

INNOV8 CONFERENCE

November 15-17, 2017
Las Vegas



PROGRAM BOOK

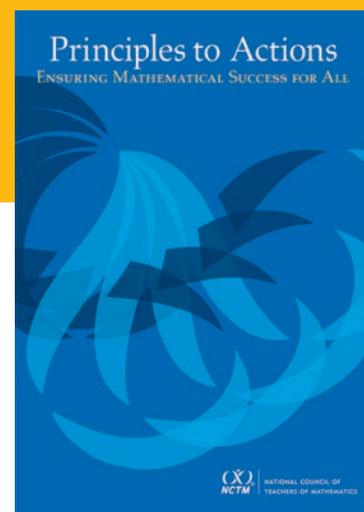


NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

nctm.org/innov8

    #NCTMinnov8

Principles to Actions Professional Learning Toolkit



NCTM's *Principles to Actions* Professional Learning Toolkit provides grade-band-specific professional learning modules focused on the Effective Teaching Practices and Guiding Principles from *Principles to Actions: Ensuring Mathematical Success for All*—NCTM's landmark publication that connects research with practice. Specific research-based teaching practices that are essential for a high-quality mathematics education for each and every student are combined with core principles to build a successful mathematics program at all levels.

The *Principles to Actions* toolkit helps support professional learning with teachers by analyzing mathematical tasks, narrative and video cases, student work samples, vignettes, and more. Each module includes a presentation, presenter notes, and required materials. Teachers learn by abstracting general ideas from the specific examples about how to effectively support student learning.

The teaching and learning modules were developed in collaboration with the Institute for Learning at the University of Pittsburgh and are available exclusively to NCTM members. Limited modules are provided for each grade level.

Building on *Principles to Actions*

Many related publications build on *Principles to Actions* and the toolkit.

Principles to Actions-related publications explore implementing the effective mathematics teaching practices; go in depth about the research behind *Principles to Actions*; and elaborate on such topics as access and equity, tools and technology, assessment, and more.

- **Taking Action: Implementing Effective Mathematics Teaching Practices in—**
 - Grades Pre-K–5
 - Grades 6–8
 - Grades 9–12

This set of grade-band books elaborates on the teaching and learning principles described in *Principles to Actions*. Each book provides examples and activities to help teachers develop their understanding of the eight effective

mathematics teaching practices and how they can be enacted in the classroom.

- **Enhancing Classroom Practice with Research behind “Principles to Actions”**

This book summarizes and synthesizes the research behind each of the guiding principles and essential elements in *Principles to Actions*. It also provides examples of what this research might look like in classroom practice. This resource will provide readers with a sense of where the field stands in its knowledge and hypotheses about the big ideas put forth in *Principles to Actions*. In addition, it makes the principles and elements—as well as the research—concrete for readers by offering examples from classroom practice.



- **Access and Equity: Promoting High-Quality Mathematics in—**
 - Grades Pre-K–2
 - Grades 3–5
 - Grades 6–8
 - Grades 9–12
- **Principles to Actions Elaboration Series**
 - Access and Equity
 - Curriculum
 - Tools and Technology
 - Assessment
 - Professionalism



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nctm.org/PtAToolkit

[f](#) [@](#) [in](#) [p](#) [v](#) YouTube #NCTMp2a



HOST

Nevada Mathematics Council (NMC)

All Innov8 presentations will be held at the Rio All-Suites Hotel & Casino. See pages 57–58 for floor plans.

REGISTRATION

Wednesday	3:00 p.m.	–	7:00 p.m.
Thursday	7:00 a.m.	–	3:00 p.m.
Friday	7:00 a.m.	–	12:00 p.m.

EXHIBITS

Wednesday	4:00 p.m.	–	6:00 p.m.
Thursday	11:45 a.m.	–	5:30 p.m.
Friday	9:00 a.m.	–	4:00 p.m.

NCTM CENTRAL

Wednesday	4:00 p.m.	–	6:00 p.m.
Thursday	11:45 a.m.	–	5:30 p.m.
Friday	9:00 a.m.	–	4:00 p.m.



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nctm.org/Innov8

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Some speakers on this program have elected to print their e-mail addresses as a means for individual correspondence with conference attendees. Unsolicited commercial e-mail or unsolicited bulk e-mail, whether or not that e-mail is commercial in nature, is expressly prohibited. Any use of e-mail addresses beyond personal correspondence is not authorized by NCTM.

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Printed in U.S.A.

Welcome to Innov8 2017!



Welcome to the 2017 NCTM Innov8 Conference. We are so excited to bring you this inspiring, informative, and creative conference. We hope that you walk away with ideas for your schools, solutions to challenging situations, and a feeling of having accomplished something great over its three days. The title of this year's conference is "Breaking Barriers: Actionable Approaches to Reach Each and Every Learner in Mathematics." As our world is becoming more and more data-driven and technologically advanced, our students will need to be mathematically skilled. This is true not just for certain students but for all students, regardless of income, race, gender, or where they live. As educators, we have the responsibility to make sure that each and every one of our students develops the mathematical skills and understanding required for their future. Each of the sessions and components of the program have been specifically picked because they address the conference title "Breaking Barriers" as well as speak to the themes of equity, access, and empowerment. While each session is different, they work together to tell a story not just of educators making mathematics accessible to all students but also of how mathematics is a powerful tool for breaking barriers for some of our most vulnerable student populations.

While you are here, we hope you will take the time to enjoy the exciting city of Las Vegas! There are so many things to do here. Even locals are regularly amazed at all the new things to experience in Las Vegas. In addition to the casinos and shows, there are zoos, theaters, aquariums, and galleries. Check out the Fremont Street Experience for a taste of old Vegas. If you're

feeling adventurous, ride the world's tallest observation wheel, the High Roller, ride a roller coaster, or take a zip line ride. There's also plenty to do outside the glow of the neon lights. Check out the Hoover Dam, go hiking in Red Rock, or visit Mount Charleston. All of these are within an hour's drive from the Strip. Take in the culture of Las Vegas by going to the Pinball Hall of Fame, the National Atomic Testing Museum, the Neon Museum, the Mob Museum, the Vegas Art Museum, or the Marjorie Barrick Museum of Art. There are many wonderful restaurants both on and off the Strip. Be sure to experience what Las Vegas has to offer!

We'd like to thank you for being a part of this conference and hope that you will gain ideas and strategies to empower all students to engage in high-quality mathematics instruction.



Rebecca Quander
Program Committee Chair
University of Houston—
Downtown, Texas



Barbara Perez
Volunteer Committee Chair
Clark County School District
Las Vegas, Nevada

The NCTM 2017 Innov8 Conference officially begins with the Opening Session, starting at 5:30 p.m. on Wednesday. Presentations begin at 8:30 a.m. on Thursday and at 8:00 a.m. on Friday and are scheduled concurrently throughout the day.

We have made every attempt to provide adequate seating for participants at the Innov8 Conference. The room capacity for each presentation is listed on all meeting room signs. For your safety and due to fire regulations, only those with seats will be allowed to stay in meeting rooms.

Please remember:

- All meeting rooms will be cleared between presentations.
- All seats are available on a first-come, first-served basis.
- Reserving spaces in line or saving seats is not permitted.
- In compliance with fire codes, sitting on the floor or standing is not permitted.
- As a courtesy to the speakers and your colleagues, please silence your cell phone during all presentations.

Grade Bands

To assist attendees in finding appropriate presentations to attend, each presentation lists the presentation's target grade-band audience. The grade bands are:

- Pre-K–2
- Grades 3–5
- Grades 6–8
- Grades 8–10
- Grades 9–12
- Elementary
- Middle School
- High School
- General Interest—issues of interest to multiple grades and audiences

Program Updates

Check nctm.org/innov8 for a digital copy of the program updates including all of the latest changes, cancellations, and additions!

Tips for a Rewarding Innov8 Conference

- Become familiar with the layout of Rio All-Suites Hotel & Casino by reviewing the floor plans on pages 57–58.
- Visit **NCTM Central** and stop by the **NCTM Bookstore** for the latest NCTM educational resources; the **Mathematics Education Trust** to inquire about available grant, scholarship, and award opportunities; and the **Member Services** area to learn more about how NCTM can help you professionally and pick up free resources.
- If attending the conference with colleagues, attend different presentations and share your learned knowledge after the conference.
- Silence cell phones during presentations.
- Be safe! Remove your name badge when you leave the conference facilities at the end of the day.

Registration and Access to Presentations

You must wear your badge to enter all presentations and the NCTM Exhibit Hall. You will need to present a photo ID to receive a replacement badge.

By registering and attending an NCTM conference, meeting, or other activity, participants grant NCTM the right to use their likeness or voice as recorded on, or transferred to, video, photographs, websites, electronic reproductions, audio files, and/or other media of such events and activities.

For Your Child's Safety

Due to the size and nature of the NCTM 2017 Innov8 Conference, this event is not an appropriate setting for children under 16 years of age. Children under age 16 will not be permitted in the Innovation Lounge or Exhibit Hall. We appreciate your understanding and cooperation.

Information Booth

The NCTM Information Booth will be in Rio All-Suites Hotel & Casino. Staff can answer your questions about Las Vegas and assist you with directions and local information, from transportation and historical sites to shopping and entertainment.

Lost-and-Found

You may retrieve or turn in lost-and-found items at the NCTM Information Booth. Unclaimed items will be turned over to Rio All-Suites Hotel & Casino Security.

Program Information

30-MINUTE PRESENTATIONS

Innovations from the Classroom	These sessions share transformational strategies to empower students. Sessions will include details that would support participants in designing and implementing these mathematical instructional strategies.
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60-MINUTE SESSIONS

Professionals as Advocates	This session provides participants with opportunities to develop and reflect on an understanding of institutional barriers and what participants can do to advocate for high-quality mathematics for all students.
Focus on the Students	During this session, the presenter(s) will discuss their experience working with underserved groups of students including refugee students, LGBTQ, gifted students, first-generation college students, students from economically-depressed areas, and homeless students.

75-MINUTE SESSIONS

Experiences in the Classroom	<i>45 minutes for presentation + 30 minutes for interactive discussion</i> This interactive session will engage participants as learners in the mathematics classroom. Facilitators will model equitable mathematics instructional practices within a specific lesson. Facilitators will include evidence of student learning.
Views of the Classroom	Presenters will share brief video clip (about 5 minutes) illustrating equitable teaching practices that empower and engage students in mathematics. Session will include facilitated analysis and discussion of the video to gain further insight on teaching practices. Presenters will provide a transcript for videos.

OTHER PRESENTATION TYPES

Major Keynotes	Experts in the field will address crucial topics related to and supporting the conference theme as well as the three conference pathways: building effective multi-tiered systems of support (MTSS), supporting productive struggle, and motivating the struggling learner.
Team Time	Thursday Team Time —These sessions are designed to guide teams in defining and deepening their understanding of a challenge they face related to mathematics instruction and learners who struggle. Facilitators will guide teams in creating an action plan for addressing this challenge and in selecting conference sessions that will be beneficial in refining the action plan. Friday Team Time —These sessions will provide the opportunity for teams to receive feedback on the action plans they've created and to finalize their action plans using the knowledge and strategies they've gained from conference sessions. Teams will leave with a plan for continued action toward addressing their challenge.
Exhibitor Workshops	Exhibitor Workshops offer exhibitors an opportunity to showcase their products and services away from the Exhibit Hall. If you are interested in purchasing an exhibitor workshop, please visit nctm.org/Innov8exhibit/ . Look for the symbol  indicating exhibitor workshops in the program book.

Innovation Lounge

The Innovation Lounge, located in Pavilion of Rio All-Suites Hotel & Casino, includes five areas designed to provide new and unique learning experiences. See the floorplan on page 58.

Innov8 Bar: Experts will be available to talk to individuals or groups of teachers about issues related to breaking barriers to reach each and every learner. You will be able to sign up in advance to speak to an expert at a designated time.

Research Innovations: Featuring “Lessons from Research” presentations, researcher/practitioner teams will share findings from equity-focused research projects, experiences, and innovations. Session will highlight implications for changing mathematics instructional practices to reach each and every learner.

TNT (Teachers Networking Together): TNT offers several different opportunities for participants:

- **Twitter 101/Blog 101**—Learn how to tweet and find out what it means to Blog and how to get started on both
- **Math Circles**—Teachers get a chance to work on rich mathematics problems together, allowing them to enrich their own mathematical knowledge.

The Hangout: The Hangout offers two different opportunities for participants:

- **Author Talks**—Attend Meet and Greet sessions with your favorite authors.
- **Hangout**—This area provides an unscheduled space for discussion and meet-ups with team members and/or other conference attendees.

Wellness Workshops: Take time to focus on your well-being. As classroom teachers, you have to constantly respond to change, manage a work/life balance, and stay grounded. These sessions will help you manage life’s challenges as a classroom teacher.

First-Aid Station

There will be a first-aid station in the Choro Room at Rio All-Suites Hotel & Casino during the NCTM conference. If you need medical services while in Las Vegas, please check with the hotel concierge for the closest medical facilities. For any medical emergency, call 911 without hesitation.

Your Opinion Counts

Thank you for attending the NCTM 2017 Innov8 Conference. In the days following the Innov8 Conference, you will receive an email asking for an evaluation of your meeting experience. Please take a moment to complete the survey. Use the Conference App to rate specific presentations you attend. Your feedback is important to us and will be instrumental in planning future meetings.

Exhibits

Make time to visit the NCTM Exhibit Hall. The hours allow ample opportunity to explore, try out, and purchase products and services for your classroom or to help you meet your career goals. You’ll also be able to meet the people who produce these products, get fresh ideas, and see demonstrations of how products work. To give you dedicated time to visit the exhibits, no presentations will take place from 12:00 noon to 1:30 p.m. on Thursday, and from 12:00 noon to 1:00 p.m. on Friday. Check out the Exhibitor Directory on pages 60–61 and a floor plan of the Exhibit Hall on page 58.

Exhibitor Workshops

Do you want more in-depth, personal interaction with exhibitors? If so, plan to attend the Exhibitor Workshops. These workshops are held on Thursday and Friday and offer a wide variety of topics. For exhibitor workshop offerings, look for presentations in this program book marked with the symbol  or see the Program Updates.

Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner at nctm.org/PlanINNOV8. Handouts will be available until January 2018.

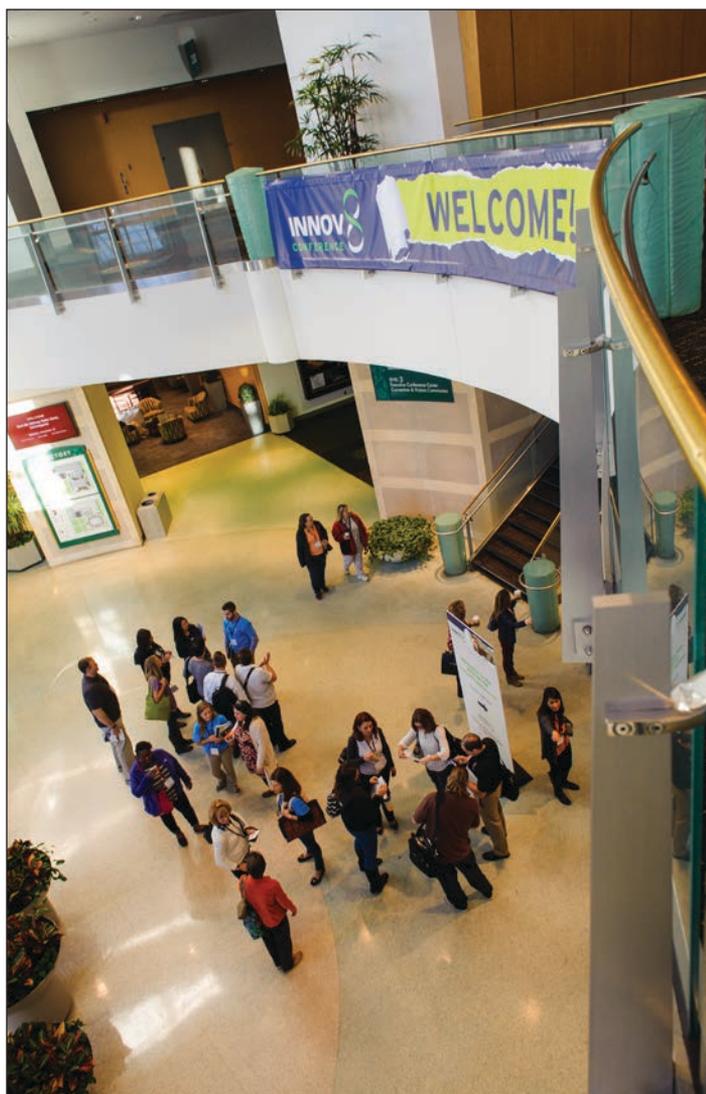
General Information

Conference App

The NCTM App keeps you connected with the Innov8 Conference's every aspect. The free app allows you to search sessions, speakers, and exhibits; view the Exhibit Hall floor plan; highlight your favorite presentations; rate presentations; and interact with your colleagues! Visit nctm.org/confapp for more information.

Online Conference Planner

The Online Conference Planner is a great way for you to search the conference program book, set up your personal schedule, and download available presentation handouts. The Online Conference Planner is continually updated with the latest presentation changes and information. Visit nctm.org/PlanINNOV8 to check it out.



NCTM Central

Check out NCTM Central. This exciting area has everything "NCTM" all in one convenient location, right at the entrance of the Exhibit Hall.

Wednesday	4:00 p.m.–6:00 p.m.
Thursday	11:45 a.m.–5:30 p.m.
Friday	9:00 a.m.–4:00 p.m.

- Whether you are a new NCTM member or a seasoned veteran, you can learn more about what your membership can do for you at **Member Services**. We can walk you through your benefits, including your online access to lessons, classroom-ready activities, online journal articles, and more. Make sure to stop by and pick up sample journals and other materials! Not a member or wish to renew your membership? Make sure to sign up onsite and be placed in a daily drawing for a \$25 NCTM gift certificate!
- Browse the **NCTM Bookstore** and save **25% off the list price** on all purchases! View firsthand all the publications that NCTM has to offer. You will also find a variety of specialty products that you can use as gifts, prizes, and incentives to spread the word about the importance of mathematics. Start your wish list today by previewing NCTM's wealth of resources at nctm.org/catalog. The NCTM Bookstore is not equipped to handle shipping; the business center can assist you with your shipping needs.

Note on Sales Tax Exemptions: To be considered exempt from sales tax in the NCTM Bookstore, you must provide a copy of a Nevada tax exemption certificate at the time of purchase. NCTM is required by law to keep a copy of the certificate, so we cannot return it to you. To qualify, you must make payment with a purchase order, check, or credit card from the school to which the Nevada exemption certificate is issued. NCTM cannot accept personal checks, personal credit cards, or cash in conjunction with tax exemption certificates. Tax exemption certificates for states other than Nevada are not valid for this Innov8 Conference.

- Stop by **The Math Forum** to learn about new PoW resources available to NCTM members. Pick up information about our scheduled online PD courses, samples of problem-solving resources, and more. Visit mathforum.org.
- Discover available funding and resources to support you in your career and professional development through the **Mathematics Education Trust (MET)** grants, scholarships, and awards. Visit nctm.org/met.



Wednesday

HIGHLIGHTS

Opening Session: Breaking Barriers—Only Part of “Breaking Bad”!, 1

GET SOCIAL

Stay informed and get connected with attendees by using #NCTMinnov8 on social media.



Conference App
nctm.org/confapp



Twitter
@NCTM



Instagram
@NCTM.math



Facebook
facebook.com/TeachersofMathematics

REGISTRATION HOURS

3:00 p.m.–7:00 p.m.

EXHIBIT & INNOVATION LOUNGE HOURS

4:00 p.m.–6:00 p.m.

NCTM CENTRAL HOURS

4:00 p.m.–6:00 p.m.

FIRE CODES

We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the room.

1



Opening Session Breaking Barriers—Only Part of “Breaking Bad”!

Keynote

This lively presentation will focus on access, equity, and empowerment, and it will set the tone for the remainder of the conference experience. It will address mathematics instruction in terms of equitable approaches to learning, describe mathematical teaching practices that empower students, and identify dispositions and strategies for removing barriers to access to high-quality mathematics. In short, the presentation will delve into “breaking bad” in school mathematics!

Lee Stiff

Past President, National Council of Teachers of Mathematics; North Carolina State University, Raleigh

Brasilia, Rio All-Suite Hotel & Casino

CPM EDUCATIONAL PROGRAM

Empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership for 28 years.

- + Curriculum written by a group of teachers and professors
- + Student-centered and problem-based lessons
- + Free professional development for implementation
- + Nonprofit and self published

We are pleased to support the NCTM Innov8 Conference in Las Vegas. **Stop by booth #519 to meet with a CPM mentor teacher, see our materials, and request a preview.**

Visit CPM.ORG/cpminfo or scan the QR code to get more information and view our conference sessions.



MORE MATH FOR MORE PEOPLE
CPM EDUCATIONAL PROGRAM





HIGHLIGHTS

Creating Mathematics Teacher Leaders, 2

Using Task and Discourse to Position Each and Every Learner as Mathematically Competent, 3

Vision, Values, and Practices for Supporting Positive Math Identities in the Classroom, 4

GET SOCIAL

Stay informed and get connected with attendees by using **#NCTMinnov8** on social media.



Conference App
nctm.org/confapp



Twitter
@NCTM



Instagram
@NCTM.math



Facebook
facebook.com/TeachersofMathematics

REGISTRATION HOURS

7:00 a.m.–12:00 p.m.

EXHIBIT & INNOVATION LOUNGE HOURS

11:45 a.m.–5:30 p.m.

NCTM CENTRAL HOURS

11:45 a.m.–5:30 p.m.

FIRE CODES

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8:00 A.M.–9:45 A.M.

Choose any of the rooms below to view all three Keynotes. The presenters will rotate through the three rooms.

- **Brasilia 4-7, Rio All-Suite Hotel & Casino**
- **Amazon A-F, Rio All-Suite Hotel & Casino**
- **Amazon G, N-T, Rio All-Suite Hotel & Casino**

2 Creating Mathematics Teacher Leaders

High School Keynote

Too often, mathematics teachers must leave the classroom to exercise leadership. This session will review projects that are working to develop mathematics teachers' leadership while in the classroom. We will review different types of projects, and session attendees will discuss what kinds of leadership opportunities are of interest and what types of supports are needed.

Karen King
National Science Foundation, Arlington, Virginia

3 Using Task and Discourse to Position Each and Every Learner as Mathematically Competent

Access and Equity: Teaching Mathematics with an Equity Stance

Keynote

This session will make connections between task, discourse, identity, and agency. Specifically, the session will examine how high cognitively demanding tasks provide opportunities to engage learners in meaning discourse positioning learners as risk-takers and mathematically competent. The session will use mathematical discourse community as a framework for connecting social norms of discourse to identity and agency. This session will conclude with a discussion of teaching practices that cultivate identity and agency to support access, equity and empowerment.

Robert Q. Berry, III
President-Elect, National Council of Teachers of Mathematics;
University of Virginia, Charlottesville

4 Vision, Values, and Practices for Supporting Positive Math Identities in the Classroom

General (K–12) Keynote

In this session, we will explore ways math identity impacts a child's math experience in and out of the classroom. Participants will examine their mathematics vision and values for math-strong students, how routine practices reflect their vision and values, and ways to support and sustain positive math identities that empower K–12 children to bring their whole selves to learning mathematics.

Julia Aguirre
University of Washington, Tacoma

10:15 A.M.–11:45 A.M.

Team Time

Team Time

This session is designed to guide teams in defining and deepening their understanding of a challenge they face related to mathematics instruction and access, equity, and empowerment. Facilitators will guide teams in exploring facets of an action plan that will address this challenge and in selecting conference sessions that will be beneficial in refining the action plan. Team Time assignments are printed on badges.

5 Team Time 1

Delise Andrews
Lincoln Public Schools, Nebraska
Brasilia 4-7, Rio All-Suite Hotel & Casino

6 Team Time 2

Fred Dillon
Ideastream/PBS, Cleveland, Ohio
Amazon HI, Rio All-Suite Hotel & Casino

10:15 A.M.–11:45 A.M.

7
Team Time 3

Fawn Nguyen
Mesa Union Junior High School, Somis, California
Amazon J-M, Rio All-Suite Hotel & Casino

8
Team Time 4

Brian Bushart
Round Rock Independent School District, Texas
Tropical A-D, Rio All-Suite Hotel & Casino

9
Team Time 5

Kyndall Brown
University of California, Los Angeles
Tropical E-H, Rio All-Suite Hotel & Casino

10
Team Time 6

M Alejandra Sorto
Texas State University, San Marcos
Palma, Rio All-Suite Hotel & Casino

11
Team Time 7

Marta Civil
University of Arizona, Tucson
Miranda 1-2, Rio All-Suite Hotel & Casino

12
Team Time 8

Comfort Akwaji-Anderson
Waterloo Community School District, Iowa
Miranda 3-4, Rio All-Suite Hotel & Casino

13
Team Time 9

John SanGiovanni
Howard County Public Schools System, Ellicott City, Maryland
Miranda 5-6, Rio All-Suite Hotel & Casino

14
Team Time 10

Kathy Dees
Clark County School District, Nevada
Miranda 7-8, Rio All-Suite Hotel & Casino

15
Team Time 11

Jessica Ivy
Mississippi State University
Brasilia 2, Rio All-Suite Hotel & Casino

12:00 P.M.–12:30 P.M.

16 **INNOVATION LOUNGE**
Article Talk: Toya Jones Frank

Toya Jones Frank will lead a discussion around the *Journal for Research in Mathematics Teaching* article “The Relationship Between Teachers’ Mathematical Content and Pedagogical Knowledge, Teachers’ Perceptions, and Student Achievement” (July 2014, vol. 45, no. 4). This study of early-career teachers identified a significant relationship between upper-elementary teachers’ mathematical content knowledge and their students’ mathematics achievement, after controlling for student- and teacher-level characteristics. Findings provide evidence of the relevance of teacher knowledge and perceptions for teacher preparation and professional development programs.

Toya Jones Frank
George Mason University, Fairfax, Virginia
**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

12:00 P.M.–1:00 P.M.

17 **INNOVATION LOUNGE**
Finding Peace: Stress Reduction at Work

It’s time to break up with stress. Learn to recognize your stress triggers and what to do with them. Find out about an easy step-by-step guide to reducing stress and finding that peace you crave in the workplace.

Samantha Delory
Wellness Expert and Owner of Yoga Desires, Las Vegas, Nevada
**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**



12:00 P.M.–1:10 P.M.

Innov8 Bar 1

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

18 INNOVATION LOUNGE

Linda Gojak – Instructional Practices

Winner of the Presidential Award for Excellence in Science and Mathematics Teaching, Linda M. Gojak directed the Center for Mathematics and Science Education, Teaching, and Technology (CMSETT) at John Carroll University for 16 years. She has spent 28 years teaching elementary and middle school mathematics and has served as the president of the National Council of Teachers of Mathematics (NCTM), the National Council of Supervisors of Mathematics (NCSM), and the Ohio Council of Teachers of Mathematics. She is all about getting K–8 teachers and students active and excited about learning and doing mathematics.

Linda M. Gojak

Past President, National Council of Teachers of Mathematics; I Do Math LLC, Willowick, Ohio

Theodore Chao – Instructional Practices

Theodore Chao is an assistant professor of mathematics education in Teaching and Learning's Science, Technology, Engineering and Mathematics program. He recently finished a postdoctoral research fellowship at the Harvard Graduate School of Education. He earned his PhD in mathematics education at the University of Texas. Dr. Chao taught seventh- and eighth -grade mathematics at I.S. 318 in Brooklyn, NY. As a classroom teacher, he participated in the Japan Fulbright Memorial Fund exchange program and the NSF-funded Research Experience for Teachers program. Dr. Chao's research focuses on the use of photographs and video to open up spaces for mathematical discussion, storytelling, and reflection

Theodore Chao

Ohio State University, Columbus

**Innov8 Bar, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

12:00 P.M.–1:30 P.M.

19 INNOVATION LOUNGE

Math Circle: Problem-Solving Strategies

Let's do some math! Come and work with others in solving rich mathematical problems that are designed to offer a variety of entry points and varied solution strategies. Gain insight into your students' problem-solving strategies, experience a bit of productive struggle, and have fun!

Fawn Nguyen

Mesa Union Junior High School, Somis, California

Joshua Zucker

Stanford University, California

**TNT - Math Circles, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

12:00 P.M.–12:30 P.M.

20 INNOVATION LOUNGE

CSU Summer Algebra Institute Project: Culturally Based Program Development and Evaluation

Middle School Professionals as Advocates

The Summer Algebra Institute (SAI) is a university-community collaboration comprising California's higher education systems and multisite partnerships with faith-based organizations in Northern and Southern California. The aim of the project is to expand the college pipeline of African American middle school students.

Kyndall Brown

University of California, Los Angeles

Rehema Gray

California State University, Bakersfield

Jacqueline Mimms

California State University, Bakersfield

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Mingle, explore, and learn in the Exhibit Hall and NCTM Central!



12:45 P.M.–1:15 P.M.

21 INNOVATION LOUNGE

What Is Teaching Mathematics for Social Justice?

High School Lessons from Research

This Innov8 Lounge Book Talk engages teachers in an interactive discussion on the 2012 NCTM volume *Teaching Mathematics for Social Justice: Conversations with Educators* (Wager and Stinson 2012) and on critical/social justice mathematics in general.

David Stinson
Georgia State University, Atlanta

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:00 P.M.–1:30 P.M.

22 INNOVATION LOUNGE

Article Talk: Sararose Lynch

Sararose Lynch will lead a discussion around the *Mathematics Teaching in the Middle School* article “I-THINK I Can Problem Solve” (August 2013, vol. 19, no. 1). In this article students access the THINK framework that involves prompts exploring talk, how, identify, notice, and keep.

Sararose Lynch
Westminster College, New Wilmington, Pennsylvania

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:00 P.M.–1:30 P.M.

23 INNOVATION LOUNGE

Twitter/Blog Talk 1

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Brian Bushart
Round Rock Independent School District, Texas

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:30 P.M.–2:30 P.M.

24 INNOVATION LOUNGE

Book Signing: Marta Civil

Meet and greet Marta Civil, the series editor of NCTM’s *Access and Equity: Promoting High-Quality Mathematics* series. Marta will be available to sign your copies of the book and/or answer questions about the books.

Marta Civil
University of Arizona, Tucson

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

25 INNOVATION LOUNGE

Getting Out of Your Own Way: Steps toward Happiness and Reaching Your Goals

A scientific formula has been created to understand happiness. It defines three things that determine your level of happiness. We’ll learn what those three things are, how to recognize and overcome your own obstacles and barriers toward happiness, and key steps to reaching your goals.

Samantha Delory
Wellness Expert and Owner of Yoga Desires, Las Vegas, Nevada
**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Interested in speaking at one of the 2018 Regional Conferences next year in Kansas City or Seattle? Submit your proposal at nctm.org/speak before December 2, 2017.



Thursday

1:30 P.M.–2:40 P.M.

Innov8 Bar 2

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

26 INNOVATION LOUNGE

Denise Spangler – Advocacy

Denise Spangler supports teachers, studies their growth, and works to impact policy and resources to support teachers, the teaching profession, and learning of students. Denise conducts long-term studies of preservice teachers from the beginning of their teacher education programs through their induction years and into their 10th+ year of teaching to identify significant influences on their mathematics teaching practices. Denise served on the school board for her community, is currently on the NCTM Board of Directors, and a Senior Associate Dean at the University of Georgia College of Education.

Denise Spangler

Board of Directors, National Council of Teachers of Mathematics, Reston, Virginia; University of Georgia, Athens

Imani Goffney – Instructional Practices

Imani Masters Goffney currently works as an assistant professor of mathematics education at the University of Maryland, College Park. Her research focuses on mathematics instruction and on interventions designed to improve its quality and effectiveness, especially for students not traditionally served well by our educational system. In particular, she studies the ways in which teachers use mathematical knowledge for teaching in equitable ways. She was recently awarded a grant from the Greater Texas Foundation for her grant entitled, “The Quest for College Readiness for All Students in Mathematics Begins with Elementary Teacher Preparation.”

Imani Goffney

University of Maryland, College Park

Julia Aguirre – Culture and Language

Julia Aguirre’s scholarship and professional development work focus on mathematics teaching and learning, teacher education, and culturally responsive mathematics instruction. Her work investigates how children’s mathematical thinking and community/cultural funds of knowledge, language, and power inform the development of teaching knowledge, beliefs, and practice. She is committed to preparing a new generation of elementary and secondary teachers with knowledge and skills to teach rich and rigorous mathematics and engage families and communities to support mathematics teaching and learning. Her goals are to mathematically empower youth, families/communities, and teachers to strengthen K–12 mathematics education access, performance, and advancement, especially for those historically underrepresented in STEM fields (Science, Technology, Engineering and Mathematics).

Julia Aguirre

University of Washington, Tacoma

Innov8 Bar, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino

1:30 P.M.–2:00 P.M.

27 Building a Persistent, Creative Mathematics Learning Community

Middle School Innovations from the Classroom

We will explore the use of nonroutine problems to engage students and help them become better problem solvers. The problems align with middle school content and Common Core practice standards. Participants will receive several problems that promote productive struggle, creativity, and positive dispositions. Student work will be shared.

Hoyun Cho

Capital University, Columbus, Ohio

Gary Lawrence

Mustard Seed School, Hoboken, New Jersey

Brasilia 2, Rio All-Suite Hotel & Casino

28

Empowering Mathematical Thinking

Elementary Innovations from the Classroom

Rich, open-ended mathematical tasks are the starting point to encouraging students to think deeply about the mathematics. Encouraging students to reflect on their thinking by creating a “thinking map” assists students in persevering through the process. Teachers also use the map to monitor student progress and adjustments to instruction.

Rob Nickerson

ORIGO Education, Lakewood, Colorado

Miranda 5-6, Rio All-Suite Hotel & Casino

29

Finding the Value of Place

Elementary Innovations from the Classroom

Elementary students struggle with the concept of place value, and they often do not have a true understanding of what place value actually means. In this session, participants will experience hands-on activities to deepen understanding of the value of place. Participants will leave this session with strategies that will reach all learners.

Stephanie Doran

[@stephtalksmath](#)

The Discovery School, Jacksonville, Florida

Miranda 1-2, Rio All-Suite Hotel & Casino

30

Formative Assessments That Empower Students

High School Innovations from the Classroom

Come learn about our students’ favorite formative assessments. These are quick and easy to implement, allow students to take risks, and empower students to take ownership of the learning process. Both immediate and long-term interventions will be discussed.

Renee Hunt

Centennial High School, Champaign, Illinois

Betsy Alderman

Centennial High School, Champaign, Illinois

Miranda 7-8, Rio All-Suite Hotel & Casino

32

Inspiring Social Justice Using Math

High School Innovations from the Classroom

This session will highlight some of the cross-curricular projects in our geometry and algebra 2 classes. Our projects not only ask the students to collaborate on the math concepts at hand, but to be advocates for national & local social issues. Through these projects, we ask the students to stand in solidarity with a vulnerable community.

Anthony Lecheler

[@LechelerMath](#)

Notre Dame High School, San Jose, California

Beverly Heigre

Notre Dame High School, San Jose, California

Palma, Rio All-Suite Hotel & Casino

33

Making Math Accessible to All Students

General (K–12) Innovations from the Classroom

This session will focus on supporting students and maximizing access to mathematical understanding. Strategies will be shared on how to utilize effective questioning, engage students in productive discourse, and provide opportunities for students to develop more productive dispositions toward mathematics.

Katarzyna Maleszewska-Suarez, Ed.D.

East Hartford Public Schools, Wethersfield, Connecticut

Miranda 3-4, Rio All-Suite Hotel & Casino

Need funding for professional development? Check out grant opportunities from the **Mathematics Education Trust**. The next deadline to apply is May 5. Visit the MET area in **NCTM Central** to learn more.



34 Modeling Problem Solving “Think Aloud”

Elementary Innovations from the Classroom

Participants will learn questioning strategies to use when modeling the thinking involved in problem solving. The questioning will guide students through the thought process used to develop an understanding of how to approach word problems.

Christina Ondier
Spring ISD/Salyers Elementary, Humble, Texas

Brasilia 1, Rio All-Suite Hotel & Casino

35 Multiple Representations and Perseverance: A Tool for When the Going Gets Tough

High School Innovations from the Classroom

Getting students to create multiple representations and connect the key features of the representations is a strategy that teachers can develop in students to give them a pathway when they are stumped and don't know how to proceed. The focus will be on how different representations can help students persevere and make sense of the mathematics.

Janet Sutorius
Mathematics Vision Project, Nephi, Utah

Tropical E-H, Rio All-Suite Hotel & Casino

36 Rigorous and Accessible Tasks for All

High School Innovations from the Classroom

Identifying, creating, and facilitating worthwhile mathematical tasks for all our students are part of our duties as educators at all grade levels. Participants will engage in different types of tasks and reflect on their commonalities and differences, creating a working framework for “rigorous but accessible to all” tasks.

Greisy Winicki Landman
Cal Poly Pomona, California

Amazon HI, Rio All-Suite Hotel & Casino

37 Solving the Engagement Equation!

Elementary Innovations from the Classroom

During this session, we will get you up and moving while we show you a wealth of online math music resources, discuss ways to build and assess fact fluency, examine metacognitive strategies for problem solving, and explain how to structure your intervention programs with music and dance to allow for more engagement from your most reluctant learners!

Allison Randall
@peachteachlab
Rockdale County Public Schools, Conyers, Georgia

Amazon G, N-T, Rio All-Suite Hotel & Casino

38 The Self-Paced, Mastery-Based Classroom

High School Innovations from the Classroom

We all know our students learn at different rates, that some need more help, and that others could be moving much more quickly than we let them. The problem for many of us is that we just can't figure out how to manage that in our classrooms. How do you run a classroom where each student is working on a different thing at a different speed?

Shawna Morgan
Lander Valley High School, Wyoming
Rachel Giesmann
Mediapolis Community School District, Iowa

Amazon A-F, Rio All-Suite Hotel & Casino

39 Uncovering Student Misconceptions with Formative Assessment Probes: Grades 6–8

Middle School Innovations from the Classroom

Students come to us with misconceptions from their everyday experiences or their own interpretations of what is taught. We must surface, understand, and use these ideas to bridge between where students are to where they need to be to achieve conceptual understanding. Come explore the use of formative assessment probes to uncover student ideas!

Cheryl Tobey
@Tobey_Math
Maine Department of Education, Palermo, Maine

Amazon J-M, Rio All-Suite Hotel & Casino

1:30 P.M.—2:00 P.M.

41 INNOVATION LOUNGE

Number Sense Interventions to Build Confidence and Fluency for All Students

Middle School Lessons from Research

The Institute of Education Sciences recommends that math interventions include ten minutes of daily number sense practice. We recently conducted an action research project to determine the effects of this recommendation on our general education population. Our results show that these activities benefit all students, not just struggling learners.

Matt Hayden

Middleton-Cross Plains Area School District, Middleton, Wisconsin

Jay Larson

Middleton-Cross Plains Area School District, Middleton, Wisconsin

Lyndsey Thompson

Middleton-Cross Plains Area School District, Middleton, Wisconsin

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

41.1 ew

Get More Math—Increase Mastery & Long-Term Retention!

Middle School Exhibitor Workshop

Get More Math is a math practice app that supports initial mastery and long-term retention of skills in grades 5 through algebra 1. Written by a math teacher to address the problem of his students forgetting what they were taught, it has produced amazing results in many of its pilot schools. All teachers at this session will get a FREE one-year trial account!

Get More Math

Sonora, California

Conga, Rio All-Suite Hotel & Casino

2:00 P.M.—3:30 P.M.

42 INNOVATION LOUNGE

African Mathematical Circle

The focus of the African Mathematical Circle is a culturally relevant approach to teaching mathematics, specifically from an African/African-American perspective. Topics covered will include the Ishango Bone, the Yoruba number system, ancient Egyptian mathematics, and African games.

Kyndall Brown

University of California, Los Angeles

**TNT - Math Circles, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

2:15 P.M.—2:45 P.M.

43 INNOVATION LOUNGE

Interim Goals and Self-Efficacy

High School Lessons from Research

Many students enter high school with low self-efficacy about their ability in mathematics. This research focuses on how high school teachers can help increase efficacy in their students through promoting short-term goals in their classroom.

Hannah Oldham

Sprayberry High School/ Georgia State University, Atlanta

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

2:30 P.M.—3:45 P.M.

44

Algebraic Thinking through Pattern Tasks

High School Experiences in the Classroom

Encourage learners in algebraic reasoning by supporting productive struggle and exploring visual pattern tasks. Participants will take part in a number of activities, including solving a visual pattern task, anticipating the ways students will solve the task, and reflecting on how to aid students' learning without taking over the thinking for them.

Jose Francisco Sala Garcia

[@JoseFSala](#)

IES Santa Maria d'Eivissa, Ibiza, Spain

Brasilia 1, Rio All-Suite Hotel & Casino

45

Enhancing the Depth of Knowledge through the Use of Technology

Elementary Experiences in the Classroom

This session will focus on how to create a classroom culture where students are critical thinkers able to engage with the world through the use of technology. Participants will see how the use of technology can enhance the Depth of Knowledge in the content area of mathematics. This innovative use of technology will be modeled and shared freely.

Ismael Miranda

Victor Elementary School District, Helendale

Brasilia 2, Rio All-Suite Hotel & Casino

Thursday

46

Facilitating ELLs' Mathematics and Language Learning

Elementary Experiences in the Classroom

The session will emphasize the role of language in mathematics learning. Participants will explore mathematical tasks and language supports that provide English language learners (ELLs) with access to mathematical content and discourse, while empowering them to communicate mathematical ideas. Presenters will provide research-based tools for immediate classroom implementation.

Galina (Halla) Jmourko

[@HallaJmourko](#)

ESOL Department, Prince George's County Public Schools, Adelphi, Maryland

Rodrigo Gutierrez

University of Maryland, College Park

Amazon HI, Rio All-Suite Hotel & Casino

47

Immersing Elementary Students in Mathematical Modeling through Community-Based Service Learning

Elementary Experiences in the Classroom

This interactive session will engage participants to experience mathematical modeling as they pose problems and find solutions using mathematics to help their local community. Facilitators will share how elementary students engaged in math modeling using the mathematics they were learning to help their local community solve real-world problems.

Jennifer Suh

George Mason University, Fairfax, Virginia

Kathleen Matson

George Mason University, Fairfax, Virginia

Rachel Levy

George Mason University, Fairfax, Virginia

Marka Carson

Pomona Unified District, California

Robyn Stankiewicz

Pomona Unified District, California

Jeanette Aranda

Pomona Unified District, California

Gabriela Gamiz

Harvey Mudd College, Claremont, California

Amazon A-F, Rio All-Suite Hotel & Casino

48

Math Modeling: The Great Equalizer

High School Experiences in the Classroom

In this session, we will discuss what math modeling is and how it can be effectively used in the classroom to reach students at a variety of levels, particularly high-achieving students. Participants will first work on a modeling problem. Then different solutions, strategies for engaging students, and tips for modifying the lesson will be shared.

Cheryl Gann

North Carolina School of Science and Math, Durham

Tropical E-H, Rio All-Suite Hotel & Casino

49

Rangolee Art Integration in Elementary Math Education

Middle School Experiences in the Classroom

Rangolee designs are drawn by first drawing a dot matrix and then connecting the dots in a certain order. Participants will discover how to use rangolee art in elementary mathematics education. Activities are designed to address NCTM standards on topics such as numbers, addition and multiplication, fractions, symmetry, geometry, and algebra.

Madhuri Bapat

Eastern Arizona College, Thatcher

Palma, Rio All-Suite Hotel & Casino

50

Tensions of Teaching for Positive Mathematical Identity

High School Experiences in the Classroom

All people are mathematical, so why is it that in our classrooms some children display positive mathematical identities and others do not? In this session, we will consider teacher decision making in response to unexpected student ideas. This attention to robust mathematical identities moves beyond and problematizes a narrow focus on achievement.

Brian Lawler

[@blaw0013](#)

Kennesaw State University, Athens, Georgia

Bryan Meyer

Escondido Union High School District, California

Brasilia 4-7, Rio All-Suite Hotel & Casino

2:30 P.M.–3:45 P.M.

51

The S-Pattern: An Equitable Lesson

High School Experiences in the Classroom

Participants will solve a growing pattern problem called the S-problem. They will be led through the lesson as if they were students. Square tiles and other tools will be available to aid participants in solving the problem. Participants will discuss why the lesson is equitable for each and every student.

Marilyn Strutchens

Auburn University, Alabama

Amazon J-M, Rio All-Suite Hotel & Casino

52

Using Number Talks to Empower Student Thinking

Middle School Experiences in the Classroom

We will model how to use number talks with students at both the elementary and middle school levels. We will share examples of multiple teachers we work with and the success they have had using this in their classroom. Participants will first role-play the experience as students before having the opportunity to conduct their own number talks.

Vicki Gjovik

New Richmond, Wisconsin

Erick Hofacker

University of Wisconsin–River Falls

Kathryn Ernie

University of Wisconsin–River Falls

Tropical A-D, Rio All-Suite Hotel & Casino

Get social! Stay informed and get connected with attendees by following **#NCTMinnov8** on social media.



2:30 P.M.–3:00 P.M.

53

INNOVATION LOUNGE

Book Talk: David Stinson

David Stinson will lead a discussion around the NCTM publication *Teaching Mathematics for Social Justice: Conversations with Educators*. Book description: Educators increasingly recognize the important role that mathematics teaching plays in helping students to understand and overcome social injustice and inequality. This collection of original articles is the start of a compelling conversation among some of the leading figures in critical and social justice mathematics, a number of teachers and educators who have been inspired by them and who have inspiring stories of their own to tell—and any reader interested in the intersection of education and social justice. An important read for every educator, this book shows how to teach mathematics so that all students are given the tools they need to confront issues of social justice today and in the future.

David Stinson

Georgia State University, Atlanta, Georgia

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

2:30 P.M.–3:45 P.M.

54

Considering Students' Mathematical Ideas to Advance Equity and Access

Middle School Views of the Classroom

In this session, I will describe the importance of diverse students having time and support to learn challenging mathematics. Videos of my students solving problems will be shown. Participants will have opportunities to discuss the videos with regard to specific practices related to equity and student access to challenging mathematical concepts.

Richard Kitchen

University of Wyoming, Laramie

Miranda 1-2, Rio All-Suite Hotel & Casino

Thursday

2:30 P.M.–3:45 P.M.

55 Effective Teaching Practices Promoting Equity

High School Views of the Classroom

Come participate in instructional coaching that promotes equity and quality mathematics for each and every student. In this session, we will run through a coaching cycle and have a shared observation of a classroom episode. During the pre- and post-observation sessions, coaching for equity, access, and empowerment will be modeled.

Travis Lemon

MVP, Lehi, Utah

Joleigh Honey

USBE, Salt Lake City, Utah

Miranda 5-6, Rio All-Suite Hotel & Casino

56 Engaging Students Takes Practice(s)!

Elementary Views of the Classroom

What does instruction look like when math content and the mathematical practices are well integrated? Through engaging in the practices, students develop persistence and a positive disposition toward mathematics. Come see clips from classrooms where practices are intentionally integrated into instruction and students are deeply considering math!

Katherine Arrington

Charles A. Dana Center, University of Texas at Austin

Brian Newsom

Charles A. Dana Center, University of Texas at Austin

Miranda 7-8, Rio All-Suite Hotel & Casino

2:30 P.M.–3:45 P.M.

57 Language Level Matters! Matching Effective Strategies for ELLs

Views of the Classroom

Have you ever tried to solve a problem you couldn't completely read and understand? Well, join us as we use three cognitively demanding math tasks to situate you in the shoes of English language learners (ELLs) at high, intermediate, and beginner levels of English proficiency. These tasks will be followed by a discussion on the similarities and difference of strategies across English proficiency levels, to better understand how to help English language learners make sense of mathematics.

Ricardo Martinez

Iowa State University, Ames

Ji-Yeong I

Iowa State University, Ames

Miranda 3-4, Rio All-Suite Hotel & Casino

58 Teaching Practices for Engaging Latina/o Students with Rigorous Problem Solving

Elementary Views of the Classroom

This session draws from kindergarten video clips to illustrate teaching practices that support Latina/o students in accessing rigorous mathematics problems. Participants will discuss ways to create a mathematics discourse community in their classrooms that engages all students in learning mathematics using assets-based teaching practices.

Sylvia Celedon-Pattichis

University of New Mexico, Albuquerque, New Mexico

Amazon G, N-T, Rio All-Suite Hotel & Casino

58.1 Rethinking Expressions and Equations: Implications for Teachers

Middle School Exhibitor Workshop

An interactive discussion will focus on a technology-leveraged approach for teaching that brings coherence across grades for content that is tough to teach and tough to learn. The session will consider the shifts necessary to develop real understanding of this content, the research behind the shifts, and teachers' role in carrying out these shifts.

Texas Instruments

Dallas, Texas

Conga, Rio All-Suite Hotel & Casino

Thursday

59 INNOVATION LOUNGE**Book Signing: David Stinson**

Meet and greet David Stinson, one of the editors on the book *Teaching Mathematics for Social Justice: Conversations with Educators*. David will be available to sign your copies of the book and/or answer questions about the book.

David Stinson

Georgia State University, Atlanta, Georgia

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

60 INNOVATION LOUNGE**Healing the Mind and Body by a Fellow Educator: An Introduction to Nature's Medicine—Ayurveda**

The role the doshas (body energy types) play is a dynamic one, constantly changing in response to weather, conditions, and stress. Come join a fellow mathematician and discover your dosha. I will guide you to making adjustments in your life based on your dosha. Create a healthier and more balanced you!

John Reynolds

Math Teacher and Wellness Educator, Las Vegas, Nevada

**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Hear what's new from exhibitors—
attend an **exhibitor workshop**.

Look for the **ew** symbol
throughout the program book.

**Innov8 Bar 3**

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

61 INNOVATION LOUNGE**Marcy Wood – Culture and Language**

Marcy Wood is an associate professor at the University of Arizona. Her interests are supporting unsuccessful elementary students in finding their mathematical strengths. She is one of the authors of the book, *Smarter Together! Collaboration and Equity in the Elementary Math Classroom*, which focuses on using Complex Instruction to create a productive and collaborative environment for learning mathematics. Marcy has presented at several NCTM conferences and enjoys working with teachers to help each of their students enjoy math.

Marcy Wood

University of Arizona, Tucson

Dorothy White – Instructional Practices

Dorothy Y. White is an associate professor of mathematics education in the College of Education at the University of Georgia. Her research focuses on equity and culture in mathematics education by examining ways to: prepare mathematics teachers of diverse student populations, build and support teacher learning communities, and develop models of collaborative mathematics planning. As a mathematics teacher educator, she infuses her research into her undergraduate and graduate courses for preservice and in-service teachers. She also provides professional development to teachers in pre-K–8.

Dorothy White

University of Georgia, Athens

**Innov8 Bar, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

3:00 P.M.—3:30 P.M.

62 INNOVATION LOUNGE

Twitter/Blog Talk 2

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Theodore Chao
Ohio State University, Columbus

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

63 INNOVATION LOUNGE

Online Olympiad: Mistakes Speak Up Middle School Lessons from Research

An online Olympiad provided us with data regarding the types of mistakes that students of different level of performance make. We found that students differ not only in the number of their mistakes but also by in types of these mistakes. We will share both findings and our suggestions on how to help students develop problem-solving techniques.

Nina Dubinsky
Russian School of Mathematics, Newton, Massachusetts
Maryna Yeroshkina
Russian School of Mathematics, Newton, Massachusetts
Kate Ergasheva
Russian School of Mathematics, Newton, Massachusetts

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

4:00 P.M.—5:00 P.M.

64
**Black (Math) Lives Matter Too:
Liberating Mathematics Teaching from
Itself**

Focus on the Students

We can create communities of competent, creative, and engaged black students of mathematics when we are more honest about the four prevailing forces that have held back mathematics teachers, leaders, and reformers from being more successful. In this presentation, participants examine and challenge persistent racist and cultural limitations that prevent education from using mathematics to improve their own lives and the lives of black students and their communities. Participants will have the opportunity to challenge the structural barriers from their own stories and the limiting messages that propel existing reform efforts globally. Participants will focus on how black communities can be better and more positively engaged in ways that inspire black children and their families, teachers, and leaders.

Lou Matthews
Bermuda Public Schools, St David

Tropical E-H, Rio All-Suite Hotel & Casino

65
Making Students Matter

General (K–12) Focus on the Students

Too often, lessons or activities fail to address the contexts of students from low-SES backgrounds or projects fail to reach them. This session explores how to send the message “you matter” to students as a means to engage all learners no matter their background. Participants will reflect on challenging questions and examine tools for their own practice.

Tracie McLemore Salinas
Appalachian State University, Boone, North Carolina

Amazon G, N-T, Rio All-Suite Hotel & Casino

**The NCTM Annual Meeting &
Exposition is coming up!**

Washington D.C. | April 25–28, 2018
nctm.org/annual



4:00 P.M.–5:00 P.M.

66

Teacher and Parent Data Teams

Elementary Focus on the Students

Looking for meaningful ways to engage parents? In this session, you will become part of a parent-teacher team—a yearlong process of empowering parents to look at data, set goals, and work on foundational skills with their children. Participants will leave with new skills for meeting Title I and school goals for effectively engaging families.

Sherry Ayala

Chandler Unified School District, Chandler, Arizona

Amy Spilde

Chandler Unified School District, Chandler, Arizona

Amazon HI, Rio All-Suite Hotel & Casino

67

The Tale of the Engaged Learner

General (K–12) Focus on the Students

We need to engage students in learning in ways that spark their interest and create a burning desire that continues throughout their lives. Stories engage us in their themes and lessons. The techniques presented in this session can create learner involvement as well as encouraging deep learning, thoughtful reflection, and boisterous engagement.

Loran McEvoy

[@loranmcevoy](#)

Consultant, Fort Worth, Texas

Amazon A-F, Rio All-Suite Hotel & Casino

68

Tiers without Tears in Math

High School Focus on the Students

Response to Intervention (RTI) and Multi-Tiered System of Supports (MTSS) are acronyms used in schools every day. Providing reading interventions seems to come natural for teachers. But what about math interventions? In this session, the presenters will focus on RTI specifically for mathematics, including assessments and instructional strategies.

Jarrold Slone

Kentucky Department of Education, Frankfort

Pamela Pickens

Kentucky Department of Education, Shelbyville

Lori Shephard

Kentucky Department of Education, Shelbyville

Tropical A-D, Rio All-Suite Hotel & Casino

69

Working with Gifted Elementary Students

Elementary Focus on the Students

Fair is fair. Too often gifted students are overlooked in elementary mathematics classrooms. This session will provide resources and strategies for meeting the needs of those students who already understand the concept being taught, or who catch on after one class or activity. The focus is on enrichment of the curriculum as well as differentiation.

Rita Barger

University of Missouri-Kansas City

Amazon J-M, Rio All-Suite Hotel & Casino

4:00 P.M.–4:30 P.M.

70

INNOVATION LOUNGE

Book Talk: Cheryl Gann

Cheryl Gann will lead a discussion around chapter 9 (“Moving Students from Remembering to Thinking: The Power of Mathematical Modeling”) in the NCTM publication *2016 Annual Perspectives in Mathematics Education: Mathematical Modeling and Modeling Mathematics*. In this chapter, examples of how mathematical modeling activities can have a powerful effect on student attitudes about mathematics and about themselves as learners of mathematics are shared. Also included are a selection of modeling problems with student comments, and examples of different levels of scaffolding appropriate if a modeling problem appears early or late in the students’ mathematical development.

Cheryl Gann

North Carolina School of Science and Mathematics, Durham

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Thursday

4:00 P.M.—4:30 P.M.

71 INNOVATION LOUNGE

Supporting Special Educators: A Professional Development Model

Elementary Lessons from Research

Come learn about an innovative professional development and coaching program for special educators designed around the recommendations from the IES Practice Guide: Assisting Students Struggling with Mathematics. Leave with examples of tools used in the program to support educators as they teach mathematics to special education students.

Nancy Lander

Maine Department of Education (Auburn School Department)

Cheryl Tobey

Maine Department of Education, Palermo

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

4:00 P.M.—5:00 P.M.

72

Breaking Barriers: Redefining College Readiness

High School Professionals as Advocates

As more students access higher education as a path to upward mobility, they encounter policies and practices that prevent them from achieving their goals. What are these policies and practices? What strategies can we enact before students graduate high school to ensure that they are able to succeed on their chosen paths?

Kathi Cook

[@UTDCKathi](#)

Charles A. Dana Center, University of Texas at Austin

Katherine Arrington

Charles A. Dana Center, University of Texas at Austin

Miranda 5-6, Rio All-Suite Hotel & Casino

73

Creating a Multiplier Effect with Coaches and Teachers: Accessing Ambitious Math Instruction

Elementary Professionals as Advocates

Coaches and teachers can create a multiplier effect in our school and be our most impactful change agents to provide high-quality mathematics for all students. Facilitators will engage participants and school teams to work through a professional development model that promoted culturally responsive mathematics teaching (CRMT) through problem solving and math discourse.

Jennifer Suh

George Mason University, Fairfax, Virginia

Sara Birkhead

George Mason University, Fairfax, Virginia

Padhu Seshaiyer

George Mason University, Fairfax, Virginia

Brasilia 4-7, Rio All-Suite Hotel & Casino

74

Creating Opportunities for Voice & Agency

Middle School Professionals as Advocates

How can we create social justice lessons that keep math at the forefront and still provide opportunities for student voice and agency? Participants will analyze a lesson that focuses on systems of linear equations and employs student voice and agency to change their community. We will address the pitfalls of reinforcing stereotypes and negativity.

Laurie Speranzo

[@LaurieSperanzo](#)

Institute for Learning, Quincy, Massachusetts

Victoria Bill

Institute for Learning, Pittsburgh, Pennsylvania

Miranda 7-8, Rio All-Suite Hotel & Casino

75

Data Teams: Teachers Driving Equity

Elementary Professionals as Advocates

This workshop is designed to help teachers, schools, and districts establish, grow, and maintain a culture of inquiry and data use that can inform decisions impacting teaching and learning and that can ultimately improve the achievement of all students by connecting data to the everyday reality of the classroom and the improvement of teaching and learning.

Chinita Allen

[@chinitaallen](#)

Chinita Allen Education and Advocacy Consulting, Marietta, Georgia

Miranda 1-2, Rio All-Suite Hotel & Casino

76

Everything You've Ever Wanted to Know about MET Grants and Scholarships But Were Afraid to Ask

General Interest Session

This session will inform participants about what grants and scholarships are available from the Mathematics Education Trust (MET) and how to apply. It will also provide some tips for choosing the most appropriate award for you, and for enhancing your chances of getting it. MET supports teachers with funds for materials, lesson development, conferences, coursework, professional development, technology in-service, and action research.

Ralph Connelly
Trustee, MET Board of Trustees

Brasilia 2, Rio All-Suite Hotel & Casino

78

Slaying the College Remediation Dragon

High School Professionals as Advocates

Looking for an innovative way to lower college math remediation rates? Through the California Academic Partnership Program, Solano Community College and MIT Academy have produced amazing results, eliminating math remediation for almost all college-going students, and you can replicate the process. Join us for this engaging and informative session.

Lynne Vaughan
MIT Academy, Vallejo, California

Kelly Penwell
Solano Community College, Fairfield, California

Lilia Tanakeyowma
Solano Community College, Fairfield, California

Palma, Rio All-Suite Hotel & Casino

79

Teaching Mathematics Equitably to All!

Elementary Professionals as Advocates

Connect with classroom cultures! Explore beyond the visible factors of diversity to focus on developing a classroom culture of equity to maximize the mathematical learning potential of ALL students! This interactive session will explore factors that create a culturally responsive teaching environment to enhance mathematical achievement.

Diana Yesbeck
Randolph-Macon College, Ashland, Virginia

Brasilia 1, Rio All-Suite Hotel & Casino

80

The Math Student in You

Middle School Professionals as Advocates

See yourself in your students. What kind of quality mathematics would you want? This session provides participants with the opportunity to network with teachers from varied, diverse backgrounds. Individuals or teams will develop an action plan for classroom policies, procedures, or situations for systematically disadvantaged students.

Craig Dierking
Blue Springs R-IV School District, Missouri
Virginia Hogan
Blue Springs R-IV School District, Missouri
Ashley Stoffregen
Blue Springs R-IV School District, Missouri

Miranda 3-4, Rio All-Suite Hotel & Casino

80.1

ew

Centers

Elementary Exhibitor Workshop

Simple centers—seriously? Preparation, classroom management, and differentiation—all can make using centers a challenge. Come learn new strategies and share ideas to make center learning meaningful for students and realistic for the teacher. See new tools from ETA hand2mind to engage your students. Get free manipulatives that you can use now!

ETA hand2mind
Vernon Hills, Illinois

Conga, Rio All-Suite Hotel & Casino

Visit **NCTM Central**—renew your membership, learn about grant opportunities, and shop for the latest titles at the **Bookstore**.



4:15 P.M.–5:25 P.M.

Innov8 Bar 4

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

81 INNOVATION LOUNGE

Halla Jmourko – Culture and Language

Halla Jmourko is an ESOL (English for Speakers of Other Languages) instructional coach in Prince George's County Public Schools, Maryland. Halla's primary professional engagements are focused on advocacy for children coming from diverse cultural and linguistic backgrounds. What began as a personal experience as a parent of an ESOL student became a professional investigation about the role of language in mathematics and a commitment to supporting English language learners (ELLs) in mathematics. She designs professional development opportunities, creates language-based instructional tools, and implements a variety of coaching structures to support mainstream and ESOL teachers of English learners across content areas, but particularly in mathematics. Over the years, Halla has been working with the Center for Mathematics Education at the University of Maryland to support university-district outreach efforts; she is currently co-teaching a course on middle school mathematics instruction for ELLs.

Halla Jmourko
Prince George's County Public Schools, Maryland

Rodrigo Gutierrez – Instructional Practices

Rodrigo Jorge Gutiérrez is the co-director of the Center for Recruitment and Retention of Mathematics Teachers at the University of Arizona. His professional interests lie at the intersection of teacher development, mathematics education, and teaching for social justice, paying particular attention to Latinx and emergent bilinguals. He is actively involved in various professional development initiatives, including induction support for novice teachers and efforts aimed at improving mathematics instruction for ELLs. Previously, Rodrigo was a fellow with the Center for the Mathematics Education of Latinas/os (CEMELA) at the University of Arizona, where his dissertation study examined the implementation of Critical Mathematics in an urban high school's precalculus course.

Rodrigo Jorge Gutiérrez
University of Arizona, Tucson

Lee Stiff – Instructional Practices

Lee Stiff is a professor of mathematics education and an associate member of the math department at North Carolina State University. He is a past president of the National Council of Teachers of Mathematics. He has taught courses in mathematics and mathematics education, including uses of technology in teaching mathematics, and the mathematics education of African American children. Dr. Stiff's research and other professional activities have focused on teaching strategies, problem solving, the mathematics education of African American children, and uses of instructional technologies in mathematics teaching. His research methodologies include experimental design, surveys and interviews, and classroom-based investigations.

Lee Stiff
Past President, National Council of Teachers of Mathematics;
North Carolina State University, Raleigh, North Carolina

**Innov8 Bar, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

4:30 P.M.–5:30 P.M.

82 INNOVATION LOUNGE

Power of Perception: A Look into the Power of Mindset

Perception is merely an idea, a thought that is malleable. Let's look at how we can view the world around us and the experiences in our life through a different lens. Can our perception change and affect the outcome of events in our lives? Come join the group as we find out.

Scott Amberson
Wellness Educator, Las Vegas, Nevada

**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Thursday

4:45 P.M.—5:15 P.M.

83 INNOVATION LOUNGE

Book Talk: Dorothy White

Dorothy White will lead a discussion around the NCTM publication *Mathematics for Every Student, Responding to Diversity, Pre-K–Grade 5*. Book Description: Guided by the views of Principles and Standards for School Mathematics, NCTM has created a new three-book series designed to help teachers support high-quality mathematics learning for diverse student populations in the classroom. The articles in the pre-K–5 book demonstrates how connecting real-life activities with mathematical concepts, and building on students’ knowledge and experiences, can help them excel in the classroom. Strategies that can immediately be implemented to help students form better connections with the content they are studying are also described.

Dorothy White

University of Georgia, Athens, Georgia

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

84 INNOVATION LOUNGE

Restorative Circles to Promote Equity

High School Lessons from Research

Fostering meaningful mathematics discourse is an important part of a successful math classroom, but fostering an atmosphere where everyone feels comfortable to share their justifications is critical to the success of that discourse. We discuss the role of Restorative Circles in supporting students to meaningfully engage in math discussions.

Mike Steele

[@mdsteele47](#)

University of Wisconsin–Milwaukee

Cori Moran

Milwaukee Public Schools, Wisconsin

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

5:00 P.M.—5:30 P.M.

85 INNOVATION LOUNGE

Twitter/Blog Talk 3

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Levi Patrick

Oklahoma Department of Education, Oklahoma City

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**



Thursday

Build Your Professional Resource Library with Books from NCTM

SAVE 25%! Conference attendees receive a **25% discount** off the NCTM list price on all purchases made in the Bookstore, including special products!*

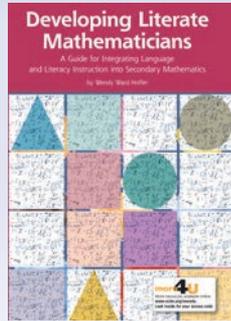
MATH IS ALL AROUND US

Developing Literate Mathematicians: A Guide for Integrating Language and Literacy Instruction into Secondary Mathematics

BY WENDY WARD HOFFER

How can we integrate literacy instruction authentically into mathematics content to support mathematical understanding? Busy secondary mathematics teachers who seek to respond to the needs of their students and the demands of the Common Core State Standards will welcome this book, which offers lively classroom examples, usable research, and specific ideas and resources. Enrich your students' understanding of mathematics by attending to reading, vocabulary, discourse, and writing through a workshop model.

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Putting Essential Understanding of Geometry and Measurement into Practice in Grades 3–5

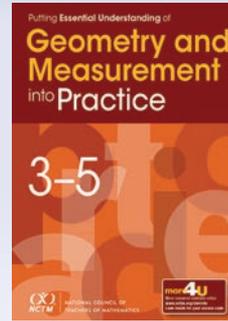
BY KATHRYN CHVAL, JOHN LANNIN, AND DUSTY JONES

KATHRYN CHVAL, VOLUME EDITOR

BARBARA J. DOUGHERTY, SERIES EDITOR

Do your students have “concept images” that limit their ideas of shapes to specific examples, oriented in particular ways? Do they confuse the size of an angle with the length of the rays in a drawing of an angle? This book demonstrates how to use multifaceted knowledge to address the big ideas and essential understandings that students must develop for success with geometry and measurement—not only in their current work, but also in higher-level mathematics and a myriad of real-world contexts.

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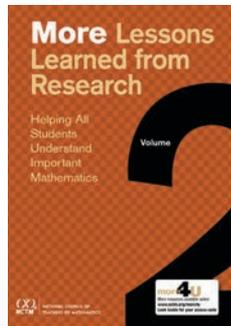
More Lessons Learned from Research, Volume 2: Helping All Students Understand Important Mathematics

EDITED BY EDWARD A. SILVER AND PATRICIA ANN KENNEY

Applying research to strengthen teaching practice and ensure students' success in mathematics

More than seventy years of research point to the importance of teaching mathematics for understanding. Successful students actively construct understanding rather than passively receive knowledge. Implications of this fundamental lesson from research are explored in different ways through twenty-four chapters presented in this book. Chapters cover investigations of a wide range of topics, approaches, and settings, and mathematics teachers at all levels will find examples of research that are relevant to the challenges they face.

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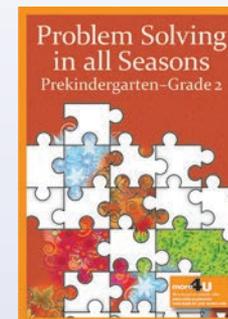


Problem Solving in All Seasons, Grades 3–5

BY KIM MARKWORTH, JENNI MCCOOL, AND JENNIFER KOSIAK

Holidays and seasonal activities offer perfect backdrops for mathematical tasks that can be related to other topics and themes in the classroom. This book delivers thirty-six appealing, real-world mathematical tasks, arranged in grade-level order, to engage young learners in problems tied to the Common Core and designed to allow children to participate in the Common Core Standards for Mathematical Practice. Each task includes a complete implementation guide, and handouts and ancillary materials can be accessed online. This is your all-in-one practical handbook for problem solving in the primary years.

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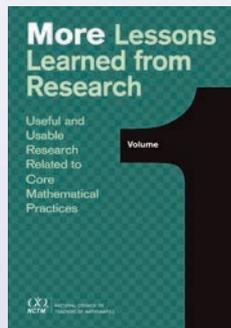


DON'T MISS! More Lessons Learned from Research, Volume 1

EDITED BY EDWARD A. SILVER

Helps to link classroom teachers to all that original research has to offer

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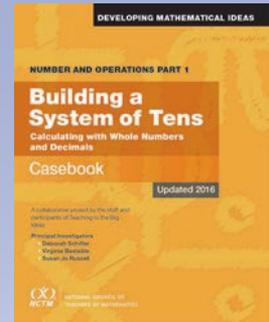


DON'T MISS! Problem Solving in All Seasons, Pre-K–Grade 2

BY KIM MARKWORTH, JENNI MCCOOL, AND JENNIFER KOSIAK

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ADDITIONAL NEW TITLES

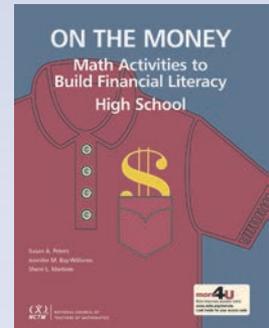


Developing Mathematical Ideas: Building a System of Tens, Casebook and Facilitators Guide

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On the Money: Math Activities to Build Financial Literacy in High School

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Annual Perspectives in Mathematics Education 2016

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Discovering Lessons for the Common Core Standards in Grades 9–12

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Thursday 8:00 a.m. – 5:00 p.m.
Friday 8:00 a.m. – 2:00 p.m.



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HIGHLIGHTS

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Breaking Barriers: Mexican-American Mothers as Partners in Mathematics Education, 87

Exploring Teacher Identity as a Way to Promote Identity, Access, and Empowerment, 88

All Politics Is Local: Advocating for and Implementing Equitable Practices in Your Setting, 89

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REGISTRATION HOURS

7:00 a.m.–12:00 p.m.

EXHIBIT & INNOVATION LOUNGE HOURS

9:00 a.m.–4:00 p.m.

NCTM CENTRAL HOURS

9:00 a.m.–4:00 p.m.

FIRE CODES

We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the room.



8:00 A.M.—4:00 P.M.

86 Micromessaging to Reach and Teach Every Student

Administrator Session

PRE-REGISTRATION IS REQUIRED. Micromessages are small, subtle, often unconscious messages we send and receive in the form of word choice, gesture, treatment, or even tone of voice. These messages can be either positive (micro-affirmations) or negative (micro-inequities). Without awareness, educators, parents, other adults, and even peers may inadvertently send micro-inequities that discourage students from engaging in courses, and ultimately careers. This is particularly salient in science, technology, engineering, and math (STEM) fields. NAPE has developed a research-based professional development program designed to employ the power of micromessages to improve classroom pedagogy and increase the enrollment, retention, performance, and completion of underrepresented students in nontraditional and STEM careers. Aligned to 2011 Learning Forward professional development standards, the Micromessaging to Reach and Teach Every Student workshop empowers educators, educational administrators and school leaders to expand access and create equitable learning environments for every student.

Dr. Meagan Pollocic

National Alliance for Partnerships in Equity (NAPE)

Brasilia 1, Rio All-Suite Hotel & Casino

8:00 A.M.—9:15 A.M.

87 Breaking Barriers: Mexican-American Mothers as Partners in Mathematics Education

Keynote

This presentation draws on over two decades of work with parents and mathematics education. Focusing on the concept of parents as intellectual resources, we will explore how to learn from and with parents to develop stronger mathematical connections between home and school. In particular, the focus will be on the voices of immigrant mothers as they talk about their own experiences with mathematics as well as that of their children.

Marta Civil

University of Arizona, Tucson

Brasilia 4-7, Rio All-Suite Hotel & Casino

88

Exploring Teacher Identity as a Way to Promote Identity, Access, and Empowerment

Keynote

As teachers support students in developing positive mathematics identities, it is important that they explore and interrogate their own identities. In this keynote address, we will discuss how teachers' exploration of their identities has implications for their students' opportunities to learn and their development of agency and empowerment.

Toya Jones Frank

George Mason University, Fairfax, Virginia

Amazon G, N-T, Rio All-Suite Hotel & Casino

89

All Politics Is Local: Advocating for and Implementing Equitable Practices in Your Setting

Keynote

This session will address effective strategies for successfully advocating to change school policies that stand as barriers to providing students access to high-quality mathematics instruction. The experience of one school district that eliminated low-level mathematics courses and implemented timely and targeted learning supports will be discussed.

Matthew Larson

President, National Council of Teachers of Mathematics, Reston, Virginia; Lincoln Public Schools, Nebraska

Denise Spangler

Board of Directors, National Council of Teachers of Mathematics, Reston, Virginia; University of Georgia, Athens

Amazon A-F, Rio All-Suite Hotel & Casino

Friday

90 INNOVATION LOUNGE**7 Days of Lessons to Reduce Stress**

Reducing stress can seem like an overwhelming task. Learn 21 easy-to-follow steps that you can spread out over seven days. Working toward staying in the present moment, letting go, and finding the path of least resistance. No hippie woo woo, just pure simple steps everyone can follow. Based upon Deepak Chopra's book *The Seven Spiritual Laws of Success*.

Samantha Delory

Wellness Expert and Owner of Yoga Desires, Las Vegas, Nevada
**Wellness Workshops, Innovation Lounge Pavilion,
 Rio All-Suite Hotel & Casino**

91 INNOVATION LOUNGE**Article Talk: Crystal A. Kalinec-Craig**

Crystal A. Kalinec-Craig will lead a discussion around the *Journal of Mathematics Education and Connections* article "Uncovering the Mathematical Challenges and Connections When Using Mariachi Music as a Representation for Teaching Equivalent Fractions." The article describes an exploratory phenomenological case study about the experiences of a third-grade mathematics teacher as she collaborated with a mariachi musician to teach equivalent fractions through mariachi music.

Crystal Kalinec-Craig

University of Texas at San Antonio

**Hangout, Innovation Lounge Pavilion,
 Rio All-Suite Hotel & Casino**

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NEW SERIES | Taking Action

MARGARET SMITH, SERIES EDITOR

NCTM's newest series builds on the practice-based approach and eight effective mathematics teaching practices presented in *Principles to Actions* (2014) and the subsequent *Principles to Actions* toolkit (nctm.org/ptatoolkit/).

The Taking Action series includes three grade-band books: K–grade 5, grades 6–8, and grades 9–12. Each book presents a coherent set of professional learning experiences, with the specific goal of fostering teachers' development of the effective mathematics teaching practices. The books also give connections to resources in research and equity, with special attention given to issues of equity, access, and identity.

NEW | Taking Action: Implementing Effective Mathematics Teaching Practices in K–Grade 5

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 BILL, AND MARGARET SMITH

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 FREDERICK DILLON, MARGARET
 SMITH, AND STEPHEN MILLER

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Innov8 Bar 5

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

92 INNOVATION LOUNGE

Marilyn Strutchens – Instructional Practices

Marilyn Strutchens is an Emily R. and Gerald S. Leischuck Endowed Professor, Mildred Cheshire Fraley Distinguished Professor, and coordinator of secondary mathematics education at Auburn University. Her research focuses on equity issues, clinical experiences for secondary teacher candidates, and teacher change in mathematics education. She is an NCTM Board member, an Advisory Committee Member of the National Science Foundation’s Directorate for Education and Human Resource, Advisory Board Member for the AAAS initiative Stimulating Research and Innovation in STEM Teacher Preservice Education, funded by the NSF Robert Noyce Teacher Scholarships Program. She is a past president of the Association of Mathematics Teacher Educators.

Marilyn Strutchens
Auburn University, Alabama

David Stinson – Advocacy

David W. Stinson’s research interests, broadly speaking, are twofold: critical postmodern theory and identity. He explores how mathematics teachers, educators, and researchers (might) incorporate the philosophical and theoretical underpinnings of critical postmodern theory into their education philosophies, pedagogical practices, and/or research methods. Additionally, he examines (and theorizes) how students who are constructed outside the white, Christian, heterosexual male of bourgeois privilege successfully accommodate, reconfigure, or resist (i.e., negotiate) the hegemonic discourses of society generally and schooling specifically, including those found in the mathematics classroom.

David Stinson
Georgia State University, Atlanta

Julia Aguirre – Culture and Language

Julia Aguirre’s scholarship and professional development work focus on mathematics teaching and learning, teacher education, and culturally responsive mathematics instruction. Her work investigates how children’s mathematical thinking and community/cultural funds of knowledge, language, and power inform the development of teaching knowledge, beliefs, and practice. She is committed to preparing a new generation of elementary and secondary teachers with knowledge and skills to teach rich and rigorous mathematics and engage families and communities to support mathematics teaching and learning. Her goals are to mathematically empower youth, families/communities, and teachers to strengthen K–12 mathematics education access, performance, and advancement, especially for those historically underrepresented in STEM fields (Science, Technology, Engineering and Mathematics).

Julia Aguirre
University of Washington, Tacoma

93 INNOVATION LOUNGE

Twitter/Blog Talk 4

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Theodore Chao
Ohio State University, Columbus

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

94 INNOVATION LOUNGE

Translanguaging in the Mathematics Classroom

Elementary Lessons from Research

We share our findings of mathematical learning in a second-grade dual language classroom where students and teachers are using translanguaging practices. These practices, which can be used in classrooms with emergent bilingual students, build a space where students’ full linguistic repertoires enable deep mathematical understanding. Come to aprender!

Luz Maldonado

[@Luz_BilngMathEd](#)

Texas State University, San Marcos

Gladys Krause

University of Texas at Austin

Melissa Adams

University of Texas at Austin

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

95 Differentiating Mathematics for Economically Disadvantaged Students: Strategies and Activities

Elementary Focus on the Students

Because a solid understanding of operation sense is essential for developing reasoning and computational skills, economically disadvantaged students often struggle with conceptual learning. This session will focus on how to differentiate mathematics instruction for teaching basic operations explicitly to elementary school students who are at risk.

Jennifer Bond

Ferguson-Florissant School District, Saint Louis, Missouri

Joseph Sencibaugh

Webster University, Saint Louis, Missouri

Tropical A-D, Rio All-Suite Hotel & Casino

96 Engaging Families beyond Flash Cards

Elementary Focus on the Students

Reciprocal partnerships between home and school are vital in breaking down institutional barriers. Offering Family Math Night Fundamental games for parents and students helps parents to understand that aptitude for math isn’t predetermined, supports high-quality mathematics, and encourages growth mindset mathematics.

Andrea Kotowski

[@ORIGOAPS](#)

Origo Education, Placitas, New Mexico

Palma, Rio All-Suite Hotel & Casino

97 Project-Based Learning and Mathematics

Elementary Focus on the Students

Project-based learning (PBL) can motivate students through the use of real and authentic problems. This workshop provides participants with the skills and knowledge needed to design, assess, and manage a rigorous, relevant, and standards-based project. The workshop models the project process.

Chinita Allen

[@chinitaallen](#)

Chinita Allen Education and Advocacy Consulting, Marietta, Georgia

Amazon J-M, Rio All-Suite Hotel & Casino

98 RTI: Growth Mindset, Standards, and Personalized Learning

General (K–12) Focus on the Students

Our district faced a challenge: How do we identify struggling students, determine their individual needs, and motivate them to succeed? Our solution blends standards, the latest research on growth mindset, and personalized learning within an RTI framework. You will learn how to use the tools we developed and customize them to fit your needs.

Jay Larson

Middleton-Cross Plains Area School District, Middleton, Wisconsin

Matt Hayden

Middleton-Cross Plains Area School District, Middleton, Wisconsin

Lyndsey Thompson

Middleton-Cross Plains Area School District, Middleton, Wisconsin

Tropical E-H, Rio All-Suite Hotel & Casino



99

The Power of Math Messages

General (K–12) Focus on the Students

Subtle (and not so subtle) messages about what mathematics is and what it means to inundate students daily and have a profound impact on their future. Scenarios will be presented where students' mathematical identities, status, and sense-making abilities were challenged, and discussion will be encouraged on supporting alternative realities.

Maggie Hackett

Sunnyside Unified School District, Tucson, Arizona

Amazon HI, Rio All-Suite Hotel & Casino

100

Beyond Pyramids: Math from Egypt

Middle School Professionals as Advocates

In this session, teachers will learn how our school adapted our America-centric textbook (problems involving dollars, quarters, nickles, etc.) to be more applicable and compelling to international students. Techniques included cultural awareness, student leadership, and high-level math thinking to create meaningful learning opportunities.

Sarah Martin

 @semartin1001

Schutz American School, Alexandria, Egypt

Miranda 5-6, Rio All-Suite Hotel & Casino

101

From Stale to Stimulating: Changing the Game through Formative Assessment

Professionals as Advocates

Formative assessment is understood to be a dynamic tool for educators, but to what degree are the students in your classroom engaging with these experiences? Learn how to work with your students to design and implement high-quality experiences in mathematics while fostering positive relationships with them.

Brea Ratliff

Southern Methodist University, Dallas, Texas

Miranda 7-8, Rio All-Suite Hotel & Casino

102

Prioritizing Standards, Writing Proficiency Scales, and Standards-Based Grading

High School Professionals as Advocates

Are you frustrated with the grades you're giving? Tired of wondering if your students really know the math concepts and unsure what to tell their parents at conferences? This session will shift the focus of grades from a weighted average of scores earned on various assignments to a measure of mastery of individual learning targets related to the content of the course.

Shawna Morgan

Lander Valley High School, Wyoming

Rachel Giesmann

Mediapolis High School, Iowa

Miranda 1-2, Rio All-Suite Hotel & Casino

103

Rehumanizing Mathematics: A Vision for the Future

Professionals as Advocates

In this session, Dr. Gutiérrez will reorient the audience away from a long-established "equity" standpoint toward reframing the goal as rehumanizing mathematics. In particular, she will highlight 1) what may constitute dehumanizing practices/experiences in mathematics classrooms and 2) what can be done so that students and teachers are provided with both windows and mirrors onto the world and ways of relating to each other with dignity through mathematics. Specific examples of what one might look for in a rehumanized mathematics classroom will be provided.

Rochelle Gutiérrez

University of Illinois at Urbana-Champaign

Brasilia 4-7, Rio All-Suite Hotel & Casino

9:45 A.M.–10:45 A.M.

104

Removing Obstacles (Seen and Unseen)

Elementary Professionals as Advocates

This session draws upon the case of an urban school to examine the multiple factors that shape equity in mathematics. Some of these factors are easily recognizable; others are not as obvious. In considering opportunities for advocacy, this session will engage participants in exploration of the obstacles to equity that are both seen and unseen.

Celia Anderson

University of Memphis, Tennessee

Miranda 3-4, Rio All-Suite Hotel & Casino

105

Breaking the Cycle of Deficit Thinking

Professionals as Advocates

What happens when educators believe that their students can achieve beyond the expectations of ethnic/cultural or gender stereotypes? Their students begin to believe it too! The Solano School District in southern New Mexico created the conditions for mathematics success for all their K–8 students by overcoming institutionalized mindsets that reinforced the stereotypes of Mexican and Mexican American children as poor problem solvers. The consistent progress that Solano has made over the last ten years provides valuable lessons on what it means to believe that ALL students are capable of being successful high-achieving mathematicians.

Rocío Benedicto

New Mexico State University, Las Cruces

Brasilia 2, Rio All-Suite Hotel & Casino

106

Mathematics, Common Core, and Language

Elementary Views of the Classroom

This session presents and illustrates research-based recommendations for math instruction for English language learners aligned with the Common Core State Standards. The first part summarizes research on effective mathematics teaching for ELLs. The second part illustrates recommendations for supporting mathematical reasoning for ELLs in elementary classrooms with a classroom vignette.

Judit Moschkovich

University of California, Santa Cruz

Amazon G, N-T, Rio All-Suite Hotel & Casino

106.1 **ew**

Using Coding to Explore Algebra and Geometry

High School Exhibitor Workshop

Coding is a skill that is in high demand. But did you know it can also improve computational thinking when applied to math problems? See how to promote critical thinking and boost engagement by using programming in your algebra and geometry classes.

Texas Instruments

Dallas, Texas

Conga, Rio All-Suite Hotel & Casino

106.2 **ew**

Hands-On Learning: It's Easy with the Right Tools

Elementary Exhibitor Workshop

Do your K–5 students struggle with math fluency and with solving complex problems? Do you struggle with making center time valuable for all students? And with knowing how to use the manipulatives you have? In this fast-paced session, you will learn strategies and find solutions to support your students. You will leave with goodies to use now!

ETA hand2mind

Vernon Hills, Illinois

Tango, Rio All-Suite Hotel & Casino

10:15 A.M.–10:45 A.M.

107 **INNOVATION LOUNGE**

Article Talk: Rita Barger

Rita Barger will lead a discussion around the Teaching Children Mathematics article “Gifted, Talented, and High-Achieving” (October 2009, vol. 16, issue 3). In this article, the author gives practical do-and-don't guidelines to maximize students' potential to advance mathematically every day.

Rita Barger

University of Missouri–Kansas City

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

Friday

10:15 A.M.–10:45 A.M.

108 INNOVATION LOUNGE

I-THINK I Can Engage All Students

Elementary Lessons from Research

Join a mathematics teacher educator and a special education teacher educator to learn about the I-THINK problem-solving framework. Engaging students in purposeful discourse, I-THINK breaks down problem-solving barriers by facilitating task analysis, solution strategy selection, self-regulation, and justification of solutions.

Sararose Lynch

Westminster College, New Wilmington, Pennsylvania

Jeremy Lynch

Slippery Rock University, Pennsylvania

Alex Schroder

Slippery Rock University, Pennsylvania

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

11:00 A.M.–12:00 P.M.

109 INNOVATION LOUNGE

Balancing the Chakras While Adapting to Stress

Our energy chakras are located along a channel where nerve endings are scientifically proven to be located. Learn what the chakras are, see how they affect everyday living, and identify where your potential misalignment(s) exist. You will leave with simple daily steps to practice and the tools to explore this ancient healing technique further.

Charlotte Van Noordt

President, GVN Workplace Solutions, San Diego, California

**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

11:00 A.M.–12:10 P.M.

Innov8 Bar 6

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

110 INNOVATION LOUNGE

Sylvia Celedón-Pattichis - Culture and Language

Sylvia Celedón-Pattichis is Interim Senior Associate Dean for Research and Community Engagement and professor of bilingual and mathematics education in the Department of Language, Literacy, and Sociocultural Studies at the University of New Mexico. She prepares elementary preservice teachers in the bilingual/ESL cohort to teach mathematics and teaches graduate level courses in bilingual education. She taught mathematics at Rio Grande City High School in Texas for four years. Her research interests focus on studying linguistic and cultural influences on the teaching and learning of mathematics, particularly with emergent bilinguals. She serves as a National Advisory Board Member of several NSF-funded projects and as an Editorial Board Member of the Bilingual Research Journal and Journal of Latinos and Education. Her most current work includes co-editing two NCTM books entitled *Access and Equity: Promoting High Quality Mathematics in Pre-K-2 and Grades 3-5*.

Sylvia Celedón-Pattichis

University of New Mexico

Robert Berry – Instructional Practices

Robert Q. Berry, III, is President-Elect of the National Council of Teachers of Mathematics (NCTM) and is an associate professor of mathematics education at the University of Virginia in the Curry School of Education. Dr. Berry teaches mathematics methods courses in the teacher education program. Equity issues in mathematics education are central to his research focus with four key strands: (a) understanding black children's (particularly black boys') mathematics experiences and identities; (b) measuring and understanding standards-based mathematics teaching practices; (c) understanding identity, agency, and positionality; and (d) qualitative metasynthesis research methodology in mathematics education. He was on the writing team for NCTM's landmark publication *Principles to Actions: Ensuring Mathematical Success for All* (2014). Berry served on the NCTM Board of Directors from 2011–2014, was the recipient of NCTM's Linking Research to Practice Publication Award for volume years 2010 and 2014, and the recipient of the University of North Carolina School of Education's 2016 Distinguished Alumni Excellence in Teaching Award.

Robert Berry, III

President-Elect, National Council of Teachers of Mathematics; University of Virginia, Charlottesville, Virginia

111 INNOVATION LOUNGE

Article Talk: Madhuri Bapat

Madhuri Bapat will lead a discussion around his books: Rangolee Art: A Comprehensive Book; Rangolee Art: A Step by Step Learning Book; Kolam Art: Step by Step Learning Designs; Sona Designs: Step by Step Learning Designs; and DOT.MATH I (for ages 8–10) and II (for ages 11–13)-a series of workbooks and worksheets designed using rangolee designs.

Madhuri Bapat
Eastern Arizona College, Thatcher, Arizona

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

112 INNOVATION LOUNGE

Twitter/Blog Talk 5

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Levi Patrick
Oklahoma State Department of Education, Oklahoma City
**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

113 Adapting Number Talks for Secondary Mathematics

Middle School Innovations from the Classroom

How can effective number talk routines be adapted to meet the needs of secondary classrooms? Explore strategies and resources for implementing math talks in grades 6–12. See how math talks can provide opportunities for students to communicate and justify mathematical ideas, reasoning, and arguments within a concise, organized classroom structure.

B. Michelle Rinehart
@HowWeTeach
Region 18 Education Service Center, Fort Davis, Texas
Amazon HI, Rio All-Suite Hotel & Casino

114 Articulating Math Talk through Games

Elementary Innovations from the Classroom

During this quick session, participants will play four key math games and experience how student math talk and having students articulate their thinking during game play empowers them. Having students share their strategies helps improve their performance. Games, student samples, and assessment pieces will be shared.

Allison Riddle
@UtahTOY2014
Davis School District, Centerville, Utah
Amazon J-M, Rio All-Suite Hotel & Casino

115 BBA: Engaging All Students In Meaningful Discourse

General (K–12) Innovations from the Classroom

This interactive session will engage participants as learners in the mathematics classroom. A specific lesson will be shared with opportunities for discussion from the audience. Formative assessment, cooperative group strategies, and student reflection will be included in the lesson.

Beatrice Moore-Luchin
@BeaLuchin
Luchin Educational Consulting, Houston, Texas
Brasilia 2, Rio All-Suite Hotel & Casino

116 Cubes, Containers, and Conceptual Diagrams: Making Algebra Visible

General (K–12) Innovations from the Classroom

We will explore how we use manipulatives and models to assist our students in developing their algebraic thinking. We will focus on areas such as writing expressions, creating equations, and solving equations (including systems) through a conceptual and visual manner before focusing on algorithms and symbolic manipulation.

Ashlee LeGear
Hudson High School, Wisconsin
Erick Hofacker
University of Wisconsin–River Falls
Kathryn Ernie
University of Wisconsin–River Falls
Palma, Rio All-Suite Hotel & Casino



117

How Groupworthy Tasks Break Down Barriers

Elementary Innovations from the Classroom

Group work provides opportunities to learn communication and collaboration skills, but how can we ensure all students are engaging with the content during groupwork? Groupworthy tasks provide structures needed for students to participate equally with the content and practice such social skills. Learn how to incorporate them in your instruction!

Barbara Swartz

[@baswartz23](#)

McDaniel College, New Wilmington, Pennsylvania

Brad Swartz

Liberty High School, Carroll County Public Schools, Westminster, Maryland

Sararose Lynch

Westminster College, Westminster, Maryland

Tropical A-D, Rio All-Suite Hotel & Casino

118

Incorporating Visual Models for an Inclusive Early Math Class

Elementary Innovations from the Classroom

This session includes a demonstration of visual aids for developing powerful mental strategies that begin with addition and subtraction number facts and broaden as they extend to greater numbers. We will discuss how these strategies can help students with learning differences and language barriers. Educators will leave with a range of activities.

Amy Helmstetter

[@origomath](#)

ORIGO Education, Las Vegas, Nevada

Miranda 7-8, Rio All-Suite Hotel & Casino

119

Lesson Study: Social Justice Learning

High School Innovations from the Classroom

Lesson study is a dynamic professional development activity. Lessons are designed within a social justice context while reflecting research on culturally relevant pedagogy and NCTM's teaching and learning strategies. Observed lessons focus on what students are saying and doing. The goals are improved instruction and deeper student learning.

Linda Fulmore

Math Nation Arizona, Cave Creek, Arizona

Amazon G, N-T, Rio All-Suite Hotel & Casino

121

PBL for All

General (K–12) Innovations from the Classroom

PBL is a framework for all students. Project- or problem-based learning allows students to grapple with a real problem while also learning content. The entry points into the situation allows all students to have access while the process supports diverse students needs. In this session, you will learn about PBLs for kindergarten to grade 12.

Telannia Norfar

[@thnorfar](#)

Northwest Classen High School, Spencer, Oklahoma

Brasilia 4-7, Rio All-Suite Hotel & Casino

122

Strategies to Empower Creative Solutions!

Middle School Innovations from the Classroom

Making connections between concepts not only enhances brain development but also importantly links scientific and mathematical analysis to real-world problem solving. Explore hands-on techniques that promote discovery, encourage pattern recognition and growth mindsets, and will empower students to create innovative problem-solving strategies.

Jason Pittman

RAFT, San Jose, California

Miranda 1-2, Rio All-Suite Hotel & Casino

123

Teaching Basic Computation to Struggling Students Using Alternative Algorithmic Techniques

Elementary Innovations from the Classroom

Participants will learn how to identify common math errors of students with learning problems. In addition to conducting an error analysis, individuals attending this session will learn how to implement alternative algorithmic techniques for teaching basic operations and explicitly teach mathematical concepts through strategy instruction.

Joseph Sencibaugh

Webster University, Saint Louis, Missouri

Jennifer Bond

Ferguson-Florissant School District, Saint Louis, Missouri

Tropical E-H, Rio All-Suite Hotel & Casino

124

Uncovering Student Misconceptions with Formative Assessment Probes: Grades 3–5

Elementary Innovations from the Classroom

Students come to us with misconceptions from their everyday experiences or their own interpretations of what is taught. We must surface, understand, and use these ideas to bridge between where students are to where they need to be to achieve conceptual understanding. Come explore the use of formative assessment probes to uncover student ideas!

Cheryl Tobey

@Tobey_Math

Mathematics Specialist, Palermo, Maine

Amazon A-F, Rio All-Suite Hotel & Casino

126 INNOVATION LOUNGE

Adjusting Word Problems for ELLs

Elementary Lessons from Research

Research was conducted with prospective teachers to explore the adjustment of word problems to better meet the needs of elementary English language learners (ELLs). Participants will learn what modifications supported or hindered the development of ELLs based on the findings and on research-based practices. Adjustments of word problems will also be demonstrated.

Terri Kurz

Arizona State University, Mesa, Arizona

Research Innovations, Innovation Lounge Pavilion, Rio All-Suite Hotel & Casino

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Stop by Member Services in NCTM Central (Exhibit Hall).



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Friday

11:15 A.M.–11:45 A.M.

126.1 **ew**

Overcoming the Relevance Barrier

High School Exhibitor Workshop

If your kids are into it, STEM is in it too. Come explore a new lesson series on the STEM Behind Cool Careers. Learn how technology can be used to engage your students in challenging mathematics they experience every day. Get free resources for middle grades through precalculus that can be used in your classroom right away.

Texas Instruments
Dallas, Texas

Conga, Rio All-Suite Hotel & Casino

128 **INNOVATION LOUNGE**

Oracy in Urban Bilingual Classrooms

High School Lessons from Research

English language learners all have the ability to learn meaningful mathematics content simultaneously with the acquisition of the academic language of mathematics. This session focuses on how the intentional development of student oracy improves student learning of content knowledge in urban high school mathematics classrooms.

Laura Maly
Milwaukee Public Schools, Milwaukee, Wisconsin
Rocio Trejo
Milwaukee Public Schools, Milwaukee, Wisconsin

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

12:00 P.M.–12:30 P.M.

127 **INNOVATION LOUNGE**

Book Talk: Imani Goffney

Imani Goffney will lead a discussion around the upcoming NCTM publication of the 2018 *Annual Perspectives in Mathematics Education (APME)* volume, *Rehumanizing Mathematics for Black, Indigenous, and Latin@/x Students*, which will showcase efforts to ensure mathematics teaching and learning is a humane experience for students who historically have been marginalized in mathematics. In response to the heightened focus on equity-based school reforms that seek to help students play the game of mathematics (e.g., addressing access and achievement) without also interrogating how such reforms may ignore the need to change the game of mathematics (e.g., address students' identities and power dynamics inside and outside of schools), this volume will provide research-based illustrations of teachers' and researchers' individual or collaborative initiatives to promote a more humane mathematics education.

Imani Goffney
University of Maryland, College Park

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

12:30 P.M.–1:30 P.M.

129 **INNOVATION LOUNGE**

Helping Students Move from Suspension to Shanti (Peace)

Discover alternative solutions to student discipline problems within our schools. Transform detention to meditation. Learn how to help students with mindful thinking practices, preparing them to make better fight-or-flight choices. You'll also discover ways to finding your own peace in the workplace.

John Reynolds
Math Teacher and Wellness Educator, Las Vegas, Nevada

**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

A big **thank you** to our exhibitors,
sponsors, volunteers, and speakers!



12:30 P.M.–1:40 P.M.

Innov8 Bar 7

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

130 INNOVATION LOUNGE

Judit Moschkovich – Culture and Language

Judit Moschkovich is a professor in the Education Department of the University of California, Santa Clara (UCSC). Her research focuses on mathematical thinking and sociocultural approaches to mathematics learning. Her research agenda addresses three topics: the transition from arithmetic to algebraic thinking, especially representations of functions; mathematical discourse practices; and learning and teaching mathematics in classrooms with bilingual Latino/a students and English learners. Her research examines student understanding of algebraic and graphical representations of functions, conceptual change in mathematics, and mathematical discourse practices. She has conducted research in middle and high school mathematics classrooms with a large number of Latino/a students. Her recent publications have focused on the relationship between language and learning mathematics and on analyses of mathematical discussions among bilingual Latino/a students. She is a former mathematics instructor, having taught mathematics courses at San Francisco State University, Golden Gate University, the Upward Bound Program at USF, and the Yo Puedo Program at UCSC.

Judit Moschkovich
University of California, Santa Clara

Matt Larson – Advocacy

Matt Larson is president of the National Council of Teachers of Mathematics (NCTM). Previously, Larson was the K–12 curriculum specialist for mathematics in Lincoln (Nebraska) Public Schools for more than 20 years. He has authored or co-authored several books, including a series on professional learning communities. Larson has taught mathematics at the elementary through college level and has held an appointment as an honorary visiting associate professor at Teachers College, Columbia University.

Matthew Larson
President, National Council of Teachers of Mathematics, Reston, Virginia; Lincoln Public Schools, Nebraska

12:30 P.M.–2:00 P.M.

131 INNOVATION LOUNGE

Math Circle: Compositions

Counting the number of ways to decompose a number into sums is an accessible but challenging puzzle. In this session for elementary teachers (but open to all levels), we will explore various ways to represent sums and the patterns that emerge from them, and see how changing our point of view can help us get started on a novel problem!

Joshua Zucker
Stanford University, California
**TNT - Math Circles, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:00 P.M.–2:15 P.M.

133

Developing Visualization in Elementary Classrooms

High School Experiences in the Classroom

In this session, the audience will engage as learners in activities developed using the Spatial Operational Capacity framework integrating 3-D models, 2-D pictures, and more abstract top plan views and front-side-top views of such models. Geocadabra (a dynamic visualization interface) and examples of typical student work will be shared.

Jacqueline Sack
University of Houston Downtown, Texas
Irma Vazquez
Houston Independent School District, Texas
Amazon J-M, Rio All-Suite Hotel & Casino

Friday

134

Educators Learning from Middle School Students' Views on Mathematical Strengths

Experiences in the Classroom

Have you ever wondered what your students think about mathematical strengths? This session describes the work of a professional learning community to create classroom activities to solicit middle school students' views on mathematical strengths. Five classroom teachers conducted action research projects in their classrooms that allowed our PLC to explore students' perspectives across schools, classes, and data collection methods. Come learn how we designed the projects, students' initial responses, ways these responses shifted as students interacted with each other, and the lessons we learned about how to improve instruction.

Dorothy White

University of Georgia, Athens

Amazon G, N-T, Rio All-Suite Hotel & Casino

135

Launching into Engagement and Accessibility

High School Experiences in the Classroom

Launching a lesson is key to creating engagement and access to grade-level content. Building upon that access creates equitable opportunities within a lesson. By exploring the structure of activities, we will see the impact on discussions and accessibility. Join us to dive into a variety of strategies you can implement with your students tomorrow!

Jill Swissa

 @CL_JILL

Carnegie Learning, Chicago, Illinois

Sarah Galasso

Anaheim, California

Brasilia 2, Rio All-Suite Hotel & Casino

136

Modeling the 5 Practices for Equitable Classroom Discourse: Experience to Action

High School Experiences in the Classroom

We will engage teams in an experience that models the 5 Practices for Orchestrating a Productive Math Discussion. Teams will first play the role as students engaged in a task. Once they have seen it modeled, teams will participate themselves in trying to model the 5 Practices by role-playing with a rich math task and provided student work.

Kathryn Ernie

University of Wisconsin–River Falls

Erick Hofacker

University of Wisconsin–River Falls

Ashlee LeGear

University of Wisconsin–River Falls

Miranda 3-4, Rio All-Suite Hotel & Casino

137

Overcoming the “Gap Trap”

Middle School Experiences in the Classroom

In many instances, students use invalid numerical strategies to compare fractions. The challenge is that many times these invalid strategies yield correct answers. Activities will be shared that can assist teachers in identifying these numerical strategies and can help them move their students toward more conceptual-based reasoning strategies.

Patrick Sullivan

Missouri State University, Springfield

Joann Barnett

Missouri State University, Springfield

Brasilia 4-7, Rio All-Suite Hotel & Casino

138

Redefining Problem Solving in Mathematics with Technology & Wonder

High School Experiences in the Classroom

This session will have teachers engaging in a problem-solving lesson where they ask students to wonder about the problem by peeling back the layers (eliminating the text, eliminating the numbers, eliminating the structure) and instead starting with video/pictures and then supporting and engaging the learner in the problem-solving process.

Eric Milou

 @drMi

Rowan University, Sewell, New Jersey

Tropical A-D, Rio All-Suite Hotel & Casino

1:00 P.M.–2:15 P.M.

139

Smarter Together through Differentiated Instruction

Elementary Experiences in the Classroom

Differentiating instruction is an important strategy for supporting the learning of each student. However, it sometimes labels certain students as less able to do mathematics. We will explore strengths-based ways of differentiating instruction so that each student is seen as mathematically capable and is supported in doing challenging mathematics.

Marcy Wood

University of Arizona, Tucson

Amazon HI, Rio All-Suite Hotel & Casino

140

Start from Where They Are

Elementary Experiences in the Classroom

Using the cognitively guided instruction (CGI) framework, join us in a problem-solving classroom where students' thinking is used to drive task selection, assist with teacher questioning, and help facilitate discussion of mathematical ideas. Starting where students are means including every student because every student knows something!

Luz Maldonado

[@Luz_BilingMathEd](#)

Texas State University, San Marcos

Miranda 7-8, Rio All-Suite Hotel & Casino

142

Visible Learning: Pathway to Success for All

Middle School Experiences in the Classroom

John Hattie's meta-analyses of effective instruction research and Principles to Actions' effective teaching practices provide a road map of strategies that ensure success for all students. Let's start the journey by looking at teacher clarity as well as surface, deep, and transfer learning and applying these components to our daily instructional practice.

Linda M. Gojak

Past President, National Council of Teachers of Mathematics; I Do Math LLC, Willowick, Ohio

Amazon A-F, Rio All-Suite Hotel & Casino

1:00 P.M.–1:30 P.M.

143

INNOVATION LOUNGE

Book Talk: Laura McLeman

Laura McLeman will lead a discussion around chapter 5 ("Focusing on Challenges and Resolutions: Analyzing and Revising Lessons for Access and Equity") in the NCTM publication, *Access and Equity: Promoting High-Quality Mathematics in Grades 6–8*. Book Description: NCTM's Access and Equity Principle states that "all students [should] have access to a high-quality mathematics curriculum, effective teaching and learning, high expectations, and the support and resources needed to maximize their learning potential." This book offers math educators strategies and resources for putting that principle into practice.

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

144

INNOVATION LOUNGE

Memory's Role in Learning Mathematics: Achieving Success through Mathematical Interventions

High School Lessons from Research

In this presentation, a neurological approach to understanding developmental dyscalculia will give insight into the difficulty students may face in secondary-level mathematics courses. Using research methods and neurological explanations, the presenter will provide teachers with strategies that may be helpful for their students.

Ravi Shah

DePaul University, Chicago, Illinois

**Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:00 P.M.–2:15 P.M.

145

Bilingual Voices in Mathematics Classrooms

Middle School Views of the Classroom

During this session, participants will have the opportunity to experience a view into a classroom where two languages are spoken while keeping high expectations and high cognitive demand. The scenario will be posed as a teaching challenge, and participants will discuss possible solutions.

M. Alejandra Sorto

San Marcos, Texas

Miranda 1-2, Rio All-Suite Hotel & Casino

Friday

1:00 P.M.–2:15 P.M.

146
Multiple Entry Points for Equitable Teaching

Elementary Views of the Classroom

In this session, participants will see how a teacher explores tens and ones place value with her first-grade students. We will discuss the teaching techniques that give students depth of understanding and the ability to express their thinking in multiple ways.

Amy Helmstetter

 @origomath

ORIGO Education, Las Vegas, Nevada

Miranda 5-6, Rio All-Suite Hotel & Casino

1:30 P.M.–2:00 P.M.

148 **INNOVATION LOUNGE**
Twitter/Blog Talk 6

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Brian Bushart

Round Rock Independent School District, Texas

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

1:30 P.M.–2:15 P.M.

147 **INNOVATION LOUNGE**
Book Signing: Marta Civil

Meet and greet Marta Civil, the series editor of NCTM's Access and Equity: Promoting High-Quality Mathematics series. Marta will be available to sign your copies of the book and/or answer questions about the books.

Marta Civil

University of Arizona, Tucson

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

2:00 P.M.–3:00 P.M.

149 **INNOVATION LOUNGE**
Defeating Procrastination

Procrastination has plagued some of the world's greatest geniuses. Let's learn step-by-step ways to get out of your own way. We'll utilize goals, set timeframes, and come up with rewards. You'll leave this session with a plan and the motivation to finally get things done.

Scott Amberson

Wellness Educator, Las Vegas, Nevada

**Wellness Workshops, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**



Friday

2:00 P.M.–3:10 P.M.

Innov8 Bar 8

The following Innovators will be available in the Innov8 Bar during the designated time slot. Individuals and/or teams can sign up for 10-minute time slots at the Innov8 Bar information desk:

150 INNOVATION LOUNGE

Lee Stiff – Instructional Practices

Lee Stiff is a professor of mathematics education and an associate member of the math department at North Carolina State University. He is a past president of the National Council of Teachers of Mathematics. He has taught courses in mathematics and mathematics education, including uses of technology in teaching mathematics, and the mathematics education of African American children. Dr. Stiff's research and other professional activities have focused on teaching strategies, problem solving, the mathematics education of African American children, and uses of instructional technologies in mathematics teaching. His research methodologies include experimental design, surveys and interviews, and classroom-based investigations.

Lee Stiff

Past President, National Council of Teachers of Mathematics; North Carolina State University, Raleigh

Matt Larson – Advocacy

Matt Larson is president of the National Council of Teachers of Mathematics (NCTM). Previously, Larson was the K–12 curriculum specialist for mathematics in Lincoln (Nebraska) Public Schools for more than 20 years. He has authored or co-authored several books, including a series on professional learning communities. Larson has taught mathematics at the elementary through college level and has held an appointment as an honorary visiting associate professor at Teachers College, Columbia University.

Matthew Larson

President, National Council of Teachers of Mathematics, Reston, Virginia; Lincoln Public Schools, Nebraska

2:15 P.M.–2:45 P.M.

151 INNOVATION LOUNGE

Book Talk: Robert Berry

Robert Berry will lead a discussion around chapter 3 “(Informing Teachers about Identities and Agency Using the Stories of Black Middle School Boys Who Are Successful with School Mathematics”) in the NCTM publication *More Lessons Learned from Research, Volume 2*.

Robert Berry, III

President-Elect, National Council of Teachers of Mathematics; University of Virginia, Charlottesville, Virginia

Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino

152 INNOVATION LOUNGE

Making Meaningful Connections in Mathematics

Elementary Lessons from Research

Research reveals the importance of teachers making connections in mathematics instruction to familiar experiences in homes and communities in order to support student learning. These connections are particularly important for students with various cultural and linguistic backgrounds. This session focuses on how teachers can make these connections in their teaching.

Kathleen Stoehr

Santa Clara University, California

Crystal Kalinec-Craig

San Antonio, Texas

Research Innovations, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino

2:30 P.M.–4:00 P.M.

153 INNOVATION LOUNGE

Math Circle: Geometry with SET

The popular card game SET is mathematically rich and invites explorations in combinatorics, algebra, and, surprisingly, geometry! Come discover the geometry behind the game in this session, which is open to all levels but may particularly appeal to middle and high school teachers.

Brianna Donaldson

TNT - Math Circles, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino

Friday

2:45 P.M.–3:45 P.M.

Team Time

Team Time

This session will provide the opportunity for teams to receive feedback and finalize their action plans using the knowledge and strategies they've gained from conference sessions. Teams will leave with a plan for continued action toward addressing their challenge. Teach Time assignments are printed on badges.

154

Team Time 1

Delise Andrews

Lincoln Public Schools, Nebraska

Brasilia 4-7, Rio All-Suite Hotel & Casino

155

Team Time 2

Fred Dillon

Ideastream/PBS, Cleveland, Ohio

Amazon HI, Rio All-Suite Hotel & Casino

156

Team Time 3

Fawn Nguyen

Mesa Union Junior High School, Somis, California

Amazon J-M, Rio All-Suite Hotel & Casino

157

Team Time 4

Brian Bushart

Round Rock Independent School District, Texas

Tropical A-D, Rio All-Suite Hotel & Casino

158

Team Time 5

Kyndall Brown

University of California, Los Angeles

Tropical E-H, Rio All-Suite Hotel & Casino

2:45 P.M.–3:45 P.M.

159

Team Time 6

M Alejandra Sorto

Texas State University, San Marcos

Palma, Rio All-Suite Hotel & Casino

160

Team Time 7

Marta Civil

University of Arizona, Tucson

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Team Time 10

Kathy Dees

Clark County School District, Nevada

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Team Time 11

Jessica Ivy

Mississippi State University

Brasilia 2, Rio All-Suite Hotel & Casino

Friday

3:00 P.M.–3:30 P.M.

165 INNOVATION LOUNGE

Article Talk: Teddy Chao

Teddy Chao will lead a discussion around the Special Issue Mathematics Education: Through the Lens of Social Justice article “That’s Not Fair and Why: Developing Social Justice Mathematics Activists in Pre-K” (Summer 2016, vol. 7, no. 1). Article abstract: Prekindergarten mathematics can be filled with rich, complex mathematical talk that moves beyond traditional counting and cardinality. When paired with issues of fairness, mathematics becomes a social justice tool that empowers prekindergarteners to mathematically recognize and address oppression they see in their own world. We profile the critical mathematics details in two black history-based activities in which children use mathematics to describe and confront the unfairness they notice within Rosa Parks and Harriet Tubman skits. Through these activities, children learn how to communicate and address the unfairness they see using mathematics. We also share instructional considerations and extensions for implementing these activities in the classroom.

Theodore Chao
Ohio State University, Columbus

**Hangout, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

166 INNOVATION LOUNGE

Twitter/Blog Talk 7

Explore Twitter and Blogs and learn how they can be used as a learning tool and can extend the learning environment beyond the classroom. This hands-on how-to session will introduce participants to the use of blogs and Twitter as educational tools, sources of professional development for teachers, and an opportunity to build professional networks. All experience levels welcome!

Laila Nur
Manual Arts Senior High School, Los Angeles, California

**TNT - Twitter/Blog, Innovation Lounge Pavilion,
Rio All-Suite Hotel & Casino**

4:00 P.M.–5:00 P.M.

167
Closing Session
Taking a Stand for Students

Keynote

In this session, Dr. Gutiérrez will bring together ideas expressed throughout the conference and connect them in ways that relate to next steps. In particular, she will offer the audience guidance in how to take what they have learned in the conference and translate that into action, with a particular emphasis on advocating for students to have meaningful and humanizing experiences while learning mathematics. She will build upon the concept of creative insubordination to highlight how teachers can effectively stand up to policies, practices, and statements that are not perceived to be in the best interests of students.

Rochelle Gutiérrez
University of Illinois at Urbana-Champaign
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A handwritten signature in black ink, which appears to read "Matthew Larson", written over a horizontal line.

Matt Larson
President, NCTM



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Ken Krehbiel
Executive Director, NCTM

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The Nevada Mathematics Council (NMC) is a statewide NCTM affiliate. NMC has representation from the Southern Nevada Math Council, Northern Nevada Math Council, University of Las Vegas, University of Nevada, Reno, and the Nevada Department of Education. Members include teachers, professors, and administrators. The purpose of this group is to promote high-quality mathematics instruction throughout the state.



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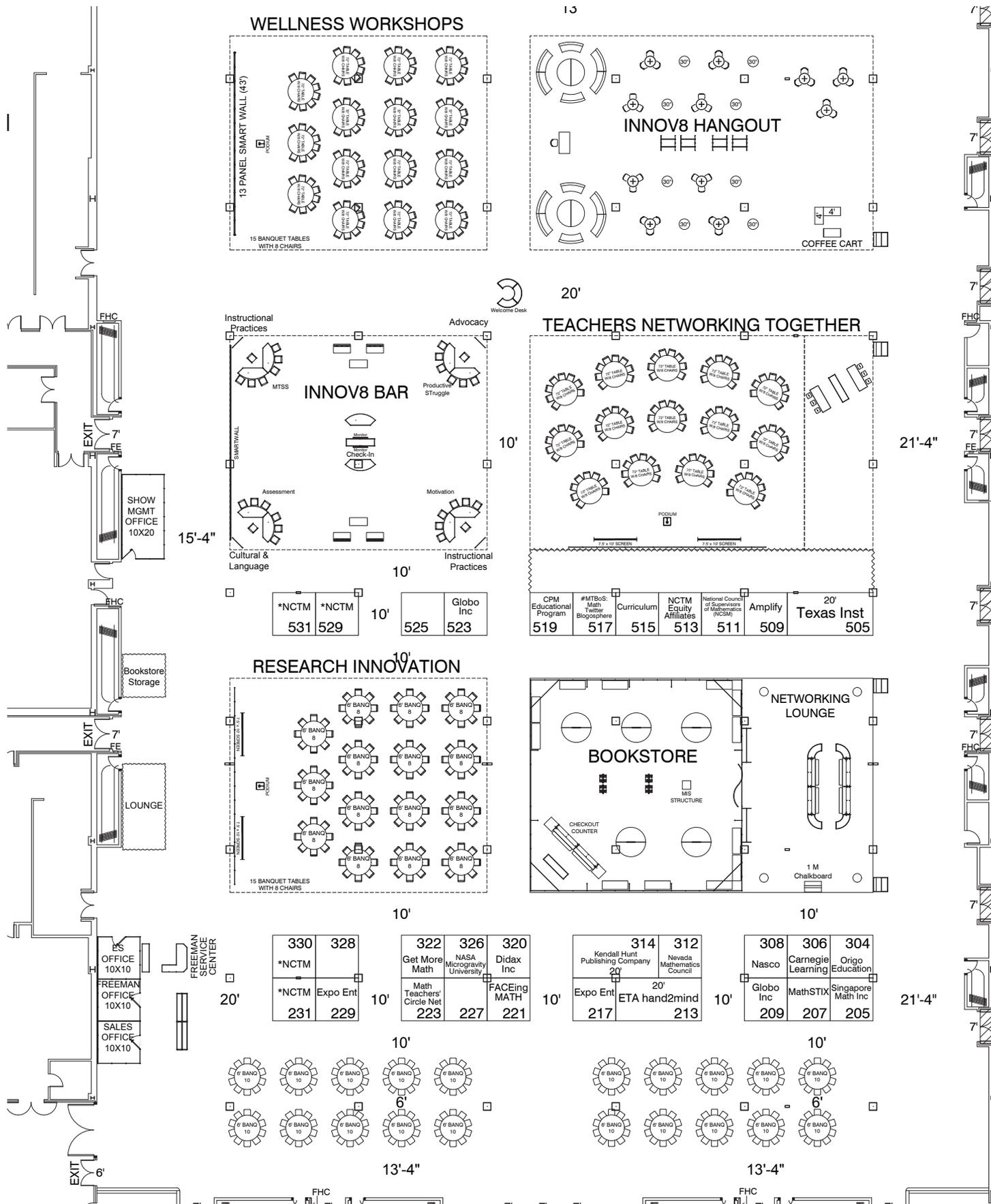
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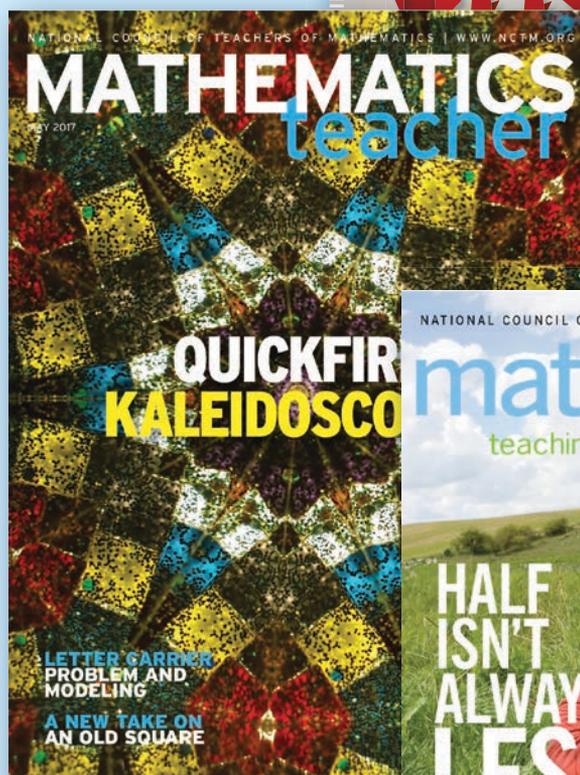
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M

Math Teachers' Circle Network **Booth 425**

San Jose, California
408-350-2088
mathteacherscircle.org

Math Teachers' Circles (MTCs; www.mathteacherscircle.org) are professional communities of K–12 mathematics teachers and mathematicians. Groups meet regularly to work on interesting mathematics problems, allowing teachers to enrich their knowledge and experience of math, while building meaningful partnerships with other teachers and mathematicians. Founded in 2006, the Math Teachers' Circle Network is a project of the American Institute of Mathematics (AIM; www.aimath.org).

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NCTM Equity Affiliates

Booth 426

Venice, California

310-422-9277

todos-math.org / bannekermath.org

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Nevada Mathematics Council

Booth 312

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