

# NCTM 2019 Research Conference

## Schedule-at-a-Glance: Monday/Tuesday

### REGISTRATION

Monday 4:00 p.m.–6:00 p.m.  
Tuesday 7:30 a.m.–2:00 p.m.

### Infinity Bar @ NCTM Research Conference

The Infinity Bar offers attendees the opportunity to meet with senior scholars and leaders in the field. Infinity Bar sessions follow the conference program. No sign-up is necessary. Just come and grab a seat at the table.

### Legend

Research Report	Research Symposium	Invited Session
Discussion Session	Poster Session	Opening/Plenary Session

	Room 29A	Room 29B	Room 29C	Room 29D	Room 30AB	Room 30C	Room 30DE	Room 31AB	Room 31C	Room 32A
Monday 5:30 p.m.-7:00 p.m.	#1. Opening Session Room 33 ABC <b>What Is the Responsibility of the Mathematics Education Research Community to Address Local, National, and Global Issues?</b> Deborah Loewenberg Ball, Na'ilah Suad Nasir, Kathryn B. Chval									
Tuesday 8:30 a.m.-9:45 a.m.	#2. <b>Exploring Volume Measurement Dynamically</b> (Panorkou) <b>Promoting Young Children's Spatial Visualization through Defining Practices</b> (Wongkamalasai)	#3. <b>Postulating Two Types of Mathematical Concepts and How They Develop</b> (Simon) <b>Explicit vs. Implicit Teaching Concerning Strategies for Problem Solving</b> (Portnov Neeman, Amit)	#4. <b>Comparing Sensitivity of Video and Artifact-Based Observations of Teaching</b> (Kelly, Stein) <b>Elementary Teachers' Use of Digital Instructional Resources in 4 Countries</b> (Remillard)	#5. <b>Investigating Student Thought via Scratch Work for a Large-Scale Assessment</b> (Hass) <b>Computer Generated Graphic Preparation in Elementary Outcomes</b> (Rugh, M. Capraro, R. Capraro)	#6. <b>What's in a Name? A Study of Mathematics Teachers' Implicit Bias</b> (Copur-Genturk, Cimpian, Theule Lubinski, Thacker) <b>One University's Story on Teacher Preparation in Elementary Mathematics</b> (Thomas)	#7. <b>Using Number Talks to Support the Development of a Math-Talk Community</b> (Woods) <b>Professional Learning Community: Mathematicians and Writers</b> (Santarone, Abney, Webb)		#9. <b>Making Mathematics Connections Visible through Problem Solving and Dialogue</b> (Koch, Suurtamm)		#11. <b>Examining Students' Opportunities to Engage with Mathematics in High School</b> (Jansen, Middleton, Tarr, Edusei, Curtis, Discussant: Goldin)
10:00 a.m.-11:15 a.m.	#13. <b>A Framework for Analyzing Secondary Students' Covariational Reasoning</b> (Cavey, Totrica, Libberton, Carney, Souders) <b>Quantitative Reasoning among Linguistically Diverse Middle School Students</b> (Zahner, Lara-Meloy, Kim)	#14. <b>Using Learning Progressions to Design and Assess Geometry Curricula</b> (Battista) <b>A Study to Examine Preservice Teachers' Understanding of the Quadrilaterals</b> (Bharaj, Cross Francis)	#15. <b>Empowering Students in Learning Proof: Balancing Agency and Authority</b> (Pair, Reed, Bleiler-Baxter) <b>The Role of the Two-Column Proof in the High School Geometry Classroom</b> (Pair, Singh, Strachota)	#16. <b>Teachers Eliciting Students' Mathematical Arguments</b> (Francisco)	#17. <b>"It Just Got Real": Backing into Social Justice</b> (Thanheiser, Felton-Koestler, Rosencrans, Osa, Koestler)	#18. <b>Discovering Square Roots: Productive Struggle in Middle School Mathematics</b> (Cattley) <b>Inservice Teachers' Distinctions Between Quadratic and Exponential Growth</b> (Vishnubhotla)	#19. <b>Common Methodological Errors in JRME Submissions</b> (Cai, Shih, Empson, Wood)	#20. <b>Mathematical Authority: Gateway to High Quality Classroom Discourse</b> (Sullivan, Evans)	#21. <b>Preservice Teachers [RE] Learning the Meaning of Multiplication of Fraction</b> (Gichobi)	#22. <b>Differentiating Instruction in Mathematics Education</b> (Hackenberg, Silva, Jones, MacDonald, Hunt, Roxburg)
11:30 a.m.-12:45 p.m.	#24. <b>Developing Measures of Mathematical Proficiency in a Learning Technology</b> (Hulse, Harrison, Manzo, Sawrey, Ottmar) <b>Development of Diagnostic Assessments in Probability for Middle Graders</b> (H. Lee)	#25. <b>Reasoning with Ratios: As Composed Units or as Multiplicative Comparisons?</b> (Aydeniz) <b>Grounded in Common Sense?: Examining Contextual References in a Ratio Unit</b> (Reinke, Casto, Ayan, Stephan)	#26. <b>Discourse that Empowers Self in the Learning of Mathematics</b> (Chapman) <b>Elementary Teachers' Math Anxiety and Implications for Self-Evaluation</b> (Kearns, Hone)	#27. <b>Improving Children's Fraction Understanding through the Use of Number Line</b> (Soni, Okamoto) <b>Intervention for Improving Struggling 5th-Graders' Fractions Achievement</b> (Jayanthi, Karp, Schumacher, Gersten)	#28. <b>Synthesizing Measures of K-12 Students' Math Knowledge</b> (Bostic, Shih, Krupa, Carney) <b>Connecting Mathematical Knowledge and Dispositions with Pedagogical Skills</b> (Shaughnessy, Boerst)	#29. <b>Integer Problem Types and Their Relationship to Children's Thinking</b> (Lamb, Bishop, Philipp, Whitacre) <b>Properties of Equality and Operations: How Do 3rd Graders Think?</b> (Yagi, Zenigami)	#30. <b>ICME, International Perspectives, and Opportunities</b> (Burrill)	#31. <b>Mathematical Modeling with Cultural and Community Contexts in Grades 3-5</b> (Foote, Aguirre, Roth McDuffie, Turner)	#32. <b>Enhancing Elementary Mathematics Instruction: A U.S.China Collaboration</b> (Ding, Seidman, Larese, Milewski, Murray, Discussant: Cai)	#33. <b>Researching Synchronous Online Content-Focused Mathematics Coaching</b> (Amador, Carson, Gillespie, Discussant: Elliott)
1:45 p.m.-3:00 p.m.	#35. <b>How a MOOC for Educators Can Make a Large Impact</b> (H. Lee, Mojica, Azmy, Barker) <b>Transforming Teachers' Understandings About Distribution</b> (Peters)	#36. <b>A Model for Teacher Candidate Attentiveness to Student Thinking</b> (Carney, Cavey, Totrica) <b>Critical Embodied Noticing</b> (Mendoza, Hand)	#37. <b>Operationalizing Evaluative Listening-to-Question in Mathematics Teaching</b> (Kuehnert, Eddy, Pratt) <b>Preservice Mathematics Teachers' Lesson Launch Considerations</b> (Amador)	#38. <b>Examining Teacher Learning through Shifts in Teachers' Enacted Identity</b> (Munson) <b>The Impact of Professional Identity on Quality of Mathematics Instruction</b> (Flessner, Liu, Lloyd, Bharaj)	#39. <b>Examining Domains of Teacher Knowledge in a Lesson Study Experience</b> (Erbilgin)	#40. <b>Key Indicators of Mathematically Responsive Classrooms</b> (Bishop, Przybyla-Kuchek, Hamilton) <b>Does Disability Matter In Mathematics Education Research? A Research Review</b> (Lambert, Tan)	#41. <b>Detracking in Action: Stories, Opportunities, and Challenges</b> <b>Detracking to Support Equity: The San Francisco Story</b> (Torres, Hull, Barnes) <b>A Systemic Way to Approach Change: Transforming Mathematics Education</b> (Leaf, Meyer, Lawler)	#42. <b>Learning From Each Other: A Conversation Around Extending 30 Years of CGI</b> (Empson, Franke, Jacobs)	#43. <b>The Impact of Simulation Features on the Learning MKT</b> (Boerst, Pfaff)	#44. <b>Middle Grades and High School Students Three-Dimensional Reasoning</b> (Tillema, Lee, Barrett)
3:15 p.m.-4:30 p.m.	#46. <b>Mathematics for Democracy?</b> (Raygoza) <b>Rehumanizing Mathematics: Historical and Cultural Recontextualization</b> (Moore, Slavit)	#47. <b>The Predictive Validity of an Algebraic Reasoning Universal Screener</b> (Adams, Ketterlin Geller) <b>Students' Mathematical Capabilities in Mediated Field Experiences</b> (Wilson, Sharpe)	#48. <b>Preservice Teachers' Representational Fluency and Functional Reasoning</b> (Altindis, Fonger) <b>Framing a Task as Both Construction and Proof: How Do Teachers Manage?</b> (Milewski, Bardelli, Herbst)	#49. <b>Beyond Correctness: Strategy Use in Multiplicative Reasoning Performance</b> (Ebby, Nathenson) <b>Additive Reasoning as Disabler of Fraction Reasoning: Where is Disability?</b> (Hunt, Martin, Patterson)	#50. <b>A Participatory Approach to Mathematics Teacher Noticing</b> (Hand, Mendoza, van Es)		#52. <b>But what about Equity? Examining Equity as a Collective Professional Responsibility</b> (Celedón-Pattichis, Boote Goffney, Larnell, Lunney Borden, Males, Peters)	#53. <b>Components of Professional Development that Lead to Change in Teaching</b> (Garcia, Shaughnessy, Mortimer, Pfaff, Pynes)	#54. <b>Mixed Methods Research Synthesis: Addressing Complexity in Math Education</b> (Chimuma)	#55. <b>Math Instructional Supports and Assessments for Students Learning English</b> (Nikula, Zahner, Schultz, Neumayer, Bergey)
4:30 p.m.-6:00 p.m.	#57-119. <b>Poster Session</b> – Reception in Ballroom 20D									

Learn more at [www.nctm.org/researchconference](http://www.nctm.org/researchconference) or download our app at [www.nctm.org/confapp](http://www.nctm.org/confapp).  
Connect with other attendees by using #NCTMresearch on Twitter, Facebook, and Instagram.

# NCTM 2019 Research Conference

## Schedule-at-a-Glance: Wednesday

### REGISTRATION

Monday 4:00 p.m.–6:00 p.m.  
Tuesday 7:30 a.m.–2:00 p.m.

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Wednesday 8:00 a.m.-9:15 a.m.	#120. <b>Exploring Coordinates Using Coding</b> (Germia, Panorkou) <b>Learning from Dialogic Online Mathematics Videos</b> (Lobato)	#121. <b>Sketchnotes: A Communication Tool to Strengthen Research and Practice Links</b> (Fonger) <b>Impact of Electronic Notebooks on Teacher Educator Instructional Decisions</b> (Gallivan)	#122. <b>Using Pitfalls to Support Middle School Mathematical Discussion and Equity</b> (D'Silva) <b>Who Is Math? Drawings and Texts Tell Stories of Healing from Math Trauma</b> (Ruef, Willingham)	#123. <b>Teachers Dealing with Nonstandard Student Solutions to Linear Equations</b> (Milewski, Chazan, Herbst) <b>Addressing the Computer Science &amp; Math Debate with a Catalyzing Change Lens</b> (Zelkowski)	#124. <b>Design Features of Digital Math ACATs through the Lens of ACAT</b> (Moyer-Packenham, Litster, Ashby, Roxburgh, Bullock) <b>Digital Math Games: Affect, Vocabulary, and Strategy Influences on Learning</b> (Litster, Moyer-Packenham, Ashby, Roxburgh)	#126. <b>MET Grant Research: Second-Grade Urban Students' Sense of Fraction Magnitude; and Infusing History into Mathematics Instruction</b> (Connelly, Powell, Son, Martey)		#128. <b>Math-as-Discourse &amp; Sci-Fi Futures: Perspectives on MTs' Prep for SJ</b> (Warburton, Rezvi, Gutiérrez)	#129. <b>Equity in K-12 Mathematics Education: Highlights from a National Survey</b> (Malzahn, Gordon, Plumley, Discussant: Heck)	#130. <b>NCTM President's Session: Researchers as Advocates for Mathematics Teaching and Learning</b> (Berry)
9:30 a.m.-11:00 a.m.	#131. <b>Plenary Session – Room 33ABC</b> <b>Learning, Identity, and Power in a Collaborative World</b> Jennifer M. Langer-Osuna									
11:15 a.m.-12:30 p.m.	#132. <b>Embracing Change Agency: Practical Lessons from Secondary Classrooms</b> (Gates, Badertscher, Sword, MacDowell) <b>Opportunities for Student Agency in Math Lessons with/ out Interactive Sims</b> (Atabas, Whitacre, Schellinger)	#133. <b>Prospective Teachers' Development of Knowledge of Mathematical Modeling</b> (Zhao) <b>Modeling as a Mean of Fostering Creativity and Multicultural Equity</b> (Amit, Gilat)	#134. <b>What Can Mathematics Teacher Educators Do to Develop Their Knowledge Bases?</b> (Prasad, Patterson, Vallines Mira, Liang) <b>The Moderating Effect of Student-Teacher Relationship on Math Learning</b> (Flores, Lan)	#135. <b>Making Sense of Teachers' Varied Responses to Representations of Practice</b> (Jackson, Nieman, Kochmanski)	#136. <b>Diagnosing Reasoning to Measure Future Teachers' Facility with Fractions</b> (Olmez, Izsak) <b>A Fraction Sense Intervention for Struggling Middle School Math Students</b> (Dyson, Jordan)	#138. <b>Sharing Research with Classroom Teachers: Writing for MTLT</b> (Barlow, Adams)	#139. <b>Making Sense of Identity and Sense of Belonging in Mathematics</b> (Kress, Gilmore)	#140. <b>Exploring Dynamic Learning Technologies for Experiencing Algebraic Notation</b> (Sawrey, Ottmar, Hulse)	#141. <b>Examining Classroom-Based Professional Learning Models</b> (Davenport, Lewis, Board, Shaughnessy, Gibbons, Discussant: Davenport)	#142. <b>Linking Research and Practice: Productive Struggle for All Students Using Differentiated Instruction</b> (Lewis, Hunt, Lynch)
1:30 p.m.-2:45 p.m.	#143. <b>K-8 Mathematics Teachers' Beliefs About Mathematical Aptitude</b> (Copur-Genturk, Thacker, Quinn, Brayer Ebby) <b>Teacher Views of Non-Cognitive Traits Key to Success in 8th Grade Algebra</b> (K. Walters, Eisner, Sorensen, Gorsky)	#144. <b>What Online Resources are Elementary Mathematics Teachers Using?</b> (Dick, Shapiro, Sawyer, Wisner) <b>MTEs Learning through Lesson Study: A Community of Practice Perspective</b> (Appelgate, Dick, Soto, Gupta)	#145. <b>Developing Math Teacher-Leaders in Rural Schools: A Yearlong PD Experience</b> (Anderson-Pence) <b>Studying the Sustained Impacts of Professional Development</b> (Plumley, Heck, Hoover, Malzahn)	#146. <b>Identifying the Differential Impact of an Individualized Coaching Approach</b> (Cross Francis) <b>Using Rehearsal to Grow Shared Expertise in a Community of Teacher Leaders</b> (Nickerson, Vaughn)	#147. <b>The Effects of Informal Learning on Student Interest in STEM Fields</b> (Bicer, Y. Lee)	#149. <b>Writing MTE Manuscripts: Using the Writing Tool to Guide the Communication of Your Ideas</b> (Hollebrands, MTE Editorial Panel)	#150. <b>The Arc of Learning Framework: Building Learning Over Time</b> (Edson, Phillips, Slanger-Grant)	#151. <b>Syllabus Subject to Change; or Transforming Assessment with Specs Grading</b> (C.D. Walters)	#152. <b>Mathematical Engagement IS Fundamentally an Equity Issue</b> (Badertscher, Gates, Boston, Discussant: Spencer)	#153. <b>Linking Research and Practice: Strategies for Bulding Caring Relationships in Math Classrooms</b> (Hunsdon, Neal, Battey)
3:00 p.m.-4:15 p.m.	#154. <b>Exploring Gravity Through Mathematics</b> (Panorkou, Basu) <b>The Use of Task Templates to Guide Design Activity</b> (Cannon)	#155. <b>Teacher-Designed Mathematical Modeling Routines for Secondary Classrooms</b> (Elliott, Knapp) <b>Secondary Mathematics Teachers' Descriptions of Mathematical Practices</b> (Wynn)	#156. <b>Teachers' Shifting Perceptions of the Standards for Mathematical Practice</b> (Davis, Seiwel) <b>Change in Pre-service Teachers' Conceptions of Mathematics Teaching</b> (Kartal, Tillett)	#157. <b>Impact of Professional Development for Math Teachers of English Learners</b> (Buffington, Neumeyer DePiper, Louie, Nikula) <b>Examining the 12th-grade Mathematics NAEP: Validity Considerations for ELLs</b> (Runnalls)	#158. <b>Gender Difference on Spatial Visualization (STEM vs non-STEM)</b> (Y. Lee, R. Capraro, Bicer, M. Capraro, Park) <b>Interactional Pathways to Shared Intellectual Authority During Group Work</b> (Langer-Osuna, Gargroetzi, Munson, Williams, Chavez)	#160. <b>Research in Math Education and STEM: Panel Discussion</b> (Hjalmarson, Asbell-Clarke, Gresalfi)	#162. <b>Refreshing High School Curricula with Mathematics-News-Snapshots</b> (Movshovitz-Hadar)	#163. <b>Collaborating to Improve the Preparation of Secondary Mathematics Teachers</b> (Amick, Franz, Lischka, McNamara, Smith, Strutchens, Discussants: Lawler, Martin)	#164. <b>Linking Research and Practice: Inverse Functions: Why Switch the Variables?</b> (Teuscher, Palsky, Palfreyman)	

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#### NCTM Bookstore

The NCTM Bookstore opens at 10 a.m. on Wednesday, and you will save 25% off the list price on all purchases made onsite. The Bookstore is located in Exhibit Hall G of the San Diego Convention Center.

#### NCTM Central

NCTM Central opens at 10 a.m. on Wednesday. Find the answers to all your NCTM membership questions, and learn about NCTM grants, professional development offerings, and what is coming next from NCTM.

#### Linking Research and Practice Day @ Research Conference

NCTM Annual Meeting attendees are welcome to participate in sessions focusing on linking research and practice at the NCTM Research Conference.

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April 1-3 | San Diego