Karen F. Hollebrands
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Academic Background

August 2001	Ph.D., Curriculum & Instruction with emphasis in Mathematics Education The Pennsylvania State University, University Park, PA
May 1995	M.Ed., Mathematics Education North Carolina State University, Raleigh, NC
May 1989	B.S., Secondary Education-Mathematics State University of New York College at Oswego, Oswego, NY

University Experience

2020 – present	Associate Dean for Research and Innovation College of Education North Carolina State University, Raleigh, NC
2014 – present	Professor and Alumni Distinguished Undergraduate Professor Mathematics Education Department of Science, Technology, Engineering, and Mathematics Education North Carolina State University, Raleigh, NC
2007 – 2014	Associate Professor, Mathematics Education Department of Science, Technology, Engineering, and Mathematics Education North Carolina State University, Raleigh, NC
2001 - 2007	Assistant Professor, Mathematics Education Department of Mathematics, Science and Technology Education North Carolina State University, Raleigh, NC
1996 - 2001	NSF Graduate Research Trainee Fellow The Pennsylvania State University, University Park, PA

K-12 Teaching Experience

1995-1996	Mathematics Teacher Cary High School, Cary, NC
1992-1995	Mathematics Department Chairperson

	Franklinton Junior/Senior High School, Franklinton, NC
1990-1995	Mathematics Teacher
	Franklinton High School, Franklinton, NC

Externally-Funded Grants ($12.99 million received)

Active:
PI Karen Hollebrands, Co-PIs Matthew Reynolds, Cyndi Edgington. *NC State STEM Education Scholars Program (NC S3)* (April 1, 2024 - March 31, 2029) This project at NC State partners with the Wake County Public School System, North Carolina Central University, Wake Technical Community College, and the College of Sciences at NC State to recruit a diverse pool of scholars interested in becoming mathematics and science teachers. We will select 21 scholars and provide them with learning experiences to deepen their understanding of the content they are teaching, as well as pedagogical strategies to engage students from diverse populations. Evaluation activities will provide insights into how the project prepares and retains beginning teachers. The project will also examine the institutional impacts of the project on the degree programs at NC State. Recommended: $1,199,913

PI Karen Hollebrands, Co-PIs Ruby Ellis, Gemma Mojica. *Collaborative Research: Preparing Future Middle and High School Mathematics Teachers to Lead Productive Geometry Discussions using Web-Based Dynamic Geometry Technology Tools* (Oct 2023 - Sept 2028). . The Level 3 Engaged Student Learning project has three goals: 1) create online modules focused on preparing future teachers to facilitate productive mathematics discussions with the use of web-based dynamic geometry tools, 2) conduct research studies on future middle and high school mathematics teachers? noticing of grades 6-12 students? geometric thinking while using technology and the ways they use that analysis to plan a productive discussion, and 3) provide support for mathematics teacher educators to use the materials with prospective teachers at their institutions. Awarded: $1,783,246.00 (full amount $1,995,859).

PI Paola Sztajn, Co-PIs Temple Walkowiak, Jessica Hunt, Karen Hollebrands. *ECR Conference: Conversations Across Boundaries: Bringing PreK-2 Mathematics Experts Together.* (August 2023 - July 2025). This two year project brings together experts from mathematics teacher education, cognitive science, and special education to work on a common goal via constructive conversations organized over two face-to-face days with follow-up virtual meetings. The proposed conference is designed to generate a set of principles and a collaborative research agenda among the fields, focused on existing agreement regarding PK-2 mathematics and uncovering areas of disagreement where further exchange and generation of knowledge is needed. Awarded: $673,241.

Completed:
PI Karen Hollebrands, Co-PIs Erin Krupa, Molly Fenn. *Noyce Master Teaching Fellows at NC State* (March 2018-2024). This five-year project partners with the non-profit agency The Innovation Project (TIP) and four high-need school districts (Cabarrus County Schools, Mount Airy City Schools, Rockingham County Schools, Wayne County

Schools) to prepare highly qualified master teachers of mathematics to become mentors and leaders in their schools and districts. Twenty scholarships will be awarded. Awarded: $1,844,149.00 (with required cost sharing $2,788,500).

PI Karen Hollebrands, Co-PI Allison McCulloch, Co-PI Scott Steketee, Co-PI Daniel Scher. *Technology rich units for future secondary teachers: Forging mathematical connections through the geometry of functions*. (June 2016- December 2020) The purpose of this grant is to develop five technologically rich units of instruction that will focus on school mathematics topics from an advanced perspective. Supplement received May, 2020 to host online workshops for mathematics teacher educators. Awarded: $300,000.

PI Karen Hollebrands. *Track 4 Noyce Research proposal* Florida State University Lead institution. (May 2016- June 2019) The purpose of this grant is to conduct research on Noyce scholars who are currently teaching in high school mathematics classrooms. Tasks and samples of students' work on those tasks are collected from current Noyce scholars teaching in NC. Awarded: $75,000 subcontract.

Senior Researcher Karen Hollebrands, PI: Glen Kleiman, Co-PI Hollylynne Lee. *Development of MOOC-Eds*. Funded by the Hewlett Foundation (December 2015-December 2017). This grant was funded to support the development, implementation, and evaluation of MOOC-Eds focused on secondary mathematics topics. Awarded: $500,000

PI Karen Hollebrands, Co-PI Andrew Cooper (College of Sciences), Co-PI Sonia Dupree (Wake County Public Schools). *MAP:TICCS. Mathematics and Pedagogy: Training for Implementation of High School Common Core Standards for Mathematics Continuation Grant*. (March 2016 – May 2017). This continuation grant was awarded to support the preparation of high school mathematics teachers in Wake County to implement the Common Core State Standards. Awarded: $150,000

Co-PI Karen Hollebrands, PI Hollylynne Lee, Co-PI Allison McCulloch. *Preparing to Teach Mathematics with Technology: Expanding, Transforming, and Community Building* (September 2011 – August 2017). This is the third grant funded to support the development of curricula materials for preparing teachers to teach mathematics with technology. The goals of this project are to create and test an Algebra module and to develop a community of faculty who are preparing teachers to teach mathematics with technology using the materials developed by these projects. Awarded: $350,000.

PI Karen Hollebrands, Co-PI Andrew Cooper (College of Sciences), Co-PI Sonia Dupree (Wake County Public Schools). *MAP:TICCS. Mathematics and Pedagogy: Training for Implementation of High School Common Core Standards for Mathematics*. (March 2015 – May 2016). This grant was awarded to support the preparation of high school mathematics teachers in Wake County to implement the Common Core State Standards. Awarded: $300,000

Co-PI Karen Hollebrands, PI Sarah Stein (College of Humanities and Social Sciences), Co-PI Eric Wiebe, Co-PI Henry Schaffer (Office of Instructional Technology). *Scale-Up: Scaling up STEM Learning with the VCL* (September 2009 – August 2014). This project is funded by the ITEST division of the National Science Foundation. The virtual computing lab (VCL) is used as a mechanism for delivering mathematics software to teachers teaching in 1:1 laptop high schools. Teachers are involved in long-term, professional development that is focused on preparing them to learn how to use technology to teach mathematics and become familiar with STEM-related professions. The goal is to increase student interest in mathematics so they are able to pursue STEM-related majors and careers in the future. Awarded: $1,800,000.

PI Karen Hollebrands, Co-PI Hollylynne Lee. *Preparing to Teach Mathematics with Technology: An Integrated Approach* (September 2008 – August 2012). The goal of this National Science Foundation supported project is to publish and disseminate a module focused on preparing teachers to teach Data Analysis and Probability topics with technology and to develop and test a second module focused on Geometry. Awarded: $500,000.

Co-PI Karen Hollebrands, PI Hollylynne Lee, Co-PI Roger Woodard, Co-PI Irina Kogan. *Noyce Mathematics Education Teaching Scholars at NC State* (September 2007 – August 2013). This NSF-sponsored scholarship grant provides funding to 26 undergraduate and graduate students completing a major in mathematics or statistics and a degree in mathematics education. Students commit to teaching in a high-needs school district and receive professional development related to the use of technology to teach mathematics. Awarded: $994,000.

Co-PI Karen Hollebrands, PI Hollylynne Lee. *Preparing to Teach Mathematics with Technology: An Integrated Approach* (June 2005 – December 2007). This proof-of-concept grant funded by the National Science Foundation supported the development and testing of the Data Analysis and Probability module for preparing teachers to teach mathematics with technology. Awarded: $74,000.

Co-PI Karen Hollebrands, PI Laura Bottomley. *Engineers and Teachers Working for Mathematics Success* (February 2004 – June 2013). NSF-GK-12 project to encourage K-12 students to pursue mathematics and science by partnering mathematics education undergraduates and engineering graduate and undergraduate students with classroom teachers to assist in creating and implementing inquiry-based projects with K-12 students. Awarded: $2,134,000.

Co-PI Karen Hollebrands, PI Laura Bottomley. *GE Foundation Recognizing Accelerated Mathematics Potential in Underrepresented People (RAMP-UP)* (February 2004 – June 2013) grant to increase the number of underrepresented students in nine Wake County schools in grades 3-9 taking Algebra in 8th grade and Calculus in 12th grade. Awarded: $500,000.

Co-PI Karen Hollebrands, PI Jody Underwood, Co-PI Hollylynne Stohl, Co-PI Chris

Hoadley, Co-PI Chris DiGiano. *Identifying Emergent Design Principles through Analysis of Learning Technology in Action.* (May 2002-May 2003). Grant sponsored by CILT (Center for Innovative Learning Technologies—an NSF funded Center) that identified design principles by examining mathematical java applets from the CILT design principles database (http://www.design-principles.org). Awarded: $8,000.

Active Internally-Funded Grants (more than $40,000)

Education Outreach and Extension Resource Centers. PI: Karen Hollebrands. Grant funded through University Foundation to expand existing outreach efforts of the college, we seek to explore a partnership with NC State Extension to provide education extension services to community members across the state. University Foundation. (2023-2024). Awarded: $25,000.

Completed:
Integrating dynamic geometry software in college geometry. Co-PI Karen Hollebrands. Grant submitted with Co-PI Irina Kogan from the Mathematics Department at NCSU awarded by the Faculty Center for Teaching and Learning Instructional Grants Program. (2007 – 2008). Awarded: $3,000.

Creating connected handheld computing environments. PI: Karen Hollebrands, Co-PI: Stohl. Grant funded through College of Education Computer & Technology Committee, November 2002. Awarded: $8,028

Investigating middle school students' understandings of geometric transformations. PI: Karen Hollebrands. Grant funded through the College of Education FR&PD program. Awarded $4,000.

Peer Review Publications in Journals (42 published)

Hoyes, M., Diaz, B., & Hollebrands, K. (2026). Learning geometry with dynamic geometry environments: A systematic review of 30 years of research. *International Journal of Education in Mathematics, Science and Technology.*

Okumus, S., & Hollebrands, K. (2026). Dimensional shifts in forming solids of revolution: A student's attention using paper-and-pencil and manipulatives. *Journal for Research in Mathematics Education*, *57*(3), 121-147. https://doi.org/10.5951/jresematheduc-2024-0173

Hoyes, M., Hollebrands, K., Mojica, G., Chandler, K., & Ellis, R. (2025). The development of a framework for describing students' geometric thinking while working on technology based geometry tasks to support teachers' professional noticing. *International Journal of Technology in Mathematics Education*, *32*(4), 145-163. https://doi.org/10.1564/tme_v32.4.01

Trocki, A. & Hollebrands, K. (2025). Examining effects of professional development on teachers' written dynamic geometry tasks. *Digital Experiences in Mathematics Education*, 1-24. https://doi.org/10.1007/s40751-025-00190-z

Weigand, H-G., Hollebrands, K. & Maschietto, M. (2025). Geometry education at the secondary level – a systematic literature review. *ZDM, 57*(4), 829-843, https://doi.org/10.1007/s40751-025-00190-z

Smiling, J. & Hollebrands, K (2025). Examining the impact of engagement on TPACK proficiency among math educators in a technology-enhanced MOOC. *International Journal of Educational Research Open*, *9*, 100469. https://doi.org/10.1016/j.ijedro.2025.100469

Amaral, R. & Hollebrands, K. (2023). An analysis of similarity concept presented in textbooks in Brazil and the United States. *Educação Matemática Pesquisa, 25*(2), 356-393. https://doi.org/10.23925/1983-3156.2023v25i2p356-393

Amedu, J. & Hollebrands, K. (2022). Teachers' perceptions of using technology to teach mathematics during COVID-19 remote learning. *REDIMAT, 11*(1), 71-85. https://doi.org/10.17583/redimat.8872

Ozen-Unal, D., Hollebrands, K., McCulloch, A., Scher, D., & Steketee, S. (2022). Prospective high school mathematics teachers' uses of diagrams and geometric transformations while reasoning about geometric proof tasks. *International Journal of Technology in Mathematics Education, 29*, 13-24. https://doi.org/10.1564/tme_v29.1.02

Hollebrands, K., McCulloch, A., & Okumus, S. (2021). High school students' use of technology to reason about geometric representations of function. *Digital Experiences in Mathematics Education*, 1-29. 10.1007/s40751-021-00089-5

Williams, D., Cudd, M., Hollebrands, K., & Lee. H.S., (2020) Beginning high school teachers' organization of students for learning and methods for teaching mathematics. *PNA Journal of Research in Mathematics Teaching 15*(1), 51-68. 10.30827/pna.v15i1.10748

Hollebrands, K., & Lee, H.S. (2020). Effective design of massive open online courses for mathematics teachers to support their professional learning, *ZDM* 52(5), 859-875. 10.1007/s11858-020-01142-0

Okumus, S., & Hollebrands, K. (2019). Middle school students' employments of gestures for forming 3D objects using an extrusion or spinning method. *Journal of Mathematical Behavior*. 10.1016/j.jmathb.2019.100737

Hollebrands, K., Mojica, G., & Outlaw, B. (2018). Teachers' analysis of student thinking in a Teaching Mathematics with Technology Massive Open Online Course for Educators. *Journal of Technology and Teacher Education*, *26*(4), 587-612.

McCulloch, A., Hollebrands, K., Lee, H., Harrison, T., & Mutlu, A. (2018). Factors that influence secondary mathematics teachers' uses of technology. *Computers and Education. 123*, 26-40. doi.org/10.1016/j.compedu.2018.04.008

Trocki, A. & Hollebrands, K. (2018). Examining relationships between task quality and student argumentation in a dynamic geometry environment. *Digital Experiences in Mathematics Education. 4*(2-3), 110-138.

Hollebrands, K. & Okumus, S. (2017). Secondary mathematics teachers' instrumental integration in technology-rich geometry classrooms. *Journal of Mathematical Behavior,* 49, *82-94. 10.1016/j.jmathb.2017.10.003*

Amarel, R., & Hollebrands, K. (2017). An analysis of context-based similarity tasks in geometry textbooks from Brazil and the United States. *International Journal of Mathematical Education in Science and Technology. 48*(8), 1166-1184.

Okumus, S. & Hollebrands, K. (2017). Prospective mathematics teachers' problem solving processes to optimization problems using Cabri 3D. *Digital Experiences in Mathematics Education 3*(3), 206-232.doi:10.1007/s40751-017-0033-0

Hollebrands, K., & Lee, H.S. (2016). Characterizing questions and their focus when pre-service teachers implement dynamic geometry tasks. *Journal of Mathematical Behavior, 43*, 148-164.

Okumus, S., Patterson, L., Wiebe, E., & Hollebrands, K. (2016). Utility and usability as factors influencing teacher decisions about software integration. *Educational Technology Research & Development*, 1-23.

Hollebrands, K., (2015). Comments on elementary students' construction of geometric transformations reasoning in a dynamic animation environment. *Constructivist Foundations*, *10*(3), 350-351.

Cayton, C., Hollebrands, K., Okumus, S. & Boehm, E. (2015). Types of questions posed during pivotal teaching moments in technology-intensive secondary geometry classrooms. *Journal of Mathematics Teacher Education*. 1-26.

Lee, J., Spires, H., Wiebe, E., Hollebrands, K., & Young, C. (2015). Portraits of one-to-one learning environments in a new learning ecology. *International Journal of Learning, Teaching, and Educational Research, 10*(3).

Lesh, R., Berry, R., Chval, K., Fish, M., Hollebrands, K., Konold, C., Stephan, M., Walker, E., & Wanko, J. (2014). The NCTM Research Presession: A brief history and reflection. *Journal for Research in Mathematics Education 45*(2), 157-172.

Dove, A. & Hollebrands, K. (2013) Teachers' scaffolding of students' learning of geometry while using a dynamic geometry program. *International Journal of Mathematical Education in Science and Technology, 45*(5), 668-681.

Tarr, J., Walker, E., Hollebrands, K., Chval, K., Berry, R., Rasmussen, C., Konold, C., & King, K. (2013). New assessments for new standards: The potential transformation of mathematics education and its research implications. *Journal for Research in Mathematics Education, 44*(2), 340-352

Lee, J., Hollebrands, K., Spires, H., Wiebe, E., & Young, C. (2012). Toward a new learning ecology in a secondary one-to-one learning environment: A portrait of theory into practice. *Contemporary Issues in Technology and Teacher Education, 12*(2).

Heck, D. Tarr, J., Hollebrands, K., Walker, E., Berry, R., & Baltzely, P., Rasmussen, C., & King, K. (2012). Reporting research for practitioners: Proposed guidelines. *Journal for Research in Mathematics Education, 43*(2), 126-143.

Wilson, P.H., Lee, H., & Hollebrands, K. (2011). Understanding prospective mathematics teachers' processes for making sense of students' work with technology. *Journal for Research in Mathematics Education, 42*(1), 39-64.

Starling, T., & Hollebrands, K. (2010). Investigating star polygons. *Mathematics Teacher, 103*(7), 525-534.

Hollebrands, K., Conner, A., & Smith, R. (2010) College geometry students' uses of technology in the process of constructing arguments. *Journal for Research in Mathematics Education, 41(*4), 324-350.

Wilson, P.H., Lee, H., & Hollebrands, K. (2010). An alternative development of measures of center and spread using dynamic diagrams. *Centroid 36*(2), 6-11.

Lee, H., & Hollebrands, K. (2008). Preparing to teach mathematics with technology: An integrated approach to developing technological pedagogical content knowledge. *Contemporary Issues in Technology and Teacher Education, 8*(4).

Hollebrands, K. (2007). The role of a dynamic software program for geometry in the strategies high school mathematics students employ. *Journal for Research in Mathematics Education, 38*(2), 164-192.

Lee, H. S. & Hollebrands, K. (2006). Students' use of technological features while solving a mathematics problem. *Journal of Mathematical Behavior, 25*(3), 252-266.

Underwood, J., Hoadley, C., Stohl, H., Hollebrands, K., DiGiano, C., & Renninger, K. A (2005). IDEA: Identifying Design Principles in Educational Applets. *Educational Technology Research and Development, 53(2),* 99-112.

Hollebrands, K. (2004). High school students' intuitive understandings of geometric transformations. *Mathematics Teacher, 97*(3), 207-214.

Hollebrands, K. (2003). High school students' understandings of geometric transformations in the context of a technological environment. *Journal of Mathematical Behavior, 22* (1), 55-72.

Heid, M.K., Blume, G., Hollebrands, K.F., Piez, C. (2002). Implications from research on the use of CAS in the teaching and learning of mathematics. *Mathematics Teacher Focus Issue on the Use of CAS, 95*(8), 586-591.

Heid, M.K., Hollebrands, K., & Iseri, L. (2002). Reasoning, justification, and proof, with examples from technological environments. *Mathematics Teacher, 95*(3), 210-16.

Heid, M.K., Blume, G., Flanagan, K., Iseri, L. & Kerr, K. (1998). The role of CAS on non-routine problem solving with college mathematics students. *The International Journal for Computer Algebra Systems in Mathematics Education, 5* (9), 217-250.

Blog Posts (1 publication)
Scher, D., Steketee, S., McCulloch, A., & Hollebrands, K. (2020). *A geometric approach to functions.* American Mathematics Society (AMS) Blog. https://blogs.ams.org/matheducation/2020/06/15/a-geometric-approach-to-functions/

Editorial Publications in Journals (10 publications)
Hollebrands, K. (2022). Looking forward and looking back. Editorial, *Mathematics Teacher Educator 10*(3), 175-177.

Hollebrands, K., West, H., Faulkner, V., & Elrod, E. (2021). From dissertation to publication in the Mathematics Teacher Educator. *Mathematics Teacher Educator, 10*(1), 3-8.

Faulkner, V., Hollebrands, K., Elrod, E., & West, H. (2021). Equity, Identity, and Power: Disrupting Neutrality Myths. *Mathematics Teacher Educator*, *9*(3), 163-167.

Hollebrands, K., West, H., Elrod, E., & Faulkner, V. (2021). Considering connections across research questions, data, methods, and claims. Editorial, *Mathematics Teacher Educator 9*(2), 91-93.

Elrod, E., West, H., Hollebrands, K. Faulkner, V (2020). Interventions, tools, and equity-oriented resources in the *Mathematics Teacher Educator* journal. Editorial, *Mathematics Teacher Educator 9*(1), 3-6.

West, H., Elrod, E., Hollebrands, K., Faulkner, V. (2020). Analyzing Eight Years of Mathematics Teacher Educator articles: Where we were, where we are, and where we are going. Editorial, *Mathematics Teacher Educator 8*(2), 83-87.

Hollebrands, K. (2019). Looking back and looking forward. Editorial, *Mathematics Teacher Educator 8*(1), 3-6.

Hollebrands, K. & Stohl, H. (2003). Tech Tips: Creating interactive spreadsheets for exploring functions. *Mathematics Teacher, 96*(6), 452-456.

Hollebrands, K. & Stohl, H. (2003). Tech Tips: The use of spreadsheets for creating a parameter exploration of a linear function. *Mathematics Teacher, 96*(7), 516-519.

Kerr, M. & Hollebrands, K. (2002). Technology Tip: Using a CAS for Comparing Two Algebraic Expressions. *Mathematics Teacher Focus Issue on the Use of CAS, 95*(8), 649-651.

Edited and Co-Authored Books (5 books)

Hollebrands, K., Anderson, R., & Oliver, K. (Eds.) (2021). Online Learning in Mathematics Education. In J. Cai & J. Middleton *Research in Mathematics Education Series*, Springer.

Niess, M., Driskell, S., & Hollebrands, K. (Eds.) (2016). *Handbook of Research on Transforming Mathematics Teacher Education in the Digital Age*. IGI Global.

Hollebrands, K. & Lee, H. (2012). *Preparing to Teach Mathematics with Technology: An Integrated Approach to Geometry*. Dubuque, IA: Kendall-Hunt Publishers.

Dick, T., & Hollebrands, K. (Eds.) (2011). *Focus on High School Mathematics: Reasoning and Sense Making with Technology*. Reston, VA: National Council of Teachers of Mathematics.

Lee, H., Hollebrands, K., & Wilson, P.H. (2010). *Preparing to Teach Mathematics with Technology: An Integrated Approach to Data Analysis and Probability.* Dubuque, IA: Kendall-Hunt Publishers.

Peer-Reviewed Chapters in Books (14 chapters)

Chandler, K. & Hollebrands, K. (accepted). The Use of Dynamic Geometry to Support Exploring, Conjecturing, and Proving. In P. Herbst & L. Pyzdrowski (Eds.), *The GeT Course: Resources and Objectives for the Geometry Courses for Teachers*

Lovett, J., McCulloch, A., Cayton, C., Dick, L., Hollebrands, K. & Lee, H. (2024) Preparing Secondary Prospective Teachers to Teach Mathematics with Technology. In B. Benken (Ed). *Reflecting on the Past, Present, and Future: Paving the Way for the Future of Mathematics Teacher Education*. Association of Mathematics Teacher Educators.

Hollebrands, K., McCulloch, A. & Lee, H.S. (2016). The design and implementation of a curriculum for preparing teachers to teach secondary mathematics using technology. In

Niess, M., Driskell, S., & Hollebrands, K. (Eds). *Handbook of Research on Tranforming Mathematics Teacher Education in the Digital Age*. IGI Global.

Hollebrands, K. F. (2015). Using a dynamic software program for geometry: A look at strategies students employ. In. E. Silver and P. Kenney (Eds.). *More Lessons Learned from Research, Volume 1,* (pp. 203-212). Reston, VA: National Council of Teachers of Mathematics. [Invited chapter]

Hollebrands, K. & Dove, A. (2011). Using Technology to Engage in Reasoning and Sense-Making Activities in Geometry. In Dick, T., & Hollebrands, K. (Eds.). *Focus on Reasoning and Sense Making; Technology*. (pp. 33-52). Reston, VA: National Council of Teachers of Mathematics. [Invited chapter]

Cohen, J., & Hollebrands, K. (2011). Teaching with Technology Tools. In Dick, T., & Hollebrands, K. (Eds.). *Focus on Reasoning and Sense Making; Technology*. (pp. 105-122). Reston, VA: National Council of Teachers of Mathematics. [Invited chapter]

Lee, H. & Hollebrands, K. (2011). Characterizing and developing teachers' knowledge for teaching statistics with technology. In C. Batanero, G. Burrill, C. Reading & A. Rossman (Eds.), *Teaching Statistics in School Mathematics - Challenges for Teaching and Teacher Education: A joint ICMI/IASE Study*. (pp. 359-370). New York: Springer. [Invited chapter]

Lee, H., Ives, S., Starling, T., & Hollebrands, K. (2010). Knowledge for teaching statistics with technology: Examining mathematics teacher educators' planning. In J. Lott & J. Luebeck (Eds.) *Association of Mathematics Teacher Educators Monograph VII: Mathematics Teaching: Putting Research into Practice at all Levels*. (pp. 7-24). Association of Mathematics Teacher Educators.

Hollebrands, K. & Smith, R. (2009). The impact of dynamic geometry software on secondary students' learning of geometry: Implications from research. In T. Craine & R. Rubenstein (Eds.). *NCTM 2009 Yearbook: Understanding Geometry for a Changing World*. (pp. 221-232). Reston, VA: National Council of Teachers of Mathematics.

Hollebrands, K., Laborde, C., & Straesser, R. (2008). The learning of geometry with technology at the secondary level. In M.K. Heid & G. Blume (Eds.) *Handbook of Research on Technology in the Learning and Teaching of Mathematics: Syntheses and Perspectives.* (pp. 155-206). Greenwich, CT: Information Age. [Invited chapter]

Zbiek, R., & Hollebrands, K. (2008). A research-informed view of the process of incorporating mathematics technology into classroom practice by inservice and prospective teachers. In M. K. Heid & G. Blume (Eds.) *Handbook of Research on Technology in the Learning and Teaching of Mathematics: Syntheses and Perspectives* . (pp. 287-344). Greenwich, CT: Information Age. [Invited chapter]

Laborde, C., Kynigos, C., Hollebrands, K., & Straesser, R. (2006). Teaching and learning geometry with technology. In A. Guitierrez & P. Boero (Eds.) *Research Handbook of the International Group of the Psychology of Mathematics Education* (pp. 275-304). Rotterdam, The Netherlands: Sense Publishers

Hollebrands, K. & Zbiek, R. (2004). Teaching mathematics with technology: An evidence-based road map for the journey. In R. Rubenstein & G. Bright (Eds.), *Sixty-sixth Yearbook*: *Perspectives on the Teaching of Mathematics* (pp.259-270). Reston, VA: National Council of Teachers of Mathematics.

Flanagan (Hollebrands), K. & Kerr, K. (1998). Making connections: The isosceles triangle and the TI-92. In M.K. Heid & G. Blume (Eds.), *The Pennsylvania Council of Teachers 1997 Annual Yearbook*, (pp. 67-74). University Park, PA: Pennsylvania State University.

Book Reviews (2 book reviews)

Hollebrands, K & Okumus, S. (2017). Tools and Mathematics. Book Review. *Journal for Research in Mathematics Education*. [Invited]

Hollebrands, K. (2001). Math Stuff. Book Review. *Mathematics Teacher, 94* (9*),* 794.

Refereed Conference Proceedings (47 peer-reviewed conference proceedings)

Mojica, G., Hollebrands, K., Hoyes, M. Ellis, R., Chandler, K. (2026). The role of a dynamic geometry environment in secondary students' argumentation while engaging with a Euclidean geometry task. In C. Bokhove & A. Clark-Wilson (Eds.), Proceedings of the 17th International Conference on Technology in Mathematics Teaching. London UK. University College London. DOI: tbc

Hoyes, M., Hollebrands, K., Mojica, G., Chandler, K., Ellis, R. (2025). Exploring high school students' arguments while engaged in solving a dynamic geometry task. In X. Yao, A. McCloskey, R. Zbiek, & R. Martinez (Eds.) *Proceedings for the 47th Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Mojica, G., Hollebrands, K., Hoyes, M., Ellis, R., & Chandler, K. (2025). The role of a dynamic geometry environment in secondary students' argumentation while engaging with a Euclidean geometry task. In C. Bokhove & A. Clark-Wilson (Eds). *Proceedings of the 17th International Conference on Technology in Mathematics Teaching*.

Okumus, S. & Hollebrands, K., (2024). Middle school students' reasoning about the volume of oblique geometric solids. The 15th International Congress on Mathematics Education.

Lee, H., Fusarelli, B., Jaeger. A., Hollebrands, K. (2024). Pathway to innovative leadership and impact across the educational sector. Hawaii International Conference on Education.

Witt, N, Chandler, K., Cayton, C., Suh, J., McCulloch, A., Hollebrands, K., Davis, J. (2023). C*onceptualizing the Role of Technology in Equitable Mathematics Classrooms* Proceedings for the Forty-fifth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education.

Krupa, E., Hoyes, M., & Hollebrands, K., (2022). Interactions types in online and hybrid mathematics instruction. *Proceedings for the Forty-fourth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Ozen Unal, D., & Hollebrands, K. (2021). Prospective teachers' interactions with dynamic diagrams while solving proof tasks. *Proceedings for the Forty-Third Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Krupa, E., Hoyes, M., & Hollebrands, K., (2021). Interactions in blended mathematical learning environments. *Proceedings for the Forty-Third Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Barker, H., Mojica, G., Hollebrands, K., & Smiling, J. (2021). *Participants patterns of interaction within and across social networks in a massive open online course for educators*. The 14th International Congress on Mathematics Education, Beijing, China. [rescheduled]

Hollebrands, K. & Lee, H. (2021). *Effective design of massive online courses to support mathematics teachers' professional learning*. The 14th International Congress on Mathematics Education, Beijing, China. [rescheduled]

Yow, J. & Hollebrands, K. (2020). Publishing MTEP work in the Mathematics Teacher Educator journal. In MTEP Online Conference Proceedings.

Hollebrands, K. & Ozen Unal, D. (2020). Prospective high school mathematics teachers; uses of diagrams and geometric transformations while reasoning about geometric proof tasks. *Proceedings for the Forty-Second Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*. [postponed]

Cudd, M., Williams, D., & Hollebrands, K. (2018). Beginning mathematics teachers' uses of instructional strategies and organization of students for learning. *Proceedings for the Fortieth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Hollebrands, K., Mojica, G., & Outlaw, B. (2018). Teachers' analysis of students' thinking in a Teaching Mathematics with Technology Massive Open Online Course. *Proceedings for the Fortieth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Hollebrands, K. (2017). A framework to guide the development of a teaching mathematics with technology massive open online course for educators. *Proceedings for the Thirty-Ninth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Okumus, S. & Hollebrands, K. (2017). Middle school students' reasoning about three-dimensional objects using extrusion and spinning. *Proceedings of the Conference of the European Society for Research in Mathematics Education*.

Okumus, S. & Hollebrands, K. (2016) High school students' forming 3D objects using technological and non-technological tools. In (Eds.) *Proceedings for the Thirty-Eighth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Amarel, R. & Hollebrands, K. (2016). Contextual-based similarity tasks in textbooks from Brazil and the United States. In (Eds). *Proceedings for the Fortieth Annual Meeting of the International Group for the Psychology of Mathematics Education*. *Hungary.*

Hollebrands, K., McCulloch, A., & Chandler, K. (2015). Students' reasoning about technology-based geometric functions. In T. Bartell & K. Bieda (Eds.) *Proceedings for the Thirty-Seventh Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Hollebrands, K. & Okumus, S. (2014). High school students' reasoning about properties of solids using DGS. In P. Liljedahl, C. Nicol, S. Osterle, D. Allan (Eds.) *Proceedings for the Thirty-Sixth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Okumus, S. & Hollebrands, K. (2013). Teachers' solutions to a 3D minimization task with Cabri 3D. In P. Liljedahl, C. Nicol, S. Osterle, D. Allan (Eds.) *Proceedings for the Thirty-Sixth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Hollebrands, K., Cayton, C., & Boehm, E. (2013). Types of questions posed during pivotal teaching moments in a technology-intensive secondary geometry classroom. *Proceedings for the Thirty-Fourth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*.

Hollebrands, K., Cayton, C., & Boehm, E. (2013). Pivotal teaching moments in a technology-intensive secondary geometry classroom. *Proceedings for the Thirty-Seventh*

Annual Conference of the International Group for the Psychology of Mathematics Education.

Hollebrands, K., Lee, H., Starling, T., Gonzalez, M. & Pulis, T. (2012). Prospective secondary mathematics teachers' design and implementation of dynamic geometry tasks. *Proceedings for the Thirty-Third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.*

Hollebrands, K., Cayton, C., & Patterson, L. (2011). Characterizing discourse in two technology-intensive high school geometry classrooms. In L Wiest & T. Lamburg (Eds.) *Proceedings for the Thirty-Third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.*

Albers, L., Linday, K., Tucker, J., Hemric, J., Bottomley, L., Hollebrands, K., Parry, E. (2010). The impact of active learning during out-of-school time (OST) energy clubs on elementary school students. *Proceedings of the American Society for Engineering Education.*

Hollebrands, K. & Smith, R. (2010). Attitudes towards and support provided for mathematics learning reported by parents of students involved in a GK-12 program. *Proceedings of the American Society for Engineering Education.*

Smith, R. Hollebrands, Bottomley, Parry, Albers and Smith (2009). The ways in which K-8 students' participation in a GK-12 program affects achievement in and beliefs about mathematics. *Proceedings of the American Society for Engineering Education.*

Smith, R., Hollebrands, K., Iwancio, K. & Kogan, I. (2007) College geometry students' uses of technology in the process of constructing arguments. In T. Lamberg (Ed.) *Proceedings of the Twenty-Ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.*

Hollebrands, K., Wilson, H., & Lee, H.S. (2007) Prospective teachers' use of a videocase to examine students' work. In T. Lamberg (Ed.) *Proceedings of the Twenty-Ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.*

Bottomley, L., Parry, L., Hollebrands, K. (2007). Community and family math nights as a vehicle for mathematics success. *Proceedings of the Association of the Society of Engineering Education.*

Smith, R. & Hollebrands, K., Iwancio, K., & Kogan, I. (2007). The affects of a dynamic program for geometry on college students' understandings of properties of quadrilaterals in the Poincare Disk model. In A. Rogerson, (Ed.) *Proceedings of the Ninth International Conference on Mathematics Education in a Global Community*.

Lee, H.S., Hollebrands, K., & Wilson, H. (2007) The use of research-based methods and materials for preparing to teach mathematics with technology. In A. Rogerson, (Ed.) *Proceedings of the Ninth International Conference on Mathematics Education in a Global Community*.

Bottomley, L., Hollebrands, K., & Parry, L. (2006). How does high school mathematics prepare engineers? *Proceedings of the Association of the Society of Engineering Education.*

Hollebrands, K. & Heid, M.K. (2005). Patterns of secondary mathematics students' representational acts and task engagement in a small-group technology-intensive context. In M. Wilson & G. Lloyd (Eds.) *Proceedings of the Twenty-Seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.*

Mitchell, T., Bottomley, L., Hollebrands, K., Daniel, A., & Leager, K. (2005). A comprehensive model for ensuring K-12 students are mathematically prepared and keenly acclimated to enter engineering disciplines. *The Fourth American Society for Engineering Education/ Australasian Association for Engineering Education Global Colloquium on Engineering Education*, Sydney, Australia.

Bottomley, L., Hollebrands, K., & Parry, L. (2005). Creating Effective Teacher Partnerships: Characteristics of Teachers who Choose to Participate in a K-16 Partnership. *Proceedings of the American Society for Engineering Education.*

Hollebrands, K. & Stohl, H. (2004). The interplay between technology design and students' control of problem solving. In D. McDougall & J. Ross (Eds.), *Proceedings of the Twenty-Sixth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp.1481-1488). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Science.

Hollebrands, K. (2003). Eighth grade students' understandings of geometric transformations in the context of a dynamic software environment. In N. Pateman, B. Dougherty & J. Zilliox (Eds.), *Proceedings of the Twenty-Seventh Annual Meeting of the International Group for the Psychology of Mathematics Education* (p. 230). Honolulu: Center for Research and Development Group, University of Hawaii.

Hollebrands, K. (2002). The role of a dynamic software program for geometry in high school students developing understandings of geometric transformations. In D. Mewborn (Ed.), *Proceedings of the Twenty-Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 695-706). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Science.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Iseri, L., Deckert, W., & Piez, C. (2000). College students' interpretation and use of dynamic computer-based

representations of function. In G. Goodell (Ed.) *Proceedings of the Twelfth Annual International Conference on Technology in Collegiate Mathematics* (pp. 112-116). Reading, MA: Addison Wesley Longman.

Flanagan (Hollebrands), K. & Piez, C. (1999). Justification within a dynamic geometry environment. In G. Goodell (Ed.), *Proceedings of the Eleventh Annual International Conference on Technology in Collegiate Mathematics* (pp. 122-126). Reading, MA: Addison Wesley Longman.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Iseri, L., Piez, C., & Deckert, W. (1999). Research on mathematics learning in CAS environments. In G. Goodell (Ed.), *Proceedings of the Tenth Annual International Conference on Technology in Collegiate Mathematics* (pp. 156-160). Reading, MA: Addison Wesley Longman.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Iseri, L., Kerr, K., Deckert, W., & Piez, C. (1998). The roles of CAS technology in non-routine problem solving. In L. Lum (Ed.) *Proceedings of the Tenth Annual International Conference on Technology in Collegiate Mathematics*, (pp. 106-111). Reading, MA: Addison Wesley Longman.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Kerr, K., Marshall, J & Iseri, L. (1997). Conjecturing and representational style in CAS-assisted mathematical problem solving. In J. Dossey, J. Swafford, M. Parmantie, A. Dossey (Eds.), *Proceedings of the Nineteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 585-592). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Heid, M.K., Blume, G., Iseri, L., Flanagan (Hollebrands), K., Kerr, K. & Marshall, J. (1997). Roles of symbolic representation in CAS-assisted mathematical problem solving. In J. Dossey, J. Swafford, M. Parmantie, A. Dossey (Eds.), *Proceedings of the Nineteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.* (pp. 593-599). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Online Curriculum Materials (2 online curriculum materials)

Hollebrands, K., Lee, H., & Mojica, G. (2016). *Teaching Mathematics with Technology MOOC-Ed*. Available: fi.ncsu.edu/theplace

McCulloch, A., Lee, H., & Hollebrands, K. (2015). *Preparing to Teach Mathematics with Technology: An Integrated Approach to Algebra.* Available: goncsu.edu/ptmtportal

Honors, Awards, and Recognitions

2015-2020 University Faculty Scholar
North Carolina State University, Raleigh, NC

2016	Outstanding Reviewer, *Journal of Mathematical Behavior*
2016 - 2017	Board of Governors Outstanding Teacher Nominee for College of Education at NC State
2013-2014	Alumni Distinguished Undergraduate Professor North Carolina State University, Raleigh, NC
2008-2009	Outstanding Teaching Award; Member of the Academy of Outstanding Teachers at North Carolina State University, North Carolina State University, Raleigh, NC
1998, 1999, 2000	Donald B. and Mary Louise Elder Tait Scholarship in Mathematics Education, The Pennsylvania State University, University Park, PA
1996-2000	National Science Foundation Graduate Research Trainee, The Pennsylvania State University, University Park, PA
1994-1995	Teacher of the Year, Franklinton Junior/Senior High School, Franklinton, NC
1994-1995	Teacher of the Year, Franklin County, NC
1994	Tandy Technology Scholar Award

Service to Professional Organizations

2025	International Programme Committee, The 17th International Conference on Technology in Mathematics Teaching (ICTMT17)
2023 - 2024	Invited Topic Study Group Team Organizer for Research on the Use of Technology at the Secondary Level for the International Congress in Mathematics Education (ICME) Conference. Sydney, Australia.
2017 – 2022	Editor, *Mathematics Teacher Education* journal. Co-published by NCTM and AMTE.
2017 – present	Reviewer, *Digital Experiences for Mathematics Education* journal
2016 – 2017	Co-Vice President of Professional Learning, *Association of Mathematics Teacher Educators*

2014 – 2017	Elected Steering Committee member of the *North America Chapter of the Psychology of Mathematics Education International Group*. Chair, 2015-2016.
2013 – 2017	STaR mentoring program for early career faculty in mathematics education. Sponsored by the Association of Mathematics Teacher Educators. Staff member 2013-2015; Co-Director 2015-2016; Director 2016-2017
2011 – 2014	Member, Research Committee for the National Council of Teachers of Mathematics (Chair, 2013-2014)
2011 – present	External Reviewer for Mathematics Education Faculty seeking Promotion and Tenure
2011 – present	Reviewer, Research Presession Conference, National Council of Teachers of Mathematics
2009 – present	Reviewer, *For the Learning of Mathematics*
2007 – present	Review Panel Member, *National Science Foundation*
2005 – present	Reviewer, *Journal for Research in Mathematics Education*
2001 – present	Reviewer, *Journal of Mathematical Behavior* (Outstanding Reviewer Award 2016)
1999 – present	Reviewer, North American Chapter of the Psychology of Mathematics Education Conference
2011 – 2014	Strand Leader, Mathematical Processes, North American Chapter of the Psychology of Mathematics Education
2010 – 2013	Member, Technology Committee for the Association of Mathematics Teacher Educators
2011	Reviewer, Developing Essential Understandings of Geometry in grades 9-12, NCTM publication
2011	Invited reviewer, *Focus on Learning Mathematics*
2010 – 2011	Invited Co-Editor. *Focus on High School Mathematics: Technology to Support Reasoning and Sense Making*
2005 – 2009	Editorial Board Member (Chair 2007 – 2009), *ON-Math*. National Council of Teachers of Mathematics.

2008	Invited Topic Study Group Team Organizer for Research on the Teaching and Learning of Geometry for the International Congress in Mathematics Education (ICME) Conference. Monterrey, Mexico.
2008	Invited Participant in the Knowles Teaching Scholar Conference, Washington, DC.
2008	Invited Participant in the Research Agenda Conference for the National Council of Teachers of Mathematics
2005 – 2007	Member of Board of Directors, Electronic Communication Secretary, AERA Special Interest Group/Research in Mathematics Education
2003 – 2004	Editor, Technology Tips column. *Mathematics Teacher*. National Council of Teachers of Mathematics.
2002 – 2003	Co-Editor, Technology Tips column. *Mathematics Teacher*. National Council of Teachers of Mathematics.
1999 – 2003	Reviewer, *Journal of Computers in Mathematics and Science Teaching*
1997 – 2004	Reviewer, *Mathematics Teacher*. National Council of Teachers of Mathematics.

Service to the College and University

2024	Member, Search Committee for the Vice Chancellor for Research
2023	Chair, STEM Ed Department Head Search Committee
2018 – 2020	Graduate Coordinator, Mathematics and Statistics Education program
2020	Chair, Assistant Professor of Mathematics Education Search Committee
2018 – 2019	Chair, Assistant/Associate Professor of Mathematics Education Search Committee
2017 – 2020	Chair, College of Education Graduate Studies Committee

2017 – 2020	Elected Representative, Administrative Board of the Graduate School
2017 – 2019	University Reappointment, Promotion, and Tenure committee (Chair, 2018-2019)
2016 – 2018	College of Education Reappointment, Promotion, and Tenure review committee (Chair, 2017-2018)
2006 – 2020	Member, STEM Education Department Scholarship Committee
2017 – 2018	Chair, Assistant Professor Mathematics Education Search Committee
2016 – 2017	Chair, Fixed-Term Teaching Assistant Professor in Mathematics Education Search Committee
2016 – 2017	State Employees Combined Campaign, STEM Ed Department Representative
2015 – 2018	O. Max Gardner Award Selection Committee (Chair 2016-2017)
2015 – 2018	University Calendar Committee
2014 – 2017	Professional Education Committee, College of Education at NC State (Chair 2015-2016).
2012 – 2017	Department Voting Faculty for Elementary Department (Chair 2012-2013).
2015 - 2016	Provost's Special Committee on Interdisciplinary Studies
2015 – 2016	Search Committee, Technology Education Assistant Professor
2007 – 2014	College of Education Program Coordinators Committee
2007 – 2014	Undergraduate Program Coordinator, High School Mathematics Program
2007 – 2014	Undergraduate Program Coordinator, Middle School Mathematics Program
2012 – 2013	Member, STEM Education Department Head Review Committee at NCSU
2010 – 2013	Member, University Courses and Curricula Committee

2010 – 2013	Member, College of Education Courses and Curricula Committee
2001 – 2009	College of Education Research Committee Member (Chair 2002-2003; 2008- 2009)
2003 – 2005	Elected Member, University Grievance Committee

Invited Presentations (22 invited presentations)

Hollebrands, K. (2025, October). Evaluating technology tools. *17th International Conference on Teaching Mathematics with Technology*. London, UK.

Okumus, S. & Hollebrands, K. (2024, July). *Middle school students' reasoning about the volume of oblique geometric solids*. ICME-15, Sydney, Australia [Invited Session]

Hollebrands, K. (2021, October). *Dynamic geometry tasks to promote reasoning in geometry*. University of Michigan, GRIP project presentation, online [Invited Presentation].

J., Wieman, R., Hollebrands, K., Males, & Bowen, B, (2020, February). *Behind the curtain: Technology use in schools*. Association of Mathematics Teacher Educators, Phoenix, AZ. [Invited Session]

Hollebrands, K. (2019, November). *Early career mathematics teachers' uses of technology to teach mathematics.* Colloquium presentation, Appalachian State University. [Invited Presentation]

Hollebrands, K. & McCulloch, A. (2019, April). *Making connections between geometric transformations and functions using technology*. National Council of Teachers of Mathematics Annual Meeting, San Diego, CA. [Invited Presentation]

Hollebrands, K. (2019, March). *Early career mathematics teachers' uses of technology to teach mathematics.* Colloquium presentation, Virginia Commonwealth University. [Invited Presentation]

Dick, T., Burrill, G. and Hollebrands, K. (2019, February). *Developing robust concept images across middle school mathematics - the role of dynamic math technology.* Association of Mathematics Teacher Educators Conference. Orlando, FL. [Invited Discussant]

Hollebrands, K., Mojica, G., & Kott, B. (2018, April). *Teaching mathematics with technology*. NCTM, Washington, DC. [Invited Presentation]

Hollebrands, K. (2018, March). *Early career mathematics teachers' uses of technology to teach mathematics.* Colloquium presentation, RiSE (Research in STEM Education) Center, University of Maine, Orrono, ME. [Invited Presentation]

Hollebrands, K. (2017, October). *A framework to guide the development of a Teaching Mathematics with Technology Massive Open Online Course*. North America Chapter of the International Group for the Psychology of Mathematics Education. [Invited plenary panel]

Hollebrands, K. (2015, June) *A scholarly approach to teaching: Examples and reflections*. Plenary talk at the 2015 STaR Summer Institute. Park City, UT.

Hollebrands, K. (2014, June) *A scholarly approach to teaching: Examples and reflections*. Plenary talk at the 2014 STaR Summer Institute. Park City, UT.

Dick, T., Hollebrands, K., Heid, M.K., Zbiek, R. M., Burrill, G., Lee, H., Dove, A., & Cohen, J. (2012, April). *Research to inform the use of technology to support reasoning and sense making in high school mathematics*. National Council of Teachers of Mathematics Research Pre-session. Philadelphia, PA. [Invited session]

Hollebrands, K. & Dick, T. (2012, April). *Focus on High School Mathematics: Using technology to promote reasoning and sense making*. Research Pre-session of the National Council of Teachers of Mathematics Annual Meeting. Philadelphia, PA. [Invited session]

Dick, T. & Hollebrands, K. (2012, April). *Using technology as a lever to promote reasoning and sense making*. National Council of Teachers of Mathematics Annual Meeting. Philadelphia, PA. [Invited session]

Dick, T., Hollebrands, K., Heid, M.K., Zbiek, R. M., Burrill, G., Lee, H., Dove, A., & Cohen, J. (2012, February). *Focus on high school mathematics: Reasoning and sense making with technology*. Association of Mathematics Teacher Educators Conference Pre-session. Fort Worth, TX. [Invited session]

Hollebrands, K. & Dick, T. (2011, October). *Using technology as a lever to promote reasoning and sense making*. National Council of Teachers of Mathematics Regional Meeting. St. Louis, MO. [Invited session]

Conner, A., Singletary, L., Gleason, B., Edenfield, K., Smith, R., & Hollebrands, K. (2011, April). *Using argumentation in analyzing geometry teaching and learning*. National Council of Teachers of Mathematics Research Pre-session. Indianapolis, IN. [Invited discussant]

Dean, C., Silverman, J., Driskell, S., Browning, C., Niess, M., Johnston, C., Harrington, R., Madden, S., & Hollebrands, K. (2011, April). *Technological Pedagogical Content*

Knowledge interactive paper session at the National Council of Teachers of Mathematics Research Pre-session. Indianapolis, IN. [Invited discussant]

Dick, T., & Hollebrands, K. (2011, April). *Using technology as a lever for reasoning and sense making in mathematics*. National Council of Teachers of Mathematics Conference. Indianapolis, IN. [Invited session]

Tarr, J. & Baltzey, P. (organizers). (2011, April). *Mentoring session for graduate students and new faculty*. National Council of Teachers of Mathematics Research Pre-session. Indianapolis, IN. [Invited participant]

Conference Presentations (87 national and international conference presentations)

Mojica, G., Hollebrands, K., Hoyes, M., Ellis, R., Chandler, K. (2025, October). Secondary students' argumentation while engaging with a task in a dynamic geometry environment. *17th International Conference on the Teaching of Mathematics with Technology*. London, UK.

Hoyes, M., Hollebrands, K., Mojica, G., Chandler, K. & Ellis, R (2025, October). Exploring high school students' arguments while engaged in solving a dynamic geometry task. *Forty-Seventh Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*. State College, PA.

Hoyes, M., Ellis, R., Mojica, G., Hollebrands, K., Chandler, K. (2025, April). Describing students' geometric thinking while using technology: Development of a framework to support teachers' noticing. *American Education Research Association*. Denver, CO.

Hollebrands, K., Hoyes, M., Chandler, K., Ellis, R., & Mojica, G., (2025, February). A technology based geometric thinking framework designed to support teachers' noticing of students' thinking. *Association of Mathematics Teacher Educators Annual Meeting*. Reno, NV.

Krupa, E., Hoyes, M., & Hollebrands, K., (2022, October). Interactions types in online and hybrid mathematics instruction. *Forty-Fourth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*. Nashville, TN.

Ozen Unal, D., & Hollebrands, K. (2021, October). Prospective teachers' interactions with dynamic diagrams while solving proof tasks. *Proceedings for the Forty-Third Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*. Philadelphia, PA.

Krupa, E., Hoyes, M., & Hollebrands, K., (2021, October). Interactions in blended mathematical learning environments. *Proceedings for the Forty-Third Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*. Philadelphia, PA.

Hollebrands, K., & McCulloch, A. (2021, April). *Using Dynamic Geometry and Dance to Make Connections between Functions and Geometric Transformations*. Annual Meeting of the National Council of Teachers of Mathematics. Baltimore, MD.

Amedu, J. & Hollebrands, K. (2021, March). Teachers' perceptions of using technology to teach mathematics during COVID-19 remote learning. International Consortium for Research in Science and Mathematics Education. Virtual.

Hollebrands, K., McCulloch, A., Scher, D., & Steketee, S. (2021, February). *Online technology-based lessons to support secondary preservice mathematics teachers' understanding of functions*. Association of Mathematics Teacher Educators. Virtual.

Benken, B., Driskell, S., & Hollebrands, K. (2020, February) Sharing your research in AMTE publications. Association of Mathematics Teacher Educators Conference, Phoenix, AZ.

Hollebrands, K., Mojica, G., & Kott, B. (2018, November). *Teachers' analysis of student thinking in teaching mathematics with technology massive open online course*. Fortieth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education. Greenville, SC.

McCulloch, A., Hollebrands, K., Harrison, T., & Mutlu, A., (2018, April). *Teachers' uses of technology to teach mathematics*. NCTM Research Conference, Washington, DC.

Hollebrands, K., McCulloch, A., Harrison, T., & Mutlu, A. (2018, February). Early career mathematics teachers' uses of technology to teach mathematics. Association of Mathematics Teacher Educators Conference. Houston, TX.

Okumus, S. & Hollebrands, K. (2017, February) *Middle school students' reasoning about three-dimensional objects using extrusion and spinning*. Conference of the European Society for Research in Mathematics Education. Dublin, Ireland.

Okumus, S., & Hollebrands, K. (2016, November). *High school students' forming 3D objects using technological and non-technological tools*. Thirty-Eighth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education. Tucson, AZ.

Amarel, R. & Hollebrands, K. (2016, July). *Contextual-based similarity tasks in textbooks from Brazil and the United States*. Fortieth Annual Meeting of the International Group for the Psychology of Mathematics Education. Szeged, Hungary.

Hollebrands, K. & McCulloch, A. (2016, January) *Connecting transformations and functions with technology*. Association of Mathematics Teacher Educators Conference. Irvine, CA.

McCulloch, A., Lee, H., Hollebrands, K., Chandler, K., & Nickel, J. (2016, January). *Preparing teachers to plan and implement technology-based algebra tasks using open access tools.* Association of Mathematics Teacher Educators Conference. Irvine, CA.

Hollebrands, K., McCulloch, A., & Chandler, K. (2015, November). *Students' reasoning about technology-based geometric functions*. Thirty-Seventh Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, MI.

Okumus, S., Cayton, C., & Hollebrands, K. (February, 2015). *Teacher and Student Interactions in a Technology-Intensive High School Algebra Classroom.* Association of Mathematics Teacher Educators Conference. Orlando, FL.

Hollebrands, K. & Okumus, S. (July, 2014). *High school students' reasoning about properties of solids using DGS.* Thirty-Eighth International Meeting/Thirty-Sixth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education*,* Vancouver, CA.

Patterson, L., Wiebe, E., Okumus, S., Cayton, C., & Hollebrands, K. (April, 2014). *An Investigation of Teacher Pedagogical Strategies and Student Engagement in 1:1 Laptop Mathematics Classrooms*. AERA Annual Meeting, Philadelphia, PA.

Hollebrands, K., Cayton, C., Stockero, S., & Leatham, K. (2014, April). *Analyzing Critical Moments in High School Mathematics Classrooms*. National Council of Teachers of Mathematics Research Conference, New Orleans, LA.

Campbell, P., Hatfield, L., Shaughnessy, M., Sowder, L., Steffe, L., *NCTM Research Committee and SIG/RME Board of Directors*. (2014, April). National Council of Teachers of Mathematics Research Conference, New Orleans, LA.

Hollebrands, K., Lee, H., Perry, A., & Thrasher, E. (2014, February). *Supporting and retaining beginning mathematics teachers*. Association of Mathematics Teacher Educators Conference. Irvine, CA.

Okumus, S. & Hollebrands, K. (2013, November). *Teachers' solutions to a 3D minimization task with Cabri 3D*. Thirty-Fourth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.

Hollebrands, K. Cayton, C., & Boehm, E. (2013, November). *Types of questions posed during pivotal teaching moments in a technology-intensive secondary geometry classroom.* Thirty-Fourth Annual Meeting of the North America Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.

Hollebrands, K., Cayton, C., & Boehm, E. (2013, July). *Pivotal teaching moments in a technology-intensive secondary geometry classroom*. Thirty-Seventh Annual Meeting of the International Group for the Psychology of Mathematics Education. Kiel, Germany.

Hollebrands, K., Steketee, S., Lee, H., McCulloch, A., & Whitley, K. (2013, April). *Students' understandings of geometric functions*. National Council of Teachers of Mathematics Research Pre-session. Denver, CO.

Hollebrands, K., Lee, H., Starling, T., Gonzalez, M. & Pulis, T. (2012, November). *Prospective secondary mathematics teachers' design and implementation of dynamic geometry tasks*. Thirty-Third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI.

Hollebrands, K., Lee, H., Starling, T., Gonzalez, M. & Pulis, T. (2012, April). *Prospective secondary mathematics teachers' design and implementation of dynamic geometry tasks*. National Council of Teachers of Mathematics Research Pre-session. Philadelphia, PA.

Cayton, C., Hollebrands, K. & Patterson, L. (2012, April). *Characterizing discourse in technology-intensive high school geometry classrooms*. National Council of Teachers of Mathematics Research Pre-session. Philadelphia, PA.

Hollebrands, K. & Walker, E. (organizers). (2012, April). *Mentoring session for graduate students and new faculty*. National Council of Teachers of Mathematics Research Pre-session. Philadelphia, PA.

Wiebe, E., Hollebrands, K., Patterson, L., & Cayton, C., (2012, April). *Ubiquitous computing environments and mathematics discourse: Differential approaches by teachers*. Paper presented at the Annual Meeting of the American Educational Research Association. Vancouver, Canada.

Hollebrands, K., Lee, H., Starling, T., Gonzalez, M. & Pulis, T. (2012, February). *Prospective high school mathematics teachers' design and implementation of dynamic geometry tasks*. Association of Mathematics Teacher Educators Conference. Fort Worth, TX.

Hollebrands, K., Cayton, C., & Patterson, L. (2011, October). *Characterizing discourse in two technology-intensive high school geometry classrooms*. Thirty-Third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Reno, NV.

Lee, H., Hollebrands, K., Starling, T., & Gonzalez, M. (2011, January) *Preparing to teach mathematics with technology: Data Analysis and Probability and Geometry*. Association of Mathematics Teacher Educators Preconference session. Irvine, CA.

Lee, J., Hollebrands, K., Spires, H., Young, C. & Wiebe, E. (2010, April/May). *Toward a new learning ecology in 1:1 learning environments*. Paper presented at American Educational Research Association. Denver, CO.

Hollebrands, K.F., Smith, R.C., Herbst, P., Bush, W.S., Lee, C., Jakubowski, E., & Ronau, R. (2010, January). *Methods and purposes for assessing high school teachers' knowledge of geometry*. Association of Mathematics Teacher Educators Conference. Irvine, CA.

Lee, H.S., Hollebrands, K.F., Gonzalez, M.D., & Smith, R.C. (2010, January). *Preparing to teach mathematics with technology [PTMT]: Engaging practices and materials for technology-using mathematics teachers educators*. Association of Mathematics Teacher Educators Conference Preconference. Irvine, CA.

Smith, Hollebrands, Bottomley Parry, Albers, Smith (2009, June). *The ways in which K-8 students' participation in a GK-12 program affects achievement in and beliefs about mathematics*. Association of the American Society for Engineering Education.

Lee, H., Hollebrands, K., Smith, R., Ives, S., Niess, M., Bowers, J., Zbiek, R., (2009, April). *Technological Pedagogical Content Knowledge for Mathematics Teachers*. National Council of Teachers of Mathematics Research Pre-session. Washington, DC.

Hollebrands, K., Smith, R., Conner, A., Laborde, C., Moore-Russo, D., Rhodes, G. (2009, April). *The use of tools in the learning and teaching of geometry*. National Council of Teachers of Mathematics Research Pre-session. Washington, DC.

Smith, R., Hollebrands, K., & Conner, A. (2009, February). *The structure of college students' arguments in the presence of technology*. Research on Undergraduate Mathematics Education Conference. Raleigh, NC.

Hollebrands, K., Smith, R., & Conner, A (2009, April). *The structure of college geometry students' arguments when solving problems in the presence of technology*. National Council of Teachers of Mathematics Research Pre-session. Washington, DC.

Lee, H., Hollebrands, K., Ives, S., & Smith, R., (2009, April). *Developing secondary teachers' Statistical Pedagogical Technological Knowledge*. National Council of Teachers of Mathematics Research Pre-session. Washington, DC.

Hollebrands, K., Berry, R., Wilkerson, T., & Peterson, B. (2009, April). *Publishing articles in the school journals*. National Council of Teachers of Mathematics Research Pre-session. Washington, DC. [Invited session]

Smith, R. & Hollebrands, K. (2008, July). T*he affects of a dynamic program for geometry on college students' understandings of properties of quadrilaterals in the Poincare Disk model.* International Congress on Mathematics Education. Monterrey, Mexico.

Hollebrands, K., Berry, R., Wilkerson, T., & Peterson, B. (2008, April). *Writing for the journals*. National Council of Teachers of Mathematics Research Pre-session. Salt Lake City, UT. [Invited session]

Hollebrands, K., Berry, R., Wilkerson, T., & Peterson, B. (2008, April). *Tips for publishing ideas in NCTM journals.* National Council of Teachers of Mathematics. Salt Lake City, UT. [Invited session]

Steketee, S., Wray, J., & Hollebrands, K. (2008, April). *Using ON-Math in the mathematics classroom*. National Council of Teachers of Mathematics. Salt Lake City, UT.

Hollebrands, K. & Smith, R., (2007, October). *College geometry students' uses of technology in the process of constructing arguments*. Twenty-Ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Lake Tahoe, NV.

Hollebrands, K., Lee, H. S., & Wilson, H., (2007, October). *Prospective teachers use of a videocase to examine students' work when solving mathematical tasks using technology*. Twenty-Ninth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Lake Tahoe, NV.

Smith, R. & Hollebrands, K. (2007, September). *The affects of a dynamic program for geometry on college students' understandings of properties of quadrilaterals in the Poincare Disk model*. Ninth International Conference on Mathematics Education in a Global Community. Charlotte, NC.

Lee, H.S., Hollebrands, K., & Wilson, H. (2007, September) *The use of research-based methods and materials for preparing to teach mathematics with technology*. Ninth International Conference on Mathematics Education in a Global Community. Charlotte, NC.

Lanius, C., & Hollebrands, K. (2007, March) *Teaching with Technology: ON-Math Investigations*. National Council of Teachers of Mathematics Conference. Atlanta, GA.

Lee, H.S., Hollebrands, K. & Wilson, H. (2007, March). *Learning to teach probability with a simulation approach: A focus on teachers*. National Council of Teachers of Mathematics Research Pre-session. Atlanta, GA.

Wilson, H., Lee, H.S., & Hollebrands, K. (2007, March). *Preparing to teach mathematics with technology: Research-based materials*. National Council of Teachers of Mathematics Research Pre-session. Atlanta, GA.

Lee, H.S. & Hollebrands, K (2007, March). *Preparing to teach mathematics with technology: Research-based materials*. National Council of Teachers of Mathematics Annual Conference, Atlanta, GA.

Wilson, H., Hollebrands, K., & Lee, H. (2007, January) *Preparing to teach mathematics with technology: Prospective teachers' analysis of students' mathematical thinking*. Association of Mathematics Teacher Educators Conference. Irvine, CA.

Bottomley, L., Hollebrands, K., & Parry, L. (2006, June). *How does high school mathematics prepare engineers?* Association of American Society for Engineering Education. Chicago, IL.

Wilson, H. & Hollebrands, K. (2006, January). *Preparing to teach mathematics with technology.* Association of Mathematics Teacher Educators Conference. Tampa, FL.

Hollebrands, K. (2006, January). *Using ON-Math for preparing prospective teachers.* Association of Mathematics Teacher Educators Conference. Tampa, FL.

Hollebrands, K. & Heid, M.K. (2005, October). *Patterns of secondary mathematics students' representational acts and task engagement in a small-group technology-intensive context.* Twenty-Seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Blacksburg, VA.

Bottomley, L., Hollebrands, K., & Parry, L. (2005, June). *Creating effective teacher partnerships: Characteristics of teachers who choose to participate in a K-16 partnership.* Association of American Society for Engineering Education. Portland, OR.

Mitchell, T., Bottomley, L., Hollebrands, K., Daniel, A., Leager, K. (2005, June). *A comprehensive model for ensuring K-12 students are mathematically prepared and keenly acclimated to enter engineering disciplines*. 4th Association of American Society for Engineering Education/ Australasian Association for Engineering Education Global Colloquium on Engineering Education (GCEE 2005). Sydney, Australia.

Hollebrands, K. & Stohl, H. (2004, October). *The interplay between technology design and students' control of problem solving*. Twenty-Sixth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Toronto, Ontario.

Hollebrands, K. (2003, July). *Eighth grade students' understandings of geometric transformations in the context of a dynamic software environment*. Twenty-Seventh Annual Meeting of the International Group for the Psychology of Mathematics Education. Honolulu, HI.

Underwood, J., Hoadley, C., DiGiano, C., Stohl, H., & Hollebrands, K. (2003, April). *Design Principles of the ESCOT math environments*. American Educational Research Association Annual Meeting. Chicago, IL.

Hollebrands, K. (2002, October). *The role of a dynamic software program for geometry in high school students' developing understandings of geometric transformations.* Twenty-Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Athens, GA.

Heid, M. K., Blume, G., Zbiek, R., Foletta, G., Hollebrands, K., Piez, C., Glass, B., Finken, T., Dugdale, S. (2002, April). *Perspectives on classroom-based research on the teaching and learning of mathematics in the context of technology*. National Council of Teachers of Mathematics Research Pre-session. Las Vegas, NV.

Heid, M.K., Blume, G., Hollebrands, K., & Piez, C. (2002, April). *Patterns in students' engagement with tasks in a technology-intensive secondary school mathematics curriculum*. National Council of Teachers of Mathematics Research Pre-session. Las Vegas, NV.

Heid, M.K., Blume, G., Hollebrands, K. & Piez, C. (2002, April). *The development of a mathematics task-coding instrument (MaTCI).* Council of Teachers of Mathematics Research Pre-session. Las Vegas, NV.

Hollebrands, K. (2002, April). *High school students' understandings of geometric transformations in the context of a technological environment.* American Educational Research Association. New Orleans, LA.

Flanagan (Hollebrands), K. (2001, April). *Research on the learning of geometry at the secondary level*. National Council of Teachers of Mathematics Research Pre-session. Orlando, FL.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Iseri, L., Deckert, W., & Piez, C. (1999, November). *Students' interpretations of dynamic geometry representations of function.* Twelfth International Conference on Technology in Collegiate Mathematics. Burlingame, CA.

Flanagan (Hollebrands), K. & Glass, B. (1999, January) *Compositions of transformations using the TI-92*. International Teachers Teaching with Technology Conference. Chicago, IL.

Heid, M.K., Blume, G., Deckert, W., Flanagan (Hollebrands), K., Iseri, L., & Piez, C. (1998, November). *Research on student learning with a CAS environment*. Eleventh International Conference for Technology in Collegiate Mathematics. New Orleans, LA.

Flanagan (Hollebrands), K. & Piez, C. (1998, November). *Justification within a dynamic geometry environment*. Eleventh International Conference for Technology in Collegiate Mathematics. New Orleans, LA.

Heid, M. K., Blume, G., Flanagan (Hollebrands), K., Iseri, L. & Kerr, K. (1997, November) *The role of CAS in non-routine problem-solving.* Tenth International Conference for Technology in Collegiate Mathematics. Chicago, IL.

Heid, M.K., Blume, G., Flanagan (Hollebrands), K., Iseri, L., Kerr, K. & Marshall, J. (1997, October). *CAS-Learning Study: Conjecturing and representational style*. Nineteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Bloomington-Normal, IL.

Heid, M.K., Blume, G., Iseri, L., Flanagan (Hollebrands), K., Kerr, K. & Marshall, J.(1997, October). *Roles of symbolic representation in CAS-assisted mathematical problem solving*. Nineteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Bloomington-Normal, IL.

Heid, M.K., Blume, G., Iseri, L., Flanagan (Hollebrands), K., Kerr, K. & Marshall, J. (1997, April). *The impact of use of a CAS-calculator on prospective mathematics teachers' symbolic representations*. National Council of Teachers of Mathematics Research Pre-session. Minneapolis, MN.

Heid, M.K., Blume, G., Iseri, L., Flanagan (Hollebrands), K., Kerr, K. & Marshall, J. (1997, March). *A CAS learning study: The impact of access to a computer algebra calculator on the use of multiple representations in non-routine problem solving*. American Educational Research Association. Chicago, IL.

Blume, G., Heid, M.K., Iseri, L, Flanagan (Hollebrands), K., Kerr, K. & Marshall, J,. (1996, October). *A Computer Algebra System (CAS) Learning Study: The impact of access to a CAS calculator on the nature of mathematical exploration by prospective mathematics teachers*. Eighteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Panama City, FL.

Heid, M.K., Blume, G., Iseri, L, Flanagan (Hollebrands), K., Kerr, K. & Marshall, J,. (1996, October). *A CAS Learning Study: The impact of access to computer algebra calculator on the use of multiple representations by prospective mathematics teachers*. Eighteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Panama City, FL.

Local Presentations (26 presentations)

Hollebrands, K. (2016, November). Preparing for promotion to full-professor. The Associate Professors Round Table. North Carolina State University.

Williams, D., Hollebrands, K., Azmy, C. (2015, October). Mathematical Modeling Tasks for High School Students. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Thrasher, E., Cetner, M., & Hollebrands. K. (2014, October). *Engaging Mathematical Tasks.* Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Hollebrands, K., & Lee, H. (2014, March). *Teacher Professional Development in Relation to Digital Media and Tools*. Convening on K-12 Mathematics Education, Digital Learning, and State Policy. The William and Ida Friday Institute for Educational Innovation.

Hollebrands, K., & Thrasher, E. (2013, November). Functions and Statistics in the Real World. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Lee, H., McCulloch, A., Hollebrands, K., Gonzalez, M., Pulis, T., Whitley, B., Chandler, K. (2013, April). *Preparing to teach mathematics with technology: Results from eight years of teacher education curriculum development, dissemination, and research*. William & Ida Friday Institute for Educational Innovation Brown Bag Seminar. Raleigh, NC.

Thrasher, E., Perry (Franklin), A., Lee, H., Hollebrands, K., Hall, W., Early, M., Swandby, A. (2012, October). *Using iPads to enhance the mathematics classroom*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Stein, S., Schaeffer, H. Wiebe, K. & Hollebrands, K. (2012, March). *Scaling up STEM learning with the VCL*. Presented at the Brown Bag Seminar at the Friday Institute for Educational Innovation, Raleigh, NC.

Hollebrands, K. & Wredberg, C. (2011, October) *Focus on High School Mathematics: Using technology to promote reasoning and sense making*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Hollebrands, K., Lee, H., Brucki, T., Casstevens, K., Mann, L., Oppelaar, R., O'Neill, A., Rice, J., & Washington, H. (2010, October). *Activities that promote reasoning and sense-making in the high school classroom*. Annual Meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Hollebrands, K.F., Gonzalez, M.D., & Wredberg, C. (2010, October). *Exploring properties of quadrialterals using dynamic geometry software*. Session presented at the Annual Meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Spires, H., Wiebe, E., Young, C., Hollebrands, K., & Lee, J. (2009, December). *Toward a new learning ecology: Teaching and learning in 1:1 environments*. Presented at the Brown Bag Seminar at the Friday Institute for Educational Innovation, Raleigh, NC.

Hollebrands, K. & Lee, H. (2009, November). *Preparing teachers of 21st century learners: Infusing technology in mathematics instruction*. Presented at the Brown Bag Seminar at the Friday Institute for Educational Innovation, Raleigh, NC.

Hollebrands, K. (2009, July). *Incorporate technology in the teaching of mathematics in 1:1 classrooms*. William & Ida Friday Institute for Educational Innovation, Raleigh, NC.

Hollebrands, K. (2006, October). *Activities for family math nights*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Lee, H., Hollebrands, K., & Wilson, H. (2006, October). *PTMT: An integrated approach*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Wilson, H., Hollebrands, K., & Lee, H. (2006, October). *From univariate to bivariate analysis with Fathom*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Hollebrands, K. (2004, October). *Teaching geometric transformations using technology*. Annual Meeting of the North Carolina Council of Teachers of Mathematics. Greensboro, NC.

Stohl, H. D., & Hollebrands, K.F. (2001, October). *Technology as a vehicle for promoting mathematical reasoning*. Annual Meeting of the North Carolina Council of Teachers of Mathematics Fall Meeting. Greensboro, NC.

Straesser, R. & Hollebrands, K. (2001, September). *The learning of geometry with technology at the secondary level*. The Learning and Teaching of Mathematics with Technology Conference. The Pennsylvania State University, University Park, PA.

Zbiek, R. & Hollebrands, K. (2001, September). *A research-informed view of the process of incorporating mathematics technology into classroom practice by inservice and prospective teachers*. The Learning and Teaching of Mathematics with Technology. The Pennsylvania State University, University Park, PA.

Piez, C. & Flanagan (Hollebrands), K. (1999, March) *Trigonometric applications with the TI-92*. Annual Pennsylvania Council of Teachers of Mathematics. Lake Harmony, PA.

Glass, B. & Flanagan (Hollebrands), K. (1998, April) *Teaching Transformations with the TI-92*. Teachers Teaching with Technology Regional Conference. Pittsburgh, PA.

Flanagan (Hollebrands), K. & Piez, C. (1998, March). *Making Connections with the TI-92*. Annual Pennsylvania Council of Teachers of Mathematics Regional Conference. Harrisburg, PA.

Flanagan (Hollebrands), K. & Kerr, K. (1997, March). *Using the TI-92 in the geometry classroom*. Workshop presented at the Pennsylvania Council of Teachers of Mathematics Regional Conference, Valley Forge, PA.

Flanagan (Hollebrands), K. & Watson, L. (1995, March). *Activities for Teaching Technical Mathematics.* Workshop presented at the North Carolina Council of Teachers of Mathematics Regional Conference, Kinston, NC.

Workshops (36 sessions for faculty and teachers)

University Faculty Professional Development

Hollebrands, K., McCulloch, A., Scher, D., & Steketee, S (2020, May). *Forging Connections Online Workshop for Mathematics Teacher Educators*.

McCulloch, A., Lee, H. & Hollebrands, K. (2013, June). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Algebra.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Lee, H., Hollebrands, K., & McCulloch, A. (2012, May). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Geometry, Data Analysis, and Probability.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Hollebrands, K., & Lee, H. (2011, June). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Geometry, Data Analysis, and Probability.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Lee, H., & Hollebrands, K. (2010, July). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Data Analysis, Probability and Geometry.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Lee, H., & Hollebrands, K. (2009, June). *Preparing to Teaching Mathematics with Technology: Faculty Professional Development in Data Analysis and Probability.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

K-12 Teacher Professional Development

Avineri, T., Krupa, E., Hoyes, M (2021, June). Reflecting and providing feedback on high school mathematics teaching. Noyce Master Teacher Summer Institute, NCSU, Raleigh, NC.

Krupa, E., Hollebrands, K., Hoyes, M., Fenn, M. (2021, Spring). Mathematics content preparation for National Board Certification, NCSU, Raleigh, NC.

Krupa, E., Hollebrands, K., Hoyes, M. (2020, Fall). Equitable mathematics teaching practices. Noyce Master Teacher Online Professional Development, NCSU, Raleigh, NC.

Krupa, E., Hollebrands, K., Elrod, E., & Cudd, M. (2019, June). Effective teaching practices for high school mathematics teachers. Noyce Master Teacher Summer Institute, NCSU, Raleigh, NC.

Hollebrands, K (2019, March). Orchestrating productive mathematics discussions in high school classrooms. Knightdale High School, Knightdale, NC.

Hollebrands, K. & Keene (2016, August). Creating and critiquing rich mathematical tasks. William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Hollebrands, K. & Lee, H.L. (2016, July). Noyce summer institute. William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Hollebrands, K. & Lee, H.L. (2013, July). Noyce summer institute. William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Hollebrands, K. (2012, May). *Common Core State Standards for Mathematics: Geometry and Technology*. Two sessions presented to Wake County teachers. Raleigh, NC.

Hollebrands, K., Cayton, C., & Boehm, E. (2012, June). *Teaching Algebra with Fathom.* William & Ida Friday Institute for Educational Innovation Raleigh, NC.

Hollebrands, K. (2011, August). *Using The Geometer's Sketchpad to teach mathematics*. Chatham County.

Hollebrands, K. & Cayton, C. (2011, July). *Teaching Algebra with The Geometer's Sketchpad.* William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K. & Cayton, C. (2011, July). *Teaching Geometry with The Geometer's Sketchpad – Part II.* William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K., Dove, A., & Cayton, C. (2010, June). *Teaching Geometry with The Geometer's Sketchpad – Part I.* William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K., Smith, R., & Dove, A. (2008, October). *Using technology to teach mathematics*. Institute on Leading Innovation: Implementing Effective 1:1 Programs. William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Tombes, S. & Hollebrands, K. (2008, July). *Classroom resources to transform teaching and learning*. Institute on Leading Innovation: Implementing Effective 1:1 Programs. William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K. (2008, July). *Going deeper in mathematics.* Institute on Leading Innovation: Implementing Effective 1:1 Programs. William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K. (2007, November). *Using the Geometer's Sketchpad in a 1-1 laptop mathematics classroom*. William & Ida Friday Institute for Educational Innovation. Raleigh, NC.

Hollebrands, K. (2002, November). *Success in Algebra*. Department of Defense School in the Asia division, Tokyo, Japan.

Stohl, H. & Hollebrands, K. (2002, Spring). *Teaching Mathematics with Technology*. Cary High School, Cary, NC.

Flanagan (Hollebrands), K. (1999, August) *An introduction to the Geometer's Sketchpad*. Bellefonte Area High School, Bellefonte, PA.

Flanagan (Hollebrands), K. (1999, August) *The Geometer's Sketchpad in the secondary classroom*. Workshop presented at the Pennsylvania Governor's Institute for Mathematics Educators, University Park, PA.

Flanagan (Hollebrands), K. (1999, August) *The Geometer's Sketchpad in the elementary mathematics classroom*. Pennsylvania Governor's Institute for Mathematics Educators, University Park, PA.

Flanagan (Hollebrands), K. & Piez, C. (1998, October). *SOH-CAH-TOA in a technological environment*. The University of Pittsburgh at Johnstown, SOS/MOS program, Johnstown, PA.

Flanagan (Hollebrands), K. (1998, August). *Conjecturing, inductive and deductive reasoning within a technological environment*. Pennsylvania Governor's Institute for Mathematics Educators, University Park, PA.

Bookman, J., Collins, K., Ebert, J., Flanagan (Hollebrands), K., Thomas, J., & Vosskamp, M. (1997, November) *Making Connections: Using the TI-92 and Geometry throughout the curriculum.* Workshop presented at Duke University, Durham, NC. Sponsored by the Park City/ Institute for Advanced Study - Mathematics Institute and the National Science Foundation.

Flanagan (Hollebrands), K. & Kerr, K. (1997, April) *Using the TI-92 in the mathematics classroom*. Stroudsburg High School, Stroudsburg, PA.

Collins K., Ebert, J., Flanagan (Hollebrands), K., King, J., Naeser, S. & Vosskamp M. (1996, November) *Teaching Geometry with the TI-92*. Workshop presented at Duke

University, Durham, NC. Sponsored by the Park City/ Institute for Advanced Study - Mathematics Institute and the National Science Foundation.

Bookman, J., Brummett, B., Collins K., Ebert, J., Flanagan (Hollebrands), K., Naeser, S., Thomas, J. & Vosskamp M. (1995, November) *Drawing on Geometry*. Workshop presented at Duke University, Durham, NC and sponsored by the Park City/ Institute for Advanced Study - Mathematics Institute and the National Science Foundation.

Flanagan (Hollebrands), K. & Watson, L. (1995, March). *Activities for Teaching Technical Mathematics.* Workshop presented at the North Carolina Council of Teachers of Mathematics Regional Conference, Kinston, NC.

Doctoral Students Advised

24. Elyse Smith (2026). *Equity in Numbers: Mathematics Teacher Candidates' Use of Cultural Capital and Prior Knowledge in edTPA Commentaries*.

23. Rayshawn Locklear (2025). *Teacher Questioning in High School Mathematics : A Qualitative Study.*

22. James Smiling (2023). *Characterization of Highly Active Teacher Learners' Participation and TPACK Knowledge While Engaging in a Teaching Mathematics with Technology MOOC for Mathematics Educators.*

21. Co-Chair with Jonee Wilson. Brittney Black (2023). *Intersecting Identities: A Mixed Methods Study Exploring the Mathematical and Racial Identity of Middle School Black Girls*.

20. Michael Hoyes (2023). *Mathematics Identity of African American Male High School Students while Course-Taking with an African American Male Mathematics Teacher.*

19. Latoya Brewer (2023). *Analyzing Relationships Among College Students' Interactions with Instructional Videos and their Mathematical Learning: A Qualitative Multi-Case Study.*

18. Co-Chair with Ruby Ellis. Jerome Amedu (2023). *Examining Mathematics Teachers' Perceptions of The Effects of Informal Learning on Teacher Knowledge and Practices: An Explanatory, Sequential Mixed-Methods Study.*

17. Katie Johnston (2022). *Undergraduates' Attitudes Toward Mathematics and Perceptions of Community of Inquiry in the Fully Online Mathematics Classroom: An Explanatory, Sequential Mixed-Methods Study*.

16. Co-Chair with Robin Anderson. Jonathan Lopez-Torres (2021). *Their Voices, Lived Experiences and Perceptions: A Mixed Methods Study on Non-STEM Undergraduate Students in General Education Mathematics.*

15. Michele Cudd (2021) *An Exploratory Case Study of Prospective Teachers' Support of Student Thinking During Rehearsals*

14. Kristi Martin (2020). *Pre-service Secondary Mathematics Teachers' Problem-Solving across Trigonometric Domains*.

13. Co-Chair with Allison McCulloch. James Strickland (2019). *The Algebraic Habits of Mind of Community College Students Enrolled in Developmental Mathematics.*

12. Gregory Downing (2019). *Leveraging Culturally Relevant Pedagogy in a College Algebra Course: A Mixed Methods Study.*

11. Angelina Knies (2018). *Perceptions and the Role of Personal Experiences on Females' Participation and Persistence in Mathematics.*

10. Derek Williams (2017). *Student Experiences in Community College Precalculus: A Mixed Methods Study of Student Engagement and Understanding*

9. Kayla Chandler (2017). *Examining How Prospective Secondary Mathematics Teachers Notice Students' Thinking on a Paper and Pencil Task and a Technology Task*

8. Samet Okumus (2016). *Middle School Students' Reasoning About 3-Dimensional Objects: A Case Study.*

7. Aaron Trocki (2015). *Designing and Examining the Effects of a Dynamic Geometry Task Analysis Framework on Teachers' Written Geometer's Sketchpad Tasks.*

6. Charity Cayton (2012). *Teachers' Implementation of Pre-Constructed Dynamic Geometry Tasks in Technology-Intensive Algebra 1 Classrooms.*

5. Anthony Dove (2011). *Teaching Geometry in a 1:1 Classroom: High School Teachers' Instructional Practices while Participating in Professional Development*

4. Ryan Smith (2010). *A Comparison of Middle School Students' Mathematical Arguments in Technological and Non-technological Environments.*

3. Co-Chair with Hollylynne Lee. Rachael Kenney (2008). *The Influence of Symbols on Pre-calculus Students' Problem Solving Goals and Activities.*

2. Co-Chair with Lee Stiff. Miranda Cave (2008). *Impact of Community Service Learning on Middle School African and Latino Americans' Understanding of Mathematics.*

1. Co-Chair with Sally Berenson. Kelli Slaten (2006). *Effective Teaching and Uses of Instructional Representations in Secondary Geometry: A Comparison of a Novice and an Experienced Mathematics Teacher.*

National and International Invited Doctoral Committee Memberships

Bram Cabbeke (international) Served as an international committee member representative for University of Ghent, Belgium

Nick Witt (national). Served as a national committee member for Western Michigan University.

Outreach and Extension

Jan – Mar 2020. Mathematics tutor. Mills Park Middle School, Cary, NC. Worked with a small group of eighth grade mathematics students weekly for 15 weeks.

2019- 2020. Member of the state of North Carolina's Department of Public Instruction (NCDPI) writing team for the Precalculus standards, indicators, and unpacking documents.

2019-2020. Mathematics tutor. Grey Culbreth Middle School, Chapel Hill, NC. Assisted a class of nine eighth grade students taking an online Math II course with a face-to-face mathematics teacher. Attended class once per week for 25 weeks.

Spring 2019. Mathematics instructor. Teaching Mathematics with Technology MOOC for Educators. Facilitated online MOOC for 180 educators enrolled in the online course.

Spring 2018. Mathematics instructor. Teaching Mathematics with Technology MOOC for Educators. Facilitated online MOOC for 250 educators enrolled in the online course.

Fall 2017. Mathematics instructor. Teaching Mathematics with Technology MOOC for Educators. Facilitated online MOOC for 400 educators enrolled in the online course.

Professional Memberships
Association of Mathematics Teacher Educators
National Council of Teachers of Mathematics
North Carolina Council of Teachers of Mathematics
American Educational Research Association
Psychology of Mathematics Education - North America Chapter