



Research Council on Mathematics Learning  
47<sup>th</sup> Annual Conference



*Increasing the Odds for All Mathematics Learners*

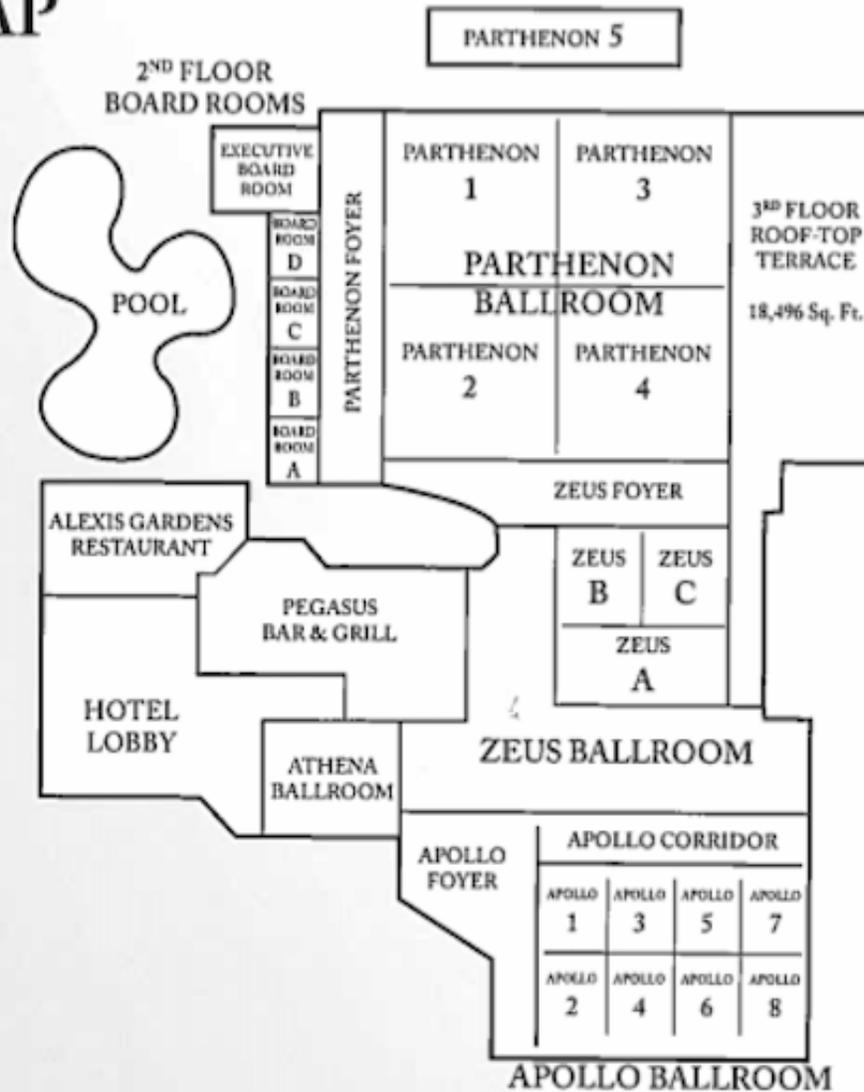
Alexis Park All-Suite Resort  
Las Vegas, NV  
March 5–7, 2020



# MAP OF ALEXIS PARK



## MAP





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## SPECIAL THANKS

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Proposal Reviewers: A special thank you to all the proposal reviewers for reading and scoring so many proposals for this year's conference.

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Seanyelle Yagi  
Jamaal Young  
Fay Zenigami

Proceedings Reviewers: A special thank you to all of the proceedings reviewers for reading and scoring the immense amount of proceedings for this conference.

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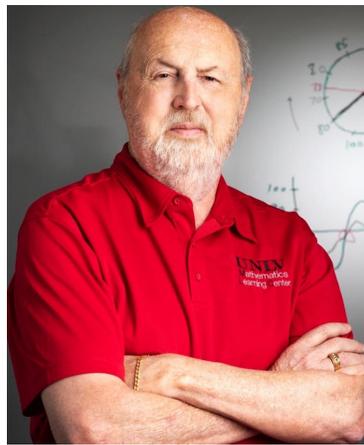
## Welcome from the 2020 Program and Conference Chairs

Welcome to the 47<sup>th</sup> annual RCML Conference. We are honored to host this year's conference at the Alexis Park All-Suite Resort in Las Vegas, Nevada, and hope you find this year's conference to be stimulating, rewarding, and energizing. We would like to thank all the speakers, attendees, reviewers, committee members, and contributors to the conference. We celebrate the success of the conference with you, as we know it is due to the dedication of your efforts and support.

We hope you will have a *fabulous* time throughout the conference. Please let us know if we can assist you in any way. Enjoy the conference!



Linda C. H. Venenciano  
University of Hawai'i at Mānoa  
2020 Program Chair



William R. Speer  
University of Nevada, Las Vegas  
2020 Conference Co-Chair



Jeffrey C. Shih  
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2019–2022, Kate Raymond, University of Oklahoma, kate.m.raymond@ou.edu

2019–2022, Nesrin Sahin, University of Central Arkansas, nesrins@uca.edu



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## CONFERENCE EVENTS AT A GLANCE

### Thursday, March 5, 2020

- 11:30 AM–3:30 PM RCML Board of Directors Meeting  
*Apollo 1*
- 1:00–5:00 PM Registration Table  
*Apollo Foyer*
- 3:30–5:00 PM Poster Session and Reception (with heavy hors d’oeuvres)  
*Apollo Foyer and Apollo Hallway*
- 5:15–6:30 PM **WILSON MEMORIAL LECTURE: Anthony Lucas**  
*Athena Ballroom*  
INTRODUCED BY: *William Speer*

### Friday, March 6, 2020

- 7:00 AM–5:00 PM Registration Table  
*Apollo Foyer*
- 7:00–7:50 AM Continental Breakfast  
*Athena Ballroom*
- 8:00–11:55 AM Breakout Sessions 1–4  
*Apollo Rooms 1–7*
- 12:00–1:20 PM Lunch and RCML Business Meeting  
*Athena Ballroom*
- 1:30–4:25 PM Breakout Sessions 5–7  
*Apollo Rooms 1–7*
- 4:30–5:30 PM **FOUNDERS LECTURE: Francis “Skip” Fennell**  
*Athena Ballroom*  
INTRODUCED BY: *William Speer*

### Saturday, March 7, 2020

- 7:00–11:00 AM Registration table  
*Apollo Foyer*
- 7:00–7:50 AM Continental Breakfast  
*Athena Ballroom*
- 8:00–10:55 AM Breakout Sessions 8–10  
*Apollo Rooms 1–7*
- 11:00 AM–12:30 PM Lunch & Closing  
**MATH-MAGICAL FINISH: Allan Ackerman**  
*Athena Ballroom*  
INTRODUCED BY: *William Speer*



## WILSON MEMORIAL LECTURE: ANTHONY LUCAS

Thursday, 5:30 pm, *Athena Ballroom*

INTRODUCTION BY WILLIAM SPEER

**Title:** *Casino Operations: Profits, Potential, and Pratfalls.*

**Description:** The ins and outs of the casino business remain a mystery to most, as this burgeoning industry has only recently entered the mainstream hospitality sector. Having operated in the shadows for decades, we have shined a light on several of the industry's critical operating paradigms, only to find that things were not as they seemed. This talk will describe some of these paradigms, how we tested them, and how the results failed to support the assumptions. The ramifications of these myth-busting findings are considerable.



**Biography:** Anthony F. Lucas received his Ph.D. in 2000, following a ten-year career in the gaming industry where he worked in the areas of financial and operations analysis for Harrah's, MGM, and Stations Casinos. Currently, Dr. Lucas is a full professor on the faculty of UNLV's William F. Harrah College of Hospitality, teaching courses in the areas of casino marketing, casino management, and statistics. He has coauthored four books, including Wiley's *Casino Operations Management*, *Introduction to Casino Management*, and *Principles of Casino Marketing*. Having won several awards for his research in the fields of casino marketing and casino operations, Dr. Lucas has published 40 gaming articles in scholarly journals such as *Cornell Hospitality Quarterly*, *Journal of Hospitality and Tourism Research*, and the *International Journal of Hospitality Management*. He also actively serves as a consultant to gaming companies and government agencies, conducting research and delivering seminars across the globe.



## FOUNDERS LECTURE: FRANCIS “SKIP” FENNEL

Friday, 5:30 pm, *Athena Ballroom*

INTRODUCTION BY WILLIAM SPEER



**Title:** Students, Stewards, Visionaries, Mentors – Paths to Leading OUR Profession

**Description:** Participants will be engaged in considering their paths and journey toward impacting and leading others in the field of mathematics education. Interconnected professional responsibilities and areas of both interest and need, now and in the future, will be proposed and discussed.

**Biography:** Francis (Skip) Fennell, PhD, D.H.L. is emeritus as the L. Stanley Bowsbey professor of education and Graduate and Professional Studies at McDaniel College in Maryland, where he also directed the Elementary Mathematics Specialists and Teacher Leaders

Project (<http://www.mathspecialists.org>) A mathematics educator who has experience as a classroom teacher, principal, and supervisor of instruction, he is a past president of the Association of Mathematics Teacher Educators (AMTE), the Research Council for Mathematics Learning (RCML), and the National Council of Teachers of Mathematics (NCTM).

Widely published in professional journals and books related to PreK-8 mathematics education, with particular research interests related to number sense, curriculum, formative assessment, and teacher education, Dr. Fennell has also had key leadership responsibilities with the National Science Foundation (NSF) and the U.S. National Commission on Mathematics Instruction (USNCMI). He served as a writer for the Principles and Standards for School Mathematics (NCTM, 2000), the Curriculum Focal Points (NCTM, 2006) and for the Common Core State Standards for Mathematics (CCSSO, 2010). He also served on the National Mathematics Advisory Panel (2006-2008). Dr. Fennell served as a member of the Council for the Accreditation of Educator Preparation (CAEP) Commission (2012-2013) and as both Vice-Chair, and Treasurer of the CAEP Board of Directors. Dr. Fennell has received numerous honors and awards, including Maryland’s Outstanding Mathematics Educator, McDaniel College’s Professor of the Year, the Glenn Gilbert National Leadership Award from the National Council of Supervisors of Mathematics (NCSM), the CASE - Carnegie Foundation Professor of the Year - Maryland, the Association of Mathematics Teacher Educators’ (AMTE) Excellence in Leadership and Service Award, and the 2012 Lifetime Achievement Award from the National Council of Teachers of Mathematics (NCTM). In 2018, he received an honorary Doctor of Humane Letters degree from McDaniel College and the initial Lifetime Achievement Award from the Maryland Council of Teachers of Mathematics (MCTM).

He is the father of 3 and grandfather of 9. He has completed 9 marathons and close to 30 half marathons and well as countless races of shorter distances. That said, his running would now be characterized as pathetic. He regularly plays pickleball, with some enjoyment and equal amounts of frustration.



## MATH-MAGICAL FINISH: ALLAN ACKERMAN

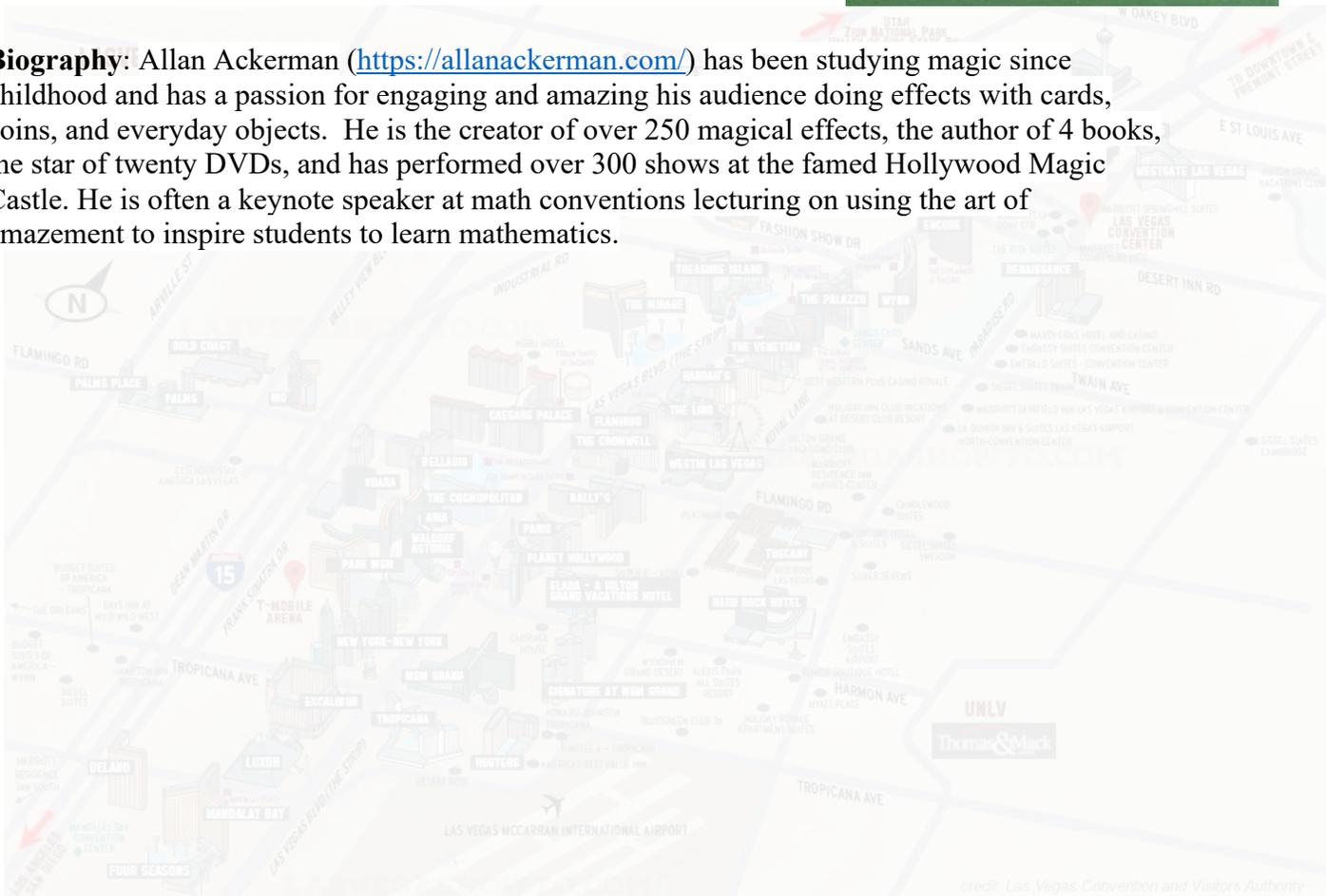
Saturday, 11:00 am, *Athena Ballroom*

INTRODUCTION BY WILLIAM SPEER

In the spirit of the RCML Vegas venue, we have secured Allan Ackerman, a well-known "mathemagician." He is one of the world's foremost experts at sleight-of-hand magic and gambling moves with playing cards. Card mathemagic like this has earned Allan a worldwide reputation as The Las Vegas Card Expert.



**Biography:** Allan Ackerman (<https://allanackerman.com/>) has been studying magic since childhood and has a passion for engaging and amazing his audience doing effects with cards, coins, and everyday objects. He is the creator of over 250 magical effects, the author of 4 books, the star of twenty DVDs, and has performed over 300 shows at the famed Hollywood Magic Castle. He is often a keynote speaker at math conventions lecturing on using the art of amazement to inspire students to learn mathematics.





## RESEARCH POSTER PRESENTATIONS

Thursday Afternoon

3:30–5:00 pm

*Apollo Foyer and Apollo Hallway*

- 1. Pedagogical Content Knowledge of Teaching Multiplication and Division**  
*Christine Austin, Jennifer Heisler, & Karl Kosko*
- 2. Pedagogical Content Knowledge of Teaching Fractions**  
*Maryam Zolfaghari & Karl Kosko*
- 3. Refining a Quantitative Literacy Knowledge for Teaching: Two Brief Studies**  
*Ryan Fox*
- 4. Shifts in Teachers' Ability to Model and Solve an Algebraic Equation**  
*Tejvir Grewal & Teruni Lamberg*
- 5. Assessing for Misconceptions Using Think Alouds**  
*Tiara Hicks & Jonathan Bostic*
- 6. Math Stories and Rough Drafts**  
*Kevin Lopresto*
- 7. Powerful Impact. Using Diagnostic Interviews to Impact Math Learning**  
*Johanna Massey*
- 8. Promoting Computational Thinking in the Middle School Through Re**  
*David Pugalee*
- 9. The Use of Mathematics and Science Apps in K-12 Classrooms**  
*Selma Koc & Xiongyi Liu*
- 10. Rethinking and Redesigning “Practice Problems” as a Teacher Resource**  
*Kara Suzuka, Linda Venenciano, & Eric Kobayashi*
- 11. Sharing Video Clip Playlists from Mathematics Methods Courses**  
*Mark Carroll, Jonah Shulman, & Jeff Shih*
- 12. Characteristics of Research-Based Interventions for Early Numeracy**  
*Macie Baucum, Mary Margaret Capraro, Robert Capraro, & Jamaal Young*
- 13. Engineering Design as the Design for Learning Mathematics**  
*Aamir Fidai, Jamaal Young, Mary Margaret Capraro, & Robert Capraro*
- 14. Putting the M Upfront in STEM**  
*Katherine Vela, Mary Margaret Capraro, & Robert Capraro*



Overview of Sessions

Overview of Friday Morning Sessions				
Room	Session 1 8:00	Session 2 9:00	Session 3 10:00	Session 4 11:00
Apollo 1	<p>8:00–8:50</p> <p><b>101: Conversations About Standards</b> <i>Ryan Hoffpauir</i></p>	<p>9:00–9:25</p> <p><b>201: Video-based Instructor Feedback for Student Teachers' Math Problem Solving</b> <i>Xiongyi Liu</i></p> <p>9:30–9:55</p> <p><b>202: Integration and Balance: Voices of PSTs on Teaching Math and Literacy</b> <i>Carolyn Mitten, Nicole Aoki, Ashley Hong, Daniela Roach, Amanda Thomas</i></p>	<p>10:00–10:25</p> <p><b>301: Advances in Machine Learning Make Any Textbook Interactive</b> <i>Michael Rugh, Donald Joseph Beyette, Robert Capraro</i></p>	<p>11:00–11:50</p> <p><b>401: Getting Involved with the RCML Research Journal Investigations in Mathematics Learning</b> <i>Jonathan Bostic, Colleen Eddy</i></p>
Apollo 2	<p>8:00–8:50</p> <p><b>102: Pre-service Mathematics Teachers' Perceptions of the edTPA</b> <i>Tony Thompson, Kwaku Adu-Gyamfi</i></p>	<p>9:00–9:50</p> <p><b>203: Preservice Teacher Beliefs Regarding Project-Based Learning</b> <i>Robert Quinn, Glenn Waddell</i></p>	<p>10:00–10:50</p> <p><b>302: Examining Preservice Teachers' STEM Dispositions through Informal Learning</b> <i>Cathrine Maiorca, Thomas Roberts</i></p>	<p>11:00–11:50</p> <p><b>402: Where is the "M" in STEM</b> <i>Sue Brown</i></p>
Apollo 3	<p>8:00–8:50</p> <p><b>103: Increasing the Odds...for All Black Teacher Educators of Mathematics</b> <i>Tina Mitchell, Taajah Witherspoon, Nickolaus Ortiz, Jamaal Young</i></p>		<p>10:00–10:25</p> <p><b>303: Does Class Size Matter with Inquiry? Addressing Student Outcomes</b> <i>Devon Günter</i></p> <p>10:30–10:55</p> <p><b>304: PST and Math Methods: What Are the Odds They Remember?</b> <i>Georgia Cobbs</i></p>	<p>11:00–11:50</p> <p><b>403: Using Number to Support Students' Generalizations</b> <i>Karen Zwanch</i></p>



<p>Apollo 4</p>	<p>8:00–8:50 104: Measuring What We Intend: Problem-Solving Measure (PSM5) <i>Jonathan Bostic, Gabriel Matney</i></p>	<p>9:00–9:25 204: Typologies: Underutilized Tools for Building Mathematics Education Research <i>Julie Nurnberger-Haag</i></p> <hr/> <p>9:30–9:55 205: Polya Revisited: Developing a Problem-Solving Self-Efficacy Instrument <i>James Telese, Jair Aguilar</i></p>	<p>10:00–10:25 305: After the IRB: Research Decisions while in the Field <i>Natalia Bailey</i></p> <hr/> <p>10:30–10:55 306: A Systematic Review of Meta-Analytic Research in Mathematics Education <i>Jamaal Young</i></p>	<p>11:00–11:50 404: Navigating Normative Spaces Through the Integration of Culture-Based STEM <i>Linda Furuto</i></p>
<p>Apollo 5</p>	<p>8:00–8:50 105: Preservice Teachers' Work Towards Developing a Critical Consciousness <i>Stacy Jones, Carlos Nicolas Gomez</i></p>	<p>9:00–9:50 206: Connections Between Teachers' Beliefs and Perceptions of Practices <i>Jianna Davenport, Jennifer Cribbs, Juliana Utley</i></p>	<p>10:00–10:50 307: Peer Mentoring with PSTs' Learning of Fraction Multiplication and Division <i>Shawn Broderick</i></p>	<p>11:00–11:25 405: Focusing on Teaching Practices in Secondary Mathematics Methods Courses <i>Ryann Shelton</i></p> <hr/> <p>11:30–11:55 406: Mathematical Mistakes and Prospective Teachers' Misconceptions of Mathematics <i>Matthew Duncan, Lucy Watson, Kristin Hartland</i></p>
<p>Apollo 6</p>		<p>9:00–9:50 207: Internships in the Preparation of Mathematics Teachers <i>Daniel Brahler</i></p>	<p>10:00–10:50 308: Using Perusal to Connect Readings to Real Life and Peers <i>Heidi Eisenreich, Andria Disney</i></p>	<p>11:00–11:50 407: Writing to Engage: Deepening PSTs' Mathematics Content and Pedagogy <i>Andria Disney, Heidi Eisenreich</i></p>
<p>Apollo 7</p>	<p>8:00–8:50 106: Draw Yourself Doing Mathematics: A Completed Validation Study <i>Rachel Bachman, Cora Neal</i></p>	<p>9:00–9:50 208: Building an Accessible Real-World Corequisite Quantitative Reasoning Course <i>Lorraine Gale, Cora Neal, Rachel Bachman</i></p>	<p>10:00–10:50 309: Envisioning Co-Requisite Enrollment in Undergraduate Mathematics Courses <i>Eileen Faulkenberry</i></p>	<p>11:00–11:25 408: Learning Fraction Multiplication with Understanding <i>Li Sun</i></p> <hr/> <p>11:30–11:55 409: Redesign and Implementation of a Liberal Arts College Mathematics Course <i>Carryn Warren</i></p>



Overview of Friday Afternoon Sessions			
Room	Session 5 1:30	Session 6 2:30	Session 7 3:30
Apollo 1	<p>501: Developing Understanding of Math Practices in a Collaborative PD Program <i>Daniel Heck</i></p>	<p>601: <math>x</math> to Why: Supporting Students who Struggle in Algebra <i>Barbara Dougherty</i></p>	<p>701: Progress- Monitoring Data as Support for Teaching Algebra <i>Linda Venenciano, Eric Kobayashi, Barbara Dougherty</i></p>
Apollo 2	<p>502: PLN for Mathematics Teachers: Is it Personal or Professional? <i>Glenn Waddell, Robert Quinn</i></p>	<p>602: Lesson Study and Teachers' Dialogue about the Mathematical Practices <i>Gabriel Matney, Miranda Fox, Scott Knapke, Mackenzie Murray</i></p> <hr/> <p>603: Prospective Teachers' Beliefs and Mathematical Knowledge for Teaching <i>Nesrin Sahin, Carolyn Pinchback</i></p>	
Apollo 3	<p>503: Using Student Thinking in Instruction: Leveraging versus Endorsing <i>John Gruver, Casey Hawthorne</i></p>	<p>605: Opportunities for Reasoning-and-Proving in a Precalculus Course Textbook <i>Joash Getereqechi, Anne Waswa</i></p>	<p>702: Lessons We Learned: Engaging Preservice Teachers in Number Talks <i>Kay Wohlfuter, Mary Swarthout</i></p>



<p>Apollo 4</p>	<p><b>1:30–2:20</b> <b>504: Constructing and Validating an Early Algebra Assessment</b> <i>Christopher Engledow</i></p>	<p><b>2:30–3:20</b> <b>606: Elementary Mathematics Teachers' Knowledge and Implementation of HLTP</b> <i>Cliff Chestnutt</i></p>	<p><b>3:30–4:20</b> <b>703: Teachers' Perspectives on Student Work Embedded in Assessment Tasks</b> <i>Amy Ray</i></p>
<p>Apollo 5</p>	<p><b>1:30–2:20</b> <b>505: Latinx Students Countering Dominant Narratives of Learning Mathematics</b> <i>Carlos Nicolas Gomez, Stacy Jones</i></p>	<p><b>2:30–3:20</b> <b>607: Girls' Mathematical Discourse in Single-Sex and Coeducational Classrooms</b> <i>McKenzie Brittain, S. Megan Che, Carlos Nicolas Gomez</i></p>	<p><b>3:30–4:20</b> <b>704: Analyzing Teacher/Researcher Moves with Theories of (De)Humanizing Violence</b> <i>S. Megan Che</i></p>
<p>Apollo 6</p>	<p><b>1:30–2:20</b> <b>506: Teacher Perceptions and Expectations; Ten Mathematical Translations</b> <i>Kwaku Adu-Gyamfi, Tony Thompson</i></p>	<p><b>2:30–2:55</b> <b>608: Improving Instruction and Supporting Teacher Learning Using Five Practices</b> <i>Dennis Kombe</i></p>	<p><b>3:30–3:55</b> <b>705: US vs. China Math Education: Chinese Pre-Service Teachers' Perceptions</b> <i>Julie Herron</i></p>
<p>Apollo 7</p>	<p><b>1:30–1:55</b> <b>507: Battle of the Sexes</b> <i>McKenna Edmunds, Julia Calabrese, Robert Capraro, Hyunkyung Kwon</i></p> <p><b>2:00–2:25</b> <b>508: Fostering Female Students</b> <i>Katherine Vela, Hyunkyung Kwon, Cassidy Caldwell, Mary Margaret Capraro, Macie Baucum</i></p>	<p><b>3:00–3:25</b> <b>609: Challenges in Assessing Statistics Attitudes: Opportunities and Costs</b> <i>Douglas Whitaker</i></p> <p><b>2:30–3:20</b> <b>610: Rethinking, Revisiting, and Redesigning the "Wash, Rinse, and Repeat" Cycle</b> <i>Chyna Miller, Patrick Gorman, Meena Barikzi, Celeste Melendez</i></p>	<p><b>4:00–4:25</b> <b>706: Relationship between Teacher Efficacy, Metacognition, and Attitudes of PST</b> <i>John Weaver, Juliana Utley</i></p> <p><b>3:30–3:55</b> <b>707: Mathematics Preservice Teachers' Attitudes Toward Poverty</b> <i>Joanne Caniglia, Davison Mupinga</i></p> <p><b>4:00–4:25</b> <b>708: Math Methods to Math Classroom: Cultivating Positive Math Identities</b> <i>Colleen Eddy</i></p>



Overview of Saturday Morning Sessions			
Room	Session 8 8:00	Session 9 9:00	Session 10 10:00
Apollo 1	<p><b>801: A Teaching Partnership for Multiplication Facts</b> <i>Barbara Allen-Lyall</i></p> <p><b>802: Teachers' Pedagogical and Content Knowledge for Multiplicative Reasoning</b> <i>William McGalliard, Karl Kosko</i></p>	<p><b>901: First Graders' Representations and Relational Thinking: A Qualitative Study</b> <i>Seanyelle Yagi, Linda Venenciano, Fay Zenigami</i></p> <p><b>902: Models for Departmentalized Mathematics Instruction in Elementary Schools</b> <i>Corey Webel</i></p>	<p><b>1001: Problem Posing in Elementary Classrooms</b> <i>Julia Calabrese, Danielle Bevan, Hyunkyung Kwon, Ashley Craft, Mary Margaret Capraro</i></p> <p><b>1002: Perceptions of Creative Problem-Solving</b> <i>Danielle Bevan, Hyunkyung Kwon, Robert Capraro</i></p>
	<p><b>803: Teach Mathematics Teachers to Teach Probability and Statistics</b> <i>Lina Devaul, Amy Adkins</i></p> <p><b>804: Early Career Teachers' Understanding and Implementation of Modeling</b> <i>Micah Stohlmann</i></p>	<p><b>903: Engaged Real-World Contexts and Self-Efficacy in Problem Solving</b> <i>Hyunkyung Kwon, Robert Capraro, Danielle Bevan, Julia Calabrese, McKennah Edmunds, Mary Margaret Capraro</i></p>	<p><b>1003: High School Students' Perceptions of Interleaved Homework in Mathematics</b> <i>Carrie Toreky</i></p> <p><b>1004: ELs in Secondary Mathematics: Influences on Teacher Self-Efficacy</b> <i>Lynn Columba</i></p>
Apollo 3		<p><b>904: Elementary PSTs' Perceptions of Classroom Discourse During Number Talks</b> <i>Kate Raymond</i></p>	<p><b>1005: Understanding Parent Perceptions and Values of Math Education</b> <i>Melissa Gunter, Kate Raymond</i></p>



<p>Apollo 4</p>	<p>8:00–8:50 <b>805: Designing for a Structured Small Group Mathematics Learning Environment</b> <i>Daniel Heck, Jessica Dula</i></p>	<p>9:00–9:50 <b>905: A Framework for Supporting Shifts in Teacher Practice</b> <i>Teruni Lamberg, Linda Gillette-Koyen</i></p>	<p>10:00–10:25 <b>1006: Teaching Preservice Teachers about Fostering a Growth Mindset</b> <i>Heidi Eisenreich, Andria Disney</i></p> <hr/> <p>10:30–10:55 <b>1007: Shifts in Teacher Use of Formative Assessment</b> <i>Teruni Lamberg, Linda Gillette-Koyen</i></p>
<p>Apollo 5</p>	<p>8:00–8:25 <b>806: Divergent Beliefs: Cultural Responsiveness of Mathematics and CS Teachers</b> <i>Y. Rhoda Latimer, S. Megan Che</i></p> <hr/> <p>8:30–8:55 <b>807: Influence of Beliefs and Contextual Factors on Mathematics Instruction</b> <i>Tonya Garrett</i></p>	<p>9:00–9:50 <b>906: Function Station: A Collaborative Lesson Development</b> <i>Rachel Bachman, Ben Elmer, Cora Neal</i></p>	<p>10:00–10:25 <b>1008: A STEM Circles Approach with Emergent Multilingual Students</b> <i>Alan Zollman</i></p> <hr/> <p>10:30–10:55 <b>1009: STEAMING HOT Two-Weeks Later: A Mixed Methods Creativity Evaluation</b> <i>Timothy Hinchman, Dittika Gupta</i></p>
<p>Apollo 6</p>	<p>8:00–8:50 <b>808: The Algorithm of Success: Conceptualizing Hip Hop and Teacher Education</b> <i>Marti Cason</i></p>	<p>9:00–9:25 <b>907: Undergraduates Helping Preschoolers Learn About Geometry</b> <i>Carolyn Pinchback, Elson Bihm, Tori Francis</i></p> <hr/> <p>9:30–9:55 <b>908: Mathematical Knowledge for Teaching in Elementary Teacher Preparation</b> <i>Jason Proctor</i></p>	
<p>Apollo 7</p>	<p>8:00–8:50 <b>809: Addressing Sociopolitical Consciousness in Middle Math Teacher Preparation</b> <i>Susan Gregson</i></p>	<p>9:30–9:55 <b>910: Scaffolding and Modeling Preservice Teachers for Gamifying Math Classroom</b> <i>Xiongyi Liu, Selma Koc</i></p>	<p>10:00–10:50 <b>1010: Influencing Preservice Teachers' Mathematics Knowledge and Conceptions</b> <i>Thomas Roberts, Cathrine Maiorca</i></p>



## THURSDAY

### RESEARCH POSTER PRESENTATIONS

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #1: Pedagogical Content Knowledge of Teaching Multiplication and Division</b>	
Christine Austin	Kent State University
Jennifer Heisler	Kent State University
Karl Kosko	Kent State University
This study focuses on developing an assessment of preservice teachers' pedagogical content knowledge for teaching multiplication and division.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #2: Pedagogical Content Knowledge of Teaching Fractions</b>	
Maryam Zolfaghari	Kent State University
Karl Kosko	Kent State University
This study focuses on developing an assessment of preservice teachers' pedagogical content knowledge for teaching fractions in elementary school.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #3: Refining a Quantitative Literacy Knowledge for Teaching: Two Brief Studies</b>	
Ryan Fox	Belmont University
Using results from a case study results and an associated self-study, I elaborate on components of a Quantitative Literacy Knowledge for Teaching.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #4: Shifts in Teachers' Ability to Model and Solve an Algebraic Equation</b>	
Tejvir Grewal	University of Nevada, Reno
Pre and post analysis of an algebraic problem revealed shifts in teachers ability to visualize and write an expression for an algebraic problem involving equations. The findings reveal gaps in teacher knowledge that can be supported through professional development.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #5: Assessing for Misconceptions Using Think Alouds</b>	
Tiara Hicks	Bowling Green State University
Jonathan Bostic	Bowling Green State University
This study focuses on developing an assessment of preservice teachers' pedagogical content knowledge for teaching multiplication and division.	



**THURSDAY**

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #6: Math Stories and Rough Drafts</b>	
Kevin Lopresto	Francis Marion University
Data collected from university college student's math stories will be used to guide instructors into creating a rough draft mindset in university level precalculus courses.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #7: Powerful Impact. Using Diagnostic Interviews to Impact Math Learning</b>	
Johanna Massey	Alabama A&M University
This research examines PTs’ experience with diagnostic interviews and intervention. Further research will examine the correlation between interviews and intervention and passing score on edTPA; and to determine if PT use this tool in their teaching practices	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #8: Promoting Computational Thinking in the Middle School through Re</b>	
David Pugalee	University of NC, Charlotte
This project contributes to understanding how to prepare future generations for workforce participation where computational thinking is integral to success.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #9: The Use of Mathematics and Science Apps in K-12 Classrooms</b>	
Selma Koc	Cleveland State University
Xiongyi Liu	Cleveland State University
In this presentation, apps that could support K-12 and preservice teacher education classes will be introduced. These tools can be used to collaborate, assess, poll, support mathematical thinking and understanding, and organize.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #10: Rethinking and Redesigning “Practice Problems” as a Teacher Resource</b>	
Kara Suzuka	University of Hawai’i at Mānoa
Linda Venenciano	University of Hawai’i at Mānoa
Eric Kobayashi	University of Hawai’i at Mānoa
How might “warm-up” problems, given at the start of lessons, be redesigned to support teachers’ efforts to address the needs of struggling learners?	



## THURSDAY

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #11: Sharing Video Clip Playlists from Mathematics Methods Courses</b>	
Mark Carroll	University of Nevada at Las Vegas
Jonah Shulman	University of Nevada at Las Vegas
Jeff Shih	University of Nevada at Las Vegas
We will share our efforts in designing an interface for mathematics methods course instructors to share “playlists” of their frequently used videos.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #12: Characteristics of Research-Based Interventions for Early Numeracy</b>	
Macie Baucum	Texas A&M University
Mary Margaret Capraro	Texas A&M University
Robert Capraro	Texas A&M University
Jamaal Young	Texas A&M University
The present study synthesized current literature on research-based mathematics interventions for students in pre-kindergarten through second grade.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #13: Engineering Design as the Design for Learning Mathematics</b>	
Aamir Fidai	Texas A&M University
Jamaal Young	Texas A&M University
Mary Margaret Capraro	Texas A&M University
Robert Capraro	Texas A&M University
Presenters will discuss extracting mathematics from an Internet of Things device and how engineering design is the design for learning mathematics.	

<b>Time: 3:30–5:00 pm</b>	<b>Location: Apollo Foyer and Apollo Hallway</b>
<b>Session #14: Putting the M Upfront in STEM</b>	
Katherine Vela	Texas A&M University
Mary Margaret Capraro	Texas A&M University
Robert Capraro	Texas A&M University
This hands-on session will engage participants in a STEM PBL activity highlighting mathematical learning opportunities for both teaching and learning.	



**FRIDAY**

**BREAKOUT SESSION 1**

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 1</b>
<b>Session #101: Conversations About Standards</b>	
Ryan Hoffpauir	Southwestern Christian University
<p>In this study, eight mathematics teacher educators shared how they perceive and utilize standards for mathematics teacher preparation in their practice.</p>	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 2</b>
<b>Session #102: Pre-Service Mathematics Teachers’ Perceptions of the edTPA</b>	
Tony Thompson	East Carolina University
Kwaku Adu-Gyamfi	East Carolina University
<p>This presentation shares research into pre-service mathematics teachers' perceptions of the edTPA at East Carolina University.</p>	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 3</b>
<b>Session #103: Increasing the Odds...for All Black Teacher Educators of Mathematics</b>	
Tina Mitchell	Wesley College
Taajah Witherspoon	University of Alabama at Birmingham
Nickolaus A. Ortiz	Georgia State University
Jamaal Young	Texas A&M University
<p>As Black teacher educators of mathematics, we draw upon life stories as a data source for a collaborative autoethnography. We conclude with recruitment and retention recommendations.</p>	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 4</b>
<b>Session #:104 Measuring What We Intend: Problem-solving Measure (PSM5)</b>	
Jonathan Bostic	Bowling Green State University
Gabriel Matney	Bowling Green State University
<p>Learn about a robust problem-solving measure for elementary students and its potential uses in K-12 and university settings.</p>	



## FRIDAY

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 5</b>
<b>Session #105: Preservice Teachers' Work Towards Developing a Critical Consciousness</b>	
Stacy Jones	Clemson University
Carlos Nicolas Gomez	Clemson University
In this presentation, we describe preservice teachers' reflective processes on building a critical consciousness through teaching mathematics for social justice.	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 7</b>
<b>Session #106: Draw Yourself Doing Mathematics: A Completed Validation Study</b>	
Rachel Bachman	Weber State University
Cora Neal	Weber State University
Hear about the final stages of validating the Draw Yourself Doing Mathematics prompt at the university level and consider ways of using it in your own research.	



**FRIDAY**

**BREAKOUT SESSION 2**

<b>Time: 9:00–9:25 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #201: Video-based Instructor Feedback for Student Teachers’ Math Problem Solving</b>	
Xiongyi Liu	Cleveland State University
This study explores the use of video-based instructor feedback for improving mathematical problems solving among student teachers.	

<b>Time: 9:30–9:55 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #202: Integration and Balance: Voices of PSTs on Teaching Math and Literacy</b>	
Carolyn Mitten	Westmont College
Nicole Aoki	Westmont College
Ashley Hong	Westmont College
Daniela Roach	Westmont College
Amanda Thomas	Westmont College
This session will share how one cohort of preservice teachers learned to enhance their mathematics instruction through the incorporation of research-based literacy practices.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 2</b>
<b>Session #203: Preservice Teacher Beliefs Regarding Project-Based Learning</b>	
Robert Quinn	University of Nevada, Reno
Glenn Waddell	University of Nevada, Reno
This study analyzes the impact of a PBL course on preservice math teachers’ beliefs, as knowledgeable teachers are needed to harness the power of PBL.	

<b>Time: 9:00–9:25 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #204: Typologies: Underutilized Tools for Building Mathematics Education Research</b>	
Julie Nurnberger-Haag	Kent State University
This session theoretically argues for typology development as a valuable methodological tool to build foundations for mathematics education research.	



## FRIDAY

<b>Time: 9:30–9:55 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #205: Polya Revisited: Developing a Problem-Solving Self-Efficacy Instrument</b>	
James Telese	The University of Texas Rio Grande Valley
Jair Aguilar	The University of Texas Rio Grande Valley
A problem-solving self-efficacy survey was designed for pre-service elementary mathematics teachers. An exploratory factor analysis was conducted producing constructs that parallel Polya’s four steps.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 5</b>
<b>Session #206: Connections Between Teacher’s Beliefs and Perceptions of Practices</b>	
Jianna Davenport	Oklahoma State University
Jennifer Cribbs	Oklahoma State University
Juliana Utley	Oklahoma State University
Correlations between mathematics teacher beliefs and their classroom practices were explored with responses from a survey administered to mathematics teachers.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 6</b>
<b>Session #207: Internships in the Preparation of Mathematics Teachers</b>	
Daniel Brahier	Bowling Green State University
We will examine mathematics teacher candidates’ experience of working in a community-based internship to appreciate the use of mathematics in a work setting.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 7</b>
<b>Session #208: Building an Accessible Real-World Corequisite Quantitative Reasoning Course</b>	
Lorraine Gale	Weber State University
Cora Neal	Weber State University
Rachel Bachman	Weber State University
Learn about a corequisite quantitative reasoning course designed for students with developmental math/English placement, many of whom are first generation, low-income, and/or students of color.	



**FRIDAY**

**BREAKOUT SESSION 3**

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #301: Advances in Machine Learning Make Any Textbook Interactive</b>	
Michael Rugh	Texas A&M University
Donald Joseph Beyette	Texas A&M University
Robert Capraro	Texas A&M University
We we present DIME maps, AI created interactive concept maps, which depict the connections between mathematical knowledge contained in a textbook.	

<b>Time: 10:00–10:50 am</b>	<b>Location: Apollo 2</b>
<b>Session #302: Examining Preservice Teachers STEM Dispositions through Informal Learning</b>	
Cathrine Maiorca	California State University Long Beach
Thomas Roberts	Bowling Green State University
This study examines preservice teachers dispositions towards STEM after participating in an informal STEM learning experience while enrolled in an elementary mathematics course.	

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 3</b>
<b>Session #303: Does Class Size Matter with Inquiry? Addressing Student Outcomes</b>	
Devon Gunter	University of Science and Arts of Oklahoma
An “existence proof” of the ability of inquiry-based learning to be successfully implemented despite the primary constraint of high-class enrollment will be presented.	

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 3</b>
<b>Session #304: PST and Math Methods: What are the Odds They Remember?</b>	
Georgia Cobbs	University of Montana
With a semester gap (almost a year) between a PK-4 and a 5-8 methods course, what information do the Pre-service teachers remember?	

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #305: After the IRB: Research Decisions While in the Field</b>	
Natalia Bailey	University of Central Missouri
Research participants might interpret research expectations differently than expected. I share my experiences working with Guatemalan elementary mathematics teachers, focusing on ethical decisions.	



## FRIDAY

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #306: A Systematic Review of Meta-Analytic Research in Mathematics Education</b>	
Jamaal Young	Texas A&M University
Meta-analysis is essential to the theory and practice of mathematics education. This systematic review translates three decades of meta-analyses into applicable practices.	

<b>Time: 10:00–10:50 am</b>	<b>Location: Apollo 5</b>
<b>Session #307: Peer Mentoring with PSTs' Learning of Fraction Multiplication and Division</b>	
Shawn Broderick	Weber State University
In this session, we will explore how peer mentors assist PSTs' learning of fraction multiplication and division and the knowledge the peer mentors gained.	

<b>Time: 10:00–10:50 am</b>	<b>Location: Apollo 6</b>
<b>Session #308: Using Perusall to Connect Readings to Real Life and Peers</b>	
Heidi Eisenreich	Georgia Southern University
Andria Disney	Utah Valley University
This session will examine how K-8 PSTs from content and methods courses relate class content/pedagogy to NCTM articles through Perusall, a social learning platform.	

<b>Time: 10:00–10:50 am</b>	<b>Location: Apollo 7</b>
<b>Session #309: Envisioning Co-Requisite Enrollment in Undergraduate Mathematics Courses</b>	
Eileen Faulkenberry	Tarleton State University
This session will discuss options for co-requisite enrollment and share data on the efficacy of these options.	



**FRIDAY**

**BREAKOUT SESSION 4**

<b>Time: 11:00–11:50 am</b>	<b>Location: Apollo 1</b>
<b>Session #401: Getting Involved with the RCML Research Journal Investigations in Mathematics Learning</b>	
Jonathan Bostic	Bowling Green State University
Colleen Eddy	University of North Texas
Participants will engage in discussions and dialogue about the RCML research journal. Information about opportunities to publish and review will be shared.	

<b>Time: 11:00–11:50 am</b>	<b>Location: Apollo 2</b>
<b>Session #402: Where is the “M” in STEM</b>	
Sue Brown	University of Houston - Clear Lake
Mathematics learning benefits less than the other disciplines in programs claiming to focus on STEM integration. Participants will examine how mathematics can be infused in STEM investigations.	

<b>Time: 11:00–11:50 am</b>	<b>Location: Apollo 3</b>
<b>Session #403: Using Number to Support Students’ Generalizations</b>	
Karen Zwanch	Oklahoma State University
This study uses number to model students’ generalizing behavior. Operations on composite units proved critical for generalizing linear patterns.	

<b>Time: 11:00–11:50 am</b>	<b>Location: Apollo 4</b>
<b>Session #404: Navigating Normative Spaces Through the Integration of Culture-Based STEM</b>	
Linda Furuto	University of Hawai‘i at Mānoa
Policies and practices will be explored in creating equitable teaching and learning spaces for student and teacher empowerment through the integration of culture-based STEM.	

<b>Time: 11:00–11:25 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #405: Focusing on Teaching Practices in Secondary Mathematics Methods Courses</b>	
Ryann Shelton	Baylor University
This session will provide an overview of a study related to the Mathematics Teaching Practices (NCTM, 2014) focused upon in secondary mathematics methods courses.	



## FRIDAY

<b>Time: 11:30–11:55 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #406: Mathematical Mistakes and Prospective Teachers’ Misconceptions of Mathematics</b>	
Matthew Duncan	Middle Tennessee State University
Lucy Watson	Belmont University
Kristin Hartland	University of Alabama in Huntsville
Results from related research projects focused on prospective teachers’ beliefs surrounding mathematical mistakes and conceptions of nature of mathematics as a discipline will be presented.	

<b>Time: 11:00–11:50 am</b>	<b>Location: Apollo 6</b>
<b>Session #407: Writing to Engage: Deepening PSTs’ Mathematics Content and Pedagogy</b>	
Andria Disney	Utah Valley University
Heidi Eisenreich	Georgia Southern University
This session will explore how K-8 preservice teachers engage in writing tasks to deepen their knowledge of mathematical content and pedagogy.	

<b>Time: 11:00–11:25 am (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #408: Learning Fraction Multiplication with Understanding</b>	
Li Sun	Augustana University
This session shares how a Chinese mathematics teacher helped students develop both an understanding and procedures for fraction multiplication.	

<b>Time: 11:30–11:55 am (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #409: Redesign and Implementation of a Liberal Arts College Mathematics Course</b>	
Carryn Warren	University of Nevada, Las Vegas
This session is about a more inclusive liberal arts mathematics course. Specifics for the course and pass rates before and after implementation will be discussed.	

*Please join us for lunch and the RCML business meeting  
in the Athena Ballroom  
12:00–1:20PM*



**FRIDAY**

**BREAKOUT SESSION 5**

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 1</b>
<b>Session #501: Developing Understanding of Math Practices in a Collaborative PD Program</b>	
Daniel Heck	Horizon Research, Inc.
Our research examines how teachers collaborating on challenging problems in an in-person/online program engage in and learn about mathematics practices.	

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 2</b>
<b>Session #502: PLN for Mathematics Teachers: Is it Personal or Professional?</b>	
Glenn Waddell	University of Nevada, Reno
Robert Quinn	University of Nevada, Reno
Math teachers using Twitter are extending their PD activities into informal learning spaces. Where does the personal end and professional begin?	

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 3</b>
<b>Session #503: Using Student Thinking in Instruction: Leveraging versus Endorsing</b>	
John Gruver	Michigan Technological University
Casey Hawthorne	Furman University
To better understand necessary features of responsive teaching, we examine students’ reasoning developed through instruction based on student contributions.	

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 4</b>
<b>Session #504: Constructing and Validating an Early Algebra Assessment</b>	
Christopher Engledowl	New Mexico State University
This session describes the validity evidence from a Rasch analysis of a measure designed to assess 4th and 5th graders' knowledge of early algebra.	

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 5</b>
<b>Session #505: Latinx Students Countering Dominant Narratives of Learning Mathematics</b>	
Carlos Nicolas Gomez	Clemson University
Stacy Jones	Clemson University
In this presentation, we describe the dominant narratives of learning mathematics and the respective counter-stories constructed by elementary Latinx students attending predominantly white schools.	



**FRIDAY**

<b>Time: 1:30–2:20 pm</b>	<b>Location: Apollo 6</b>
<b>Session #506: Teacher Perceptions and Expectations; Ten Mathematical Translations</b>	
Kwaku Adu-Gyamfi	East Carolina University
Tony Thompson	East Carolina University
We report on a study that investigated teacher beliefs, expectations and instructional practices with respect to translations among mathematical representations.	

<b>Time: 1:30–1:55 pm (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #507: Battle of the Sexes</b>	
McKenna Edmunds	Texas A&M University
Julia Calabrese	Texas A&M University
Robert Capraro	Texas A&M University
Hyunkyung Kwon	Texas A&M University
The present study aims to dispute the existing perception that female students underperform male students with regards to mathematics education.	

<b>Time: 2:00–2:25 pm (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #508: Fostering Female Students</b>	
Katherine Vela	Texas A&M University
Hyunkyung Kwon	Texas A&M University
Cassidy Caldwell	Texas A&M University
Mary Margaret Capraro	Texas A&M University
Macie Baucum	Texas A&M University
Perceptions and self-efficacy in STEM may be increased through the implementation of project-based learning activities in informal learning settings.	



**FRIDAY**

**BREAKOUT SESSION 6**

<b>Time: 2:30–3:20 pm</b>	<b>Location: Apollo 1</b>
<b>Session #601: <math>x</math> to Why: Supporting Students who Struggle in Algebra</b>	
Barbara Dougherty	University of Hawai'i at Mānoa
In this session we will share evidence-based strategies aligned with the needs of struggling students to build engagement and understanding of algebra concepts and skills.	

<b>Time: 2:30–2:55 pm (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #602: Lesson Study and Teachers' Dialogue about the Mathematical Practices</b>	
Gabriel Matney	Bowling Green State University
Miranda Fox	Bowling Green State University
Scott Knapke	Bowling Green State University
Mackenzie Murray	Bowling Green State University
This session will share research on teacher dialogue related to the SMPs during the post-lesson debrief of 24 mathematics lesson studies.	

<b>Time: 3:00–3:25 pm (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #603: Prospective Teachers' Beliefs and Mathematical Knowledge for Teaching</b>	
Nesrin Sahin	University of Central Arkansas
Carolyn Pinchback	University of Central Arkansas
This longitudinal study investigates the changes in prospective teachers' (PTs) beliefs and mathematical knowledge for teaching. The PTs were followed for three semesters as they take content and methods courses for teaching.	

<b>Time: 3:00–3:25 pm (research brief)</b>	<b>Location: Apollo 3</b>
<b>Session #605: Opportunities for Reasoning-and-Proving in a Precalculus Course Textbook</b>	
Joash Geteregechi	Syracuse University
Anne Waswa	University of Georgia
We analyze the types and nature of reasoning-and-proving opportunities in a precalculus textbook. For more meaningful results, we consider both the book and the syllabus.	



## FRIDAY

<b>Time: 2:30–3:20 pm</b>	<b>Location: Apollo 4</b>
<b>Session #606: Elementary Mathematics Teachers’ Knowledge and Implementation of HLTP</b>	
Cliff Chestnutt	University of West Georgia
Through teacher interviews and classroom observations this study will examine in-service teachers’ knowledge and implementation of High Leverage Teaching Practices (HLTP) for the development of effective elementary mathematics teachers.	

<b>Time: 2:30–3:20 pm</b>	<b>Location: Apollo 5</b>
<b>Session #607: Girls’ Mathematical Discourse in Single-Sex and Coeducational Classrooms</b>	
McKenzie Brittain	Clemson University
S. Megan Che	Clemson University
Carlos Nicolas Gomez	Clemson University
We provide a description of how girls in middle grades single-sex and coeducation classrooms construct mathematical discourses with teacher and peers.	

<b>Time: 2:30–2:55 pm (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #608: Improving Instruction and Supporting Teacher Learning Using Five Practices</b>	
Dennis Kombe	California State University, Monterey Bay
This presentation discusses findings from a mathematics-focused, professional development effort to improve teachers’ capacity to facilitate productive mathematical discussions.	

<b>Time: 3:00–3:25 pm (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #609: Challenges in Assessing Statistics Attitudes: Opportunities and Costs</b>	
Douglas Whitaker	Mount Saint Vincent University
This presentation compares different ways to assess the Expectancy Value Theory construct, Cost, using instruments in statistics education. Empirical results and new directions are included.	

<b>Time: 2:30–3:20 pm</b>	<b>Location: Apollo 7</b>
<b>Session #610: Rethinking, Revisiting, and Redesigning the “Wash, Rinse, and Repeat” Cycle</b>	
Chyna Miller	University of Nevada, Las Vegas
Patrick Gorman	University of Nevada, Las Vegas
Meena Barikzi	University of Nevada, Las Vegas
Celeste Melendez	University of Nevada, Las Vegas
In this interactive session, attendees will explore delivery methods beyond simply “repeating a course” by leveraging students’ prior knowledge and maximizing construction of knowledge.	



**FRIDAY**

**BREAKOUT SESSION 7**

<b>Time: 3:30–4:20 pm</b>	<b>Location: Apollo 1</b>
<b>Session #701: Progress-Monitoring Data as Support for Teaching Algebra</b>	
Linda Venenciano	University of Hawai'i at Mānoa
Eric Kobayashi	University of Hawai'i at Mānoa
Barbara Dougherty	University of Hawai'i at Mānoa
The use and validity of curriculum-based measures to monitor the progress algebra learners make in addressing deficiencies in foundational content	

<b>Time: 3:30–4:20 pm</b>	<b>Location: Apollo 3</b>
<b>Session #702: Lessons We Learned: Engaging Preservice Teachers in Number Talks</b>	
Kay Wohlhuter	University of Minnesota, Duluth
Mary Swarthout	Sam Houston State University
Observations and results from a collaborative research project implementing number talks across content and methods courses for EC-12 preservice teachers will be shared.	

<b>Time: 3:30–4:20 pm</b>	<b>Location: Apollo 4</b>
<b>Session #703: Teachers' Perspectives on Student Work Embedded in Assessment Tasks</b>	
Amy Ray	Sam Houston State University
This presentation focuses on teachers' perspectives on student work embedded in assessment tasks as a mechanism for assessing students' abilities to critique others' mathematical reasoning.	

<b>Time: 3:30–4:20 pm</b>	<b>Location: Apollo 5</b>
<b>Session #704: Analyzing Teacher/Researcher Moves with Theories of (De)Humanizing Violence</b>	
S. Megan Che	Clemson University
To consider (de)generative mathematics schooling experiences, I use educative psychic (symbolic) and humanizing theories of violence to analyze mathematics and computer science teacher and researcher moves.	

<b>Time: 3:30–3:55 pm (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #705: US vs. China Math Education: Chinese Pre-Service Teachers' Perceptions</b>	
Julie Herron	Sam Houston State University
This presentation explores themes that emerged in a case study examining the perceptions of Chinese pre-service teachers, who participated in a US math methods course.	



**FRIDAY**

<b>Time: 4:00–4:25 pm (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #706: Relationship between Teacher Efficacy, Metacognition, and Attitudes of PST</b>	
John Weaver	Oklahoma State University
Juliana Utley	Oklahoma State University
Correlations between math teacher efficacy, metacognition, and attitudes of pre-service elementary teachers will be shared.	

<b>Time: 3:30–3:55 pm (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #707: Mathematics Preservice Teachers’ Attitudes toward Poverty</b>	
Joanne Caniglia	Kent State University
Davison Mupinga	Kent State University
This study sought to determine the influence of a poverty simulation on preservice mathematics teachers’ beliefs and attributions toward poverty.	

<b>Time: 4:00–4:25 pm (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #708: Math Methods to Math Classroom: Cultivating Positive Math Identities</b>	
Colleen Eddy	University of North Texas
Analysis and results from four years of instruction are examined for informing future instruction to cultivate positive math identities with secondary pre-service teachers.	

*Please join us for the Founder’s Lecture  
in the Athena Ballroom  
4:30pm – 5:50 pm*



**SATURDAY**

**BREAKOUT SESSION 8**

<b>Time: 8:00–8:25 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #801: A Teaching Partnership for Multiplication Facts</b>	
Barbara Allen-Lyall	Manhattanville College
An experienced teacher and a college professor successfully engaged students as they moved toward automaticity with multiplication facts.	

<b>Time: 8:30–8:55 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #802: Teachers’ Pedagogical and Content Knowledge for Multiplicative Reasoning</b>	
William McGalliard	University of Central Missouri
Karl Kosko	Kent State University
This study examined the connection between preservice teachers’ content knowledge and pedagogical content knowledge demonstrate at the beginning of their education program.	

<b>Time: 8:00–8:25 am (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #803: Teach Mathematics Teachers to Teach Probability and Statistics</b>	
Lina Devaul	University of Nevada, Las Vegas
Amy Adkins	University of Nevada, Las Vegas
A professional development project was designed and will be presented to improve secondary math teachers’ content and pedagogical knowledge in teaching statistics and probability.	

<b>Time: 8:30–8:55 am (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #804: Early Career Teachers’ Understanding and Implementation of Modeling</b>	
Micah Stohlmann	University of Nevada, Las Vegas
This study investigated early career teachers’ understanding of mathematical modeling and how these changed over the course of a semester.	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 4</b>
<b>Session #805: Designing for a Structured Small Group Mathematics Learning Environment</b>	
Daniel Heck	Horizon Research, Inc.
Jessica Dula	Horizon Research, Inc.
We examine how curricular supports strengthen students’ connections to the math task, social dynamics, and peer-to-peer discourse in small groups.	



**SATURDAY**

<b>Time: 8:00–8:25 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #806: Divergent Beliefs: Cultural Responsiveness of Mathematics and CS Teachers</b>	
Y. Rhoda Latimer	Clemson University
S. Megan Che	Clemson University
This session explores the differences in culturally responsive awareness of both in-service mathematics and computer science teachers.	

<b>Time: 8:30–8:55 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #807: Influence of Beliefs and Contextual Factors on Mathematics Instruction</b>	
Tonya Garrett	Northeastern State University
This research explores in-service elementary teachers’ mathematical beliefs and how those beliefs and/or contextual factors influence their mathematics instruction.	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 6</b>
<b>Session #808: The Algorithm of Success: Conceptualizing Hip Hop and Teacher Education</b>	
Marti Cason	Texas A & M University
This paper conceptualizes a framework to examine how hip-hop pedagogy may be integrated into mathematics teacher preparatory programs.	

<b>Time: 8:00–8:50 am</b>	<b>Location: Apollo 7</b>
<b>Session #809: Addressing Sociopolitical Consciousness in Middle Math Teacher Preparation</b>	
Susan Gregson	University of Cincinnati
Sociopolitical consciousness is a challenging aspect of culturally relevant math teaching. This session addresses teacher preparation for such work.	



**SATURDAY**

**BREAKOUT SESSION 9**

<b>Time: 9:00–9:25 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #901: First Graders’ Representations and Relational Thinking: A Qualitative Study</b>	
Seanyelle Yagi	University of Hawai‘I at Mānoa
Linda Venenciano	University of Hawai‘I at Mānoa
Fay Zenigami	University of Hawai‘I at Mānoa
First graders’ representations provide insight into their relational thinking in a non-numeric context. Results from interviews will be shared.	

<b>Time: 9:30–9:55 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #902: Models for Departmentalized Mathematics Instruction in Elementary Schools</b>	
Corey Webel	University of Missouri
Using select cases from a large study of Elementary Mathematics Specialists, we share five models for teaching responsibilities in elementary schools	

<b>Time: 9:00–9:25 am (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #903: Engaged Real-World Contexts and Self-Efficacy in Problem Solving</b>	
Hyunkyung Kwon	Texas A&M University
Robert Capraro	Texas A&M University
Danielle Bevan	Texas A&M University
Julia Calabrese	Texas A&M University
McKennah Edmunds	Texas A&M University
Mary Margaret Capraro	Texas A&M University
Secondary students’ mathematical problem-solving beliefs changed after participating in an informal learning experience with STEM PBLs.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 3</b>
<b>Session #904: Elementary PSTs’ Perceptions of Classroom Discourse During Number Talks</b>	
Kate Raymond	University of Oklahoma
How do elementary PST attend to classroom discourse during number talks? This session will explore elementary PST reflections of enacted number talks.	



**SATURDAY**

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 4</b>
<b>Session #905: A Framework for Supporting Shifts in Teacher Practice</b>	
Teruni Lamberg	University of Nevada, Reno
Linda Gillette-Koyen	University of Nevada, Reno
A framework that supported shifts in in-service teacher practice and resulted in growth in student achievement growth scores and shifts in practice will be presented.	

<b>Time: 9:00–9:50 am</b>	<b>Location: Apollo 5</b>
<b>Session #906: Function Station: A Collaborative Lesson Development</b>	
Rachel Bachman	Weber State University
Ben Elmer	Davis School District
Cora Neal	Weber State University
Hear the story of how a lesson introducing functions was developed and evolved as it was passed through a web of collaborative professional sharing.	

<b>Time: 9:00–9:25 am (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #907: Undergraduates Helping Preschoolers Learn About Geometry</b>	
Carolyn Pinchback	University of Central Arkansas
Elson Bihm	University of Central Arkansas
Tori Francis	University of Central Arkansas
We will review the research and theoretical literature on using fiction and nonfiction books with preschool children to teach mathematical skills and related STEM knowledge.	

<b>Time: 9:30–9:55 am (research brief)</b>	<b>Location: Apollo 6</b>
<b>Session #908: Mathematical Knowledge for Teaching in Elementary Teacher Preparation</b>	
Jason Proctor	Northeastern State University
This session presents the results of how elementary teacher candidates' MKT developed while enrolled in a math and science strategies course.	

<b>Time: 9:30–9:55 am (research brief)</b>	<b>Location: Apollo 7</b>
<b>Session #910: Scaffolding and Modeling Preservice Teachers' for Gamifying Math Classroom</b>	
Xiongyi Liu	Cleveland State University
Selma Koc	Cleveland State University
This study investigates pre-service teachers' experience and attitudes in a training for gamification in math education via scaffolding and modeling activities.	



**SATURDAY**

**BREAKOUT SESSION 10**

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #1001: Problem Posing in Elementary Classrooms</b>	
Julia Calabrese	Texas A&M University
Danielle Bevan	Texas A&M University
Hyunkyung Kwon	Texas A&M University
Ashley Craft	Texas A&M University
Mary Margaret Capraro	Texas A&M University
This presentation focuses on using problem posing activities to assess students’ mathematical understanding.	

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 1</b>
<b>Session #1002: Perceptions of Creative Problem-Solving</b>	
Daniele Bevan	Texas A&M University
Hyunkyung Kwon	Texas A&M University
Robert Capraro	Texas A&M University
This presentation will help the audience understand the effect of a STEM summer camp on secondary school students’ creative problem-solving skills.	

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #1003: High School Students’ Perceptions of Interleaved Homework in Mathematics</b>	
Carrie Toreky	University of South Florida
This study explored, in two different class settings, high school students’ perceptions and attitudes toward mathematics and homework when they experienced interleaved homework assignments.	

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 2</b>
<b>Session #1004: ELs in Secondary Mathematics: Influences on Teacher Self-Efficacy</b>	
Lynn Columba	Lehigh University
The purpose of this study is to analyze factors that may influence secondary mathematics teachers’ sense of teacher self-efficacy in working with English learners in the mainstream classroom.	



**SATURDAY**

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 3</b>
<b>Session #1005: Understanding Parent Perceptions and Values of Math Education</b>	
Melissa Gunter	Norman Public Schools
Kate Raymond	University of Oklahoma
This session will share results from a study seeking to investigate parental understanding of and involvement in their child’s mathematics education in a suburban district.	

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #1006: Teaching Preservice Teachers about Fostering a Growth Mindset</b>	
Heidi Eisenreich	Georgia Southern University
Andria Disney	Utah Valley University
This research study was conducted with preservice teachers in a mathematics content course to determine if mindset activities changed beliefs about mathematics teaching and learning.	

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 4</b>
<b>Session #1007: Shifts in Teacher Use of Formative Assessment</b>	
Teruni Lamberg	University of Nevada, Reno
Linda Gillette-Koyen	University of Nevada, Reno
Shifts in pre-service teachers use and conceptualization and Use of formative assessment as a result of participating in a year-long professional development project.	

<b>Time: 10:00–10:25 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #1008: A STEM Circles Approach with Emergent Multilingual Students</b>	
Alan Zollman	Indiana University Southeast
To illustrate our STEM Circle approach with emergent multilingual students we pose the question, “Will we ever have a 12-foot-tall basketball player?”	

<b>Time: 10:30–10:55 am (research brief)</b>	<b>Location: Apollo 5</b>
<b>Session #1009: STEAMING HOT Two-Weeks Later: A Mixed Methods Creativity Evaluation</b>	
Timothy Hinchman	Midwestern State University Texas
Dittika Gupta	Midwestern State University Texas
This mixed-methods presentation examines the impact of a two-week STEAM camp on the creativity of pre-service teachers and the elementary students enrolled.	



**SATURDAY**

<b>Time: 10:00–10:50 am</b>	<b>Location: Apollo 7</b>
<b>Session #1010: Influencing Preservice Teachers’ Mathematics Knowledge and Conceptions</b>	
Thomas Roberts Cathrine Maiorca	Bowling Green State University California State University Long Beach
This session describes how an introductory mathematics education course shaped preservice teachers’ conceptions about and knowledge of mathematics.	

*Please join us for lunch and a Math-magical Finish  
in the Athena Ballroom  
11:00 am – 12:30 pm*



## **RCML Business Meeting**

Charlotte, NC

Friday, March 1, 2019

11:00am -12:20pm

### **Minutes**

- Call to Order  
Meeting was called to order at 11:42am  
Recognition of first-time attendees and returning attendees. Overview of Executive Committee
- Approval of March 2018 Business Meeting minutes  
Eileen Faulkenberry moved to approve, Kerri Richardson seconded. Membership voted to approve. No abstentions or nay votes.
- Membership report Membership is at 193 members.  
Members were reminded to look for emails from MemberClicks in their email accounts so that they are receiving all information.
- Treasurer report  
Netted \$2,914 in the past year. Bank balance is \$50,802.
- Election results
  - Election results were shared.
    - Conference Committee (Kate Raymond & Nesrin Sahin)
    - Publications Committee (Dennis Kombe & James Telese)
    - Secretary (Travis Olson)
  - The nominations for the 2020 slate of officers is available, and hard copies or electronic forms could be given or sent to Megan Che ([sche@clemsun.edu](mailto:sche@clemsun.edu)). Positions available for nominations are President Elect, VP for Conferences, Treasurer, Conference Committee (2), & Publications Committee (2).
- Conference leadership
  - Kerri Richardson was recognized as Conference Chair. Tyrette Carter was recognized as Program Chair
  - For the Charlotte conference, there are 134 registered (97 regular, 34 student, 3 guests). 83 presentations, 8 posters, and 116 presenters.
  - The Conference Committee was recognized for their work (Cynthia Orona, Ryan Fox, Melanie Fields, Lucas Foster, Travis Mukina, and Jamaal Young).

Future sites were announced:



- Las Vegas (2020 — Jeffrey Shih & Bill Speer Conference Chairs, Melanie Fields & Lucas Foster Program Chairs).
- Kansas City (2021).
- Looking for proposals for sites (2022) from people who are willing to host the conference. 50<sup>th</sup> Annual Conference (2023).

Bill Speer shared information specific to the Las Vegas conference site at Alexis Park, including \$89 for room rate. Rose Sinicrope won the raffle for a room at the Vegas conference.

- Publications
  - The 2019 proceedings editors were recognized (Adrienne Sanogo & Jennifer Cribbs)
  - For the 2019 proceedings, there were 23 manuscripts accepted out of 36 submissions (63.89% acceptance rate). Reviewers were thanked, and any suggestions should be directed to Adrienne Sanogo and Jennifer Cribbs).
  - The 2020 proceedings editors were announced (Jennifer Cribbs & Hope Marchionda).
  - Acceptance rate for v10 of IML was 16%.
  - Drew Polly was recognized as IML Editor
  - Jonathan Bostic and Colleen Eddy were recognized as Associate Editors.
  - Conference journal presentation was announced (Burnham room today at 12:30 – 1:20pm) Reviewers for IML were recognized, and a request for more reviewers was discussed.
    - *Imagining Mathematical Thinking for Inclusive Curriculum: A Conversation* had the highest Altmetrics rating.
  - Increasing download rates was discussed. In 2018, there were 6,050 article downloads.
    - *Rehumanizing the Mathematics Education of Students with Disabilities: Critical Perspectives on Research and Practice* was the most downloaded IML article in 2018.
  - A call for Special Issue proposal for v12 (2020) is available.
- Publications Committee was recognized (Gabriel Matney, Keith Adolphson, Sarah Ives, Valerie Sharon, Kathy Smith, Jennifer Cribbs, Colleen Eddy, Jim Telese, Denise Kombe, & Allan Zollman). The committee solicits manuscripts and reviewers, reviewed for IML, assisted proceedings editors, and assisted with content checks for the website and newsletter.
- The newsletter editor (Bill McGalliard) was recognized, and the content throughout the year of Intersection Points was provided).
- Recognition of memorial scholarship awardees



- The 2019 Memorial Scholarship in Honor of Bill and Marjorie Speer awardee (Shawn Broderick) was recognized.
- Recognition of RCML service
  - William Speer was recognized as the inaugural awardee of the new James W. Heddens Distinguished Service Award. Dr. Heddens presented the award to Dr. Speer. Dr. Speer provided words of appreciation.
  - This award will be up to once annually. Nominations are made to the Board in the fall. The Executive Board will select the awardee.
  - Members were recognized for their service to RCML:
    - Keith Adolphson & Sara Ives (publications committee)
    - Ryan Fox & Cynthia Orona (conference committee)
    - Adrienne Redmond-Sanogo (proceedings editor) Jennifer Cribbs (proceedings co-editor)
    - Kerri Richardson (2019 conference chair)
    - Tyrette Carter (2019 program chair)
    - Natalia Bailey (social media coordinator)
    - Travis Olson (secretary)
    - Kerri Richardson (treasurer and membership coordinator 2014-2019)
    - Lynn Columba (interims treasurer 2019-2020)

- Old business

Electronic communications (twitter and facebook) have been implemented during the past year. Natalia was recognized for her work in taking on the social media coordinator role. The newsletter has been modified to compliment other electronic communications.

Archives and data are digitized (the Executive Board and Makenna Geise was recognized for the work in digitizing archives). These include letters, conference programs, and other historical documents for the organization. The files are currently stored in Dropbox, and keeping hard copies of some of the files.

- New business

An increase in membership dues was announced, as well as rationale: with the journal cost at \$28 per person, and website costs at \$12 per person (approximately \$2500 annually), there is no money available for scholarships, awards, and so forth. The concern that the organization is relying solely on conference revenue was shared. The proposal was shared to increase dues for regular members from \$40 to \$50, and raise student memberships from \$34 to \$40.

The floor was opened for comments. Alan Zollman asked when the last raise occurred. It was noted that an increase of \$5 occurred approximately 3 years ago. It was noted that with the journal cost, there will be a renegotiation of the journal contract. However, it's unclear as to whether the cost will go up or be lowered. It was also noted by one member that she would pay \$55 to support scholarships and those benefitting from support from RCML.

- Strategic goals



2018-2019 strategic goals were not fully reviewed, but provided:

- Make Handbook Revisions
- Revise annual timelines for Board member activities to clarify tasks and timing of annual work (roles, responsibilities, timelines)
- Revise Conference Planning Guide
- Improve Communications
- Revisit the purpose/length/necessity of Newsletter in light of a new website format
- Comprehensively plan communications efforts, from social media to newsletter, website, and email
- Define what we do better/differently than other organizations (and how to market accordingly)
- Address Membership
- Examine what can be done to attract and retain graduate students in the organization
- Plan for reaching out to first-time conference attendees

2019-2020 strategic goals were presented:

- Membership
  - Examine optimizing impact versus maximizing numbers of members
  - Explore ways to grow graduate student membership and participation
  - Revisit scholarships for grad students (awards available and how to promote them)
- Board Structure
  - Consider ex-officio graduate student Board member
  - Examine Board structure and consider adding a VP for Communications overseeing website, social media, newsletter and
  - Dividing Treasurer and Membership Coordinator into separate positions
- Visibility and Branding
  - Examine ways to increase visibility of RCML through social media and marketing
  - Define and find ways to articulate our identity to the math education community
- Adjourn.

The gavel was passed from Dan Brahier to Megan Che. Dr. Che recognized Dr. Brahier as outgoing President. The meeting was adjourned at 12:34pm.



## INDEX OF PRESENTERS

Listed: Last Name, First Name, Email, & Session Number(s)

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# MAP OF THE UNIVERSITY OF NEVADA, LAS VEGAS

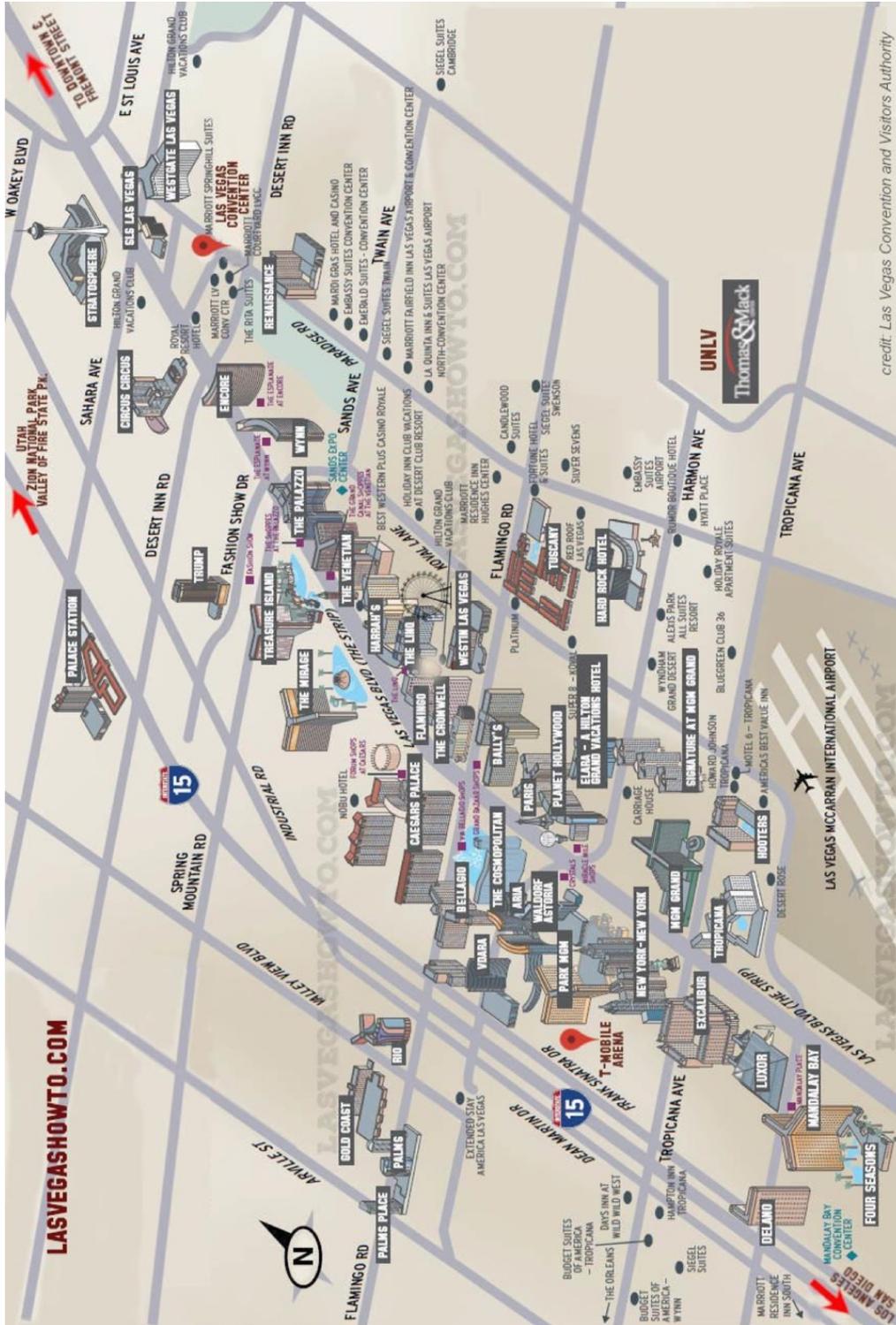


**UNLV**  
**Main Campus**  
**3D Building Map**  
 4505 S. Maryland Pkwy.  
 Las Vegas, NV 89154  
 www.unlv.edu/maps

ABBREV.	BUILDING NAME	BUILDING NUMBER	ABBREV.	BUILDING NAME	BUILDING NUMBER	ABBREV.	BUILDING NAME	BUILDING NUMBER
ALB	Accelerator Lab Building	76	HBL	High Bay Lab	86	RRC	Rebel Recycling Center	80
ARC	Paul B. Sogg Architecture Building	6	HEA	Holbert H. Hendrix Education Auditorium	52	RWC	Student Recreation and Wellness Center	12
ASC	Academic Success Center - Claude I. Howard Building	33	HCH	Artemus W. Ham Concert Hall	53	SAM	Student Affairs Maintenance	3
BDC	Bennett Professional Development Center	83	HFA	Alta Harm Fine Arts	50	SCS	System Computing Services	45
BEH	Frank and Estella Beam Hall	39	HOU	Houssels House - Center for Social Justice	7	SEB	Science and Engineering Building	58
BGC	John D. "Jackie" Gaughan, Boys and Girls Club	81	HWB	Heurman Westfall Building	23	SFB	Stan Fulton Building - International Gaming Institute	78
BHS	Rod Lee Bigelow Health Sciences	62	JBT	Judy Bayley Theatre	54	SOU	Student Services Complex	4
BKS	UNLV Bookstore	36	LAC	Led Athletic Complex	75	SSC	Student Services Complex	32
BMC	Lee and Thomas Beam Music Center	55	LBC	Lynn Bennett Early Childhood Education Center	84	STL	Science Teaching Labs	63
BPB	Robert L. Bigelow Physics	64	LDS	LDS Institute of Religion Student Center	9	SU	Student Union	38
BSL	William S. Boyd School of Law	31	LLB	Lied Library	67	SWC	SideWalk Café	66
CBC	Carol C. Harter Classroom Building Complex	30	MCB	Thomas & Mack Court	28	TAC	Richard Tam Alumni Center	79
CDC	Central Desert Complex	51	MDC	Mendenhall Center	14	TBE	Thomas T. Beam Engineering Complex	59
CEB	William D. Carson Education	65	MPE	Paul McDermott Physical Education	71	TEC	Technology Building	69
CHE	Chemistry	8	MSB	Robert Miller Soccer Building	77	TMC	Thomas & Mack Warehouse	16
CNC	Catholic Newman Center	15	MSM/HRC	Marjorie Barrick Museum and Harry Reid Center	29	TNW	Thomas & Mack Warehouse	18
COX	Cox Pavilion	17	OBM	Operations and Maintenance	19	TON	Thorpe Warehouse	35
CSB	Campus Services Building	2	PAR	Paradise Campus	1	TWH	Thunder Warehouse	20
DAY	Dayton Residence Complex	34	PES	Paradise Elementary School	82	UCC	Upper Class Residence Complex	10
DIN	Hazel M. Wilson Dining Commons	73	PHQ	Police Headquarters	49	UNH	University Hall	26
EMS	Eller Media Softball Stadium	70	PKG1	Cottage Grove Parking Garage	57	UNP	University Systems Building	24
EPA	Environmental Protection Agency	40	PKG2	Tropicals Parking Garage	13	UTC	UNLV Transit Center	85
FDH	Flora Dungan Humanities	22	PRO	Publications/Reprographics/Copy Center	27	WBS	Earl E. Wilson Baseball Stadium	74
FMA	Facilities Management Administration	56	PSB	Claude I. Howard Public Safety	25	WHI	Juanita Green White Life Sciences	61
FND	Foundations Building (D2)	72	RAB	Research Administration Building	21	WRI	John S. Wright Hall	41
FTC	Frank and Vicki Ferritta Tennis Complex	47	RAJ	James E. Rogers Center for Administration & Justice	46	WRL	Eugene R. Warner Residential Life Building	11
GRA	Archie C. Grant Hall	48	RHW	Gym Road South Resident Services Building	5			
GRS	Graduate Arts Studios	48	RPL	Radiation Protection Laboratory	68			
GUA	Greenspun Hall	37						



# MAP OF THE LAS VEGAS STRIP





**Research Council on Mathematics  
47<sup>th</sup> Annual Conference  
March 5 – 7, 2020**



**Things to Do in Las Vegas (Other than Gambling)**

**Helicopter Tours:** <https://www.sundancehelicopters.com/>

**Mob Museum:** <https://themobmuseum.org/>

**Neon Boneyard:** <https://www.neonmuseum.org/>

**Las Vegas Mini Grand Prix:** <http://www.lvmgp.com/rfp/>

**Pink Jeep Adventure Tours:** <https://www.pinkadventuretours.com/tours/las-vegas-tours/>

**Sky Jump:** <https://www.stratospherehotel.com/Attractions/SkyJump>

**Axe Throwing:** <https://axemonkeys.com/las-vegas/>

**Hike the historic railroad tunnel trail:**  
<https://www.birdandhike.com/Hike/LAME/Railroad/Railroad.htm>

**Visit Springs Preserve:** <https://www.springspreserve.org/>

**Natural History Museum:** <https://www.lvnhm.org/>

**Birdwatching:** <http://www.clarkcountynv.gov/parks/Pages/cc-wetlands-park-homepage.aspx>

**Take your picture with the Welcome to Fabulous Las Vegas sign:**  
<https://www.vegas.com/attractions/on-the-strip/welcome-las-vegas-sign/>

**Explore Red Rock Canyon National Conservation Area:** <http://www.redrockcanyonlv.org/contact-us/>

**Explore Valley of Fire State Park:** <http://parks.nv.gov/parks/valley-of-fire>

**Engineering Marvel Hoover Dam:** <https://www.usbr.gov/lc/hooverdam/>



**Research Council on Mathematics  
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**Dining Near Alexis Park**

**Caribbean**

Bahama Breeze - 375 Hughes Center Drive, Las Vegas 702.731.3252  
<https://www.bahamabreeze.com/menu-listing/food>

**Casual Dining**

Gordon Biersch – 3987 Paradise Road, Las Vegas 702.312.5247  
<https://gordonbiersch.com/locations/las-vegas/>

Shaquille O’Neal’s Big Chicken – 4480 Paradise Road, Suite 1200, Las Vegas 702.675.3333  
<https://www.bigchicken.com/>

**German food, beer & fun**

Hofbrauhaus - 4510 Paradise Road, Las Vegas 702.853.BEER (2337)  
<https://www.hofbrauhauslasvegas.com/the-food/>

**High-end Thai**

Lotus of Siam – 620 E. Flamingo Road, Las Vegas 702.735.3033  
<https://lotusofsiamlv.com/dishes/>

**Italian**

Ferraro’s – 4480 Paradise Road, Las Vegas 702.364.5300  
<https://www.ferrarolasvegas.com/menu/>

**Modern Mexican**

Tacos & Beer – 3900 Paradise Road, Las Vegas 702.675.7572  
<https://tacosandbeerlv.com/tnb-menu/>

**Steak**

Fogo de Chao – 360 E. Flamingo Road, Las Vegas 702.431.4500  
<https://fogodechao.com/location/las-vegas/>

**Tapas**

Firefly – 3824 Paradise Road, Las Vegas 702.369.3971  
<https://fireflylv.com/paradise/>

**Vegan**

Modern Vegan – 700 E. Naples Drive, Las Vegas 702.755-8127  
<https://www.tmvrestaurants.com/menu>