

**Catherine Stein Schwartz**

Associate Professor

Department of Mathematics, Science, and Instructional Technology Education (MSITE)

East Carolina University

[schwartzca@ecu.edu](mailto:schwartzca@ecu.edu)

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**EDUCATION**

- 2008 Ph.D. in Curriculum and Instruction, University of North Carolina at Greensboro  
Dissertation title: *An Exploration of Elementary Preservice Teachers: Performance and Beliefs when Negotiating Reform-based Mathematics Education.*  
Chair: Dr. Samuel Miller
- 2005 M.Ed. in Curriculum and Instruction, University of North Carolina at Greensboro
- 1997 B.A. in Elementary Education, University of North Carolina at Chapel Hill

**PROFESSIONAL HISTORY**

- 2023-present Interim Department Chair, Department of Mathematics, Science, and Instructional Technology Education, East Carolina University
- 2023-present Full Professor, Mathematics Education, East Carolina University
- 2104-2023 Associate Professor, Mathematics Education, East Carolina University
- 2008-2014 Assistant Professor, Mathematics Education, East Carolina University
- 2005-2008 Graduate Teaching Instructor, University of North Carolina at Greensboro,
- 2005-2008 Professional Development School Team Leader and Student Teaching Supervisor, University of North Carolina at Greensboro
- 1998-2005 Classroom Teacher, Carrboro Elementary School, Carrboro, NC
- 1997-1998 Classroom Teacher, South Mebane Elementary School, Mebane, NC

**AWARDS AND HONORS**

- 2019 W.W. Rankin Award, North Carolina Council of Teacher of Mathematics
- 2019 Board of Governors Distinguished Professor of Teaching
- 2018 North Carolina Council of Teachers of Mathematics Innovator Award
- 2006-2007 Graduate Student Teaching Award, School of Education, University of North Carolina at Greensboro.
- 2004-2005 Carrboro Elementary School Teacher of the Year

**SCHOLARLY PUBLICATIONS AND ACTIVITIES****Grants**

- Schwartz, C.S.** (PI), Mawhinney, K. (Co-PI), McCulloch A. (Co-PI), Stephan, M. (Co-PI), & Wilson, P.W. (Co-PI). *Collaborative Research: Co-Designing for Statewide Alignment of a Vision for High Quality Mathematics Instruction [VISIONS]*. National Science Foundation. (\$1,679,098)
- Munter, C. (PI), Chval, K. (Co-PI), Loehr, A. (Co-PI), McCulloch, A. (Co-PI), **Schwartz, C.S.** (Co-PI), & Wilson, P.H. (Co-PI). *Collaborative Research: Obstacles and Avenues to Improving School Mathematics in Two States*. National Science Foundation. Not Funded. (\$107,600)
- Holt, P.W. (PI), Ashe, L. (Co-PI), Curtis J. (Co-PI), Mawhinney, K. (Co-PI), McCulloch A. (Co-PI), **Schwartz, C.S.** (Co-PI), & Stephan, M. (Co-PI). *Expanding the NC Collaboration for Mathematics Learning (NC<sup>2</sup>ML)*. NC Department of Public Instruction, 2017-2018 (\$520,000)
- Ries, H. & **Schwartz, C.S.** (co-PIs). *Increasing Elementary Teachers' Content Knowledge about Number Theory*. ECU Teaching Grants, 2016-2017 (\$8,561)
- Schwartz, C.S.** (PI) & Benton, E. (co-PI). *Lenoir County STEM Learning Community*, North Carolina Mathematics Science Partnership Grant, 2013-2017, (\$482,518)
- Schwartz, C.S.** (PI). *Helping First-Year Elementary Teachers Achieve Teaching Excellence in Mathematics*. Z. Smith Reynolds Foundation, 2013-2015, (\$69,864)

**Book Chapters in Edited Books**

- Wilson, H.W., Baucom, L., Hare, E. Wonsavage, P., Duggan, A., Webb, J., Mawhinney, K., McCulloch, A., **Schwartz, C.S.**, & Stephan, M. (2021). Developing a statewide teacher learning community. In B. Faircloth, L. Gonzales, and K. Ramos (Eds.), *Belonging: Conceptual critique, critical application*. Roman and Littlefield.
- Schwartz, C.S.**, Lee, C.W., Gonzalez, M., & Belford, L. (2020). Using virtual simulations and videoconferencing to rehearse and enact number talks in online settings. In R.E. Ferdig, E. Baumgartner, R. Hartshorne, R. Kaplan-Rakowski, & C. Mouza (Eds.), *Teaching, technology, and teacher education during the COVID-19 pandemic: Stories from the field*. Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/p/216903/>.
- Morge, S.P., **Schwartz, C.S.**, & Hargrove, T.Y. (2020). Strategies and tools for promoting discourse during mathematics problem-solving in online settings. In P. Wachira & J. Keengwe (Eds.), *Handbook of research on online pedagogical models for mathematics teacher education*. Hersey, PA: IGI Global.
- Virmani, R., Taylor, M.W., Rumsey, C., Box, T., Kazemi, E., Knapp, M., Lynch, S., **Schwartz, C.S.**, Swartz, B., Weston, T., & Woods, D. (2017). Bringing mathematics methods into classrooms. In S.E. Kastberg, A.M. Tyminski, A.E. Lischka, & W.B. Sanchez (Eds.) *Building Support for Scholarly Practices in Mathematics Methods*. Charlotte, NC: Information Age Publishing.

**Schwartz, C.S.**, Morge, S.P., Rachlin, S.L., & Hargrove, T.Y. (2017). A blended online model for instruction: The North Carolina story. In M.B. McGatha & N.R. Rigelman (Eds.) *Elementary mathematics specialists: Developing, refining, and examining programs that support mathematics teaching and learning*. Charlotte, NC: Information Age Publishing.

### **Refereed Journal Articles**

Adu-Gyamfi, K., **Schwartz, C.S.**, Sinicrope, R., and Bosse, M.J. (2019). Making sense of fraction division: Domain and representation knowledge of preservice elementary teachers on a fraction division task. *Mathematics Education Research Journal*, DOI: 10.1007/s13394-019-00265-2

**Schwartz, C.S.** & Ticknor, A.S. (2018). The role of university-based induction in beginning elementary teacher enactment of effective mathematics teaching. *Teacher Development*, 22(3), 394-407. DOI: 10.1080/13664530.2018.1450778

**Schwartz, C.S.**, Walkowiak, T. A., Poling, L., Richardson, K., & Polly, D. (2018). The nature of feedback given to elementary student teachers from university supervisors after observations of mathematics lessons. *Mathematics Teacher Education & Development*, 20(1), 62-85.

Grady, M. M., Cayton, C. A., Middleton, C. W., Sinicrope, R., Preston, R. V., **Schwartz, C. S.**, ... Hill, D. B. (2017). Literate Mathematics Educator's Quiz: Updated for a New Century. *Centroid*, 43(1), 3-6.

**Schwartz, C.S.** & Ticknor, A.S. (2017). Beginning elementary mathematics teachers negotiating leadership responsibilities. *Journal of Interdisciplinary Teacher Leadership*, 1(2), 3-6.

Ticknor, A.S. & **Schwartz, C.S.** (2017). "It just got real:" Navigating the affordances and constraints of school-based learning in a mathematics-specific induction program. *Action in Teacher Education*. 39 (2), 138-152.

**Schwartz, C.S.** (2015). Developing the practice of teacher questioning through a K-2 elementary mathematics field experience. *Investigations in Mathematics Learning*. 7(3), 30-50.

**Schwartz, C.S.** & Sinicrope, R. (2013). Prospective elementary teachers' perceptions of gender differences in children's attitudes towards mathematics. *School Science and Mathematics*, 113(8), 410-416.

Slagter van Tryon, P.J. & **Schwartz, C.S.** (2012). A pre-service teacher training model with instructional technology graduate students as peer coaches to elementary pre-service teachers. *Tech Trends*, 56(6), 31-36.

Richardson, K., Reynolds, A. & **Schwartz, C.S.** (2012). Exploring quadrilaterals through flexible approaches. *Mathematics Teacher*, 106(4), 288-294.

**Schwartz, C.S.** (2012). Counting to 20: Online implementation of a face-to-face, elementary mathematics methods problem-solving activity. *Tech Trends*, 56(1), 34-39.

Richardson, K., **Schwartz, C.S.** , & Reynolds, A. (2010). Investigating quadrilaterals as an ongoing task. *International Journal of Mathematics Teaching and Learning*.

Fairbanks, C.M., Duffy, G.G., Faircloth, B.S., He, Y. Levin, B., Rohr, J., & **Stein, C.C.** (2010). Beyond Knowledge: Exploring Why Some Teachers Are More

- Thoughtfully Adaptive Than Other. *Journal of Teacher Education*, 61(1-2), 161-171.
- Stein, C.C.** & Richardson, K. (2009). *Using spatial reasoning to enhance K-2 number sense*. Centroid, Fall 2009, pp. 7-9.
- Richardson, K., & **Stein, C.C.**, (2008) Developing spatial sense and communication skills. *Mathematics Teaching in the Middle School*, 14(2), 101-107.
- Stein, C.C.** (2007). Let's talk: Promoting mathematical discourse in the classroom. *Mathematics Teacher*, 101(4), 285-289.

### **Refereed Proceedings in International Conference Publications**

- Adefope, O., Mawhinney, K., McCulloch, A., **Schwartz, C.**, Stephan, M., & Wilson, P.H.. (2022). Co-designing for statewide alignment of a vision for high quality mathematics instruction. In A. Kischka, E. Dryer, R. Jones, J. Lovett, J. Strayer, & S. Drown (Eds.), *Proceedings of the 44th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 994), Middle Tennessee State University: Nashville, TN.
- Stephan, M., **Schwartz, C.S.**, & Mawhinney, K. (2022). How do teachers and districts implement statewide co-designed instructional frameworks? In A. Kischka, E. Dryer, R. Jones, J. Lovett, J. Strayer, & S. Drown (Eds.), *Proceedings of the 44th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 210 - 214), Middle Tennessee State University: Nashville, TN.
- Duggan, A., **Schwartz, C.S.**, & Stephan, M. (2018). Examining critical conversations. In T. Hodges, G. Roy, & A. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, SC: University of South Carolina & Clemson University.
- Stephan, M., **Schwartz, C.S.**, & Duggan, A. (2018). Co-constructing statewide curriculum frameworks: Purpose and processes. In T. Hodges, G. Roy, & A. Tyminski, (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*.
- Schwartz, C. S.** (2012). Developing the practice of teacher questioning through a K-2 elementary mathematics field experience. *Proceedings of Research Council on Mathematics Learning Conference*.
- Schwartz, C.S.** (2010). *Counting to 20: The affordances and constraints of face-to-face and online versions of an elementary mathematics methods problem-solving activity*. Proceedings of the Society for Information Technology & Teacher Education (SITE) Conference.
- Stein, C.C.** & Miller, S.D. (2009). *An exploration of elementary preservice teachers' performance and beliefs when negotiating reform-based mathematics education*. Paper presented at the Annual Meeting of the American Education Research Association, San Diego, CA.
- Stein, C. C.** (2009). *Using Blogs to Support Mathematics Instruction Among First Year Elementary School Teachers*. Proceedings of the Society for Information Technology & Teacher Education Conference.

Wilson, P.H. & **Stein, C.C.** (2007). Growth of understanding in pattern finding. *Proceedings of the Ninth International Conference "Mathematics in a Global Community."* Charlotte, NC.

**Presentations at National and International Conferences (refereed)**

Gonzalez, M., Belford, L., & **Schwartz, C.S.** (2019, February). *Scaling Up Mathematics Methods Practices that Support Ambitious Teaching.* Research Council on Mathematics Learning Conference. Charlotte, North Carolina.

**Schwartz, C.S.**, Adu-Gyamfi, K., Sinicrope, R. (2019, February). *Supporting Preservice Teachers' Strategic Competence in a Non-routine Task.* Research Council of Mathematics Learning Conference. Charlotte, North Carolina.

Duggan, A., **Schwartz, C.S.**, Stephan, M.L., & Belford, L.B. (2019, February). *Examining Critical Conversations during Co-design of K-5 Instructional Frameworks.* Association of Mathematics Teacher Educators Annual Meeting, Orlando, Florida.

Stephan, M.L., **Schwartz, C.S.**, & Duggan, A. (2019, February). *Co-constructing Statewide Curriculum Frameworks: Purposes and Processes.* Association of Mathematics Teacher Educators Annual Meeting, Orlando, Florida.

Duggan, A. **Schwartz, C.S.**, Stephens, M.L., Schultz, D., Mawhinney, K. (2018, November). *Examining Critical Conversations during Co-design of Instructional Guidance Documents.* Poster. Annual Conference of the Association of the Psychology of Mathematics Education-North American Chapter.

Stephan, M., **Schwartz, C.S.**, & Duggan, A. (2018). *Co-constructing statewide curriculum frameworks: Purpose and processes.* Poster presented at the annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Greenville, SC.

Knapp, M., Virmani, R., Woods, D., **Schwartz, C.S.**, Swartz, B., and Lynch, S. (February, 2018). *The Power of Debriefs in Practice-Based Mathematics Education Courses.* Association of Mathematics Teacher Educators Annual Meeting, Houston, Texas.

Middleton, C., Lee, C.W., **Schwartz, C.S.**, & Belford, L. (February, 2018). *The Impact of Developing a Vision for Mathematics Teaching with Elementary Preservice Teachers.* Association of Mathematics Teacher Educators Annual Meeting, Houston, Texas.

Ticknor, A.S. & **Schwartz, C.S.** (April, 2016). *Contextual Affordances and Constraints: Supporting Beginning Teacher Agency in a Mathematics-Specific Induction Program.* American Education Research Association Annual Meeting, Washington, D.C.

Rumsey, C., Virmani, R., Lynch, S., Knapp, M., & **Schwartz, C. S.** (April, 2016). *Embedding Mathematics Teacher Preparation Courses in the PK-12 Setting.* Association of Mathematics Teacher Educators. Orlando Florida

Preston, R., **Schwartz, C.S.**, & Middleton, C. (January, 2016). *Partnering with Local Industries to Design and Implement Authentic Middle School Mathematics Tasks.* Association of Mathematics Teacher Educators Annual Meeting, Irvine, California.

- Schwartz, C.S.** (January, 2016). *“Substitutes in Their Own Classrooms” and Other Contextual Dilemmas of Beginning Elementary Mathematics Teachers.* Association of Mathematics Teacher Educators Annual Meeting, Irvine, California.
- Schwartz, C.S.,** Morge, S, Seaman, C., Starling, T., & Walkowiak, T. (February, 2015) *The North Carolina elementary add-on license.* Association of Mathematics Teacher Educators Annual Meeting, Orlando, Florida.
- Schwartz, C.S.,** Poling, L.L., Walkowiak, T.A. (February, 2014) *The Nature of University Supervisor Feedback: What is Being Acknowledged in the Mathematics Classroom* Association of Mathematics Teacher Educators Annual Meeting, Irvine, California.
- Schwartz, C.S.,** Poling, L.L. & Richardson, K. (2013, January) *The nature of feedback given to elementary student teachers during observations of mathematics lessons.* Association of Mathematics Teacher Educators Annual Meeting, Orlando, Florida.
- Schwartz, C.S.,** Wilson, P.H., Hendrix, T., Joyner, J. & Midgett, C. (2012, February). *Examining teachers’ integration and use of multiple domains of mathematics knowledge for teaching in simulated contexts of practice.* Research Council on Mathematics Learning Conference, Charlotte, North Carolina.
- Schwartz, C.S.** (2012, February). *Developing the practice of teacher questioning through a K-2 elementary mathematics field experience.* Research Council on Mathematics Learning Conference, Charlotte, North Carolina.
- Mawhinney, K.J., Dick, L.M., Hendrix, T.M., and **Schwartz, C.S.** (2012, February). *Partnering to teach K-8 teachers: Reflections from a state-wide MSP project.* Association of Mathematics Teacher Educators Annual Meeting. Fort Worth, Texas.
- Schwartz, C.S.** (2011, January). *Designing an early K-2 field experience based on high-leverage practices.* Association of Mathematics Teacher Educators Annual Meeting, Irvine, California.
- Schwartz, C.S.** (2010, March). *Counting to 20: The affordances and constraints of face-to-face and online versions of an elementary mathematics methods problem-solving activity.* Paper presented at the Society for Information Technology & Teacher Education (SITE) Conference, San Diego, CA.
- Stein, C.C.** (2009, April). *An exploration of elementary preservice teachers’ performance and beliefs when negotiating reform-based mathematics education.* Paper presented at the Annual Meeting of the American Education Research Association, San Diego, CA.
- Stein, C.C.** (2009, April). *Naming the Space Between: Struggling to Describe Preservice Teachers’ Negotiation of Reform-based Mathematics Teaching.* Presented at the Annual Meeting of the American Educational Research Association, San Diego, California.
- Stein, C.C.** (2009, March). Using Blogs to Support Mathematics Instruction Among First Year Elementary School Teachers. *Paper present at the Society for Information Technology & Teacher Education International Conference, March, 2009.*

- Stein, C.C.** (2008, April). *An exploration of elementary preservice teachers: Participation and practices in mathematics education*. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY, April 2008.
- Wilson, P.H. & Stein, C.C.** (2007, September). *The role of representations in growth of understanding in pattern-finding tasks*. Presentation at the Ninth International Conference “Mathematics in a Global Community.” Charlotte, NC.
- Stein, C.C. & Shockley, P.** (2007, March). *Linking algebra and geometry: Pattern finding with polygons*. National Council of Teachers of Mathematics, Atlanta, Georgia.
- Stein, C.C. & Shockley, P.** (2004). *Ch-Ching! A mini-society*. National Council of Teachers of Mathematics, Philadelphia, Pennsylvania.

### **Presentations at Local and State Events**

- Schwartz, C.S.** (2022, November). *Promoting a deep understanding of place value in K-5 classrooms*. Presented at the annual meeting of the North Carolina Council of Mathematics Teachers, Winston-Salem, NC.
- NC<sup>2</sup>ML Visions Team.** (2022, November). *Learn about the North Carolina Collaborative for Mathematics Learning (NC<sup>2</sup>ML)*. Presented at the annual meeting of the North Carolina Council of Mathematics Teachers, Winston-Salem, NC.
- NC<sup>2</sup>ML Visions Team.** (2022, November). *North Carolina Collaborative for Mathematics Learning (NC<sup>2</sup>ML) Updates*. Presented at the annual meeting of the North Carolina Council of Mathematics Teachers, Winston-Salem, NC.
- Schwartz, C.S.,** Stephan, M., McCulloch, A. (2020, November). *NC Collaborative for Mathematics Learning*. Invited talk for NCDPI Office Hour for Mathematics Leaders.
- Schwartz, C.S.** (2019, June). *A (Shared) Vision of (High Quality) Mathematics Instruction*. Invited talk at 2019 Access for All NC Teachers to High Quality Resources: High School Frameworks Summer Workshop. Appalachian State University, Boone, NC.
- Schwartz, C.S. & Duggan, A.** (2019, March). *Elementary instructional framework resources update*. Invited presentation at the Annual NCCTM Leadership Meeting, High Point, NC.
- Stephan, M., Duggan, A., & **Schwartz, C.S.** (2018, October). *Co-constructing statewide K-12 curriculum frameworks*. Presented at the annual meeting of the North Carolina Council of Mathematics Teachers, Greensboro, NC.
- Duggan, A., **Schwartz, C.**, & Stephan, M. (2018, October). *Examining critical conversations*. Presented at the annual meeting of the North Carolina Council of Mathematics Teachers, Greensboro, NC.
- Schwartz, C.S., & Rich, W.**(2018, August). *K-5 instructional frameworks and Tools for Teachers resources*. Presented at meeting of the North Carolina chapter of the Association of Mathematics Teacher Educators. Raleigh, NC.
- Schwartz, C.S.,** Floyd, A., Daugherty, L. & Duggan, A. (2018, June). *NC Instructional Frameworks Summer Work Sessions for District Leaders*. North Carolina Collaborative for Mathematics Learning, Asheville, NC.

- Schwartz, C.S.**, Floyd, A., Daugherty, L. & Duggan, A. (2018, June). *NC Instructional Frameworks Summer Work Sessions for District Leaders*. North Carolina Collaborative for Mathematics Learning, Greenville, NC.
- Schwartz, C.S.**, Stephan, M., & Duggan, A. (2018, May). *Introducing the NC Instructional Frameworks*. North Carolina Collaborative for Mathematics Learning, Greensboro, NC.
- Schwartz, C.S.**, Stephan, M., & Duggan, A. (2018, April). *Introducing the NC Instructional Frameworks*. North Carolina Collaborative for Mathematics Learning, Asheville, NC.
- Schwartz, C.S.**, Stephan, M., & Duggan, A. (2018, March). *Introducing the NC Instructional Frameworks*. North Carolina Collaborative for Mathematics Learning, Kinston, NC.
- Daugherty, L., Midgett, C., Rich, W., **Schwartz, C.S.**, & Floyd, A. (2017, January) *Clearly Communicating Our Messages as We Engage with Different and Important Communities*. Meredith Mathematics Leadership Institute. Raleigh, NC.
- Schwartz, C.S.** & Ticknor, A. (2016, July). *Developing Vision for Mathematics Teaching*. Meredith Mathematics and Science Institute. Raleigh, NC.
- Schwartz, C.S.** (March, 2015). *Problems with problem-solving?* NCCTM Gamma Chapter, Greenville, NC
- Schwartz, C.S.** (2015, February). *Problems with word problems?* North Carolina Council of Teachers of Mathematics Eastern Regional Conference, Wilmington, NC.
- Schwartz, C.S.** (2015, February). *Reasoning Your Way to Place Value Understanding*. North Carolina Council of Teachers of Mathematics Eastern Regional Conference, Wilmington, NC.
- Middleton, C. & **Schwartz, C.S.** (2014, October). *Co-teaching in mathematics*. North Carolina Council of Teachers of Mathematics Annual Fall Conference. Greensboro, NC.
- Schwartz, C.S.** & Ticknor, A.S. (2014) *LAUNCH into Mathematics Teaching: A mathematics-specific induction program for beginning teachers in Eastern North Carolina*. ECU College of Education Dean's Advisory Council, Greenville, NC.
- Schwartz, C.S.** & Ticknor, A.S. (2014, October). *Mentoring Beginning Teachers: Navigating School Contexts during the First Year of Teaching*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, North Carolina.
- Schwartz, C.S.**, Poling, L. & Walkwiak, T. (2013, October). *The Nature of University Supervisor Feedback: What is Being Acknowledged in the Mathematics Classroom*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Coltrain, K. & **Schwartz, C.S.** (2012, October). *Kinect with Mathematics: Using Xbox and Kinect in the classroom*, North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Schwartz, C.S.** & Richardson, K. (2012, July). *Selecting Instructional Tasks that Support the Standards for Mathematical Practice*. SAS Mathematics Summit, Cary, NC

- Schwartz, C.S.** (2011, October). *Making sense of geometry vocabulary: Activities grades 3-5*, North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Schwartz, C.S.** (2011, October). *Fun ways to help students make sense of fractions*. Gamma Chapter of the North Carolina Council of Teachers of Mathematics, Greenville, NC.
- Schwartz, C.S.** (2011, April). *I can count to 20 before you can! Encouraging math talk in elementary school classrooms*. ECU Clinical Teachers' Conference, Greenville, NC.
- Manteo Elementary Teachers & **Schwartz, C.S.** (2010, October) *Making math stations work*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Schwartz, C.S.** (2010, February). Closing Session Address. ECU Mathematics Education Conference. Greenville, NC.
- Schwartz, C.S.** (2009, February). Closing Session Address. North Carolina Council of Teachers of Mathematics Eastern Regional Conference, Rocky Mount, NC.
- Schwartz, C.S.** (2009, October). *Talking in class? Supporting useful discourse in math*. Gamma Chapter of the North Carolina Council of Teachers of Mathematics, Greenville, NC.
- Schwartz, C.S.** & Pratt, S. (2008, October) *Story problems: Examining students' representations*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Schwartz, C.S.** & Richardson, K. (2008, October) *More than just sorting shapes: Developing students' spatial sense can also enhance their understanding of number*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.
- Richardson, K. & **Schwartz, C.S.** (2006, October). *Spatial instruction with preservice teachers*. North Carolina Council of Teachers of Mathematics Annual Fall Conference, Greensboro, NC.

### Other Selected Creative Activities

2019 MSITE Research Retreat and Symposium

Organized inaugural research retreat and symposium in which national researchers are invited for two days to collaborate with faculty on current research, to mentor junior faculty, and to engage the NC mathematics education community in a symposium. The [first symposium](#), "Visions of High-Quality Instruction as a Lens for Teacher Learning" included participants from 20 school districts and five universities across the state in addition to the on-campus participants.

2017-2018 Project Leader, North Carolina K-5 Mathematics Instructional Frameworks ([www.nc2ml.org](http://www.nc2ml.org))

Chaired co-design team of approximately 70 people from 19 school districts and eight NC colleges and universities in a collaborative effort by mathematics educators to support teachers during the implementation of

the NC Mathematics Standards. Development of the Instructional Frameworks included multiple rounds of feedback from teachers, school administrators, and district leaders across the state. Over 600 state educators provided feedback and suggestions that informed the final frameworks. The Instructional Frameworks are used in some form by a majority of NC districts and the NCDPI Assessment Quarterly Checkins were largely aligned to the Instructional Frameworks.

- 2016 Floyd, A., Joyner, J., Mawhinney, K., Muri, M., Rich, W. & **Schwartz, C.S.** (2016). [\*JUMP Start Professional Development Modules\*](#).
- Served on writing team for six professional development modules on formative assessment disseminated through the National Council of Supervisors of Mathematics and the Association of Mathematics Teacher Educators
- 2014-2017 Project Leader, Lenoir County STEM Learning Community
- Six faculty members from the ECU Mathematics Education, Mathematics, and Engineering Programs provide summer graduate coursework with follow-up work during the year for three cohorts of grades K-8. Middle grades teachers toured facilities of local industry partners to better understand the applications of mathematics in each industry and create real-world tasks for their students. Ten [selected teachers](#) from Cohort 1, who completed additional professional development in leadership and a graduate certificate or M.Ed. in mathematics education, formed a district K-8 mathematics leadership team to sustain support implementation of district and state initiatives beyond the work of the grant.
- 2013-2015 Project Leader, Launch Into Mathematics Teaching [[LAUNCH](#)]
- Led two-year mathematics-specific induction program including sustained professional development and mentoring for 20 beginning teachers in Eastern North Carolina.
- 2011-2012 Teachers and Administrators Partnering for Mathematics Learning (TAP);
- Served as higher education consultant and professional developer for an MSP grant-sponsored project that provided professional development to approximately 450 mathematics lead teachers and administrators across North Carolina
- 2007-2010 Partners for Mathematics Learning
- Served as higher education consultant and professional developer for MSP grant-sponsored project the provided professional development in a train-

the-trainers model that eventually reached 80% of NC elementary school teachers.

## **TEACHING**

### **Courses Taught**

MATE 3050 Mathematics and Methods Grades K-2  
MATE 3051 Field Experience in Mathematics Grades K-2  
MATE 3060 Mathematics and Methods Grades 3-6  
MATE 3330 Rational Number  
MATE 6058 Number Systems and Operations: Selecting, Designing, and Using Mathematical Tasks in the K-5 Classroom  
MATE 6059 Rational Numbers and Operations: K-5 Learning Trajectories  
MATE 6061 Algebraic Reasoning: K-5 Discourse and Questioning  
MATE 6062 Geometry and Spatial Visualization: K-5 Assessment  
MATE 6063 Mathematical Modeling: K-5 Leadership  
MATE 6211 Research in Mathematics Education  
MATE 6223 Current Topics in Mathematics Education  
MATE 6400 Capstone Project in Mathematics Education

### **Doctoral Committee Member**

Amy Smith Scrinzi, University of North Carolina at Chapel Hill (Completed)  
Arren Duggan, University of North Carolina at Greensboro (In progress)

## **SERVICE**

### **Professional Service**

Ongoing *Member*, North Carolina Elementary Add-on Licensure Faculty Planning Team  
Ongoing *Reviewer* for various professional journals  
Ongoing *External Reviewer* for faculty members seeking tenure and promotion to associate professor  
Ongoing Provide professional development for elementary teachers in state-wide and regional meetings and in multiple individual counties across NC including: Asheboro City, Avery, Beaufort, Bertie, Cabarrus, Chatham, Dare, Edgecombe, Greene, Lenoir, Martin, Pitt, Randolph, Roanoke Rapids City, Washington.  
2022 *Reviewer*, National Science Foundation grant proposals  
2018-2020 *Secretary*, Association of Mathematics Teacher Educators - North Carolina  
2019 ETS Praxis Standard Setting for Mathematics Core  
2018 North Carolina Check-Ins Mathematics Grades 3-8 Test Specifications Meeting  
2017 *Member*, North Carolina K-8 Standards Writing Team, Grades 3-5

- 2016-2018 *Member, Association of Mathematics Teacher Educators Conference Program Committee*
- 2006-2015 North Carolina Council of Teachers of Mathematics  
*Eastern Region President, 2013-2015*  
*Executive Board Member, 2008-2011; 2013-2015*  
*State Secretary, 2008-2011*  
*Trust Fund Committee, 2006-2011*  
*Graduate Student Representative to the Board, 2006-2008*
- 2010 *Reviewer, National Science Foundation grant proposals*

### **University Service**

- Ongoing Faculty and Student Support  
*Faculty mentor, Tenure-track faculty in MSITE Department*  
*Peer observer, MSITE Department*  
*Adjunct support for elementary mathematics education courses*  
*Reviewer, College of Education Scholarship applications*  
 Providing student references and recommendation letters
- Ongoing Search Committees
- |           |   |
|-----------|---|
| 2022-2023 | <i>Member, LEHE – Department Chair Search</i>                 |
| 2020      | <i>Member, Associate Dean for Research</i>                    |
| 2018-2019 | <i>Member, MSITE - IT Tenure Track Position</i>               |
| 2017-2018 | <i>Chair, MSITE – MATE Tenure Track Position</i>              |
| 2015-2016 | <i>Chair, MSITE – MATE Tenure Track Position</i>              |
| 2014-2015 | <i>Co-Chair, MSITE Taft Endowed Professor Position</i>        |
| 2014      | <i>Chair, MSITE – MATE Fixed Term Position</i>                |
| 2013-2014 | <i>Member, Elementary Education Tenure Track Position</i>     |
| 2012-2013 | <i>Member, Adult and Higher Education Fixed Term Position</i> |
| 2011-2012 | <i>Member, Special Education Tenure Track Position</i>        |
| 2011-2012 | <i>Chair, MSITE – MATE Fixed Term Faculty Position</i>        |
| 2010-2011 | <i>Member, Elementary Education Tenure Track Position</i>     |
| 2010-2011 | <i>Member, IT Tenure Track Position</i>                       |
- 2020-2022 College of Planning Committee
- 2019-2022 ECU STEM Collaborative for Research in Education (STEM CoRE)

The STEM CoRE is a multidisciplinary team of discipline-based education research scholars at ECU representing the College of Arts and Sciences and the College of Education. The goals of the STEM CoRE

include improving PreK-12 STEM education in eastern North Carolina, increasing the STEM workforce by improving recruitment and retention of ECU STEM majors, and improving STEM education research at ECU. In pursuit of these goals, the STEM CoRE members engage in grant writing and execution, program management, partnership building, program evaluation, research design and implementation, entrepreneurship, and professional development.

- 2019 Board of Governors Award Selection Committee
- 2018-2019 ECU Representative to Committee to Review Licensure Test Requirements as directed by Professional Educator Preparation and Standards Commission (PEPSC)
- 2018-2022 Reconsiderations Appellate Committee
- 2015-present EMAoL Program Coordinator
  - Advise elementary mathematics graduate certificate and MAEd students (ongoing)
  - Coordinate Memorandum of Understanding and course scheduling with three partner universities in the UNC system (ongoing)
  - Partner with Director of Students to recruit cohorts of graduate students (ongoing)
  - Assist with annual SACS data collection and report for program (ongoing)
  - Led external program review for Elementary Mathematics Graduate Certificate Program (2020-2021)
- 2014-present MSITE Tenure and Promotion Committee
- 2011-present MSITE Personnel Committee
- 2011-2012 Research Reassignment Committee
- 2009-2013 College of Education Research Committee
  - Chair*, 2010-2012
  - Member*, 2009-2010; 2012-2013
- 2008-2009 MSITE Vision, Mission, and Goals Committee, 2008-2009

**Selected Professional Development**

- 2018 Design Based Implementation Research Workshop, University of North Carolina at Greensboro
- 2017 Design Based Implementation Research Workshop, University of Colorado Boulder
- 2015-2016 Scholarly Inquiries into Practice Conference for Mathematics Methods. Atlanta, Georgia.

- 2010 Learning Mathematics for Teaching Assessment Training, Harvard University
- 2006-2007 Participated in two summers in the Elementary Mathematics Laboratory (EML) at Park City Mathematics Institute (2006) and University of Michigan (2007)
- 2001-2007 Participated as a classroom teacher in Teaching Excellence and Mathematics (TEAM II), an NSF grant funded, state-wide teacher leadership project, 2001-2007

**Licensure**

North Carolina, Grades K-6 Elementary Education

**Professional Organizations**

Association of Mathematics Teacher Educators

National Council of Teachers of Mathematics

North Carolina Council of Teachers of Mathematics

Research Council on Mathematics Learning