative reasoning*. Given as part of *Quantitative Reasoning in Secondary Mathematics: An Avenue to Coherence*, a research symposium held at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Philadelphia, PA.

Moore, K. C., LaForest, K. R., & Kim, H. J. (2012, February). *The unit circle and unit conversions*. Paper presented at the Fifteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Portland, OR.

Teuscher, D., Moore, K. C., & Carlson, M. P. (2012, February). *Decentering: A lens for examining teacher focus on students' mathematical thinking and teacher questioning*. Association of Mathematics Teacher Educators Sixteenth Annual Conference. Fort Worth, TX.

Reys, R., Jackson, C., Safi, F., Newton, J., & Moore, K. C. (2012, February). *STaR--Service, teaching and research--An opportunity for new doctorates in mathematics education*. Development of Mathematics Teacher Educators Symposium held at the Association of Mathematics Teacher Educators (AMTE) Sixteenth Annual Conference. Fort Worth, TX.

Moore, K. C., & Dawkins, P. (2012, February). *Intersubjectivity and norms: Exploring a bridge between the social and individual perspectives*. Poster presented at the 2011 Service, Teaching, and Research (STaR) Preconference Session held at the Association of Mathematics Teacher Educators Sixteenth Annual Conference. Fort Worth, TX.

Carlson, M. P., Moore, K. C., Teuscher, D., Slemmer, G., Underwood, K., & Tallman, M. (2012, January). *Affecting and documenting shifts in secondary precalculus teachers' instructional effectiveness and students' learning*. Paper presented at the 2012 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Moore, K. C., LaForest, K. R., & Kim, H. J. (2012, January). *A circle of radius one: Pre-service teachers' notions of the unit circle*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Boston, MA.

Moore, K. C., Teuscher, D., & Carlson, M. P. (2011, October). *Exploring shifts in a teacher's key developmental understanding and pedagogical actions*. Paper presented at the 33rd Annual

Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Reno, NV.

Marfai, F. S., Moore, K. C., & Teuscher, D. (2011, October). *The influence of a teacher's decentering moves on students engaging in reflective thinking*. Paper presented at the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Reno, NV.

Moore, K. C. (2011, March). *Creating foundations for success in calculus: An approach to precalculus*. University of Georgia Department of Mathematics Colloquium. Athens, GA.

Moore, K. C. (2011, February). *Relationships between quantitative reasoning and students' problem solving behaviors*. Paper presented at the Fourteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Portland, OR.

Moore, K. C., Carlson, M. P., & Teuscher, D. (2011, January). *Using research-based curriculum to support shifts in teachers' key pedagogical understandings*. Paper presented at the 2011 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Teuscher, D., Moore, K. C., & Carlson, M. P. (2011, January). *Interaction between teacher's questions and student discourse*. Paper presented at the 2011 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Carlson, M. P., Slemmer, G., Moore, K., Teuscher, D., & Joyner, K. (2011, January). *Key variables for establishing and sustaining highly effective professional learning communities*. Paper presented at the 2011 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, D.C.

Moore, K. C. (2011, January). *Quantitative reasoning and students' approaches to solving novel problems*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. New Orleans, LA.

Moore, K. C. (2010, October). *The role of the radius in students constructing trigonometric understandings*. Paper presented at the 32nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Columbus, OH.

Moore, K. C. (2010, August). *The role of quantitative and covariational reasoning in trigonometry curriculum*. MathFest 2010 hosted by Mathematical Association of America. Pittsburgh, PA.

Moore, K. C. (2010, February). *The role of quantitative and covariational reasoning in developing precalculus students' images of angle measure and central concepts of trigonometry*. Paper presented at the Thirteenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Raleigh, NC.

Moore, K. C. (2010, January). *The role of angle measure and the radius as a unit of measurement in developing coherent understandings of trigonometric functions*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Francisco, CA.

Moore, K. C., Joyner, K., & Carlson, M. P. (2009, October). *Increasing rigor & relevancy in math*. Gallery walk presented at Arizona Middle and High School Renewal Conference. Phoenix, AZ.

Moore, K. C. (2009, September). *Trigonometry, technology, and didactic objects*. Paper presented at the Thirty-first Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Atlanta, GA.

Moore, K. C., Carlson, M., & Oehrtman, M. (2009, February). *The role of quantitative reasoning in solving applied precalculus problems*. Paper presented at the Twelfth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Raleigh, NC.

Moore, K. C. (2009, February). *An investigation into precalculus students' conceptions of angle measure*. Paper presented at the Twelfth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Raleigh, NC.

Moore, K. C. (2009, January). *An investigation of students' problem solving abilities: Where's the quantity?* Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. Washington, D.C.

Carlson, M., Bowling, S., & Moore, K. (2008, August). *Workshop on essential reasoning abilities and conceptual foundations of calculus*. Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Workshop at MathFest 2008, Mathematical Association of America. Madison, WI.

Clark, P., & Moore, K. (2008, April). *Speaking with meaning in a college algebra course*. Annual Meeting of the Southwestern Section of The Mathematical Association of America and the Spring Meeting of ArizMATYC. Tempe, AZ.

Bowling, S. & Moore, K. (2008, April). *The development of covariational reasoning in a college algebra course*. Annual Meeting of the Southwestern Section of The Mathematical Association of America and the Spring Meeting of ArizMATYC. Tempe, AZ.

Moore, K., Mullen, K., & Carlson, M. (2008, April). *"Speaking with meaning" in professional learning community discourse*. Research Pre-session of the 2008 Annual Meeting and Exposition of the National Council of Teachers of Mathematics. Salt Lake City, UT.

Carlson, M., Moore, K., & Bowling, S. (2008, April). *Meaningful mathematics discourse in mathematics learning communities*. Research Pre-session of the 2008 Annual Meeting and Exposition of the National Council of Teachers of Mathematics. Salt Lake City, UT.

Moore, K., Carlson, M., & Strom, A. (2008, March). *Supporting graduate students and talented undergraduate students to teach college algebra: Professional learning communities promote meaningful reflection on student learning*. The National Center for Academic Transformation Redesign Alliance Second Annual Conference. Orlando, FL.

Clark, P., Moore, K., & Mullen, K. (2008, March). *Documenting "speaking with meaning" in a college algebra course*. Paper presented at the Eleventh Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Bowling, S. & Moore, K. (2008, March). *Covariational reasoning in students of a redesigned college algebra course*. Paper presented at the Eleventh Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Carlson, M., Bowling, S., Moore, K., & Ramirez, N. (2008, January). *Attributes of professional learning communities that support meaningful discourse about learning and teaching*. 2008 National Science Foundation Math and Science Partnership Learning Network Conference. Washington, DC.

Bowling, S., Carlson, M., & Moore, K. (2008, January). *The development of covariational reasoning in a college algebra course*. Abstract presented at the Joint National Meeting of the American Mathematical Society and the Mathematical Association of America. San Diego, CA.

Carlson, M., Bowling, S., Moore, K., & Ortiz, A. (2007, October). *The role of the facilitator in promoting meaningful discourse among professional learning communities of secondary mathematics and science teachers*. Paper presented at the Twenty-ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Stateline (Lake Tahoe), NV.

Carlson, M., Clark, P., & Moore, K. (2007, October). *Documenting the emergence of "speaking with meaning" as a sociomathematical norm in professional learning community discourse*. Paper presented at the Twenty-ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics. Stateline (Lake Tahoe), NV.

Carlson, M., Clark, P., Koch, K., Ortiz, A., McDaniel, J., Moore, K., & Panagiotou, K. (2007, February). *Documenting the emergence of "speaking in meaning" as a sociomathematical norm in professional learning community discourse*. Paper presented at the Tenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Bowling, S., Carlson, M., Kalachykhina, L., Moore, K., Ortiz, A., & Wopperer, K. (2007, February). *The Importance of Decentering in the Role of a Professional Learning Community Facilitator*. Paper presented at the Tenth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. San Diego, CA.

Moore, K., Clemons, C. B., & Young, G. W. (2006, March). *Deposition of coatings onto nanofibers*. Spring Meeting of the Ohio Section of the Mathematical Association of America. Akron, OH.

Moore, K., Clemons, C. B., & Young, G. W. (2005, November). *Deposition of coatings onto nanofibers*. The University of Akron Conference on Undergraduate and Graduate Student Research. Akron, OH.

### HONORS AND AWARDS

University of Georgia Student Career Development and Support Award, 2013, 2014, 2015, 2016, 2017, 2018, 2019, and 2020.

2020 Graduate School Outstanding Mentoring Award Nominee.

Transforming Research in Undergraduate STEM Education (TRUSE) Conference invited participant, St. Paul, MN, 2017.

Conference on Research in Undergraduate Mathematics Education Honorable Mention for Best Paper Award, 2016.

Conference on Research in Undergraduate Mathematics Education Honorable Mention for Best Paper Award, 2012.

Mathematics Education *Service, Teaching, and Research (STaR)* Program member.

WISDOME<sup>e</sup> Planning Conference and Research Team invited participant, Larry Hatfield (chair), Laramie, WY, 2010.

Conference on Research in Undergraduate Mathematics Education Pre-Journal Submission Award, 2009.

Floyd L. Downs Award for Research in Math Education, School of Mathematical & Statistical Sciences, Arizona State University, 2008.

Pathways to Algebra Conference invited participant, David W. Carraher (Chair), Evron, France, 2008.

Conference on Research in Undergraduate Mathematics Education Conference Pre-Journal Submission Award, 2008.

Representative Student Responder, Graduation Commencement Ceremony, Summer 2006.

Outstanding Graduate Student Teaching Award, University of Akron Department of Mathematics, 2005-2006.

The University of Akron Conference on Undergraduate and Graduate Student Research Oral Session Award, 2006.

### **TEACHING EXPERIENCE**

*\* identifies designed course*

Assistant Professor, University of Georgia, Athens, GA (2010-current)

- \*EMAT 8990: Influencers of Radical Constructivism (1 section, co-designed with Irma Stevens)
- \*EMAT 8990: Selected Works of Jean Piaget Seminar (1 section)
- \*EMAT 8990: Scholarship and Writing in Mathematics Education Seminar (1 section)
- \*EMAT 8990: Research in Undergraduate Mathematics Education Seminar (1 section)
- \*EMAT 8990: Quantitative Reasoning in Mathematics Education Seminar (1 section)
- EMAT 9640: Analysis and Critique of Research in Mathematics Education (1 section)
- EMAT 8010: Advanced Studies in Mathematics Curriculum (2 sections)
- \*EMAT 4920/6920: Teaching and Learning Undergraduate Mathematics (2 sections)
- EMAT 4650/6650: Historical and Cultural Foundations of Mathematics (2 sections)
- EMAT 4550/6550: Modeling in Secondary Mathematics (3 sections)
- EMAT 4500/6500: Connections in Secondary Mathematics (2 sections)
- EMAT 4450/6450: Mathematics in Context (1 section)
- \*EMAT 4810/6810 (formally 3700): Connections in Secondary Mathematics I (9 sections)
- EMAT 3500: Functions – Concepts in Secondary Mathematics (4 sections)
- \*FYO 1001: Where does mathematics exist? (3 sections)

Research Assistant, Arizona State University, Tempe, AZ (2006-2010)

- MTE 598/MAT 494: Functions – Mathematical Tools for Science (1 section for in-service mathematics and science secondary teachers, co-instructor with Nora Ramirez)
- MAT 170: Precalculus (2 sections using research-based curriculum)
- MAT 117: College Algebra (1 section using research-based curriculum)

Adjunct Faculty, Scottsdale Community College, Scottsdale, AZ (2007-2008)

- MAT 212: Brief Calculus (1 section)
- MAT 141: College Mathematics (1 section)

Graduate Assistant, The University of Akron, Akron, OH (2005-2006)

- 3450:145: College Algebra (1 section)

- 3450:100: Intermediate Algebra (1 section)

## **PROFESSIONAL SERVICE**

### Journal Reviewer

- Cognition and Instruction (2020-present)
- Mathematics Teacher Educator (2018-present)
- Mathematical Thinking and Learning (2017-present).
- Journal of Numerical Cognition (2016-present).
- Journal of Mathematics Teacher Education (2016-present).
- International Journal of Research in Undergraduate Mathematics Education (2015-present).
- Journal for Research in Mathematics Education (2014-present).
- The Mathematics Educator (2011-Present).
- The Journal of Mathematical Behavior (2010-Present).

### Conference Proposal/Proceeding Reviewer

- Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education, 2011–Present.
- 13th International Congress on Mathematical Education, 2016.
- International Group for the Psychology of Mathematics Education–North American Chapter, 2011, 2017, 2019, 2020.

### Grant Reviewer

- National Science Foundation, DUE-IUSE Ad Hoc Reviewer, 2019.
- National Science Foundation, Discovery Research K-12 Ad Hoc Reviewer, 2019.
- National Science Foundation, EHR Core Research Program Ad Hoc Reviewer, 2017.
- National Science Foundation, Discovery Research K-12 Review Panel, Washington, DC, 2012.

### Conference Organizer

- Program Committee Member, Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. 2015-Present.
- Conference Co-organizer, 50 Years of Mathematics Education at University of Georgia, Denise Spangler and Jeremy Kilpatrick (Co-organizers). Alumni and Faculty Research Conference. Athens, GA, 2016.
- Program Committee Chair, The 2nd Studying the Emerging Challenges of the Common Core State Standards for Mathematics Symposium. University of Missouri and University of Georgia. Athens, GA, 2013.
- Conference Co-organizer, Developing a framework for professional conduct and high quality in design-based research: Perspectives from across educational design fields, T. J. Kopcha and Cory Buxton (Co-organizers). AERA Research Conference. Athens, GA, 2013.

- Conference Organizer, Epistemic Algebraic Students Conference, Leslie Steffe and Larry Hatfield (Co-organizers). Athens, GA, 2013.
- Program Committee Member, Studying the Emerging Challenges of the Common Core State Standards for Mathematics Symposium. University of Missouri and University of Georgia. Columbia, MO, 2012.
- Planning Committee Member, International STEM Research Symposium: Quantitative Reasoning in Mathematics and Science Education, Larry Hatfield, John Moore, and Robert Mayes (Co-chairs). Savannah, GA, 2012.
- Planning Committee Member, Service, Teaching, and Research (STaR) Association of Mathematics Teacher Educators Pre-session, Barbara Reys and Robert Reys (Co-chairs). Dallas, TX, 2012.

#### Conference Session Organizer

- Co-organizer, Mathematization of Introductory Physics, Working group at the Twentieth Annual Special Interest Group of the Mathematical Association of America Conference on Research in Undergraduate Mathematics Education. Suzanne Brahmia and Michael Oehrtman (Co-chairs), San Diego, CA (2017).
- Co-organizer, Quantitative Reasoning and Mathematical Modeling, Working group at the Thirty-fifth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Heather Johnson (Chair), Chicago, IL (2013).
- Co-organizer, Reasoning with discrete and continuous images of quantity: Emerging research, Symposium held at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Denver, CO (2013).
- Co-organizer, Quantitative Reasoning and Mathematical Modeling, Working group at the Thirty-fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Robert Mayes (Chair), Kalamazoo, MI (2012).
- Co-organizer, Quantitative Reasoning in Secondary Mathematics: An Avenue to Coherence, Symposium held at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Philadelphia, PA (2012).
- Co-organizer, Quantitative Reasoning and Mathematical Modeling, Working group at the Thirty-third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Robert Mayes (Chair), Reno, NV (2011).

#### Workshop Development

- *GAMMA-CAT*, Spring 2020  
A series of workshops for local, in-service middle and secondary grades teachers focused on generalization. We also incorporated a research approach to understanding how to best support in-service teachers' generalizing and their engendering generalizing in their classrooms. Held in Athens, GA. Four in-service teachers.
- *Multiple Representations and Multiple Engagements*, February 17, 2020.  
Invited workshop given to North Gwinnett High School Department of Mathematics, focused on incorporating multiple representations and quantitative reasoning through intentional instructional practices. Held in Suwanee, GA. Thirty in-service teachers.



- *Teaching Analytic Geometry and Coordinate Algebra: Mathematical Practices and the CCGPS*, June 24-27, 2013.  
The workshop, which was co-organized with Dr. Anna Conner, focused on incorporating the *Common Core Standards for Mathematical Practices* of quantitative reasoning and argumentation into Analytic Geometry and Coordinate Algebra. Held in Athens, GA. Twenty-four in-service teachers from around the state participated.
- *Teaching Pathways to Calculus*, 2010-present.  
Workshops co-organized with other *Pathways* members focused on supporting teachers in implementing the *Pathways to Calculus: A Problem Solving Approach* curriculum. These workshops improve both the teachers' mathematical knowledge for teaching as well as their ability to support their students in constructing important understandings and reasoning processes. Locations have included Arizona State University, Phoenix area high schools, Iowa State University, and Iowa high schools.

#### Other

- University of Georgia Mary Frances Early College of Education Graduate Student Professional Learning & Support Group (2021-Present).
- University of Georgia Mary Frances Early College of Education Faculty Senate (2021-Present)
- University of Georgia College of Education Research Conference Committee (2018-Present).
- Secondary Program Design Committee Member, University of Georgia (2011-Present).
- JRME Reviewer Mentor Program, Mentor (2021).
- Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Nominating Committee, Chair (2020).
- University of Georgia College of Education Strategic Planning Committee (2019-2020).
- University of Georgia Department of Mathematics and Science Education Awards Committee (2016, 2019-2020).
- University of Georgia Department of Mathematics and Science Education Graduate Coordinator (2016-2020).
- University of Georgia Department of Mathematics and Science Education Social Media Manager (2013-2020).
- PAGE Future Educators Day Session Organizer and Presenter, UGA (2019).
- Research in Undergraduate Mathematics Education Conference Paper Mentor (2018-2019).
- University of Georgia Department of Mathematics and Science Education Renovations Committee (2016).
- University of Georgia College of Education Awards Committee (2015-2017).
- University of Georgia College of Education Website Committee and Liaison (2015-2018).
- University of Georgia Secondary Program Coordinator (2015-2016).
- Center for Undergraduate Research Opportunities Faculty Mentor (2014-2015, Kathryn Mauldin).
- Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Nominating Committee (2014).

- Georgia Department of Education Resource Revision Team, High School (2014).
- University of Georgia Department of Mathematics and Science Education BSEd/BS Mathematics Education/Mathematics Dual Degree Advisor (2012-2015).
- University of Georgia Mathematics Curriculum Team (2011-2017).

## **GRADUATE ADVISING**

### **Doctoral Committees**

#### ***Major Professor–Completed***

Liang, Biyao, Ph.D., Mathematics Education (2021)  
 Johnson, Sheri, Ph.D., Mathematics Education (2020, co-Major with Dr. Denise Spangler)  
 Stevens, Irma, Ph.D., Mathematics Education (2019)  
 Paoletti, Teo, Ph.D., Mathematics Education (2015)

#### ***Major Professor–In Progress***

Waswa, Anne, Ph.D., Mathematics Education  
 Tasova, Halil I., Ph.D., Mathematics Education

#### ***Committee Member–Completed***

McBride, Rett, Ph.D., Mathematics Education (2020)  
 Hardison, Hamilton, Ph.D., Mathematics Education (2018)  
 Chun, Jiyoung, Ph.D., Mathematics Education (2017)  
 Gonzalez, Dario, Ph.D., Mathematics Education (2017)  
 Lee, Hwa Young, Ph.D., Mathematics Education (2017)  
 Liss, Dave, Ph.D., Mathematics Education (2015)  
 Bowling, Stacey, Ph.D., Mathematics Education (Arizona State University; 2014)  
 Musgrave, Stacy, Ph.D., Mathematics (2013)  
 Panapoi, Ron, Ph.D., Mathematics Education (2013)

#### ***Committee Member–In Progress***

Drimalla, James, Ph.D., Mathematics Education  
 Hamilton, Mike, Ph.D., Mathematics Education  
 Kang, Rui, Ph.D., Mathematics Education  
 Salaam, Bolanle, Ph.D., Mathematics Education  
 Stagg, Polly, Ph.D., Mathematics Education  
 Park, Sarah, Ph.D., Mathematics Education  
 Kerrigan, Sarah, Ph.D., Mathematics (Virginia Tech)

#### ***External Reviewer–Completed***

David, Erika Johara, Ph.D., Mathematics Education (Arizona State University; 2019)  
 Frank, Kirstin, Ph.D., Mathematics Education (Arizona State University; 2017)

## **EdS Committees**

### ***Major Professor–Completed***

Ying, Yufeng, Ed.S., Mathematics Education (2021)

Holley, Brittany, Ed.S., Mathematics Education (2020)

Carreras, Ángel M., Ed.S., Mathematics Education (2019)

### ***Committee Member–Completed***

Katherine Respress, Ed.S., Mathematics Education (2019)

## **Masters Committees**

### ***Major Professor–Completed***

Taqiyuddin, Muhammad, M.A., Mathematics Education (2021)

Naddor, Josh, M.A., Mathematics Education (2020)

Mauldin, Kathryn, M.A., Mathematics Education (2019)

Panetta, Vincent, M.Ed., Mathematics Education (2018)

Hobson, Natalie, M.A., Mathematics Education (2017)

### ***Major Professor–In Progress***

### ***Committee Member–Completed***

Olmez, Burak, M.A., Mathematics Education (2015)

## **Honors Committees**

### ***Committee Member–Completed***

Whitmire, Ben, B.S., Mathematics (Arizona State University; 2014)