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MOVING MATHEMATICS LEADERSHIP INTO THE NEW DECADE

52nd NCSM Annual Conference

March 30–April 1, 2020 • Chicago, IL

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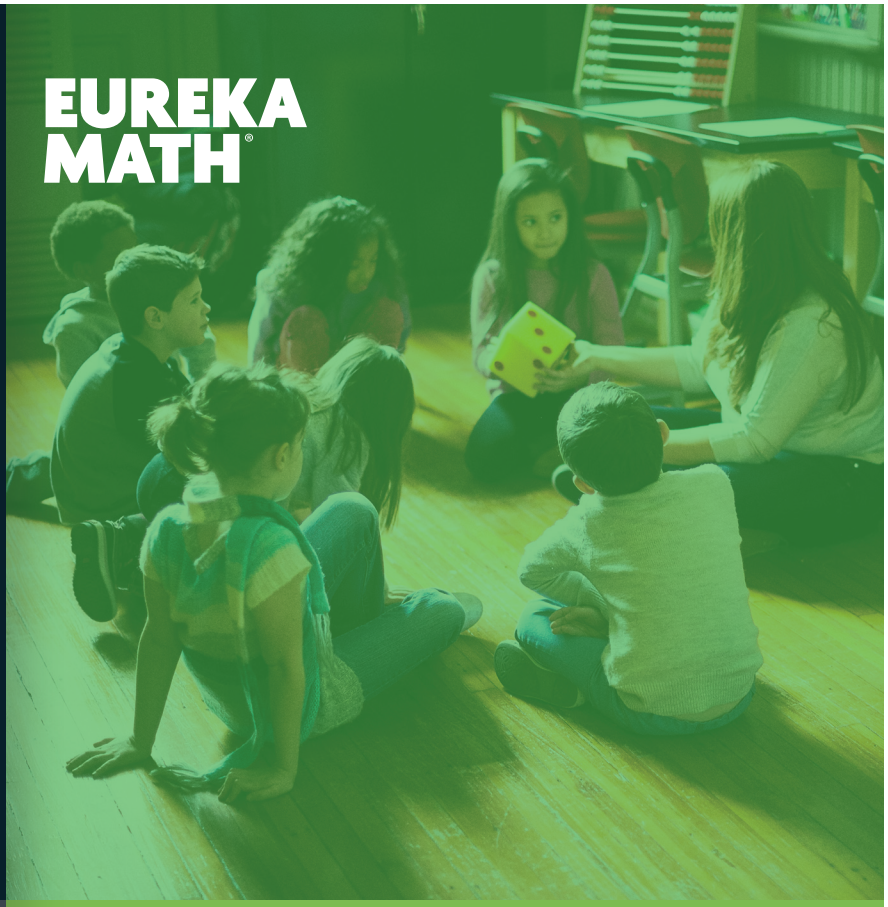

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NCSM

LEADERSHIP IN MATHEMATICS EDUCATION

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CONNECT. COLLABORATE. COMMIT. MOVING MATHEMATICS LEADERSHIP INTO THE NEW DECADE

52nd NCSM Annual Conference

March 30–April 1, 2020

Chicago, IL

REGISTRATION

The NCSM registration counters are located in the Grand Ballroom Foyer at the following times:

Sunday, March 29: 2:00 pm–6:00 pm
Monday, March 30: 6:45 am–5:00 pm
Tuesday, March 31: 6:45 am–5:00 pm
Wednesday, April 1: 7:30 am–10:30 am

SPONSOR/EXHIBITOR DISPLAY AREA

Visit sponsors and engage in stimulating professional dialogue with colleagues in the Riverside East Exhibit Hall during the following times:

Monday, March 30: 9:00 am–5:00 pm
Tuesday, March 31: 8:30 am–4:00 pm

We have also scheduled extended passing periods for visiting with our exhibitors on Monday from 10:30–11:15 am and Tuesday from 9:15–10:00 am. Please stop by, check out with our exhibitors on Monday from 10:30–11:15 am and Tuesday from 9:15–10:00 am. Please stop by, check out the latest resources and thank them for their continued support of NCSM. The conference would not be possible without their generosity.

CAUCUSES

Caucuses for NCSM regions, International attendees, and Past Presidents will be held Tuesday afternoon, 3:30 pm–4:30 pm. Details and a full schedule of caucus meetings are found at the end of Tuesday sessions.

NCSM BUSINESS MEETING

The Business Meeting will be held on Tuesday, March, 31 at 4:45 pm–5:15 pm in Columbus G. All members are invited and encouraged to attend and learn about the "State of the Organization" and opportunities for getting involved in NCSM.

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PRESIDENT'S MESSAGE

Dear Colleagues,

Welcome to Chicago and the 52nd NCSM Annual Conference. This conference for mathematics education leaders throughout North America and beyond promises to be another premier event. Our theme is "Connect. Collaborate. Commit. Moving Mathematics Leadership into the New Decade."

On behalf of the NCSM Board of Directors and the Chicago Conference Committee, it is my pleasure to welcome you to Chicago. We are grateful you have joined us in your commitment to move mathematics leadership into the next decade. The NCSM organization and those attending will benefit from the engaging conversations and collaboration focused on the bold mathematics leadership essential actions about to occur.

You will find more than 300 sessions focused on the following four conference strands which should provide you with a meaningful experience tailored to your needs.

- Build Mathematical Capacity
- Construct Impactful Mathematics Coaching
- Design Systemic Structures within the Mathematics Education Community
- Monitor Evidence of Equitable Mathematics Learning

Please read the information that is included within this program book to enhance your conference experience. You may also use the NCSM conference app for the most up-to-date information during the conference. Also, please review the valuable information included in your conference bag. In addition to the many sessions, we have built in dedicated time for you to network with other conference attendees and our sponsors.

Thank you for bringing your expertise to our annual meeting and joining us for a memorable experience. NCSM is the premier mathematics leadership organization because of you. Together, we have the vision, the knowledge, and the experience to pave our way into the future.
NCSM has planned this conference to provide you with the information you seek to enhance your leadership and professional practice. Throughout the conference, I encourage you to stay engaged, keep focused on relevant issues, and help us shape the future of mathematics education for our students. I am deeply honored to serve an organization that is committed to making a positive difference for mathematics leaders. During the conference, ***Connect*** and ***Collaborate*** with your peers. Enjoy the conference and when you return to your school, district, state or province, ***Commit*** to mathematics leadership focused on quality mathematics for each and every learner.

Sincerely,

Mona Toncheff
NCSM President

2019-2020 CONFERENCE PLANNING COMMITTEE

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Phoenix, AZ

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Immediate Past President
Emporia, KS

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Mary Fitzgerald
Conference Director
Denver, CO

Dana Eckoff
Conference Manager
Denver, CO

WELCOME TO CHICAGO, IL AND THE 52ND NCSM ANNUAL CONFERENCE

The 2019–2020 committee wants to thank our:

- *Sponsors* for breakfasts, lunches, receptions, and a variety of other ways of support. The conference committee is grateful to all those whose interests and efforts help to make the conference a rewarding experience for our attendees,
- *Speakers* for your willingness to share your ideas and experiences with colleagues,
- *Program proposal reviewers* for your time and efforts in carefully reviewing the many proposals submitted for the program,
- *On-site program committee* for supporting our speakers and taking care of their on-site needs,
- *Local support committee* for helping ensure a smooth-running conference, and
- *Volunteers* for graciously giving of their time.

We are thrilled you joined us for the 52nd Annual Conference! These three days promise to be an exciting learning experience, offering you over 300 sessions and events. Explore the schedule to select from the variety of Major Speakers, Spotlight Speakers, and regular sessions that address the conference strands across different grade level bands. Take advantage of the Leadership Exchanges, providing time for attendees to engage with Spotlight and Major Speakers on important topics for leaders in mathematics. Of course, time is dedicated to explore the exhibit hall, attend the sponsor showcases, and network with your fellow leaders of mathematics.

Here are daily, new, or noteworthy events not to miss!

Monday, March 30

- First-timer's Session: 7:00 am–7:30 am, Columbus CD
- Opening Session with Mona Toncheff, NCSM President: 8:00 am, Grand Ballroom CD South & EF
- Keynote Address with Jennie Magiera, *Courageous Edventures:* following opening remarks, Grand Ballroom CD South & EF
- NEW! Featured Speaker Presentation on *Supporting Professionals to Counteract Racism and Oppression in the Discretionary Spaces of their Work,* Deborah Ball: 9:30 am–10:30 am, Grand Ballroom CD South & EF
- NCSM Coaching Kick-off Session: 9:30 am–10:30 am, Randolph 2
- NEW LOCATION! Sponsor Showcases will be located inside the exhibit hall: see daily schedule for details.
- NCSM Ignite Luncheon (ticketed event): 12:30 pm–1:30 pm, Grand Ballroom CD South & EF
  Sponsored by: NCSM

NCSM
LEADERSHIP IN MATHEMATICS EDUCATION

- Reception (ticketed event): 5:30 pm–7:00 pm, Grand Ballroom CD South & EF
  Sponsored by: Pearson K12 Learning

Pearson

Tuesday, March 31

- Breakfast (ticketed event): 7:00 am–8:00 am, Grand Ballroom CD South & EF
  Sponsored by: Big Ideas Learning

BIG IDEAS LEARNING®

- Ross Taylor/Glenn Gilbert Speaker Series: 8:15 am–9:15 am, Columbus IJ
- Kay Gilliland Lecture Award: 11:15 am–12:15 pm, Columbus CD
- Luncheon (ticketed event): 12:30 pm–2:00 pm, Grand Ballroom CD South & EF
  Sponsored by: Texas Instruments

Texas Instruments

- NCSM: Administrator Kick-off: 8:15 am–3:15 pm
  Refer to flyer in the conference bag for specific presentations.

Wednesday, April 1

- Breakfast (ticketed event): 7:00 am–8:00 am, Grand Ballroom CD South & EF
  Partially Sponsored by: Math Solutions

Math Solutions®
FOUNDED BY MARILYN BURNS

- Luncheon (ticketed event): 12:00 pm–1:30 pm, Grand Ballroom CD South & EF
  Partially Sponsored by: Curriculum Associates

Curriculum Associates®

2020 PROGRAM PROPOSAL REVIEWERS

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Toni Allen
San Francisco, CA

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PROGRAM OVERVIEW

Strands

1. Build Mathematical Capacity
How do we advocate for high quality and equitable mathematics teaching and learning? How do we build mathematical literacy? How do we leverage technology to enhance mathematics instruction? Proposals in this strand include such topics as: access and equity; support for diverse learners (emergent bilinguals, special needs, gifted and talented, etc.); STEM/STEAM; recent research findings; engaging students in mathematics; sparking interest through meaningful tasks; and strong curriculum that addresses the rigor, depth, and conceptual understanding of mathematical standards.

2. Construct Impactful Mathematics Coaching
How do we sustain equitable learning experiences? Proposals in this strand focus on the coach's role in supporting all aspects of the teaching and learning of mathematics. Coaching imperatives to be addressed in these sessions include sustainable coaching practices, coaching mathematical content, coaching teaching and learning, and producing a culture of lifelong learning.

3. Design Systemic Structures within the Mathematics Education Community
How do we design and implement structures that support high quality mathematics teaching and learning? How do we empower a shared culture of professionalism and productive engagement? How do we ensure bold leadership actions impact each and every learner? Proposals in this strand address developing leadership; being a change agent; engaging with community partnerships and higher-education; providing district-level, administrator, and collaborative teams/teacher supports; and developing job-embedded professional learning.

4. Monitor Evidence of Equitable Mathematics Learning
How do we monitor and follow-up on evidence of student learning? How do we ensure that each and every learner is engaged in a high-quality assessment process? Proposals in this strand feature formative assessments, evaluation support for leaders, data dialogue structures, research informed reflection on evidence of student learning, intensification, intervention, differentiation, and multiple assessment approaches.

SESSION TYPES

- Opening Session with Keynote Address—Monday morning
- Featured Speaker Session—Monday morning
- First-Timer's Session—Monday morning
- Affiliate Leaders Meeting—Monday morning
- Leadership Exchange—Monday and Tuesday
- Kay Gilliland Lecture—Tuesday morning
- NCSM Caucus Sessions—Tuesday afternoon
- NCSM Annual Business Meeting—Tuesday afternoon
- Major Sessions—Monday, Tuesday, and Wednesday
- Spotlight Sessions—Monday, Tuesday, and Wednesday
- Regular Sessions—Monday, Tuesday, and Wednesday
- Sponsor Showcases—Monday, Tuesday, and Wednesday
- NCSM: Administrator Kick-off—Tuesday morning

Nominate a leader in mathematics education for the **Ross Taylor/Glenn Gilbert National Leadership Award.** See details in the section: About NCSM.

Attend your **Regional Caucus** on Tuesday afternoon. Details and a full schedule are found at the end of Tuesday sessions.

Look for an email next week inviting you to complete the **Online Conference Feedback Survey.**

Support the **Iris Carl Travel Grant Fund.** See the section in the back of this program book on NCSM Awards for more information.

GENERAL INFORMATION

EMERGENCY INFORMATION
Call 911 for any medical emergencies.

FIRE CODE
Fire Code regulations apply to all conference session rooms. Sessions will be closed when seating capacity is reached. Regulations require that there is no standing, no sitting on the floor, and no moving of chairs from one room to another. We appreciate your cooperation in this matter.

SESSION SEATING
Rooms have been set to conform to Fire Code. As per fire marshal orders, only those seated in chairs will be allowed to remain in the meeting rooms. Seating at all sessions is on a first-come, first-served basis.

NON-SMOKING POLICY
The Annual Conference is a non-smoking event. Those who wish to smoke must do so outside the buildings in designated smoking areas.

CONFERENCE BADGES AND BAGS
2020 Annual Conference name badges must be worn by attendees for admittance to conference sessions, meal functions, and the sponsor display area. One NCSM Conference bag is given to each registered participant as long as supplies last. Replacement bags and extra bags will not be distributed at the conference.

Conference badges sponsored by: CPM

Conference bags sponsored by: CASIO®

CONFERENCE PLANNER
A conference planner, located at the back of the program, is for your use in choosing a schedule of sessions and events to attend. Because all rooms have a limited seating capacity, it is suggested that you select at least one alternate session for each time slot in case your first choice is full. This information will also be available on the Conference App.

TIPS FOR A SUCCESSFUL CONFERENCE
If this is your first Annual Conference, be sure to attend the **30-minute First-Timer's Session** at 7:00 am on Monday morning, prior to the Opening Session/Keynote in Columbus CD. Special Gifts are planned for all first-timers attending these sessions.

- Become familiar with the locations of the session rooms and other conference venues.
- Visit the Exhibitor Display Area in the Riverside Exhibit Hall on Monday and Tuesday.
- Use the Conference Planner (at the back of this program) to outline your daily schedule.
- Network with colleagues and share experiences about the different sessions you attend.
- Turn off cell phones during sessions and functions.
- Attend Sponsor Showcases in the Riverside Exhibit Hall to learn about the latest in educational products and materials.

SESSION CHANGES
The listings in this program book represent the latest conference information (as of publication) and supersede all previously printed information. Be sure to use the Conference App for any last-minute revisions. NCSM reserves the right to change speakers, facilities, or program content at any time.

CONFERENCE APP
The Conference App will be available to all attendees at the 2020 Annual Conference. This App will give you the ability to have the entire program available at your fingertips electronically on your cell phone, iPad, tablet, or computer. It will also allow you to plan and schedule your sessions and take notes right in the App. Look for details in your conference bag and posted at registration to have immediate access to this great experience.

TAPING, RECORDING, OR PHOTOGRAPHING SESSIONS
Written permission to tape, record, or photograph sessions must be obtained directly from the speaker(s) before the session begins. The request must contain a statement indicating the intended use of such a tape, recording, or photograph as well as your name and contact information. A copy of the request should be given to the lead speaker.

NCSM CAUCUSES
Caucuses for NCSM regions, International attendees, and Past Presidents will be held Tuesday afternoon, March 31 at 3:30 pm–4:30 pm Details and full schedule of caucus meetings are found at the end of Tuesday sessions.

The Caucuses are perfect opportunities for all conference attendees to network, collaborate, and communicate within each NCSM region. During the sessions, participants will:

- Identify and discuss national issues.
- Enhance leadership capacity.
- Share information on opportunities for Professional Development for mathematics leaders.
- Enjoy networking among members from their region.
- Explore avenues for becoming a contributing active member of NCSM!

NCSM BUSINESS MEETING
The Business Meeting will be held on Tuesday, March 31 at 4:45 pm–5:15 pm in Columbus G meeting room. All members are invited and encouraged to attend and learn about the "State of the Organization" and opportunities for getting involved in NCSM.

Use the Conference Planner (at the back of this program) to outline your daily schedule.

GENERAL INFORMATION

SPONSOR SHOWCASES
Sponsor Showcases are provided by Sponsors and are an opportunity to learn more information about the products and materials offered by our Sponsors. These sessions will be held Monday and Tuesday in the Riverside East Exhibit Hall.

SPONSOR/EXHIBITOR DISPLAY AREA
The Sponsor/Exhibitor Display Area is an important part of the educational services NCSM provides conference attendees. Attendees can examine current resources, explore trends and practices, review products and services, and engage in discussion with NCSM's sponsors. Be sure to make time in your schedule to visit the NCSM Exhibitor Display Area in the Riverside East Exhibit Hall. Wear your conference name badge to gain entrance.

Hours: **Monday, March 30, 9:00 am–5:00 pm**
Tuesday, March 31, 8:30 am–4:00 pm

NCSM ANNUAL CONFERENCE SPONSORS
Many sponsors generously support NCSM and its membership throughout the year. Acknowledgment of all NCSM Sponsors for their contributions can be found at the back of this program.

We thank the following sponsors for their contributions to events related to the 52nd Annual Conference.

- Conference Bags – **Casio America**
- Conference Neck Wallet – **CPM**
- Volunteer T-shirts – **Casio America**
- Monday Evening Reception – **Pearson K12 Learning**
- Tuesday Breakfast – **Big Ideas Learning**
- Tuesday Luncheon – **Texas Instruments**
- Wednesday Breakfast – **Partially Sponsored by Math Solutions**
- Wednesday Luncheon – **Partially Sponsored by Curriculum Associates**

TICKETED FUNCTIONS
Through the generosity of our sponsors, we are able to offer meal functions during the conference. Tickets to each function are limited, and are available on a first-come, first-served basis in the order your conference registration is received.

Beginning in early February, the NCSM office sent out the meal ticket sign-up to the first people who registered; the email invited you to order tickets for the functions you wish to attend. We want to be as fair as possible when it comes to the meal sign-up and appreciate your understanding. If you did not receive a ticket for an event, check this book for details on wait-line procedures.

At the Fall 2018 board meeting, the board approved a small charge for meal and reception tickets.

The cost of tickets will be $5 each for breakfast & reception functions and $10 each for lunch functions. Meal tickets are a non-refundable purchase. If your plans change on-site and you have a ticket you are unable to use, please donate it to an interested colleague or return it to the on-site registration booth.

PLEASE NOTE: Those who enter meal functions through the wait line will be expected to pay unless there is a returned ticket available. NCSM has implemented this policy to better assure our sponsors that those who request meal tickets will attend the events.

FREQUENTLY ASKED QUESTIONS
Are meal function tickets automatically included in my registration? Meal functions are not included in the conference registration fee. Some of our sponsor partners graciously agree to host a portion of a meal function and provide a certain number of meals within their budget. If a seat was available for a function you selected when you were invited to purchase a meal ticket, an admission ticket was provided in your registration packet.

I have a meal ticket. Does that guarantee me a seat no matter what time I show up? If you have a ticket, don't be late! Experience has shown that some people with tickets opt to make other plans at the last minute. In order to allow as many attendees as possible to enjoy the meal functions, when the ticketed line goes through, the waiting line will follow as soon as possible. If you are late, you may not get the meal for which you have a ticket.

What do I do with a meal function ticket I have, that I no longer need? You may turn in any tickets you won't use to the Conference Registration booth in the Pre-Function Area of the Grand Ballroom. This will enable someone without a ticket to get into the event. You may also hand extra tickets to any NCSM Board Member at any time during the conference.

Is there a waiting list/waiting line for meal functions? Again this year, those without tickets may wait in the special line that will form to the side of the ticketed line. The waiting line will be permitted to enter based on the available seats once the ticketed line goes through and the start time for the function is reached. Those admitted through the waiting line may pay by cash, check, or credit card.

SPOTLIGHT SPEAKERS
Spotlight speakers are featured speakers with a larger room. These are typically speakers who have shared with us often at NCSM and always have important information to share. They are selected from submitted proposals.

STUDENT RECOGNITION CERTIFICATES
NCSM provides certificates as a means of honoring students who excel in the study of mathematics. All public, private, and parochial schools, as well as colleges and universities, that have at least one NCSM member on the faculty, are eligible to participate. Each school may receive up to two awards per year. Pick up certificates at the registration booth. More information about these certificates is available at *mathedleadership.org*.

CONFERENCE FEEDBACK
You will receive an email in the week following the conference inviting you to share your feedback with the conference committee. We encourage you to take the time to complete the online survey, as your thoughts and opinions will be helpful to future planning for the NCSM conferences.

LOST AND FOUND
If you find an item you believe belongs to someone attending the NCSM Conference, please bring it to the NCSM registration booth, located in the Pre-Function Area of the Grand Ballroom. Articles will be held there until 10:30 am on Wednesday, at which time they will be turned over to the Hyatt Regency Chicago lost and found.

GENERAL INFORMATION

NCSM BOOKSTORE, MEMBERSHIP BOOTH, AND COACHING TABLE

Visit the Bookstore, Membership, and Coaching tables on Sunday, March 29, from 2:00 pm–6:00 pm in the Pre-Function Area of the Grand Ballroom near the Registration Desk. Then on Monday we move to the NCSM Booth, located in the Riverside East Exhibit Hall. Hours are Monday, March 30 from 9:00 am–5:00 pm, and Tuesday, March 31, 8:30 am–4:00 pm. Bring your NCSM Membership Gift Ticket to redeem your special gift at the Membership Booth. We have many NCSM publications and other items to support your leadership role. Don't leave Chicago without picking up your favorite NCSM book. Join us at the bookstore where you can order and buy NCSM publications, books, and articles by some of our speakers and select NCTM publications to add to your professional library.

NCSM registrants wearing their NCSM Conference badges are welcome to attend the NCTM Research Presession sessions on Wednesday, at the McCormick Place – Lakeside Center.

The NCTM Bookstore is open to all NCSM registrants on 4/1/2020, from 10:00 AM to 5:00 PM in the Exhibit Hall at Chicago McCormick Place. NCSM registrants wearing their NCSM Conference badges will receive a 25% discount on purchases that day.

LEADERSHIP EXCHANGE NETWORKING AND ROUND TABLE DISCUSSIONS

Stop by the Leadership Exchange table located in the Exhibit Hall throughout the day on Monday and Tuesday to join casual conversations with several of our Major and Spotlight Speakers. Check the schedule for exact times. Topics of interest to mathematics education leaders will include: motivating and sustaining student engagement, focusing on student reasoning and conceptual understanding, triangulation of evidence and the connection between mathematical history and its future. Seating is limited!

Monday—Leadership Exchange will be scheduled throughout each day of the conference to provide attendees an opportunity to have an informal conversation with some of our Spotlight and Major speakers around important topics for leaders in mathematics education. Your first opportunity to participate in a Leadership Exchange will be on Monday from 2:00-2:30 pm in the Exhibit Hall. The remaining Leadership Exchanges for the day can be found in Monday's section of the program book.

Tuesday—Leadership Exchange will be located in the Exhibit Hall. The first conversation begins at 8:30am in the Exhibit Hall where you will have the opportunity to visit personally with some of our Spotlight and Major Speakers. The final Leadership Exchange for the day will be held at 2:30pm. More information about each Leadership Exchange can be found in Tuesday's section of the program book.

PRE-CONFERENCE SESSIONS—SUNDAY, MARCH 29

EMPOWER TEACHER LEADERS AS AGENTS OF CHANGE FOR ALL

1:00 PM–4:00 PM | Columbus AB | General

Attention BOLD math leaders, teacher leaders and coaches! As leaders we are called upon to be agents of change for teachers, teams, schools, districts and provinces to develop and activate a vision for math instruction. Join us as we lead you through developing a vision for math instruction aligned to the math teaching practices and eight shifts for math instruction. Learn how to create a culture for coaching and practice the art of coaching conversations that impact teaching and learning. And lastly, learn the critical elements of coaching individuals and teams. If you are a coach or teacher leader, this pre-conference session with help you to understand the foundational elements of being a BOLD mathematics leader through the NCSM Essential Actions framework and coaching essential actions. You won't want to miss this great afternoon of learning and networking with other math leaders!

Jackie Palmquist, NCSM Professional Learning Directors, Indian Prairie School District 204, Aurora, Illinois

Gina Rivera, NCSM Professional Learning Directors, Bristol Public Schools, Bristol, Connecticut

NCSM ESSENTIAL ACTIONS FOR SITE-BASED LEADERS

1:00 PM–4:00 PM | Columbus CD | General

Come join in this session with site-based leaders, including school administrators, mathematics coaches, and content leaders, to engage in strategies for developing an exemplary mathematics teaching and learning program. Explore tools for analyzing strengths and opportunities for improvement. Practice using protocols for goal setting and developing research-affirmed strategies for improved student learning. NCSM Essential Actions: Instructional Leadership in Mathematics Education serves as the focus tool for this session.

Bill Barnes, NCSM Historian, Howard County Public School System, Ellicott City, Maryland

Erin Lehmann, Rapid City Area Schools, Rapid City, South Dakota

Sharon Rendon, NCSM C2 Regional Director, Summerset, South Dakota

Denise Trakas, NCSM Western 1 RD, Washoe County School District, Reno, Nevada

Gwen Zimmermann, NCSM Assistant Newsletter Editor, Adlai E. Stevenson High School, Lincolnshire, Illinois

2020 CONFERENCE SCHEDULE OVERVIEW

Date & Time	Event	Location
Monday, March 30		
6:45 AM–5:00 PM	**On-Site Registration**	**Grand Ballroom Foyer**
7:00 AM–7:30 AM	**First-Timer's Session – Special Gifts**	**Columbus CD**
8:00 AM–9:15 AM	**Opening Session & Keynote** – Jennie Magiera	**Grand Ballroom CD South & EF**
9:00 AM–5:00 PM	**Sponsor/Exhibitor Display Area**	**Riverside East Exhibit Hall**
9:00 AM–5:00 PM	**NCSM Bookstore, Membership Booth, & Coaches Center**	**Riverside East Exhibit Hall**
9:30 AM–10:30 AM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
10:30 AM–11:15 AM	**Special Focus on Sponsor/Exhibitors**	**Riverside East Exhibit Hall**
11:15 AM–5:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
12:30 PM–1:30 PM	**Luncheon** *(Ticket Required)*	**Grand Ballroom CD South & EF**
2:00 PM–2:30 PM	**Leadership Exchange** – Sunil Singh	**Riverside East Exhibit Hall**
3:15 PM–3:45 PM	**Leadership Exchange** – Thomasina Adams	**Riverside East Exhibit Hall**
4:30 PM–5:00 PM	**Leadership Exchange** – Chrissy Newell	**Riverside East Exhibit Hall**
5:30 PM - 7:00 PM	**Reception – Sponsored by Pearson K12 Learning** *(Ticket Required)*	**Grand Ballroom CD South & EF**
Tuesday, March 31		
6:45 AM–5:00 PM	**On-Site Registration**	**Grand Ballroom Foyer**
7:00 AM–8:00 AM	**Breakfast – Sponsored by Big Ideas Learning** *(Ticket Required)*	**Grand Ballroom CD South & EF**
8:15 AM–12:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
8:30 AM–9:00 AM	**Leadership Exchange** – Annie Fetter	**Riverside East Exhibit Hall**
8:30 AM–4:00 PM	**Sponsor/Exhibitor Display Area**	**Riverside East Exhibit Hall**
8:30 AM–4:00 PM	**NCSM Bookstore, Membership Booth, & Coaches Center**	**Riverside East Exhibit Hall**
9:15 AM –10:00 AM	**Special Focus on Sponsor/Exhibitors**	**Riverside East Exhibit Hall**
10:15 AM–10:45 AM	**Leadership Exchange** – Dan Finkel	**Riverside East Exhibit Hall**
12:30 PM–2:00 PM	**Luncheon – Sponsored by Texas Instruments** *(Ticket Required)*	**Grand Ballroom CD South & EF**
2:15 PM–3:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
2:30 PM–3:00 PM	**Leadership Exchange** – Peter Liljedahl	**Riverside East Exhibit Hall**
3:30 PM–4:30 PM	**Caucuses**	**Refer to Tuesday Tab for Schedule**
4:45 PM–5:15 PM	**NCSM Business Meeting & State of the Organization Report**	**Columbus G**
Wednesday, April 1		
7:00 AM–8:00 AM	**Breakfast – Partially Sponsored by Math Solutions** *(Ticket Required)*	**Grand Ballroom CD South & EF**
7:30 AM–10:30 AM	**On-Site Registration**	**Grand Ballroom Foyer**
8:15 AM–11:45 AM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
12:00 PM–1:30 PM	**Luncheon – Partially Sponsored by Curriculum Associates** *(Ticket Required)*	**Grand Ballroom CD South & EF**
1:45 PM–4:00 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**

NOTES

CONNECT. COLLABORATE. COMMIT.

MOVING MATHEMATICS LEADERSHIP INTO THE NEW DECADE

52nd NCSM Annual Conference

March 30–April 1, 2020 • Chicago, IL

CPM EDUCATIONAL PROGRAM

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Cloud Gate in Millennium Park

PROGRAM SUMMARY INFORMATION

MONDAY, MARCH 30

See page 5 for Conference Strand descriptions.

MONDAY SUMMARY

Columbus AB

7:00 AM–8:00 AM

Nanci Smith
AFFILIATE LEADERS MEETING
Columbus AB | General

Columbus CD

7:00 AM–7:30 AM

Kris Cunningham
First-timers Session
Columbus CD | General

Grand Ballroom CD South & EF

8:00 AM–9:15 AM

Mona Toncheff and Maria Everett
Welcome Presenters
Grand Ballroom CD South & EF
General

KEYNOTE PRESENTER

Jennie Magiera
Courageous Edventures
Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

9:30 AM–10:30 AM

FEATURED SPEAKER

Deborah Ball
Supporting Professionals to Counteract Racism and Oppression in the Discretionary Spaces of their Work
Grand Ballroom CD South & EF
Strand 1 | General

12:30 PM–1:30 PM

MONDAY LUNCH SESSION

Mona Toncheff
Ignite Session
*Ticketed Event
Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

5:30 PM–7:00 PM

RECEPTION

Sponsored By: Pearson K12 Learning
*Ticketed Event
Grand Ballroom CD South & EF
General

	9:30 AM–10:30 AM	11:15 AM–12:15 PM	1:45 PM–2:45 PM	3:00 PM–4:00 PM	4:15 PM–5:15 PM
Grand Ballroom A & C North	**MAJOR PRESENTATION**	**MAJOR PRESENTATION**	**MAJOR PRESENTATION**	**MAJOR PRESENTATION**	**MAJOR PRESENTATION**
		Marilyn Strutchens Using a Variety of Media to Lead Courageous Conversations Among Mathematics Education Stakeholders Grand Ballroom A & C North Strand 3 | General	**Cathy Humphreys** Guided Collaboration to Support Teachers in Number Talks: Insights and Challenges Grand Ballroom A & C North Strand 2 | General	**Rachel Levy** Building Capacity in Statistics and Mathematical Modeling Grand Ballroom A & C North Strand 3 | General	**Daniel Finkel** How Mathematicians Play: Creating a Culture of Ownership, Rigor, and Joy in Math Class Grand Ballroom A & C North Strand 1 | General
Grand Ballroom B	**SPOTLIGHT SPEAKER**	**SPOTLIGHT SPEAKER**	**SPOTLIGHT SPEAKER**	**SPOTLIGHT SPEAKER**	**SPOTLIGHT SPEAKER**
		Edward Nolan Coaching to Improve Teacher Questioning Grand Ballroom B Strand 2 | General	**Annie Fetter** The Power of Ideas: Letting Students' Thinking Take Center Stage Grand Ballroom B Strand 1 | PK-2 Primary	**Sunil Singh** Utilizing Math History to Embrace Equity, Failure, and Authentic Problem Solving in Leadership Communities Grand Ballroom B Strand 1 | General	**Juli Dixon** Six Essential Expectations for Effective Mathematics Instruction Grand Ballroom B Strand 3 | General
Grand Ballroom D North	**Elizabeth Petit Cunningham** Eight Instructional Responses to Formative Assessment: Coaching Instructional Decisions Grand Ballroom D North Strand 3 | 3–5 Intermediate	**Natevidad Casas, Chantelle Elliott, Marjorie Huber** Taking Teacher Leadership and Learning to the Next Level: A Model for Professional Learning Cadres Grand Ballroom D North Strand 3 | General	**Graham Fletcher** Building Math Residue with Lessons that Stick Grand Ballroom D North Strand 1 | General	**Amber Candela, Melissa Boston, Juli Dixon** Coaching Discourse Actions: Supporting Teachers to Link Student's Responses and Press for More Grand Ballroom D North Strand 2 | General	**Nataliya Paquette, Melissa Eastwood, Peter Mitchell, Stephanie Burroughs** Coaching in the Moment and Beyond: Navigating the Coaching Menu Grand Ballroom D North Strand 2 | General
Michigan 1A	**Jeanne Simpson, Sheila Holt, Lisa McDonough, Carrie Plank, LeShell Smith** Building a Mathematics Coaching Community Michigan 1A Strand 3 | General	**Kathryn Flores** Supporting Teachers in Planning to Facilitate Rich Tasks Michigan 1A Strand 2 | K–5 Elementary	**Allan Bellman** Helping Preservice and Novice Teachers Become Reflective, Continuous, Formative Assessment Users Michigan 1A Strand 4 | 6–12 Secondary	**Melissa Hedges, Michelle Douglas-Meyer** Developing Teacher Capacity for Understanding Subitizing and Intentional Use of the Subitizing Trajectory in the Early Childhood Mathematics Classroom Michigan 1A Strand 1 | PK–2 Primary	**Matt McLeod, Gavin Creaden, Megan Kelley, Teresa Duncan, Nicole Constantinidis** Scaling Up "Math for All": Going Broader AND Deeper to Provide Access to Cognitively Demanding Mathematics for ALL Students Michigan 1A Strand 1 | K–5 Elementary
Michigan 1B	**Sue Chapman, Mary Mitchell** Math We Can! A Lab Approach to Growing Students as Mathematicians and Building Teacher Efficacy Michigan 1B Strand 4 | General	**Lou Matthews, Shelly Jones, Rebeka Matthews Sousa** Gonna Lay Down My Burdens! Leading Mathematics from the Center of Culturally Relevant Teaching and Social Justice Michigan 1B Strand 3 | General	**Kelley Buchheister, Christa Jackson, Cynthia Taylor** Starting the Conversation: Using Video Cases to Reflect on Equitable Mathematics Instruction Michigan 1B Strand 3 | K–5 Elementary	**Richelle Marynowski** A Model of Sustained Coaching to Support Changing Teacher Practice Michigan 1B Strand 2 | General	**Toni Allen, Emma Trevino, Alisa Brown, Sarah Gleason** Math Class: I Belong Here! Michigan 1B Strand 1 | 6–8 Middle
Michigan 1C	**Tim Truitt, Phil Daro** Building Capacity for Rigor and the Mathematical Practices in High School Classrooms Michigan 1C Strand 1 | 9–12 High School	**Natalie Crist, Emily Dwivedi** Improving Student Achievement Through Engaging and Equitable Lesson Design by Supporting Teachers Through Collaborative Processes Michigan 1C Strand 1 | K–5 Elementary	**Bernard Frost** Collaborating with School Teams to Use Data to Differentiate Math Instruction Michigan 1C Strand 1 | General	**Cynthia Callard, Jennifer Kruger** Teaching Labs: The Transition of Face-to-Face Professional Learning Experiences to Synchronous Online Implementation Michigan 1C Strand 3 | General	**Erin Altshuler, Shayla Coleman** Giving Grades True Meaning—Aligning Concept Based Assessment with Grading Michigan 1C Strand 4 | 6–12 Secondary

MONDAY SUMMARY

Columbus AB

7:00 AM–8:00 AM

Nanci Smith
AFFILIATE LEADERS MEETING

Columbus AB | General

Columbus CD

7:00 AM–7:30 AM

Kris Cunningham
First-timers Session

Columbus CD | General

Grand Ballroom CD South & EF

8:00 AM–9:15 AM

Mona Toncheff and Maria Everett
Welcome Presenters

Grand Ballroom CD South & EF
General

KEYNOTE PRESENTER

Jennie Magiera
Courageous Edventures

Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

9:30 AM–10:30 AM

FEATURED SPEAKER

Deborah Ball
Supporting Professionals to Counteract Racism and Oppression in the Discretionary Spaces of their Work

Grand Ballroom CD South & EF
Strand 1 | General

12:30 PM–1:30 PM

MONDAY LUNCH SESSION

Mona Toncheff
Ignite Session
*Ticketed Event

Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

5:30 PM–7:00 PM

RECEPTION

Sponsored By: Pearson K12 Learning
*Ticketed Event

Grand Ballroom CD South & EF
General

	9:30 AM–10:30 AM	11:15 AM–12:15 PM	1:45 PM–2:45 PM	3:00 PM–4:00 PM	4:15 PM–5:15 PM
Michigan 2	**Jeanne DiDomenico, Debbie Leslie, Anastasia Hildner** Building Math Leadership Teams in Chicago Schools Michigan 2 Strand 3 | General	**Dr. Karen Greenhaus, Gerri Dupee** Vertical Exploration of Standards to Support Equitable Math Learning & Teaching-Expressions & Equations Michigan 2 | Strand 1 3–8 Upper Elementary/Middle	**Claire Gogolen, Jackie Kearney, Samantha R. Booth** The Power of Evidence-based Coaching to Promote Equity in Mathematics Classrooms Michigan 2 Strand 4 | General	**Jonathan Brendefur, Jeff Johnson** Mathematics Screening: What Do We Look For and How Do We Intervene? Michigan 2 Strand 4 | K–5 Elementary	**Courtney Ortega, Keely Machmer-Wessels** Access and Agency: Making the Most of Math Content Routines Michigan 2 Strand 1 | 6–12 Secondary
Michigan 3	**Michael Greenlee, Douglas Sovde** Defining Rigor in the Math Classroom Michigan 3 Strand 1 | General	**Denise Trakas, Ben Beckam, Channon Toles, Christin O'Keefe** Collaborative Coaching Structures: Building a Teacher Centered Coaching System Michigan 3 Strand 3 | K–5 Elementary	**Christine Koerner, Levi Patrick** Championing Excellence: Creating an Equitable, Gold-Standard Mathematics Program in Your School Michigan 3 Strand 3 | General	**Mary Swarthout, Kay Wohlhuter** Lessons We Learned: Engaging Preservice Teachers Through Instructional Use of Number Talks to Build Number Sense Meaning and Computation Strategies Michigan 3 Strand 1 | General	**Nicole Rigelman, Courtney Baker, Melinda Knapp** Don't Regret, Rehearse! Making Challenging Conversations a Site for Mathematics Teacher Leader Learning Michigan 3 Strand 3 | General
Randolph 1A	**Michelle Luster, Leslie Grayson** Number Progressions in Action: Meeting the Needs of ALL Students at the Small Group Table and Beyond Randolph 1A Strand 1 | PK-2 Primary	**Lynley Smith, Staci Torok** The Coaching Equation: Five Steps to Formulate Effective Math Coaching Randolph 1A Strand 2 | General	**Karla Bandemer, Becky Evans, Delise Andrews** Building Teacher Capacity for Equitable Mathematics Instruction Randolph 1A Strand 1 | 3–5 Intermediate	**Shalinee Sharma, Stephanie Ely** Equitable Instruction for All Students with Visualization and Participatory Dialogue Randolph 1A Strand 1 | K–5 Elementary	**Dee Crescitelli** Creating Schoolwide Cultures of Mathematical Sense-making Randolph 1A Strand 2 | General
Randolph 1B	**PRESIDENTS EXCHANGE – ASA** **Christine Franklin** Pre-K–12 GAISE 2 – Enhancing the Spirit of School Level Statistics in GAISE 1 Randolph 1B Strand 3 | General	**Kim Webb, Stephanie Verners** A Journey Toward Improving Math Outcomes for Students Randolph 1B Strand 1 | General	**Nick Freathy, Ellen Byron** Designing a Professional Learning Cohort to Support High Quality Mathematical Explanations in the Classroom Randolph 1B Strand 3 | 6–12 Secondary	**Yvonne Slanger-Grant, Alden Edson** Understanding Differentiation in a Problem-Based, Mathematics Teaching-Learning Environment Randolph 1B Strand 1 | 6–12 Secondary	**Monica Kendall, Meghan Toshner** Opening the Door to Mathematics: Monitoring Equity and Access for English Learners Randolph 1B | Strand 4 3–8 Upper Elementary/Middle
Randolph 2	**Georgina Rivera, Jackie Palmquist** NCSM Coaching Kick-Off Session! Randolph 2 Strand 0 | General		**Betsy Berry, Sheryl Stump, Doris Mohr, Courtney Flessner, Laurie Ferry** Fostering Relationships and Leadership in K–8 Schools for Improving Mathematics Teaching Randolph 2 Strand 3 | General	**LauraMarie Coleman** The Right Question Can be the Difference Between Empowerment and Defeat in Coaching Conversations Randolph 2 Strand 2 | General	**Kathi Cook, Melissa Fast** Experiences from the Field: Lessons Learned from Implementing an Innovative 12th-Grade Course in Two States Randolph 2 Strand 3 | 9–12 High School
Randolph 3	**Craig Schneider, Vanessa Cerrahoglu** Mathematical Language Routines: Coaching for Access and Equity Randolph 3 Strand 2 | General	**Michael Belcher, Jere Confrey, Erin Krupa** The Math Shark Tank: Entrepreneurial Challenges for Middle Grades Randolph 3 Strand 1 | 6–8 Middle	**Victoria Bill, Margaret Smith, Miriam Sherin** The 5 Practices in Practice: Taking on Classroom Challenges Randolph 3 Strand 1 | K–5 Elementary	**James Lynn, Diane Briars, Kathi Cook, Alisa Rafter** Reclaiming Lost Ground: Research-Informed Intensification Strategies to Support Underprepared Algebra Students Randolph 3 Strand 1 | 9–12 High School	**Connie Conroy** Building Teacher Capacity to Differentiate Mathematical Tasks That Will Increase Accessibility for English Language Learners Randolph 3 Strand 1 | K–5 Elementary

MONDAY SUMMARY

Columbus AB

7:00 AM–8:00 AM

Nanci Smith
AFFILIATE LEADERS MEETING

Columbus AB | General

Columbus CD

7:00 AM–7:30 AM

Kris Cunningham
First-timers Session

Columbus CD | General

Grand Ballroom CD South & EF

8:00 AM–9:15 AM

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Welcome Presenters

Grand Ballroom CD South & EF
General

KEYNOTE PRESENTER

Jennie Magiera
Courageous Edventures

Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

9:30 AM–10:30 AM

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Deborah Ball
Supporting Professionals to Counteract Racism and Oppression in the Discretionary Spaces of their Work

Grand Ballroom CD South & EF
Strand 1 | General

12:30 PM–1:30 PM

MONDAY LUNCH SESSION

Mona Toncheff
Ignite Session
*Ticketed Event

Grand Ballroom CD South & EF
General

Grand Ballroom CD South & EF

5:30 PM–7:00 PM

RECEPTION

Sponsored By: Pearson K12 Learning
*Ticketed Event

Grand Ballroom CD South & EF
General

	9:30 AM–10:30 AM	11:15 AM–12:15 PM	1:45 PM–2:45 PM	3:00 PM–4:00 PM	4:15 PM–5:15 PM
Roosevelt 3A	**Melissa Hosten, Carrie Burdon, Deborrah Black, Eboney McKinney, Elisabeth Bankhead, Nancy Casagrande** Making IMPACTS: Transforming Teachers into Classroom and Regional Change Agents Roosevelt 3A Strand 3 | K–5 Elementary	**Denise Porch** Understanding the Why Behind What We Do: Manipulatives and Area Models For Building Connections to Multiply Fractions Roosevelt 3A Strand 1 3–8 Upper Elementary/Middle	**Donna Johnson, Jill Sapoznick, Rakhee Dodia** It's Easier to Move a Mountain When You've Got Help! Group Coaching: When Teachers Learn Together with a Coach. Roosevelt 3A Strand 2 | PK-2 Primary	**Beth Sappe, Smitha Hughes** A Commitment to Equity: Data Dialogue Structures to Meet the Needs of All Learners Roosevelt 3A Strand 4 | General	**Suzie Craig, Nova Katz** Redefining 3-Act Tasks Roosevelt 3A Strand 1 3–8 Upper Elementary/Middle
Roosevelt 3B	**Julie Thiele** Implementing Real-world Learning Experiences to Provide Students Equitable Learning and Assessment Opportunities Roosevelt 3B Strand 4 | K–5 Elementary	**Sandra Davis** Designing Transformational Professional Development Opportunities for Diverse Adult Learners-Let's Get Andragogical! Roosevelt 3B Strand 2 | General	**Cathy Marks Krpan** Thinking Outloud in Mathematics Classrooms Roosevelt 3B Strand 1 3–8 Upper Elementary/Middle	**Paul Gray, Jr., Thomas Stricklin, Brian Buckhalter, John Staley** Exploring the Framework for Mathematics Leadership: Advocate and Monitor Roosevelt 3B Strand 0 | General	**Melissa Pearson, Susan Totaro, Mary Ann Carnevale** Creating the Capacity for Change: Structures for Empowering Elementary Teachers and Increasing Mathematical Efficacy Roosevelt 3B Strand 1 | K–5 Elementary
Columbus AB	**Randi Blue, Cheryl Akers** The Road to Representation: Coaching a Yearlong PD Plan Columbus AB Strand 2 | 3–5 Intermediate	**John Staley, Diane Briars, Linda Gojak, Carole Greenes, Timothy Kanold, Henry Kepner, Steve Leinwand, Valerie Mills, Suzanne Mitchell, Connie Schrock** Ross Taylor Past Presidents' Session: Speed Chats for Leaders Around Critical Challenges and Effective Solutions Columbus AB Strand 1 | General	**Melissa Eastwood, Nataliya Paquette, Peter Mitchell, Stephanie Burroughs** Inclusive Mathematics Coaching: Using the Coaching Model to Support Special Education Columbus AB Strand 2 | General	**Catherine Fosnot** The Development of Data Representation, Measurement, and Geometry: New Landscapes of Learning Columbus AB Strand 1 | General	**Brenda Konicke, Jon Piraino** Ask, Listen,and Learn: Coaching Practices That Impact Mathematics Teaching and Learning Columbus AB Strand 2 | General
Columbus CD	**Lori Everson, Nanci Smith** Coaching: Connecting and Collaborating to Inspire Teachers to Meet the Needs of Each and Every Learner Columbus CD Strand 2 | K–5 Elementary	**Karen Wootton** How Might We Rethink Intervention? Columbus CD Strand 1 | 6–8 Middle	**Rachel Lambert** Delete Deficit Thinking; Why "Low Kids" and "High Kids" is Inaccurate, Ineffective, Unethical, and Counterproductive Columbus CD Strand 1 | General	**Mary Kemper** Leading with Kindness Columbus CD Strand 4 | K–5 Elementary	**Steven Goldman, Alexander Walker** What can We Learn from Corporate America? Adapting the Google Ventures "Sprint" Model for Schools Columbus CD Strand 3 | General
Columbus EF	**Jamila Riser, Valerie Maxwell** Developing a Keen Eye: A Research-Based Coaching Protocol that Shifts Teachers' Orientation Around Classroom Video-Based Conversations Columbus EF Strand 2 | General	**Darshan Jain** Effective Leadership in the Implementation of Proficiency-Based Grading and Reporting in Mathematics Columbus EF Strand 4 | 6–12 Secondary	**Dina Mendola** Facilitation and Presentation Strategies That Improve Adult Learning Columbus EF Strand 2 | General	**Danielle Seabold, Lisa Brown, Luis Lima, Denise Thornton** Dismantling the Barrier of Tracking Columbus EF Strand 3 | 6–12 Secondary	**Heather Dyer, Claudia Eckstrom** Coaching to Undo the "Proceduralizing" of Mathematics Columbus EF Strand 2 | K–5 Elementary

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Strand 1 | General

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General

Grand Ballroom CD South & EF

5:30 PM–7:00 PM

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Columbus G	**Jenny Novak, Bill Barnes** Redesigning School Improvement Structures: Leveraging School Coaching Teams as Direct Support to Schools Columbus G Strand 3 | General	**Shelly LeDoux, Jacqueline LeJeune** Contextualizing Coaching with IC Maps and Video Columbus G Strand 2 | General	**Beth Sappe, Smitha Hughes** Creating Virtual Professional Learning Experiences to Build Math Content and Teaching Knowledge Columbus G Strand 3 | General	**Eric Milou** The Status Quo in High School Mathematics is Unacceptable Columbus G Strand 3 | 9–12 High School	**Rolanda Baldwin** African-American Math Achievement Toolkit: Supporting Equity-Based Instructional Practices While Implementing High Quality Curriculum Columbus G Strand 2 | General
Columbus H	**Jody Guarino, Shelbi Cole, John Drake, Kristin Gray, Allison Hintz** Educative Curriculum…Educative for Whom? Explore Opportunities for Learning within Illustrative Mathematics K–5 Curriculum Columbus H Strand 1 | K–5 Elementary	**Karen Reinhardt** Coaching to Advance Justice: Revising Coaching Tools to Explicitly Attend to Issues of Justice and Equity Columbus H Strand 2 | K–5 Elementary	**Jeanette Scott, Roshani Dubel** Building Mathematical Literacy through CTE Columbus H Strand 1 | 9–12 High School	**Ellen McCrum, Antonia Cameron, Renee McShane** Coaching the Coach: Layers of learning Columbus H Strand 2 | K–5 Elementary	**Mary Jo Tavormina** Using a Focus on Student Learning to Foster High Quality Mathematics Teaching Columbus H Strand 3 | General
Columbus IJ	**Nigel Nisbet** Challenge Accepted: Preparing All Students for the Future with Mathematical Rigor Columbus IJ Strand 1 | K–5 Elementary	**Cathy Seeley** Why Aren't We There Yet? Columbus IJ Strand 3 | General	**Katey Arrington, Ted Coe** Secondary and Postsecondary Mathematics Alignment at Scale – It's a Big Job and Someone Has to Do It! Columbus IJ Strand 3 | General	**Francis (Skip) Fennell, Beth Kobett, Jon Wray** Math Coaches: Considering Classroom-Based Formative Assessment through the lens of Coach/Specialist Responsibilities and Leadership Expectations and Challenges Columbus IJ Strand 2 | General	**Nicole Garcia, Meghan Shaughnessy** Recording Student Thinking: Supporting Teachers to Help Students See Others' Thinking Columbus IJ Strand 2 | General
Columbus KL	**Katie Salguero, Angela Knotts** Making Mathematics Accessible: Supporting Teachers to Engage with English Learners and Diverse Learners Columbus KL Strand 2 3–8 Upper Elementary/Middle	**Margaret Smith** Orchestrating Productive Mathematics Discussions: Overcoming the Challenges Columbus KL Strand 1 | 6–8 Middle	**Jenifer Hummer** Supporting Teachers' Engagement with Student Thinking Through Lesson Study on Mathematical Modeling Columbus KL Strand 3 | 6–12 Secondary	**Sterling Hilton, Scott Hendrickson, Nicole Berg** Unit Study: Coaching Teachers to Differentiate Tasks and Discourse for Fluent Student Understanding Columbus KL Strand 2 | General	**Susan O'Connell** The Fundamental Five: Five Essential Strategies That Transform the Teaching of Mathematics K–5 Columbus KL Strand 1 | K–5 Elementary
Exhibit Hall	**SPONSOR SHOWCASE #1** **Michael Manganello** The College Board: All Students Can Succeed in Pre-AP Mathematics Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Sophia Montiel** Big Ideas Learning: Teaching Math Effectively and with Confidence Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Stephanie Ely, Kyle Falting** Zearn: Deepening Daily Instructional Choices with Innovative Curriculum-aligned Professional Development Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Andrew Byrns** Pearson K12 Learning: Leave the Math, Change the Language Exhibit Hall | General	
Exhibit Hall	**SPONSOR SHOWCASE #2** **Danielle Curran, Grace Kelemanik, Amy Lucenta** Curriculum Associates: Strategies for Eliciting and Using Student Thinking to Facilitate Powerful Discussions Exhibit Hall | General	**SPONSOR SHOWCASE #2** **Peg Hartwig, Melissa Waggoner** Discovery Education: Developing Cross-Curricular STEM Communication and Alignment to Improve Engagement, Understanding, and Performance. (Grade 7-Grade 11) Exhibit Hall | General	**SPONSOR SHOWCASE #2** Math Learning Center: Bridges Intervention—Delivering Clear and Systematic Instruction Exhibit Hall | General	**SPONSOR SHOWCASE #2** **Bill McCallum** McGraw Hill: Supporting Equity: What we are Learning at IM Exhibit Hall | General	

MONDAY SESSIONS BY STRAND

STRAND 0: NCSM BUSINESS

LEVEL	LOCATION	START	END
GEN	RANDOLPH 2	9:30 AM	10:30 AM
GEN	ROOSEVELT 3B	3:00 PM	4:00 PM

STRAND 1: BUILD MATHEMATICAL CAPACITY

LEVEL	LOCATION	START	END
GEN	MICHIGAN 3	9:30 AM	10:30 AM
K–5	COLUMBUS H	9:30 AM	10:30 AM
K–5	COLUMBUS IJ	9:30 AM	10:30 AM
9–12	MICHIGAN 1C	9:30 AM	10:30 AM
PK-2	RANDOLPH 1A	9:30 AM	10:30 AM
GEN	GRAND BALLROOM CD SOUTH & EF	9:30 AM	10:30 AM
3–8	ROOSEVELT 3A	11:15 AM	12:15 PM
K–5	MICHIGAN 1C	11:15 AM	12:15 PM
6–8	COLUMBUS KL	11:15 AM	12:15 PM
GEN	COLUMBUS AB	11:15 AM	12:15 PM
GEN	RANDOLPH 1B	11:15 AM	12:15 PM
3–8	MICHIGAN 2	11:15 AM	12:15 PM
6–8	COLUMBUS CD	11:15 AM	12:15 PM
6–8	RANDOLPH 3	11:15 AM	12:15 PM
K–5	RANDOLPH 3	1:45 PM	2:45 PM
GEN	GRAND BALLROOM D NORTH	1:45 PM	2:45 PM
3–8	ROOSEVELT 3B	1:45 PM	2:45 PM
GEN	COLUMBUS CD	1:45 PM	2:45 PM
GEN	MICHIGAN 1C	1:45 PM	2:45 PM
9–12	COLUMBUS H	1:45 PM	2:45 PM
PK-2	GRAND BALLROOM B	1:45 PM	2:45 PM
3–5	RANDOLPH 1A	1:45 PM	2:45 PM
GEN	MICHIGAN 3	3:00 PM	4:00 PM
GEN	COLUMBUS AB	3:00 PM	4:00 PM
GEN	GRAND BALLROOM B	3:00 PM	4:00 PM
6–12	RANDOLPH 1B	3:00 PM	4:00 PM
9–12	RANDOLPH 3	3:00 PM	4:00 PM
K–5	RANDOLPH 1A	3:00 PM	4:00 PM
PK-2	MICHIGAN 1A	3:00 PM	4:00 PM
K–5	MICHIGAN 1A	4:15 PM	5:15 PM
K–5	COLUMBUS KL	4:15 PM	5:15 PM
6–12	MICHIGAN 2	4:15 PM	5:15 PM
6–8	MICHIGAN 1B	4:15 PM	5:15 PM
3–8	ROOSEVELT 3A	4:15 PM	5:15 PM
K–5	RANDOLPH 3	4:15 PM	5:15 PM
GEN	GRAND BALLROOM A & C NORTH	4:15 PM	5:15 PM
K–5	ROOSEVELT 3B	4:15 PM	5:15 PM

STRAND 2: CONSTRUCT IMPACTFUL MATHEMATICS COACHING

LEVEL	LOCATION	START	END
GEN	RANDOLPH 3	9:30 AM	10:30 AM
GEN	COLUMBUS EF	9:30 AM	10:30 AM
K–5	COLUMBUS CD	9:30 AM	10:30 AM
3–8	COLUMBUS KL	9:30 AM	10:30 AM
3–5	COLUMBUS AB	9:30 AM	10:30 AM
K–5	MICHIGAN 1A	11:15 AM	12:15 PM
K–5	COLUMBUS H	11:15 AM	12:15 PM
GEN	GRAND BALLROOM B	11:15 AM	12:15 PM
GEN	RANDOLPH 1A	11:15 AM	12:15 PM
GEN	ROOSEVELT 3B	11:15 AM	12:15 PM
GEN	COLUMBUS G	11:15 AM	12:15 PM
GEN	COLUMBUS EF	1:45 PM	2:45 PM
GEN	COLUMBUS AB	1:45 PM	2:45 PM
GEN	GRAND BALLROOM A & C NORTH	1:45 PM	2:45 PM
PK-2	ROOSEVELT 3A	1:45 PM	2:45 PM
K–5	COLUMBUS H	3:00 PM	4:00 PM
GEN	MICHIGAN 1B	3:00 PM	4:00 PM
GEN	GRAND BALLROOM D NORTH	3:00 PM	4:00 PM
GEN	COLUMBUS KL	3:00 PM	4:00 PM
GEN	COLUMBUS IJ	3:00 PM	4:00 PM
GEN	RANDOLPH 2	3:00 PM	4:00 PM
GEN	COLUMBUS AB	4:15 PM	5:15 PM
GEN	COLUMBUS IJ	4:15 PM	5:15 PM
GEN	GRAND BALLROOM D NORTH	4:15 PM	5:15 PM
GEN	RANDOLPH 1A	4:15 PM	5:15 PM
K–5	COLUMBUS EF	4:15 PM	5:15 PM
GEN	COLUMBUS G	4:15 PM	5:15 PM

STRAND 3: DESIGN SYSTEMIC STRUCTURES WITHIN THE MATHEMATICS EDUCATION COMMUNITY

LEVEL	LOCATION	START	END
K–5	ROOSEVELT 3A	9:30 AM	10:30 AM
GEN	RANDOLPH 1B	9:30 AM	10:30 AM
GEN	COLUMBUS G	9:30 AM	10:30 AM
GEN	MICHIGAN 1A	9:30 AM	10:30 AM
GEN	MICHIGAN 2	9:30 AM	10:30 AM
3–5	GRAND BALLROOM D NORTH	9:30 AM	10:30 AM
GEN	MICHIGAN 1B	11:15 AM	12:15 PM
GEN	COLUMBUS IJ	11:15 AM	12:15 PM
K–5	MICHIGAN 3	11:15 AM	12:15 PM
GEN	GRAND BALLROOM D NORTH	11:15 AM	12:15 PM
GEN	GRAND BALLROOM A & C NORTH	11:15 AM	12:15 PM
6–12	RANDOLPH 1B	1:45 PM	2:45 PM
6–12	COLUMBUS KL	1:45 PM	2:45 PM
GEN	COLUMBUS G	1:45 PM	2:45 PM
GEN	MICHIGAN 3	1:45 PM	2:45 PM
GEN	RANDOLPH 2	1:45 PM	2:45 PM
GEN	COLUMBUS IJ	1:45 PM	2:45 PM
K–5	MICHIGAN 1B	1:45 PM	2:45 PM
GEN	MICHIGAN 1C	3:00 PM	4:00 PM
6–12	COLUMBUS EF	3:00 PM	4:00 PM
9–12	COLUMBUS G	3:00 PM	4:00 PM
GEN	GRAND BALLROOM A & C NORTH	3:00 PM	4:00 PM
GEN	MICHIGAN 3	4:15 PM	5:15 PM
GEN	COLUMBUS CD	4:15 PM	5:15 PM
9–12	RANDOLPH 2	4:15 PM	5:15 PM
GEN	COLUMBUS H	4:15 PM	5:15 PM
GEN	GRAND BALLROOM B	4:15 PM	5:15 PM

STRAND 4: MONITOR EVIDENCE OF EQUITABLE MATHEMATICS LEARNING

LEVEL	LOCATION	START	END
GEN	MICHIGAN 1B	9:30 AM	10:30 AM
K–5	ROOSEVELT 3B	9:30 AM	10:30 AM
6–12	COLUMBUS EF	11:15 AM	12:15 PM
6–12	MICHIGAN 1A	1:45 PM	2:45 PM
GEN	MICHIGAN 2	1:45 PM	2:45 PM
GEN	ROOSEVELT 3A	3:00 PM	4:00 PM
K–5	MICHIGAN 2	3:00 PM	4:00 PM
K–5	COLUMBUS CD	3:00 PM	4:00 PM
6–12	MICHIGAN 1C	4:15 PM	5:15 PM
3–8	RANDOLPH 1B	4:15 PM	5:15 PM

MONDAY SESSIONS

HOW TO READ THIS SPEAKER PROGRAM:

TITLE OF PRESENTATION
Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience
Description of presentation.
Speaker Name, Position/Affiliation, City, State

MONDAY LEADERSHIP EXCHANGE—EXHIBIT HALL

TIME	FACILITATOR	TOPIC
2:00 PM–2:30 PM	Sunil Singh	Why the History of Mathematics Matters to the Future of Math Education
3:15 PM–3:45 PM	Thomasina Adams	Why is Conceptual Understanding Still Important for "Doing Mathematics"?
4:30 PM–5:00 PM	Chrissy Newell	#MathGals: Building Joy & Belonging for Girls in Math

AFFILIATE LEADERS MEETING
7:00 AM–8:00 AM | Columbus AB | General
Gather with NCSM Affiliate Leaders from across North America as we share ideas, discuss concerns, and resolutions, and identify ways to serve the leaders of mathematics in our areas. We will brainstorm how NCSM can support your organization's goals for leadership development and member support. Come meet and share ideas with new colleagues. This meeting is for invited Affiliate Leaders only.
Nanci Smith, NCSM Affiliate Chair, Peoria, Arizona

CONFERENCE ORIENTATION—FIRST-TIMER'S SESSION

WHAT'S IT ALL ABOUT?
AN ORIENTATION FOR THOSE NEW TO THE NCSM ANNUAL CONFERENCE
7:00 AM–7:30 AM | Columbus CD | General
This session is for attendees who are new to the NCSM Annual Conference. Participants will network with others, review the structure of the conference, explore the different conference options, set personal priorities and goals, and work on a personal plan of what to do and where to go during the conference.
Kris Cunningham, NCSM Membership and Volunteer Coordinator, Phoenix, Arizona

OPENING SESSION—KEYNOTE PRESENTATION


Mona Toncheff


Maria Everett

WELCOME PRESENTERS
8:00 AM–9:15 AM | Grand Ballroom CD South & EF | General
Welcome to Chicago, IL and the 52nd NCSM Annual Conference. Join us for greetings from the NCSM President and 2020 Program Chair.
Mona Toncheff, NCSM President, Phoenix, Arizona
Maria Everett, NCSM First Vice President and 2020 Program Chair, Towson, Maryland

MONDAY SESSIONS

KEYNOTE PRESENTER

COURAGEOUS EDVENTURES

The early innovators are out innovating, but what about the many who hope to follow on their own adventure? These educators often feel the pull, but hesitate due to the obstacles along the way. This talk charts a course to identify and navigate around those obstacles so everyone can find the courage to journey into the limitless possibilities of the unknown—and discover their own version of classroom innovation.

Jennie Magiera is Google's Global Head of Education Impact, bestselling author of *Courageous Edventures*, and founder of the education equity nonprofit *Our Voice Alliance*. A lifelong educator, Jennie taught for over a decade and has also been an instructional coach, building leader, and district administrator. She served on the Technical Work Group for the US Dept of Education's National EdTech Plan, and has been featured on programs such as NBC's Education Nation, C-SPAN's Reimagining Education, TEDx, and NPR.

Jennie Magiera, Google, Chicago, Illinois

Presider, Maria Everett, NCSM First Vice President

9:30 AM–10:30 AM

FEATURED SPEAKER

SUPPORTING PROFESSIONALS TO COUNTERACT RACISM AND OPPRESSION IN THE DISCRETIONARY SPACES OF THEIR WORK

9:30 AM–10:30 AM | Grand Ballroom CD South & EF

Strand 1 | General

This presentation will focus on ways to help educators learn to use their discretionary power to counteract patterns and habits of practice that reproduce racism and inequity. We will investigate how these patterns can be interrupted and replaced with practices that support justice and equity. Focusing on the important work of those who support teachers, this session will examine how to develop systematically and make possible instruction that deliberately disrupts inequity.

Deborah Loewenberg Ball is the William H. Payne Collegiate Professor of education at the University of Michigan, an Arthur F. Thurnau Professor, and the director of TeachingWorks. She taught elementary school for over 15 years, and continues to teach mathematics to elementary students every summer. Ball studies the practice of teaching as the active work of building relationships with children. She uses elementary mathematics as a context for investigating the challenges of helping children develop agency and understanding, and for leveraging the power of teaching to disrupt racism and inequity. Ball is an expert on teacher education, and her current work centers on improving the quality of beginning teaching, particularly for children of color and low-income children. She has been elected to the American Academy of Arts and Sciences and the National Academy of Education, and is a fellow of the American Mathematical Society and the American Educational Research Association.

Deborah Ball, University of Michigan, Ann Arbor, Michigan

Presider, Connie Schrock, NCSM Immediate Past President, Emporia, Kansas

MONDAY SESSIONS

EIGHT INSTRUCTIONAL RESPONSES TO FORMATIVE ASSESSMENT: COACHING INSTRUCTIONAL DECISIONS

9:30 AM–10:30 AM | Grand Ballroom D North | Strand 3 | 3-5 Intermediate

The teachers you work with have focused on using formative assessment to better understand student knowledge. Now those teachers are asking you about what they should do next based on the evidence. In this session, we will explore eight instructional responses to be used in responding to evidence of fraction understanding. We will use the evidence from a set of student work to consider instructional responses based on the evidence.

Elizabeth Petit Cunningham, University of Michigan-Flint, Flint, Michigan

BUILDING A MATHEMATICS COACHING COMMUNITY

9:30 AM–10:30 AM | Michigan 1A | Strand 3 | General

Facing a growing need for qualified math coaches in our area, math specialists at the University of Alabama in Huntsville developed a coaching community to prepare teacher leaders to become math coaches and to enhance the skills and knowledge of current coaches. We will share the resources we are using to develop their mathematical content and pedagogical knowledge and how we are helping them to work with adult learners.

Jeanne Simpson, Alabama Math, Science, and Technology Initiative (AMSTI), University of Alabama, Huntsville, Alabama

Sheila Holt, University of Alabama, Hunstville, Alabama

Lisa McDonough, Alabama Math, Science, and Technology Initiative (AMSTI), University of Alabama, Hunstville, Alabama

Carrie Plank, Alabama Math, Science, and Technology Initiative (AMSTI), University of Alabama, Hunstville, Alabama

LeShell Smith, Alabama Math, Science, and Technology Initiative (AMSTI), University of Alabama, Hunstville, Alabama

MATH WE CAN! A LAB APPROACH TO GROWING STUDENTS AS MATHEMATICIANS AND BUILDING TEACHER EFFICACY

9:30 AM–10:30 AM | Michigan 1B | Strand 4 | General

The ability to examine the link between specific mathematics teaching practices and student learning requires that teachers build new understandings, skills, and mind frames. Learn about a professional-learning and coaching process which increases teacher effectiveness through formative assessment aligned with research-based instructional practices and curriculum standards. Plan for implementation of this lab approach to empower teachers and students as learners and mathematicians and improve mathematics achievement in your own setting.

Sue Chapman, University of Houston–Clear Lake, Houston, Texas

Mary Mitchell, Math Solutions, Sausalito, California

BUILDING CAPACITY FOR RIGOR AND THE MATHEMATICAL PRACTICES IN HIGH SCHOOL CLASSROOMS

9:30 AM–10:30 AM | Michigan 1C | Strand 1 | 9-12 High School

What might rigor look like in a high school mathematics classroom? In what ways might students demonstrate the eight mathematical practices? In what ways are rigor and the mathematical practices inseparable? Participants will experience multiple answers to these three questions that will increase their own capacities in three ways. Participants will increase their capacity for mathematical knowledge, coaching other mathematics teachers, and directly teaching mathematics to students in Grades 9-12.

Tim Truitt, EdReports.org, Durham, North Carolina

Phil Daro, SERP and Pearson, Berkeley, California

BUILDING MATH LEADERSHIP TEAMS IN CHICAGO SCHOOLS

9:30 AM–10:30 AM | Michigan 2 | Strand 3 | General

How do we build leadership capacity within schools to positively impact math teaching and learning? This session will share our work to develop and support math leadership teams, including administrators and teacher leaders, in four Chicago Public Schools. We will discuss ways that teams set goals and strategically planned and implemented school-wide improvement efforts, emphasizing teacher learning through collaboration and professional development sessions. We will also discuss efforts toward sustaining the work after our partnership ends.

Jeanne DiDomenico, UChicago STEM Education, Chicago, Illinois

Debbie Leslie, The University of Chicago, Chicago, Illinois

Anastasia Hildner, Niños Heroes Academy, Chicago, Illinois

DEFINING RIGOR IN THE MATH CLASSROOM

9:30 AM–10:30 AM | Michigan 3 | Strand 1 | General

"Rigor" is a fraught word in mathematics education. It has carried with it both hope and punishment for historically under-served populations. In this session, we will first explore a modernized meaning of rigor in mathematics education, developed in partnership with leading K-12 and Higher Education mathematicians. We will then dive deeper into the implications that a shared definition of rigor could have on equity-minded leadership, curriculum and instruction, including practical recommendations for implementation.

Michael Greenlee, Charles A. Dana Center, The University of Texas, Austin, Texas

Douglas Sovde, Charles A. Dana Center, The University of Texas, Austin, Texas

MONDAY SESSIONS

NUMBER PROGRESSIONS IN ACTION: MEETING THE NEEDS OF ALL STUDENTS AT THE SMALL GROUP TABLE AND BEYOND

9:30 AM–10:30 AM | Randolph 1A | Strand 1 | Pk-2 Primary

Come learn how as a large school district we successfully supported our instructional coaches in the implementation of number progressions in their primary classrooms. Our goal was to support teachers in making day to day instructional decisions during their small group teaching to ensure that ALL students' needs were being met. The trainings we offered, resources we used, materials developed and the success we have seen will be shared with all!

Michelle Luster, Katy Independent School District, Katy, Texas

Leslie Grayson, Katy Independent School District, Katy, Texas

PRESIDENTS EXCHANGE—ASA

PRE-K-12 GAISE 2—ENHANCING THE SPIRIT OF SCHOOL LEVEL STATISTICS IN GAISE 1

9:30 AM–10:30 AM | Randolph 1B | Strand 3 | General

This session focuses on the Pre-K-12 Guidelines for Assessment and Instruction in Statistics Education (GAISE) Framework Report 2 unveiled April 2020. The original GAISE (published 15 years ago) has significantly impacted state, national, and international standards and policy. GAISE2 addresses the future essentials in statistics curriculum maintaining the spirit of GAISE1 across school levels with enhancements to changes in data types, types of data sets, technology, assessment, and the necessity of always questioning the data.

Christine Franklin, American Statistical Association, Alexandria, Virginia

NCSM COACHING KICK-OFF SESSION!

9:30 AM–10:30 AM | Randolph 2 | Strand 0 | General

Are you a coach or teacher leader or new to coaching? Is this your first time attending the NCSM conference? Join us at the kick-off session where you will network with other coaches and teacher leaders. We will show you the foundational elements for math coaching and direct you to sessions related to your areas of growth. You won't want to miss this session!

Georgina Rivera, NCSM Professional Learning Director, Bristol, Connecticut

Jackie Palmquist, NCSM Professional Learning Director, Aurora, Illinois

MATHEMATICAL LANGUAGE ROUTINES: COACHING FOR ACCESS AND EQUITY

9:30 AM–10:30 AM | Randolph 3 | Strand 2 | General

Join us to engage in Mathematical Language Routines (MLRs) that support students in simultaneously meeting language demands while building content knowledge. Learning to use MLRs in daily instruction is a journey. Let's explore how coaching teachers through this work ensures every student has access. In sharing samples from our work with teachers, you'll leave inspired to try these MLRs with your own communities!

Craig Schneider, Santa Barbara Unified School District, Santa Barbara, California

Vanessa Cerrahoglu, Orange County Department of Education, Costa Mesa, California

MAKING IMPACTS: TRANSFORMING TEACHERS INTO CLASSROOM AND REGIONAL CHANGE AGENTS

9:30 AM–10:30 AM | Roosevelt 3A | Strand 3 | K-5 Elementary

Change Agents grow from inciting passion, establishing collaborative communities of practice, creating content development opportunities, and providing intentional strategic support. IMPACTS, a partnership between public schools, a community foundation, and university outreach. IMPACTS improves elementary school mathematics teaching and learning, retains teachers through satisfaction and success, and provides teacher leadership pathways. We will share program structures and four years of lessons learned.

Melissa Hosten, University of Arizona, Tucson, Arizona

Carrie Burdon, Tucson Unified School District, Tucson, Arizona

Deborrah Black, Tucson Unified School District, Tucson, Arizona

Eboney McKinney, Arizona Department of Education, Phoenix, Arizona

Elisabeth Bankhead, Altar Valley School District, Tucson, Arizona

Nancy Casagrande, Amphitheater School District, Tucson, Arizona

IMPLEMENTING REAL-WORLD LEARNING EXPERIENCES TO PROVIDE STUDENTS EQUITABLE LEARNING AND ASSESSMENT OPPORTUNITIES

9:30 AM–10:30 AM | Roosevelt 3B | Strand 4 | K-5 Elementary

Do you wonder what your students are thinking while they are grappling with a complex, real-world learning experience? We must, as mathematics educators, be able to elicit student thinking and make effective instructional decisions based on those thoughts. Participants will utilize an implementation protocol, anticipate a variety of student solution pathways and explore effective teacher actions to promote equitable learning and assessment opportunities for all students.

Julie Thiele, Kansas State University, Manhattan, Kansas

MONDAY SESSIONS

THE ROAD TO REPRESENTATION: COACHING A YEARLONG PD PLAN

9:30 AM–10:30 AM | Columbus AB | Strand 2 | 3-5 Intermediate

Do your teachers value the importance of representation? Hear about a year long journey of how two math coaches guided teachers through task selection, planning, implementation, and assessment through the lens of representation. In this hands-on session, participants will analyze tasks that provide representation, student work samples, and discuss next steps that will guide future instruction.

Randi Blue, Howard County Public School System, Ellicott City, Maryland

Cheryl Akers, Howard County Public School System, Ellicott City, Maryland

COACHING: CONNECTING AND COLLABORATING TO INSPIRE TEACHERS TO MEET THE NEEDS OF EACH AND EVERY LEARNER

9:30 AM–10:30 AM | Columbus CD | Strand 2 | K-5 Elementary

Coaching: the connection for inspiring teachers toward impactful lesson planning and instruction. Move teachers from text-reliance to innovative lesson design, founded on mathematics standards and learners' needs. We'll share our collaborative initiative which inspired teachers to discover mathematical understandings and visionary instruction, resulting in a 71% increase on state-based testing. Build expertise leading teachers, and ultimately students, into greater achievement and success. Explore unit templates and differentiated lesson strategies to equip and excite your teachers.

Lori Everson, Everson Educational Services, Phoenix, Arizona

Nanci Smith, E2C2, Peoria, Arizona

DEVELOPING A KEEN EYE: A RESEARCH-BASED COACHING PROTOCOL THAT SHIFTS TEACHERS' ORIENTATION AROUND CLASSROOM VIDEO-BASED CONVERSATIONS

9:30 AM–10:30 AM | Columbus EF | Strand 2 | General

Participants will experience an innovative video-based classroom analysis protocol that has been empirically linked to teachers' usable content knowledge, instructional practices, and student achievement (Kersting, 2010, 2012). We will unpack the usefulness of the keen-eye protocol as a coaching model and as a means for promoting teaching for conceptual understanding (Hiebert & Grouws, 2007). How do teachers respond to classroom video after developing this keen eye? We will share insights gained (and data) from our work.

Jamila Riser, Delaware Mathematics Coalition, Dover, Delaware

Valerie Maxwell, Delaware Mathematics Coalition , Dover, Delaware

REDESIGNING SCHOOL IMPROVEMENT STRUCTURES: LEVERAGING SCHOOL COACHING TEAMS AS DIRECT SUPPORT TO SCHOOLS

9:30 AM–10:30 AM | Columbus G | Strand 3 | General

Leveraging change in the mathematics classroom requires strong instructional leadership (*NCSM Essential Actions: Instructional Leadership in Mathematics Education*, 2019). In this engaging session, participants will examine innovative ways to enhance the school improvement planning process to build leadership capacity, provide ongoing support to schools. Participants will examine how a school coaching team model may be used to facilitate school improvement planning, develop administrators as instructional leaders, and provide ongoing support to school teams.

Jenny Novak, Howard County Public School System, Ellicott City, Maryland

Bill Barnes, Howard County Public School System, Ellicott City, Maryland

EDUCATIVE CURRICULUM…EDUCATIVE FOR WHOM? EXPLORE OPPORTUNITIES FOR LEARNING WITHIN ILLUSTRATIVE MATHEMATICS K-5 CURRICULUM

9:30 AM–10:30 AM | Columbus H | Strand 1 | K-5 Elementary

Do you feel as if teaching and learning happen in isolation? Want to think more about what it can look like and sound like to work on student learning and teacher learning in tandem? Come explore educative structures in the upcoming Illustrative Mathematics K-5 Curriculum that support adult and student learning. Learn from work that's been done with pre-service and in-service teachers, coaches, and administrators.

Jody Guarino, Orange County Department of Education, Costa Mesa, California

Shelbi Cole, Student Achievement Partners, New York, New York

John Drake, Newport-Mesa Unified School District, Costa Mesa, California

Kristin Gray, Illustrative Mathematics, Lewes, Delaware

Allison Hintz, University of Washington, Bothell, Washington

CHALLENGE ACCEPTED: PREPARING ALL STUDENTS FOR THE FUTURE WITH MATHEMATICAL RIGOR

9:30 AM–10:30 AM | Columbus IJ | Strand 1 | K-5 Elementary

When students face challenging problems, we don't want them to give up. We want them to make connections, think creatively, and try different avenues toward solutions. The goal of rigorous math instruction is to guide all students to become highly capable problem solvers in non-routine situations, prepared for future success. Join MIND Research Institute, a non-profit specializing in neuroscience and education research, to discuss what true rigorous learning can look like.

Nigel Nisbet, MIND Research Institute, Irvine, California

MONDAY SESSIONS

MAKING MATHEMATICS ACCESSIBLE: SUPPORTING TEACHERS TO ENGAGE WITH ENGLISH LEARNERS AND DIVERSE LEARNERS

9:30 AM–10:30 AM | Columbus KL | Strand 2 | 3-8 Upper Elementary/Middle

In this interactive session, we will focus on concepts and instructional strategies to support access and achievement in mathematics for all students, especially English Learners and diverse learners. Participants will investigate methods that teach academic vocabulary and support academic discussions, including concrete, effective ways to help learners enrich their understanding of mathematical concepts. We will also spend time developing a plan to support teachers in implementing strategies in their classrooms.

Katie Salguero, WestEd, Redwood City, California

Angela Knotts, WestEd, Redwood City, California

Sponsor Showcase #1

ALL STUDENTS CAN SUCCEED IN PRE-AP MATHEMATICS

9:30 AM–10:30 AM | Exhibit Hall | General

The College Board has launched official Pre-AP Mathematics courses for 9th and 10th graders! The Pre-AP program was founded on the belief that all students should have access to grade-level appropriate instruction that puts them on the path to college and career readiness. In this session, you will learn about the Pre-AP Algebra 1 and Pre-AP Geometry with Statistics courses which use engaging and relevant contexts to motivate a need for mathematical concepts and skills.

Michael Manganello, The College Board

Sponsor Showcase #2

STRATEGIES FOR ELICITING AND USING STUDENT THINKING TO FACILITATE POWERFUL DISCUSSIONS

9:30 AM–10:30 AM | Exhibit Hall | General

How do we get students to share their mathematical ideas and make sense of their thinking? And how do we as educators use student thinking to make instructional decisions in the moment in the classroom? We'll explore practical coaching and teaching strategies that will get students talking about mathematics and allow teachers to manageably use student thinking to inform instructional decisions.

Grace Kelemanik, Amy Lucenta, and Danielle Curran, Curriculum Associates

11:15 AM–12:15 PM

Major Presentation

USING A VARIETY OF MEDIA TO LEAD COURAGEOUS CONVERSATIONS AMONG MATHEMATICS EDUCATION STAKEHOLDERS

11:15 AM–12:15 PM | Grand Ballroom A & C North

Strand 3 | General

As change agents for ensuring that each and every student has access to a meaningful and relevant mathematics education, it is important that we are able to orchestrate courageous conversations around issues of equity and social justice among stakeholders. Participants will examine a variety of media that can be used as catalysts for courageous conversations around stereotypes and beliefs about particular groups of students and dangerous assumptions about their mathematics abilities. Strategies for conducting the conversations will also be discussed.

Marilyn E. 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, Auburn, AL. Her research focuses on equity issues, clinical experiences for secondary teacher candidates, teacher change, and teacher leadership in mathematics education. She is an editor and author of several mathematics educational publications. Currently, Dr. Strutchens is an Advisory Committee Member of the National Science Foundation's Directorate for Education and Human Resources, and an 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 served as a member of the National Council of Teachers of Mathematics' Board of Directors (2015–2018), as president of the Association of Mathematics Teacher Educators (2011–2013), and member of the Executive Board of Directors for the Conference Board of Mathematical Sciences (2012 -2014). In 2017, she received the Judith Jacobs Lectureship from the Association of Mathematics Teacher Educators.

Marilyn Strutchens, Auburn University, Auburn, Alabama

Presider, Linda Griffith, NCSM Treasurer, Quitman, Arkansas

MONDAY SESSIONS

Spotlight Speaker

COACHING TO IMPROVE TEACHER QUESTIONING

11:15 AM–12:15 PM | Grand Ballroom B | Strand 2 | General

Teachers ask many questions every day. How can coaches help teachers to use questioning effectively to improve student achievement? This session examines how teachers plan, ask, and reflect on their use of questions. Support teachers to focus on student thinking and use actions to ensure that students are the ones making sense of their strategies in solving problems. This session provides tools for coaching teachers to create environments where students do the sense making.

Edward Nolan, Towson University, Towson, Maryland

Presider, Pat Baltzley, NCSM Marketing and eNews Editor, Gardiner, Montana

TAKING TEACHER LEADERSHIP AND LEARNING TO THE NEXT LEVEL: A MODEL FOR PROFESSIONAL LEARNING CADRES

11:15 AM–12:15 PM | Grand Ballroom D North | Strand 3 | General

Teachers working together to try new techniques not only build their own skills, but also have the best chance of helping other teachers see the potential of something new. We will discuss our development of collaborative teacher cadres who conduct action research and then facilitate professional learning experiences in district mini-conferences. Participants leave with tools for organization, resources, and tips for utilizing local resources to build teacher leaders and create low-cost, effective professional learning experiences.

Natevidad Casas, Frisco Independent School District, Frisco, Texas

Chantelle Elliott, Frisco Independent School District, Frisco, Texas

Marjorie Huber, Frisco Independent School District, Frisco, Texas

SUPPORTING TEACHERS IN PLANNING TO FACILITATE RICH TASKS

11:15 AM–12:15 PM | Michigan 1A | Strand 2 | K-5 Elementary

Join us as we explore ways to support teachers in planning to facilitate rich tasks. We will plan a sample task by previewing mathematical content and practices, brainstorming students' strategies and misconceptions, and examining ways to support all students while maximizing their opportunities to learn. Participants will walk away with a template they can use to support teachers in planning to facilitate any rich mathematical task.

Kathryn Flores, UChicago STEM Education, Chicago, Illinois

GONNA LAY DOWN MY BURDENS! LEADING MATHEMATICS FROM THE CENTER OF CULTURALLY RELEVANT TEACHING AND SOCIAL JUSTICE

11:15 AM–12:15 PM | Michigan 1B | Strand 3 | General

Leaders of school mathematics are faced with re-envisioning school mathematics for students who have been historically marginalized by stagnant, disconnected teaching practices, curriculum and leadership. The power of culturally responsive practice lies in radically challenging what mathematics is, how mathematics is taught and led, and who can be successful doing it. In this session, participants explore samples of relevancy and core leadership practices that make it possible to center student and community culture in school and district success.

Lou Matthews, Urban Teachers, Baltimore, Maryland

Shelly Jones, CCSU, New Britain, Connecticut

Rebeka Matthews Sousa, Inspire Math, Paget, Bermuda

IMPROVING STUDENT ACHIEVEMENT THROUGH ENGAGING AND EQUITABLE LESSON DESIGN BY SUPPORTING TEACHERS THROUGH COLLABORATIVE PROCESSES

11:15 AM–12:15 PM | Michigan 1C | Strand 1 | K-5 Elementary

Teaching mathematics based on student interest, student needs, and background is a major component of engagement in learning. How do we design lessons that not only engage students but are equitable for those who are marginalized? What structures and professional learning must be in place for teachers? Learn how to support teachers in engaging students in rigorous, equitable mathematics instruction through the lessons learned in a high poverty, greatly diverse, urban school system.

Natalie Crist, Baltimore County Public Schools, Towson, Maryland

Emily Dwivedi, Baltimore County Public Schools, Baltimore, Maryland

VERTICAL EXPLORATION OF STANDARDS TO SUPPORT EQUITABLE MATH LEARNING & TEACHING-EXPRESSIONS & EQUATIONS

11:15 AM–12:15 PM | Michigan 2 | Strand 1 | 3-8 Upper Elementary/Middle

Come to this hands-on workshop where we will explore the vertical progression of standards and how this collaborative process can support both learning and teaching. Participants will build a vertical progression of mathematical standards focused on Expressions & Equations from grades 3 through Algebra. The goal is for participants to both build their own mathematical understanding for teaching and to clarify key focus areas at each grade in order to help identify the progression of standards, any learning gaps, and needed instructional supports.

Karen Greenhaus, Drexel University, Philadelphia, Pennsylvania

Gerri Dupee, M. Ed., Greenbrier High Schools, Springfield, Tennessee

COLLABORATIVE COACHING STRUCTURES: BUILDING A TEACHER CENTERED COACHING SYSTEM

11:15 AM–12:15 PM | Michigan 3 | Strand 3 | K-5 Elementary

This session explores a unique teacher centered, collaboration based coaching system. An overview of the systemic structure will be shared. Participants will explore how mathematics coaches engage with teachers and leave with tools and resources that may be used in their schools or districts to establish or redefine mathematics coaching. Considerations and support for developing a systemic collaborative based coaching model will be shared for district/school level administrators, coaches and teacher leaders.

Denise Trakas, Washoe County School District, Reno, Nevada

Ben Beckam, Washoe County School District, Reno, Nevada

Channon Toles, Washoe County School District, Reno, Nevada

Christin O'Keefe, Washoe County School District, Reno, Nevada

THE COACHING EQUATION: FIVE STEPS TO FORMULATE EFFECTIVE MATH COACHING

11:15 AM–12:15 PM | Randolph 1A | Strand 2 | General

Looking for the formula to build effective coaching relationships? Join us as we share our 5-step approach to individualize support for teachers in all grade levels. Participants will explore our systematic coaching method, collaborate to create reflective questions and generate specific action steps designed to move all teachers toward effective instruction.

Lynley Smith, Baltimore County Public Schools, Towson, Maryland

Staci Torok, Baltimore County Public Schools, Towson, Maryland

A JOURNEY TOWARD IMPROVING MATH OUTCOMES FOR STUDENTS

11:15 AM–12:15 PM | Randolph 1B | Strand 1 | General

Discover how eight districts are collaborating to learn what impacts student learning. Teachers, coaches, and administrators focused on developing growth mindset, learning about instructional practices, and supporting continuous improvement.

Kim Webb, Tulare County Office of Education, Visalia, California

Stephanie Verners, Tulare County Office of Education, Visalia, California

THE MATH SHARK TANK: ENTREPRENEURIAL CHALLENGES FOR MIDDLE GRADES

11:15 AM–12:15 PM | Randolph 3 | Strand 1 | 6-8 Middle

The Design & Pitch (D&P) Challenges in STEM is a novel mathematics curricular framework that combines features of project-based learning, design-based learning, and entrepreneurial-based learning within entrepreneurial pitch competitions. Attendees will explore the overarching framework, overviews of the nine challenges, and an example challenge in which students build, test, refine, and monetize rating/ranking algorithms. Presenters will discuss preliminary findings on how this framework can increase students' interest and engagement in STEM, while supporting mathematics learning.

Michael Belcher, North Carolina State University, Raleigh, North Carolina

Jere Confrey, North Carolina State University, Raleigh, North Carolina

Erin Krupa, North Carolina State University, Raleigh, North Carolina

UNDERSTANDING THE WHY BEHIND WHAT WE DO: MANIPULATIVES AND AREA MODELS FOR BUILDING CONNECTIONS TO MULTIPLY FRACTIONS

11:15 AM–12:15 PM | Roosevelt 3A | Strand 1 | 3-8 Upper Elementary/Middle

This hands-on session uses visual models and manipulatives to stress connections between the area model and procedural fluency when multiplying fractions and mixed numbers. Further exploration with manipulatives and models illuminates connections to an algorithm and procedural fluency required in upper elementary grades. A reflective look at coaching partnerships shows advancement of teachers' learning as they gain meaningful understanding based on connections and highlights the effects on student engagement and conceptual development of mathematical content.

Denise Porch, AMSTI-UAH, Huntsville, Alabama

DESIGNING TRANSFORMATIONAL PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR DIVERSE ADULT LEARNERS—LET'S GET ANDRAGOGICAL!

11:15 AM–12:15 PM | Roosevelt 3B | Strand 2 | General

One of the many responsibilities of a mathematics coach is providing professional development in order to increase teachers' mathematical content and pedagogical knowledge. Designing transformational professional development requires the application of the principles of learning to adult learners (andragogical knowledge). This interactive session will provide strategies that can easily be implemented to meet the needs of diverse adult learners when planning professional development opportunities.

Sandra Davis, Brevard Public Schools/FAMS, Viera, Florida

MONDAY SESSIONS

ROSS TAYLOR PAST PRESIDENTS' SESSION: SPEED CHATS FOR LEADERS AROUND CRITICAL CHALLENGES AND EFFECTIVE SOLUTIONS

11:15 AM–12:15 PM | Columbus AB | Strand 1 | General

Join us as participants and former NCSM Presidents meet to explore critical leadership issues in the charged and engaging session format of Speed Chats. The brief series of small group conversations will allow colleagues to discuss critical issues facing mathematics education today and to share possible solutions to benefit leaders at all levels. This session is designed for new and experienced leaders alike!

Diane Briars, Self-Employed Consultant, Pittsburgh, Pennsylvania

Linda Gojak, Mathematics Consultant, Willowick, Ohio

Carole Greenes, Arizona State University, Tempe, Arizona

Timothy Kanold, Loyola University, Chicago, Illinois

Henry Kepner, University of Wisconsin, Milwaukee, Wisconsin

Steve Leinwand, American Institutes for Research, Washington, District of Columbia

Valerie Mills, Independent Mathematics Education Consultant, Ypsilanti, Michigan

Suzanne Mitchell, Arkansas State University, Jonesboro, Arkansas

Connie Schrock, Emporia State University, Emporia, Kansas

John Staley, Baltimore County Public Schools, Towson, Maryland

HOW MIGHT WE RETHINK INTERVENTION?

11:15 AM–12:15 PM | Columbus CD | Strand 1 | 6-8 Middle

Do you have students who struggle and need intervention? What is the answer? Pre-teach? Vocab drill? More practice? Join us to experience intervention redesigned; a course focusing on relationships, problem-solving, and enjoying mathematics. Experience activities to support students as they rebuild their mathematical identity and hear comments from student surveys.

Karen Wootton, CPM Educational Program, Elk Grove, California

EFFECTIVE LEADERSHIP IN THE IMPLEMENTATION OF PROFICIENCY-BASED GRADING AND REPORTING IN MATHEMATICS

11:15 AM–12:15 PM | Columbus EF | Strand 4 | 6-12 Secondary

The proficiency-based grading and reporting movement is at a critical stage with numerous innovative approaches being modeled and assessed. This session features the learning, challenges, and successes of implementing and evolving this work within mathematics teaching and learning. Key insights into developing teacher, students, and community capacity and support for engaging in proficiency-based teacher/student relationships will be shared. Burgeoning challenges and areas for improvement will be discussed and program-wide student learning data will be shared.

Darshan Jain, Adlai E. Stevenson High School, Lincolnshire, Illinois

CONTEXTUALIZING COACHING WITH IC MAPS AND VIDEO

11:15 AM–12:15 PM | Columbus G | Strand 2 | General

Innovation Configuration (IC) maps guide coaching conversations by helping teachers focus on the concrete and tangible aspects of teacher and student actions that lead to deep conceptual understanding. Dana Center's research-informed IC maps provide the context for coaches and teachers to engage in reflective ongoing learning, assessment of needs, and goal setting for improvement. Participants in this session will use video analysis of mathematics classrooms to practice needs assessment and goal setting conversations.

Shelly LeDoux, Charles A. Dana Center, The University of Texas, Austin, Texas

Jacqueline LeJeune, Charles A. Dana Center, The University of Texas, Austin, Texas

COACHING TO ADVANCE JUSTICE: REVISING COACHING TOOLS TO EXPLICITLY ATTEND TO ISSUES OF JUSTICE AND EQUITY

11:15 AM–12:15 PM | Columbus H | Strand 2 | K-5 Elementary

Mathematics class provides a powerful setting for disrupting historical biases about who gets to be smart. One way to take action toward this end is to revise mathematics coaching tools to include explicit moves teachers can make to advance justice, including attending to issues of status and positioning and intentionally highlighting all students' mathematical competencies. Analyze and try out examples of such tools and bring one of your own to revise with colleagues.

Karen Reinhardt, TeachingWorks, University of Michigan, Ann Arbor, Michigan

WHY AREN'T WE THERE YET?

11:15 AM–12:15 PM | Columbus IJ | Strand 3 | General

We've taken one bold step after another in mathematics education for decades. NCSM redefined basic skills in 1975, NCTM published a problem-solving-focused agenda in 1980 and standards in 1989. States created, then ramped up standards, with NCTM and NCSM providing resources to empower leaders and teachers. Why haven't we seen the improvement we envisioned? Let's look together at what's worked, what gets in the way, and where we can go next.

Cathy Seeley, Speaker, Author, Consultant, Austin, Texas

MONDAY SESSIONS

ORCHESTRATING PRODUCTIVE MATHEMATICS DISCUSSIONS: OVERCOMING THE CHALLENGES

11:15 AM–12:15 PM | Columbus KL | Strand 1 | 6-8 Middle

The 5 Practices—anticipating, monitoring, selecting, sequencing and connecting—provide a model for effectively using student responses in whole-class discussions that is intended to make discussions more manageable by moderating the degree of improvisation needed during the lesson. Enacting the model, however, is not without its challenges. This session will focus on identifying challenges associated with orchestrating productive mathematics discussions and providing insights on how to address those challenges.

Margaret Smith, University of Pittsburgh, Pittsburgh, Pennsylvania

Sponsor Showcase #1

TEACHING MATH EFFECTIVELY AND WITH CONFIDENCE

11:15 AM–12:15 PM | Exhibit Hall | General

We know that the impact of a curriculum is dependent on how it is implemented in the classroom, but rarely do we have the time or resources to fully support teachers with effective implementation. What if teachers could get daily professional development on high-impact strategies that is relevant to their next math lesson? Learn how Big Ideas Math empowers teachers—every day—to teach math effectively and with confidence.

Sophia Montiel, Big Ideas Learning

Sponsor Showcase #2

DEVELOPING CROSS-CURRICULAR STEM COMMUNICATION AND ALIGNMENT TO IMPROVE ENGAGEMENT, UNDERSTANDING, AND PERFORMANCE (GRADE 7-GRADE 11)

11:15 AM–12:15 PM | Exhibit Hall | General

Improve conceptual understanding and modeling behaviors by developing cross-curricular Math – Science communication and alignment from Grade 6 through Algebra 2. Identify common ironies among related math and science learning trajectories and discuss effective options for improving these alignments. Explore ways to implement and assess student-driven STEM projects where scientific explorations are supported with related mathematical applications.

Peg Hartwig, Melissa Waggoner, Discovery Education

12:30 PM–1:30 PM SESSION

Monday Luncheon

IGNITE SESSION

12:30 PM–1:30 PM | Grand Ballroom CD South & EF | General

Join us for this NCSM sponsored fun, fast-paced, educational Ignite presentation. You will have time to network with your peers, have a relaxing lunch followed by some educational tidbits through an Ignite sessions. This is a great addition to all the in-depth sessions you will hear throughout the conference.

***Ticketed Event**

1:45 PM–2:45 PM

Major Presentation

GUIDED COLLABORATION TO SUPPORT TEACHERS IN NUMBER TALKS: INSIGHTS AND CHALLENGES

1:45 PM–2:45 PM | Grand Ballroom A & C North | Strand 2 | General

In this session I'll share findings of a small study of two high school pre-service teachers as they participated in ten cycles of guided collaboration to learn to implement Number Talks. With my support, the teachers collaborated in planning, teaching, observing each other's Number Talks, and reflecting on what they noticed.

During the session, we'll watch videos of their planning and reflection meetings and discuss the biggest issues the teachers faced as they learned to elicit and support students' ideas. We'll also think together about the coach's role in guided collaboration.

Cathy Humphreys taught elementary, middle school, and high school mathematics for thirty years in California public schools. Throughout her teaching career she has focused on helping her students make sense of mathematics.

Cathy has also been active in professional development and teacher education - as an instructor with Math Solutions, a middle school mathematics coach for the Silicon Valley Mathematics Initiative (SVMI), and a lecturer in the Stanford Teacher Education Program (STEP). She is currently an instructor with the Mathematics Education Collaborative (MEC).

Cathy has an MA in Mathematics and a PhD in Mathematics Education. She has co-authored three books: Connecting Mathematical Ideas: Middle School Videocases of Teaching and Learning (Boaler & Humphreys, 2005); Making Number Talks Matter: Developing Mathematical Practices and Deepening Understanding, Grades 4-10 (Humphreys & Parker, 2015); and, most recently, Digging Deeper: Making Number Talks Matter Even More (Parker & Humphreys, 2018).

Cathy Humphreys, Self Employed, Mountain View, California

Presider, Jackie Palmquist, NCSM Professional Learning Director, Chicago, Illinois

Spotlight Speaker

THE POWER OF IDEAS: LETTING STUDENTS' THINKING TAKE CENTER STAGE

1:45 PM–2:45 PM | Grand Ballroom B | Strand 1 | Pk-2 Primary

Do your students believe that they have important mathematical ideas? Do they believe that mathematics makes sense and is about more than answers? Do you believe that students' ideas should be at the center of the classroom? We'll explore routines and strategies for eliciting, valuing, and leveraging students' ideas in the PreK-2 classroom (and beyond!) and discuss why monitoring for sense-making is your most important job.

Annie Fetter, Math Educator, Rutledge, Pennsylvania

Presider, Pat Baltzley, NCSM Marketing and eNews Editor, Gardiner Montana

BUILDING MATH RESIDUE WITH LESSONS THAT STICK

1:45 PM–2:45 PM | Grand Ballroom D North | Strand 1 | General

Many times throughout a school year, we teach a lesson and the understanding goes out with the trash because student retention is minimal. What makes things worse, is the misconceptions we thought we addressed resurface towards the end of a unit. Let's explore how task selection can play a pivotal role in building math residue which helps understanding stick and it can reduce the number of times that misconceptions rear their ugly head.

Graham Fletcher, Self-Employed, McDonough, Georgia

HELPING PRESERVICE AND NOVICE TEACHERS BECOME REFLECTIVE, CONTINUOUS, FORMATIVE ASSESSMENT USERS.

1:45 PM–2:45 PM | Michigan 1A | Strand 4 | 6-12 Secondary

Look at a successful yearlong program used to develop preservice and novice teachers' use of timely formative information to make effective instructional decisions. Discuss a progression of activities that support teachers with setting instructional goals and then assessing student progress toward those goals. Free apps that allow quick collection and combination of formative data will be shown. Various forms of lesson monitoring; flexible, dynamic, collaborative grouping practices; and differentiation will be discussed.

Allan Bellman, University of Mississippi, University, Mississippi

STARTING THE CONVERSATION: USING VIDEO CASES TO REFLECT ON EQUITABLE MATHEMATICS INSTRUCTION

1:45 PM–2:45 PM | Michigan 1B | Strand 3 | K-5 Elementary

Mathematics instruction requires a conscious shift from the Eurocentric view of teaching and necessitates that teachers confront injustice in the current educational system. Mathematics leaders must critically examine what biases emerge in observations of classroom events and identify strategies to dismantle practices that continuously promote these inequities. This presentation is designed to stimulate discussions among mathematics educators surrounding these systemic disparities and engage participants in transformational conversations surrounding equitable instruction.

Kelley Buchheister, University of Nebraska-Lincoln, Lincoln, Nebraska

Christa Jackson, Iowa State University, Ames, Iowa

Cynthia Taylor, Millersville University of Pennsylvania, Millersville, Pennsylvania

COLLABORATING WITH SCHOOL TEAMS TO USE DATA TO DIFFERENTIATE MATH INSTRUCTION

1:45 PM–2:45 PM | Michigan 1C | Strand 1 | General

Today's math teachers have tons of data at their fingertips, but may not have the training to know how to effectively use it to differentiate instruction. In this session, math leaders will learn the ways that they can guide their teacher teams to leverage data, such as Quantile measures, to collaboratively map learning paths for all students in their schools.

Bernard Frost, Spartanburg School District 2, South Carolina Leaders of Mathematics Education, Chesnee, South Carolina

THE POWER OF EVIDENCE-BASED COACHING TO PROMOTE EQUITY IN MATHEMATICS CLASSROOMS

1:45 PM–2:45 PM | Michigan 2 | Strand 4 | General

In this session, participants will experience how MQI Coaching, an evidence-based coaching model developed by researchers at Harvard, promotes equity by using classroom video and a detailed observation rubric to help teachers reflect on the type(s) of mathematical thinking being done by each student in their classrooms. The MQI Coaching routines support attainable and sustainable instructional growth, and help teachers raise their expectations for all students in mathematics, challenging common biases against certain populations.

Claire Gogolen, Harvard University, Cambridge, Massachusetts

Jackie Kearney, Harvard University, Cambridge, Massachusetts

Samantha R. Booth, Harvard University, Cambridge, Massachusetts

CHAMPIONING EXCELLENCE: CREATING AN EQUITABLE, GOLD-STANDARD MATHEMATICS PROGRAM IN YOUR SCHOOL

1:45 PM–2:45 PM | Michigan 3 | Strand 3 | General

In this presentation, you will see statewide efforts to define and implement a gold-standard mathematics program of excellence in each of its schools. Following an introduction to the work, you will learn how you can utilize Title IV.A funds to create your own mathematics program of excellence at the school, district, and state levels.

Christine Koerner, Oklahoma State Department of Education, Oklahoma City, Oklahoma

Levi Patrick, Oklahoma State Department of Education, Oklahoma City, Oklahoma

BUILDING TEACHER CAPACITY FOR EQUITABLE MATHEMATICS INSTRUCTION

1:45 PM–2:45 PM | Randolph 1A | Strand 1 | 3-5 Intermediate

Our district is passionate about providing the best possible learning opportunities for students. However, due to the significant demands on teachers' time and the need to think deeply about many different subjects, they often lack opportunities to build capacity for high-level mathematics teaching. In response, we developed a year-long course to deepen teachers' mathematical content and pedagogical knowledge. This session will share our journey and reflections regarding shifts in teacher dispositions and instructional efficacy.

Karla Bandemer, Lincoln Public Schools, Lincoln, Nebraska

Becky Evans, Lincoln Public Schools, Lincoln, Nebraska

Delise Andrews, Lincoln Public Schools, Lincoln, Nebraska

DESIGNING A PROFESSIONAL LEARNING COHORT TO SUPPORT HIGH QUALITY MATHEMATICAL EXPLANATIONS IN THE CLASSROOM

1:45 PM–2:45 PM | Randolph 1B | Strand 3 | 6-12 Secondary

Designing a professional learning cohort allows coaches and districts to bring about sustainable change in math classrooms. We will share the professional learning model, student data and the instructional strategies used to strengthen students' mathematical explanations. This model provides every student clear expectations to improve individual mathematical responses to any prompt. We will explore the characteristics of a high quality explanation, strategies for getting students started in their writing, and methods for helping students make improvements to their own writings. Participants will experience the scaffolded learning progression in this session and leave with specific tasks and resources to use in their own schools right away.

Nick Freathy, Elk Grove Unified School District, Elk Grove, California

Ellen Byron, Elk Grove Unified School District, Elk Grove, California

FOSTERING RELATIONSHIPS AND LEADERSHIP IN K-8 SCHOOLS FOR IMPROVING MATHEMATICS TEACHING

1:45 PM–2:45 PM | Randolph 2 | Strand 3 | General

Our session will describe a year-long professional learning Academy designed to support teams of K-8 principals and teacher leaders in strengthening their leadership capacity for improving mathematics teaching and learning in their schools. We will report on the outcomes of the Academy and highlight the models of mathematics leadership developed by the participants. We will address the importance of developing relationships among mathematics teacher educators, school administrators, and teacher leaders to build toward equitable practices.

Betsy Berry, Indiana Purdue Fort Wayne, Fort Wayne, Indiana

Sheryl Stump, Ball State University, Muncie, Indiana

Doris Mohr, University of Southern Indiana, Evansville, Indiana

Courtney Flessner, Indiana University, Bloomington, Indiana

Laurie Ferry, Central Indiana Educational Service Center, Indianapolis, Indiana

THE 5 PRACTICES IN PRACTICE: TAKING ON CLASSROOM CHALLENGES

1:45 PM–2:45 PM | Randolph 3 | Strand 1 | K-5 Elementary

One of the five practices of orchestrating discussions, anticipating, will be the focus of this session. Carefully consideration will be given to strategies students are likely to use when solving a challenging task; how to respond to student work; and which student strategies address the mathematics to be learned. Specific challenges related to this practice and how to address them will be considered, based on the work of Smith, Bill and Sherin (2020).

Victoria Bill, Institute for Learning, University of Pittsburgh, Pittsburgh, Pennsylvania

Margaret Smith, University of Pittsburgh, Pittsburgh, Pennsylvania

Miriam Sherin, Northwestern University, Evanston, Illinois

IT'S EASIER TO MOVE A MOUNTAIN WHEN YOU'VE GOT HELP! GROUP COACHING: WHEN TEACHERS LEARN TOGETHER WITH A COACH

1:45 PM–2:45 PM | Roosevelt 3A | Strand 2 | Pk-2 Primary

This session will explore a structure that embeds professional development in the school day, bringing teachers together with a math coach to engage in collective inquiry into teaching mathematics and to plan for time to experiment with their own students. We will address the different phases of the group coaching cycle: learning together while co-planning a lesson, enacting the lesson, and debriefing together. We will show how teacher collaboration in coaching can be more impactful than individual coaching.

Donna Johnson, Erikson Institute, Chicago, Illinois

Jill Sapoznick, Erikson Institute, Chicago, Illinois

Rakhee Dodia, Erikson Institute, Chicago, Illinois

THINKING OUTLOUD IN MATHEMATICS CLASSROOMS

1:45 PM–2:45 PM | Roosevelt 3B | Strand 1 | 3-8 Upper Elementary/Middle

Think alouds in language arts have been widely documented to improve learning, so why not use them in math class? Teacher-led think alouds enable all learners to have access to the covert self-talk that is employed during the thinking process. Learn how to use think alouds in practical ways to enhance student self-talk and develop critical, self-directed learning skills in math. I will share many strategies based on my current research with teachers.

Cathy Marks Krpan, University of Toronto, Toronto, Ontario, Canada

INCLUSIVE MATHEMATICS COACHING: USING THE COACHING MODEL TO SUPPORT SPECIAL EDUCATION

1:45 PM–2:45 PM | Columbus AB | Strand 2 | General

As instructional coaches, we have seen the need to build bridges between mathematics educators and special educators. During this session, we will share our experiences in leveraging coaching to support all learners by providing opportunities for merging teacher expertise. Participants will experience portions of job-embedded professional development we have offered special educators, focused on content, pedagogy, and growth mindset. Attendees will also explore how coaching can empower all stakeholders and expand access to mathematics.

Melissa Eastwood, Lexington Public Schools, Lexington, Massachusetts

Nataliya Paquette, Lexington Public Schools, Lexington, Massachusetts

Peter Mitchell, Lexington Public Schools, Lexington, Massachusetts

Stephanie Burroughs, Lexington Public Schools, Lexington, Massachusetts

DELETE DEFICIT THINKING; WHY "LOW KIDS" AND "HIGH KIDS" IS INACCURATE, INEFFECTIVE, UNETHICAL, AND COUNTERPRODUCTIVE

1:45 PM–2:45 PM | Columbus CD | Strand 1 | General

Educators often describe their kids as "low" and "high" kids in math. Such thinking is based not only on deficit thinking, but on an oversimplication of mathematics, mathematical development, and mathematical ability. In this presentation, I will provide research from mathematic education and neuroscience, arguing that "low" and "high kids" is not effective, not scientifically accurate, destructive to student's construction of identities as math learners, and contributes to a lack of access to meaningful mathematics.

Rachel Lambert, Gevirtz Graduate School of Education, University of California Santa Barbara, Santa Barbara, California

FACILITATION AND PRESENTATION STRATEGIES THAT IMPROVE ADULT LEARNING

1:45 PM–2:45 PM | Columbus EF | Strand 2 | General

If the destination is to reach higher levels of learning for all students, then effective professional development alongside coaching must be a part of the school culture. Learn how to increase your effectiveness as a facilitator and coach to make learning stick! Explore innovative strategies to support the delivery of content, collaborative learning, and management of groups, including ways to have difficult conversations to overcome resistance and transform learning for deeper understanding and implementation.

Dina Mendola, US Math Recovery Council, Apple Valley, Minnesota

CREATING VIRTUAL PROFESSIONAL LEARNING EXPERIENCES TO BUILD MATH CONTENT AND TEACHING KNOWLEDGE

1:45 PM–2:45 PM | Columbus G | Strand 3 | General

To improve student outcomes, teachers must be experts in content knowledge and high-leverage, evidence-based instructional strategies. This year, Baltimore City Schools developed virtual professional learning opportunities for math teachers, aligned to grade level content, best practices, and assessment/data. Participants will experience the systems and structures our district put in place to promote a culture of continuous improvement, while reflecting on how these ideas can be leveraged in their own roles.

Beth Sappe, Baltimore City Public Schools, Baltimore, Maryland

Smitha Hughes, Baltimore City Schools, Baltimore, Maryland

BUILDING MATHEMATICAL LITERACY THROUGH CTE

1:45 PM–2:45 PM | Columbus H | Strand 1 | 9-12 High School

Learn how a large urban inner-city school district has worked to create opportunity within every CTE course to increase math literacy across 16 high schools. The presenters will discuss the process used to integrate rigorous mathematical tasks within each course. Participants will learn how to develop confidence and buy-in from CTE teachers as they integrate mathematical practices and standards into their courses using examples from multiple industries.

Jeanette Scott, Phoenix Union High School District, Phoenix, Arizona

Roshani Dubel, Phoenix Union High School District, Phoenix, Arizona

SECONDARY AND POSTSECONDARY MATHEMATICS ALIGNMENT AT SCALE—IT'S A BIG JOB AND SOMEONE HAS TO DO IT!

1:45 PM–2:45 PM | Columbus IJ | Strand 3 | General

More than twenty state leadership teams are working toward greater secondary-postsecondary alignment for high-quality mathematics. The Conference Board of Mathematical Sciences (CBMS) in partnership with the Dana Center and Achieve are supporting the state level teams' work as change agents over two years. This session will provide information about the goals of the work and partnerships between k-12 and higher education, the structures used to support teams' work, and highlights of progress made.

Katey Arrington, Charles A. Dana Center, The University of Texas, Austin, Texas

Ted Coe, Achieve, Washington, District of Columbia

SUPPORTING TEACHERS' ENGAGEMENT WITH STUDENT THINKING THROUGH LESSON STUDY ON MATHEMATICAL MODELING

1:45 PM–2:45 PM | Columbus KL | Strand 3 | 6-12 Secondary

To bridge research and practice this presentation shares results from a recent study investigating lesson study on mathematical modeling. The presenter will discuss how integrating the Five Practices for Orchestrating Mathematics Discussions within the lesson study supported secondary teachers' engagement with student thinking while implementing mathematical modeling. Resources such as lesson study protocols and an annotated lesson plan format will be provided. The presenter will also share recommendations for conducting lesson study on mathematical modeling.

Jenifer Hummer, University of Delaware, Newark, Delaware

MONDAY SESSIONS

Sponsor Showcase #1

DEEPENING DAILY INSTRUCTIONAL CHOICES WITH INNOVATIVE CURRICULUM- ALIGNED PROFESSIONAL DEVELOPMENT

1:45 PM–2:45 PM | Exhibit Hall | General

How is your district or school supporting teachers with planning daily differentiated instruction? Come experience an innovative new PD series published by Zearn that provides comprehensive internalization materials for every unit of K-5 math. Participants will experience first hand how the PD strengthens instructional practices by deeply exploring the mathematical ideas, visual representations, and teaching strategies that deepen student learning.

Stephanie Ely, Zearn, New York, New York

Kyle Falting, Zearn, New York, New York

Sponsor Showcase #2

BRIDGES INTERVENTION—DELIVERING CLEAR AND SYSTEMATIC INSTRUCTION

1:45 PM–2:45 PM | Exhibit Hall | General

Searching for an effective K–5 intervention resource with built-in assessments and frequent progress monitoring? Discover how Bridges Intervention uses the power of visual models to reach struggling students. Organized by content rather than grade, each session includes warm-ups, lessons, and practice pages focused on key standards.

Math Learning Center

3:00 PM–4:00 PM

Major Presentation

BUILDING CAPACITY IN STATISTICS AND MATHEMATICAL MODELING

3:00 PM–4:00 PM | Grand Ballroom A & C North | Strand 3 | General

With the rise of data science and interdisciplinary professions, the quantitative, computational and communication skills needed in the workforce are growing. This requires ongoing professional development to help teachers engage students in mathematical modeling and statistics in ways that teachers may not have experienced as students or in their preparation programs. To facilitate new practices in their classrooms, teachers need ongoing support, which can be provided through the powerful combination of professional development and learning communities. The Mathematical Association of America has developed several National Science Foundation (NSF) funded national-scale professional development mechanisms to build evidence-based teaching practices within professional learning communities. Through an institutional NSF grant, I have also partnered with a school district to build teacher-led professional development in mathematical modeling for elementary school teachers. I'll introduce several of these programs and emphasize elements that led to sustained success and growth both of the professional development effort and of the community-building.

Dr. Rachel Levy is Deputy Executive Director of the Mathematical Association of America (MAA). Her teaching background includes a decade in middle and high school and a decade at the college level. Throughout this time she has been a teacher educator, collaborating with teachers to engage students in the practice of mathematical modeling. To support this work, she obtained an MA in Educational Media and Instructional Design and a PhD in Applied Mathematics. She is the author of books on mathematical modeling, applied mathematics and mathematical careers, including the freely available Guidelines to Assessment and Instruction in Mathematical Modeling Education (GAIMME). She is a recipient of the MAA Alder Award for teaching and the NCTM Linking Research and Practice Outstanding Publication Award. As @mathcirque, she has blogged for sites including Grandma got STEM, American Scientist Macroscope, MAA Teaching Tidbits and most recently, MAA MathValues.

Rachel Levy, Deputy Executive Director of the Mathematical Association of America (MAA), District of Columbia

Presider, Jackie Palmquist, NCSM Professional Learning Director, Chicago, Illinois

Spotlight Speaker

UTILIZING MATH HISTORY TO EMBRACE EQUITY, FAILURE, AND AUTHENTIC PROBLEM SOLVING IN LEADERSHIP COMMUNITIES

3:00 PM–4:00 PM | Grand Ballroom B | Strand 1 | General

In order to move forward in math education with clarity, conviction, and compassion for equity, we need to have a broader lens. Specifically, one that looks back at our past, and the multitude of interwoven stories from thousands of years of global contribution. The thematic development of mathematics, with all its historic struggles, human resilience, and collective journeys, must be braided into our equity goals and mandates for the math leaders of today and tomorrow.

Sunil Singh, Scolab/Math Consultant, Montreal, Quebec, Canada

Presider, Natalie Crist, NCSM Web Editor, Baltimore, Maryland

COACHING DISCOURSE ACTIONS: SUPPORTING TEACHERS TO LINK STUDENT'S RESPONSES AND PRESS FOR MORE

3:00 PM–4:00 PM | Grand Ballroom D North | Strand 2 | General

Participants will explore measurable strategies for coaching teachers to use discourse actions. Teachers use discourse actions to elicit deeper student thinking when solving cognitively challenging tasks. Participants will use checklists and rubrics with vignettes and videos then engage in role play to practice providing feedback to the teachers in the vignettes and videos around their use of discourse actions. Participants will create a plan for taking what is learned back to their schools and districts.

Amber Candela, University of Missouri-St. Louis, St. Louis, Missouri

Melissa Boston, Duquesne University, Pittsburgh, Pennsylvania

Juli Dixon, University of Central Florida, Orlando, Florida

DEVELOPING TEACHER CAPACITY FOR UNDERSTANDING SUBITIZING AND INTENTIONAL USE OF THE SUBITIZING TRAJECTORY IN THE EARLY CHILDHOOD MATHEMATICS CLASSROOM.

3:00 PM–4:00 PM | Michigan 1A | Strand 1 | Pk-2 Primary

Subitizing is a skill that many early childhood teachers understand to be foundational in students' mathematical experiences. But is there more to subitizing than just flashing dot images? Come and learn how one district developed teachers' understanding and confidence in using the subitizing trajectory (Clements & Sarama, 2014) to identify children's developmental level and plan intentional subitizing activities leading to a deeper understanding of quantity.

Melissa Hedges, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Michelle Douglas-Meyer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

A MODEL OF SUSTAINED COACHING TO SUPPORT CHANGING TEACHER PRACTICE

3:00 PM–4:00 PM | Michigan 1B | Strand 2 | General

This session will present research findings from a year-long research project exploring what factors of a sustained coaching model of teacher professional development are most impactful on teacher change. Characteristics of the model that were included in the teacher professional development will be highlighted and a preliminary theory of teacher professional development will be presented. Participants in this session will be encouraged to consider their experiences with coaching and provide feedback on the model.

Richelle Marynowski, University of Lethbridge, Lethbridge, Alberta, Canada

TEACHING LABS: THE TRANSITION OF FACE-TO-FACE PROFESSIONAL LEARNING EXPERIENCES TO SYNCHRONOUS ONLINE IMPLEMENTATION

3:00 PM–4:00 PM | Michigan 1C | Strand 3 | General

In a partnership between the University of Rochester (NY), the University of Idaho, and rural school districts in these states, we worked to redesign a face-to-face professional learning—a Teaching Lab—for an online platform utilizing synchronous modalities. We will share how this design evolved as we implemented iterations of this job-embedded online professional learning experience to support high quality mathematics teaching and learning in regions that previously may not have had access.

Cynthia Callard, University of Rochester, Rochester, New York

Jennifer Kruger, University of Rochester, Rochester, New York

MONDAY SESSIONS

MATHEMATICS SCREENING: WHAT DO WE LOOK FOR AND HOW DO WE INTERVENE?

3:00 PM–4:00 PM | Michigan 2 | Strand 4 | K-5 Elementary

This session will provide the most current research-based guidelines on the foundation and design of effective mathematics screening systems. Common misconceptions about math screeners will be addressed. New and innovative K-2 and 3-6 grade level math screeners will be presented that include some of the most substantive research basis currently available in math screeners. These screening systems also include targeted intervention activities and invaluable reporting features for school and district administrators.

Jonathan Brendefur, Boise State University, Boise, Idaho

Jeff Johnson, Mountain Home School District, Mountain Home, Idaho

LESSONS WE LEARNED: ENGAGING PRESERVICE TEACHERS THROUGH INSTRUCTIONAL USE OF NUMBER TALKS TO BUILD NUMBER SENSE MEANING AND COMPUTATION STRATEGIES

3:00 PM–4:00 PM | Michigan 3 | Strand 1 | General

Deep, flexible number understandings are foundational for mathematics learning. Will engaging future teachers in Number Talks be an influential step in building conceptual understanding and multiple strategies for computation? Observations and results from a collaborative research project implementing Number Talks across content and methods courses for EC-12 pre-service teachers will be shared. Come engage in example Number Talks, analysis of student work samples, and gain insights about employing Number Talks as an effective instructional tool.

Mary Swarthout, Sam Houston State University, Huntsville, Texas

Kay Wohlhuter, University of Minnesota Duluth, Duluth, Minnesota

EQUITABLE INSTRUCTION FOR ALL STUDENTS WITH VISUALIZATION AND PARTICIPATORY DIALOGUE

3:00 PM–4:00 PM | Randolph 1A | Strand 1 | K-5 Elementary

Mathematicians often achieve breakthroughs when working through complex problems by visualizing solutions. Yet students struggle with more complex problem solving, especially in high-poverty contexts. Why? What can be done? Leveraging pedagogical research and data from Zearn Math Digital Lessons, this session will explore strategies that encourage visualization with pictorial representations and create safe environments of participatory dialogue. Coaches will leave with tools to support instruction that ensure flexible problem-solving skills are accessible to all students.

Shalinee Sharma, Zearn, New York, New York

Stephanie Ely, Zearn, New York, New York

UNDERSTANDING DIFFERENTIATION IN A PROBLEM-BASED, MATHEMATICS TEACHING-LEARNING ENVIRONMENT

3:00 PM–4:00 PM | Randolph 1B | Strand 1 | 6-12 Secondary

Explore a new framework for supporting diverse learning needs in rich mathematics problem-solving classroom environments. The differentiation framework highlights five different components needed to enhance how students access and engage with deep mathematical learning. Discussions center on developing students as knowers and doers of mathematics by focusing on students' strengths, backgrounds, and experiences.

Yvonne Slanger-Grant, Michigan State University, East Lansing, Michigan

Alden Edson, Michigan State University, East Lansing, Michigan

THE RIGHT QUESTION CAN BE THE DIFFERENCE BETWEEN EMPOWERMENT AND DEFEAT IN COACHING CONVERSATIONS

3:00 PM–4:00 PM | Randolph 2 | Strand 2 | General

Instructional coaches need a delicate balance between calling attention to areas where educators are struggling and supporting those same educators in a way that leaves them feeling empowered. How can you ask teachers to reflect on their weaknesses in a way that helps them see the role of their strengths? In this session we will look at how the types of questions we ask impacts the outcomes of our conversations with teachers.

LauraMarie Coleman, Great Minds, Washington, District of Columbia

RECLAIMING LOST GROUND: RESEARCH-INFORMED INTENSIFICATION STRATEGIES TO SUPPORT UNDERPREPARED ALGEBRA STUDENTS

3:00 PM–4:00 PM | Randolph 3 | Strand 1 | 9-12 High School

Today, all students must succeed in algebra, including those who are under-prepared. These students may need more time in algebra, but time alone is not enough. Learn about comprehensive, research-guided strategies and resources from mathematics learning, literacy, social psychology and special education that help under-prepared students. Learn a framework for learning intensification to help you redesign algebra courses so that learners catch up to their peers and succeed in high school mathematics.

James Lynn, University of Illinois at Chicago, Chicago, Illinois

Diane Briars, Self-Employed Consultant, Pittsburgh, Pennsylvania

Kathi Cook, Charles A. Dana Center, The University of Texas, Austin, Texas

Alisa Rafter, Agile Mind, San Francisco, California

A COMMITMENT TO EQUITY: DATA DIALOGUE STRUCTURES TO MEET THE NEEDS OF ALL LEARNERS

3:00 PM–4:00 PM | Roosevelt 3A | Strand 4 | General

Each year district and school leaders discuss and make decisions based on student data. In many cases this results in an inequity of mathematical opportunities for some student groups. During this session participants will explore effective ways to use data to improve math instruction for all student. We will walk through how our district and school leaders are using both summative and formative data to support teachers.

Beth Sappe, Baltimore City Public Schools, Baltimore, Maryland

Smitha Hughes, Baltimore City Schools, Baltimore, Maryland

EXPLORING THE FRAMEWORK FOR MATHEMATICS LEADERSHIP: ADVOCATE AND MONITOR

3:00 PM–4:00 PM | Roosevelt 3B | Strand 0 | General

NCSM is proud to present NCSM Essential Actions: A Framework for Mathematics Leadership, a new resource for mathematics leaders to think about bold leadership in their particular role. Come and hear from a selection of the authors of the framework as we focus our discussions on two of the four guiding principles: "ADVOCATE and expect high-quality, equitable mathematics teaching and learning for every student" and "MONITOR and act on evidence of student learning."

Paul Gray, Jr., NCSM President-Elect, Dallas, Texas

Thomas Stricklin, NCSM Sponsor Liaison, Salem, Oregon

Brian Buckhalter, NCSM Journal Editor, Oxford, Mississippi

John Staley, Baltimore County Public Schools, Towson, Maryland

THE DEVELOPMENT OF DATA REPRESENTATION, MEASUREMENT, AND GEOMETRY: NEW LANDSCAPES OF LEARNING

3:00 PM–4:00 PM | Columbus AB | Strand 1 | General

Landscapes of Learning are learning trajectories comprised of 3 domains: big ideas, progressive strategy development, and models as tools for thinking. They provide frameworks for curriculum design that ensures access and equity by using rich, impactful investigations designed with low floors and high ceilings. Landscapes are also powerful tools for documentation of learning and formative assessment. Four landscapes were previously offered on number, operation, and algebra in the 4-book series Young Mathematicians at Work (Fosnot et. al.). Building on the research of Spelke, Freudenthal, and others on the natural early development of two core geometries, early measurement, and data comparison, new research-based landscapes have been developed and used for curriculum sequences. This session will provide developmental descriptions of each with video and samples of children's work from across the grades.

Catherine Fosnot, New Perspectives on Learning, New London, Connecticut

LEADING WITH KINDNESS

3:00 PM–4:00 PM | Columbus CD | Strand 4 | K-5 Elementary

The world and the mathematics community needs more kindness. It is possible to lead with high expectations while being compassionate and building relationships. I will share my intentional moves to lead with kindness (including one-on-one time, 2:00 PM coffee walks, and handwritten notes) and the benefits that result. I will challenge the participants to integrate loving kindness into their daily actions to help others feel worthy of the valuable job of teaching our children.

Mary Kemper, Coppell ISD, Coppell, Texas

DISMANTLING THE BARRIER OF TRACKING

3:00 PM–4:00 PM | Columbus EF | Strand 3 | 6-12 Secondary

Are you a math leader dedicated to creating and supporting equitable mathematics experiences for all students? Ready to ensure students have access to the mathematics they need for their personal and professional lives? Want to collaborate and commit to dismantling unjust systems? We'll share research and trends related to the early stages of detracking mathematics programs. We'll include time to connect and explore addressing common concerns and initial resistance to this crucial systemic change.

Danielle Seabold, Bold Educational Consulting LLC, Michigan

Lisa Brown, Charles A. Dana Center, The University of Texas, Austin, Texas

Luis Lima, CenterPoint Education Solutions, Washington, District of Columbia

Denise Thornton, Dana Center, Austin, Texas

THE STATUS QUO IN HIGH SCHOOL MATHEMATICS IS UNACCEPTABLE

3:00 PM–4:00 PM | Columbus G | Strand 3 | 9-12 High School

Today, it seems as if nearly everyone agrees that mathematics (especially high school math) needs to change. For far too long, mathematics has not worked for far too many students. Mathematics has not changed substantially in my lifetime, nor has it changed substantially for most students, teachers & schools. It is clearly an issue—and it is time to discuss and make serious changes.

Eric Milou, Rowan University, Glassboro, New Jersey

MONDAY SESSIONS

COACHING THE COACH: LAYERS OF LEARNING

3:00 PM–4:00 PM | Columbus H | Strand 2 | K-5 Elementary

Coaches should assess their effectiveness, but there are often impediments to doing this. A major obstacle is that coaching is often a solo activity and there aren't many opportunities to get critical feedback. To remedy this problem, we have developed a public coaching-the-coach model where practitioners can study their craft. In this session, we will share video of a coaching-the-coach session to demonstrate how specific, actionable feedback focused on essential skills can dramatically change practice.

Ellen McCrum, Metamorphosis Teaching Learning Communities, New York, New York

Antonia Cameron, Metamorphosis Teaching Learning Communities, New York, New York

Renee McShane, Metamorphosis TLC, New York, New York

MATH COACHES: CONSIDERING CLASSROOM-BASED FORMATIVE ASSESSMENT THROUGH THE LENS OF COACH/SPECIALIST RESPONSIBILITIES AND LEADERSHIP EXPECTATIONS AND CHALLENGES

3:00 PM–4:00 PM | Columbus IJ | Strand 2 | General

Participants will be engaged in considering professional learning related to classroom-based formative assessment techniques, utilizing the Formative 5 (Observations, Interviews, Show Me, Hinge Questions and Exit Tasks). Participants will examine and discuss the responsibilities of coach/specialists, including leadership-related issues (i.e. adult learning, coaching, navigating relationships, learning communities), and coaching beliefs, as the lens through which a proposed formative assessment professional learning plan will be developed.

Francis (Skip) Fennell, McDaniel College, Westminster, Maryland

Beth Kobett, Stevenson University, Stevenson, Maryland

Jon Wray, Howard County Public School System, Ellicott City, Maryland

UNIT STUDY: COACHING TEACHERS TO DIFFERENTIATE TASKS AND DISCOURSE FOR FLUENT STUDENT UNDERSTANDING

3:00 PM–4:00 PM | Columbus KL | Strand 2 | General

Many teachers struggle to appropriately differentiate tasks and discussions. Coaching inter-school collaborative teams in unit study offers a process for helping teachers gain deeper math knowledge and instructional skills that address this limitation. Unit study is informed by the principles of lesson study and the Comprehensive Mathematics Instruction Framework. In this session participants will review unit study protocols and examine a variety of units (including lesson-level learning targets and tasks) created by teams of teachers.

Sterling Hilton, Brigham Young University, Provo, Utah

Scott Hendrickson, Brigham Young University, Provo, Utah

Nicole Berg, Nebo School District, Spanish Fork, Utah

Sponsor Showcase #1

LEAVE THE MATH, CHANGE THE LANGUAGE

3:00 PM–4:00 PM | Exhibit Hall | General

Access is everything. Learn ways to invite every student to the table with language strategies that lower the barrier to access. Experience these strategies based on research from NCTM and the Council of Great City schools ELL framework. Take tools back to your classroom that provide equity and access for all learners.

Andrew Byrns, Pearson K–12 Learning

Sponsor Showcase #2

SUPPORTING EQUITY: WHAT WE ARE LEARNING AT IM

3:00 PM–4:00 PM | Exhibit Hall | General

Illustrative Mathematics (IM) is writing K–12 curriculum that supports problem-based instruction and fosters student discourse. Such features are recommended by proponents of culturally responsive teaching, but also risk perpetuating structural inequities if not supported by appropriate professional learning. We trace the IM journey, describing what we have learned and what we have yet to learn about designing curriculum and professional learning to increase equity in mathematics education.

Bill McCallum, McGraw-Hill

MONDAY SESSIONS

4:15 PM–5:15 PM

Major Presentation

HOW MATHEMATICIANS PLAY: CREATING A CULTURE OF OWNERSHIP, RIGOR, AND JOY IN MATH CLASS

4:15 PM–5:15 PM | Grand Ballroom A & C North | Strand 1 | General

Play is one of the most effective ways to explore new contexts and make connections. Still, play without boundaries won't help us to achieve our teaching goals. We need to develop structures and strategies to connect meaningful exploration and develop true mathematical understanding. This session will focus on concrete methods to marry play and rigor in math class. Using conjectures and counterexamples, classroom openers, and other routines, we can build a classroom culture that motivates students to think more deeply and take ownership of their own mathematical learning.

Dan Finkel is the Founder of Math for Love, a Seattle-based organization devoted to transforming how math is taught and learned. Dan develops curriculum, leads teacher workshops, and gives talks on mathematics and education nationally and internationally. His TED Talk, 5 Principles of Extraordinary Math Teaching, has been viewed over half a million times. Dan's curriculum has been used by thousands of students, and is known for its combination of rigor and play. The math games he co-created with his wife, Katherine Cook, have won over 20 awards; they include Prime Climb, the beautiful, colorful, mathematical board game, and Tiny Polka Dot, the colorful math game for children.

Daniel Finkel, Math for Love, Seattle, Washington

Presider, Denise Trakas, NCSM W1 Regional Director, Reno, Nevada

Spotlight Speaker

SIX ESSENTIAL EXPECTATIONS FOR EFFECTIVE MATHEMATICS INSTRUCTION

4:15 PM–5:15 PM | Grand Ballroom B | Strand 3 | General

Productive leaders must know what to look for and promote in mathematics instruction. Explore six essential expectations for effective mathematics instruction that emphasize the mathematical practices and the content they support with the purpose of increasing student achievement for each and every learner. Develop a plan for communicating these expectations to parents, teachers, and administrators.

Juli Dixon, University of Central Florida, Orlando, Florida

Presider, Samantha Wuttig, NCSM Awards Chair, Fairbanks, Alaska

COACHING IN THE MOMENT AND BEYOND: NAVIGATING THE COACHING MENU

4:15 PM–5:15 PM | Grand Ballroom D North | Strand 2 | General

Coaching in the Moment (CITM) involves teacher and coach working collaboratively in the classroom and has become central to our coaching practice. We will share a menu that breaks down our coaching cycle into accessible, sustainable options for building positive relationships. We will focus on three elements: lesson planning, CITM, and leveraging video for reflection and growth. Participants will analyze classroom videos and discuss differentiated approaches to coaching, leaving with a menu of actionable strategies.

Nataliya Paquette, Lexington Public Schools, Lexington, Massachusetts

Melissa Eastwood, Lexington Public Schools, Lexington, Massachusetts

Peter Mitchell, Lexington Public Schools, Lexington, Massachusetts

Stephanie Burroughs, Lexington Public Schools, Lexington, Massachusetts

MONDAY SESSIONS

SCALING UP "MATH FOR ALL": GOING BROADER AND DEEPER TO PROVIDE ACCESS TO COGNITIVELY DEMANDING MATHEMATICS FOR ALL STUDENTS

4:15 PM–5:15 PM | Michigan 1A | Strand 1 | K-5 Elementary

Math for All (MFA) is a professional learning program designed to help elementary school teachers make cognitively demanding mathematics instruction accessible to ALL students, including diverse learners. Join us to engage with a panel of teachers, district leaders and program developers reflecting on how MFA changed their thinking, their practice, and improved their students' success. Learn how we are building on our work in Chicago to broaden and deepen participation in Chicago and other districts.

Matt McLeod, Education Development Center, Inc., Chicago, Illinois

Gavin Creaden, Chicago Public Schools, Chicago, Illinois

Megan Kelley, Chicago Public Schools, Chicago, Illinois

Teresa Duncan, Deacon Hill Research Associates, Fredericksburg, Virginia

Nicole Constantinidis, Chicago Public Schools, Chicago, Illinois

MATH CLASS: I BELONG HERE!

4:15 PM–5:15 PM | Michigan 1B | Strand 1 | 6-8 Middle

Math Intervention: An SFUSD approach to disrupting systems and assumptions of students through building mathematical strengths. In our effort to continue the positive impact of de-tracking our math classes in conjunction with a new middle school redesign, we were tasked to design a math acceleration course through action research. Was there a way to address the opportunity gap that exists for our marginalized students without re-tracking our students and our mindsets? We share our discoveries!

Toni Allen, SFUSD, San Francisco, California

Emma Trevino, UC Riverside, Riverside, California

Alisa Brown, SFUSD, San Francisco, California

Sarah Gleason, SFUSD, San Francisco, California

GIVING GRADES TRUE MEANING—ALIGNING CONCEPT BASED ASSESSMENT WITH GRADING

4:15 PM–5:15 PM | Michigan 1C | Strand 4 | 6-12 Secondary

Do you ever wonder if grades accurately reflect what students know and can do? Engaging students in the grading conversation and process gets them to take more ownership of their learning, helps them reflect more on the feedback, and focus less on the number grade. The benefits of this shift in grading practice are shared in this session.

Erin Altshuler, Ravenscroft School, Raleigh, North Carolina

Shayla Coleman, Ravenscroft School, Raleigh, North Carolina

ACCESS AND AGENCY: MAKING THE MOST OF MATH CONTENT ROUTINES

4:15 PM–5:15 PM | Michigan 2 | Strand 1 | 6-12 Secondary

"Notice and Wonder" and "Which One Doesn't Belong" are often used in the Illustrative Mathematics curriculum but they are much more than Warm-Ups. Learn how we use them in Oakland as a key lever for providing access to the learning goals of a lesson. Experience each routine to do a deep dive into the power of each routine in order to provide students access and agency around the critical mathematics of a lesson.

Courtney Ortega, Oakland Unified School District, Oakland, California

Keely Machmer-Wessels, United for Success Academy, Oakland, California

DON'T REGRET, REHEARSE! MAKING CHALLENGING CONVERSATIONS A SITE FOR MATHEMATICS TEACHER LEADER LEARNING

4:15 PM–5:15 PM | Michigan 3 | Strand 3 | General

Developing the skills necessary to become an effective mathematics teacher leader that supports each student's learning is challenging. This specialized knowledge is best learned through professional development that centers on common problems of practice. Teacher leader rehearsals simultaneously support leader learning while engaging them in challenging conversations designed to elicit leadership knowledge. Participants will experience a rehearsal, examine opportunities to learn through intentionally planned rehearsals, and gain access to selected rehearsals and accompanying resources.

Nicole Rigelman, Portland State University, Portland, Oregon

Courtney Baker, George Mason University, Fairfax, Virginia

Melinda Knapp, Oregon State University-Cascades, Bend, Oregon

CREATING SCHOOLWIDE CULTURES OF MATHEMATICAL SENSE-MAKING

4:15 PM–5:15 PM | Randolph 1A | Strand 2 | General

What can teachers and coaches do to help each other build a school-wide culture that clearly emphasizes that math is meant to make sense? This session will provide participants with information for building peer-to-peer coaching and highlight resources available for co-planning and delivering quality lessons that give students experiences with problem-solving and making connections. We will also share the resources we use to give teachers structure for questioning that emphasizes student thinking.

Dee Crescitelli, Kentucky Center of Mathematics, Highland Heights, Kentucky

Funda Gonulates, Kentucky Center of Mathematics, Highland Heights, Kentucky

MONDAY SESSIONS

OPENING THE DOOR TO MATHEMATICS: MONITORING EQUITY AND ACCESS FOR ENGLISH LEARNERS

4:15 PM–5:15 PM | Randolph 1B | Strand 4 | 3-8 Upper Elementary/Middle

English learners need ongoing and explicit language instruction to successfully access and make sense of mathematical content. In this session, leaders will experience how to support teachers by monitoring and providing effective feedback so that mathematics instruction promotes equity by utilizing instructional strategies that help students understand content, by structuring formal and informal opportunities for talk, and by supporting talk with tools such as sentence frames. Join us as we explore a lesson that promotes mathematical reasoning, discourse, and differentiation for the varied levels of English learners in your classrooms!

Monica Kendall, Math Solutions, Manager of Professional Learning, Houston, Texas

Meghan Toshner, Math Solutions, Boston, Massachusetts

EXPERIENCES FROM THE FIELD: LESSONS LEARNED FROM IMPLEMENTING AN INNOVATIVE 12TH-GRADE COURSE IN TWO STATES

4:15 PM–5:15 PM | Randolph 2 | Strand 3 | 9-12 High School

NCTM's Catalyzing Change in High School Mathematics, Initiating Critical Conversations highlights the need to think differently about high school mathematics. In 2016-17 and 2017-18, districts in Texas and Kansas did just that, piloting materials for a college readiness course combining elements of quantitative and statistical reasoning and algebraic modeling, informed by the emergence of multiple college mathematics pathways. In this session, we will share information on outcomes as well as challenges in implementing such courses.

Kathi Cook, Charles A. Dana Center, The University of Texas, Austin, Texas

Melissa Fast, Kansas State Department of Education, Topeka, Kansas

BUILDING TEACHER CAPACITY TO DIFFERENTIATE MATHEMATICAL TASKS THAT WILL INCREASE ACCESSIBILITY FOR ENGLISH LANGUAGE LEARNERS

4:15 PM–5:15 PM | Randolph 3 | Strand 1 | K-5 Elementary

Many classroom teachers struggle to meet the needs of English Language Learners (ELLs) in the mathematics classroom. During this session we will explore strategies and techniques used by one mathematics coach that helped classroom teachers differentiate tasks to increase access for (ELLs). Walk away with classroom-tested tasks as well as specific strategies and techniques that can be used by classroom teachers to increase ELL access to high quality tasks.

Connie Conroy, Howard County Public Schools, Ellicott City, Maryland

REDEFINING 3-ACT TASKS

4:15 PM–5:15 PM | Roosevelt 3A | Strand 1 | 3-8 Upper Elementary/Middle

Come experience a redefined 3-Act Task lesson through the Desmos Activity Builder and learn how to create your own with an easy-to-use Desmos template. Using the template, participants will experience and learn how to show an image or video clip, gather student responses to their noticings/wonderings, questions and estimates, as well as sequence student work in an organized and purposeful way to facilitate meaningful class discussions.

Suzie Craig, Sacramento City Unified School District, Sacramento, California

Nova Katz, Sacramento City Unified City School District, Sacramento, California

CREATING THE CAPACITY FOR CHANGE: STRUCTURES FOR EMPOWERING ELEMENTARY TEACHERS AND INCREASING MATHEMATICAL EFFICACY

4:15 PM–5:15 PM | Roosevelt 3B | Strand 1 | K-5 Elementary

Disrupting the status quo cannot happen without vision, relationships built on trust, and capacity-building. Participants will engage in structures designed to increase purposeful collaboration, support differentiated professional development, and sustain reflective practice in order to bring about systemic change designed to increase access to rigorous, equitable mathematics instruction. Participants will identify ways to leverage their district resources and stakeholders to support sustainable high impact engagement, increase collective efficacy, and to frame equitable mathematics teaching.

Melissa Pearson, West Windsor-Plainsboro Regional School District, West Windsor, New Jersey

Susan Totaro, West Windsor-Plainsboro Regional School District, West Windsor, New Jersey

Mary Ann Carnevale, West Windsor-Plainsboro Regional School District, West Windsor, New Jersey

ASK, LISTEN, AND LEARN: COACHING PRACTICES THAT IMPACT MATHEMATICS TEACHING AND LEARNING

4:15 PM–5:15 PM | Columbus AB | Strand 2 | General

NCTM's Principles to Actions states, "Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships." This principle along with empathetic listening connects directly to the heart of coaching. During this session, participants learn to navigate coaching obstacles by crafting purposeful questions to use during coaching conversations, understand how purposeful questions transform math instructional practice, and incorporate empathic listening to impact mathematics teaching and learning.

Brenda Konicke, Math Solutions, NYC, New York

Jon Piraino, Math Solutions, NYC, New York

MONDAY SESSIONS

WHAT CAN WE LEARN FROM CORPORATE AMERICA? ADAPTING THE GOOGLE VENTURES "SPRINT" MODEL FOR SCHOOLS

4:15 PM–5:15 PM | Columbus CD | Strand 3 | General

Choosing a new math curriculum can be a daunting and lengthy undertaking that often takes more than a year to complete and regularly ends in controversial or unpopular decisions. In this workshop, we will share our curriculum review and decision-making process that shortens the time frame and brings together teachers, administrators, and other community members. This approach can be adapted to any "big question" a school usually creates a committee to look at.

Steven Goldman, Buckingham Browne and Nichols School, Cambridge, Massachusetts

Alexander Walker, Buckingham Browne and Nichols School, Cambridge, Massachusetts

COACHING TO UNDO THE "PROCEDURALIZING" OF MATHEMATICS

4:15 PM–5:15 PM | Columbus EF | Strand 2 | K-5 Elementary

Coaching for content and coaching for teaching and learning intersect when we use rigorous tasks and appropriate representations in our professional learning that build teachers' capacity. In this session, participants will engage in an intentional coaching cycle that highlights three specific coaching moves that can empower teachers to effectively deliver instruction that deepens student understanding.

Heather Dyer, Howard County Public Schools, Ellicott City, Maryland

Claudia Eckstrom, Bollman Bridge Elementary, Jessup, Maryland

AFRICAN-AMERICAN MATH ACHIEVEMENT TOOLKIT: SUPPORTING EQUITY-BASED INSTRUCTIONAL PRACTICES WHILE IMPLEMENTING HIGH QUALITY CURRICULUM

4:15 PM–5:15 PM | Columbus G | Strand 2 | General

Explore lessons learned during a case study of a series of professional development to prepare it's instructional support staff to coach teachers in using research-based effective instructional strategies outlined in the book, "The Impact of Identity in K-8 Mathematics: Rethinking Equity-Based Practices", while implementing high quality curriculum. While these practices can benefit all students, there was a focus on supporting the implementation of these practices while giving african-american boys access to grade-level high quality curriculum.

Rolanda Baldwin, UnboundEd, Greensboro, North Carolina

USING A FOCUS ON STUDENT LEARNING TO FOSTER HIGH QUALITY MATHEMATICS TEACHING

4:15 PM–5:15 PM | Columbus H | Strand 3 | General

We will focus on the crucial role of the instructional supervisor in promoting high-quality mathematics teaching and learning and teachers' reflective practice. Evidence of student learning will be used as a focus as administrators explore ways to support individual teachers and teams of teachers to create active, engaged problem-solving mathematics classrooms. We will embed central ideas of the TRU Framework and connect to NCTM's Principles to Actions Mathematics Teaching Practices.

Mary Jo Tavormina, University of Illinois at Chicago, Chicago, Illinois

RECORDING STUDENT THINKING: SUPPORTING TEACHERS TO HELP STUDENTS SEE OTHERS' THINKING

4:15 PM–5:15 PM | Columbus IJ | Strand 2 | General

Representing and recording student ideas on the whiteboard, chart paper, or smart board is challenging, especially when students are working to articulate difficult concepts. However, these records are critical for helping students make sense of others' ideas and critique arguments as called for in the standards for mathematical practice and are especially important for supporting bilingual learners. Come try out activities that support teachers in improving this difficult interactive work.

Nicole Garcia, University of Michigan, Ann Arbor, Michigan

Meghan Shaughnessy, University of Michigan, Ann Arbor, Michigan

THE FUNDAMENTAL FIVE: FIVE ESSENTIAL STRATEGIES THAT TRANSFORM THE TEACHING OF MATHEMATICS K-5

4:15 PM–5:15 PM | Columbus KL | Strand 1 | K-5 Elementary

How do we ensure that our students develop a deep understanding of mathematical concepts? How do we help them think like mathematicians? How we teach is as important as what we teach. Join us to identify five instructional practices that deepen students' conceptual understanding and mathematical reasoning. Examine some simple investigations that highlight these five teaching practices and gather ideas to help your teachers embrace these strategies as a part of their everyday instruction.

Susan O'Connell, Quality Teacher Development, Millersville, Maryland

RECEPTION

NCSM
LEADERSHIP IN MATHEMATICS EDUCATION

5:30 PM–7:00 PM | Grand Ballroom CD South & EF | General
This is a ticketed session.
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Solution Tree congratulates Dr. Thomasenia Lott Adams, winner of the **2020 Kay Gilliland Equity Lecture Award**. Dr. Adams's passionate advocacy for equity in mathematics education defines her as a world-class educator, author, mentor, and role model. Learn more about Dr. Adams's work at SolutionTree.com/WhyDNA.

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PROGRAM SUMMARY INFORMATION

TUESDAY, MARCH 31

See page 5 for Conference Strand descriptions.

TUESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–2:00 PM	4:45 PM–5:15 PM
Grand Ballroom CD South & EF	**TUESDAY BREAKFAST** **Alizé Carrère** Environmental Change: What's Math Got to Do with It? Sponsored by: Big Ideas Learning Grand Ballroom CD South & EF | General	**TUESDAY LUNCHEON** **Peter Balyta** Essential Actions for All Math Leaders Sponsored by: Texas Instruments Grand Ballroom CD South & EF | General	Columbus G **MEETING** **Mona Toncheff, Linda Griffith** NCSM Annual Business Meeting and State of the Organization Report Columbus G | Strand 0 | General

	8:15 AM–9:15 AM	10:00 AM–11:00 AM	11:15 AM–12:15 PM	2:15 PM–3:15 PM	3:30 PM–4:30 PM
Grand Ballroom A & C North	**MAJOR PRESENTATION** **Thomasenia Adams** Why Are There Still Elephants in the (Mathematics Class-) Room? Grand Ballroom A & C North Strand 1 | General	**MAJOR PRESENTATION** **Mona Toncheff** Bold Mathematics Leadership: Create a Culture of Continuous Improvement using NCSM Leadership Essential Actions Grand Ballroom A & C North Strand 3 | General	**MAJOR PRESENTATION** **Michelle Rinehart** Starting with Me: Transforming Mathematics Education from the Inside Out Grand Ballroom A & C North Strand 3 | General	**MAJOR PRESENTATION** **Timothy Kanold** The New Culture Code: Simplifying the Complex Rules of Change! Grand Ballroom A & C North Strand 3 | General	**CAUCUS** **Steven Shadel** NCSM Regional Caucus: Central Region 1 Grand Ballroom A & C North Strand 0 | General
Grand Ballroom B	**SPOTLIGHT SPEAKER** **Connie Schrock** Commit to a Strong Induction Program for your New Teachers – Construct a Structure for Every Learners Success Grand Ballroom B Strand 3 | General	**SPOTLIGHT SPEAKER** **Christine Newell** See it, Move it, Grasp it: Math with Virtual Manipulatives Grand Ballroom B Strand 1 | PK–2 Primary	**SPOTLIGHT SPEAKER** **John Staley, Julia Aguirre** Where Am I in My Equity Walk? Where will you be in 2025? Grand Ballroom B Strand 1 | General	**SPOTLIGHT SPEAKER** **Mike Flynn** Powerful Moments in Math Class: Why Certain Experiences Stand Out and How We Create More of Them Grand Ballroom B Strand 1 | General	**CAUCUS** **Kathlan Latimer** NCSM Regional Caucus: Western Region 2 Grand Ballroom B Strand 0 | General
Grand Ballroom D North	**Christina Tondevold** Making Room for Number Sense Grand Ballroom D North Strand 3 | K–5 Elementary	**Thomas Stricklin, Sharon Rendon** Coaching from the Administrator Role: Tools and Understanding to Support and Lead Ambitious Teaching in Mathematics Grand Ballroom D North Strand 4 | General	**Lukas Hefty** Our Professional Development System is Broken, and How to Fix It Grand Ballroom D North Strand 3 | K–5 Elementary	**Jackie Palmquist, Alyssa Schneider, Pat Baltzley** Changing Mathematical Mindsets with High School Number Talks: A Story of Our Research Grand Ballroom D North Strand 4 | 6–12 Secondary	**CAUCUS** **Cheryl Cantin** NCSM Regional Caucus: Canada Grand Ballroom D North Strand 0 | General
Michigan 1A	**Brandon Frost** Affirming Student Voice Through Teacher Coaching in Mathematics Michigan 1A Strand 2 | 6–12 Secondary	**David Wees** Using Instructional Routines to Support Teachers Using Dynamic Digital Representations Michigan 1A Strand 1 | 6–12 Secondary	**Cyndia Acker-Ramirez, Katie Laskasky, Katharine Clemmer, Tatiana Mirzaian** Capturing Real-time Interactions within the Mathematics Instructional Core Michigan 1A Strand 4 | General	**Terri Gibbs-Burke** Interim/Diagnostic Assessment Data: A Practical Approach for the Implementation of a Cycle of Inquiry to Inform Teaching and Learning Michigan 1A Strand 4 | 3–8 Upper Elementary/ Middle	
Michigan 1B	**Kerin Sancken, Crystal Conley** Coaching Partnerships to Detrack and Support High-Quality Mathematics Instruction Michigan 1B Strand 3 | 6–12 Secondary	**Amy Lucenta, Grace Kelemanik** Developing an Instructional Routine to Develop Students' Capacity to Model with Mathematics: A Window into the Process Michigan 1B Strand 1 | General	**Lisa Amick** Explicitly Targeting the Mathematics Teacher Crisis by Supporting and Retaining Early Career Secondary Mathematics Teachers Michigan 1B Strand 3 | 6–12 Secondary	**Shelbi Cole, Bill McCallum** Evaluating Curriculum-Embedded Math Assessments: Are "Chapter Tests" Good Evidence of Student Learning? Michigan 1B Strand 4 | K–5 Elementary	
Michigan 1C	**Sean Nank** Students' Voices Matter: Supporting Teachers in Building Equity and Literacy with Math Language Routines Michigan 1C Strand 1 | 6–12 Secondary	**Kimberly Morrow-Leong** Gathering Evidence and Refraining from Judgment: Focusing on Evidence in Student Work to Meet All Students' Learning Goals Michigan 1C Strand 4 | General	**Cheryl Tobey, Kate Greeley** Building Fluency Flexibility with Formative Instruction Cycles and Routines Michigan 1C Strand 4 | K–5 Elementary	**Antonia Cameron, Deanna Catanzaro, Lynn Ann Fox** Re-envisioning Coaching Frameworks: How Ten-Minute Reasoning Routines and Comparative Teaching Can Be Used to Improve Teacher Practice Michigan 1C Strand 2 | PK–2 Primary	

TUESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–2:00 PM
Grand Ballroom CD South & EF	**TUESDAY BREAKFAST** **Alizé Carrère** Environmental Change: What's Math Got to Do with It? Sponsored by: Big Ideas Learning Grand Ballroom CD South & EF | General	**TUESDAY LUNCHEON** **Peter Balyta** Essential Actions for All Math Leaders Sponsored by: Texas Instruments Grand Ballroom CD South & EF | General

	4:45 PM–5:15 PM
Columbus G	**MEETING** **Mona Toncheff, Linda Griffith** NCSM Annual Business Meeting and State of the Organization Report Columbus G | Strand 0 | General

	8:15 AM–9:15 AM	10:00 AM–11:00 AM	11:15 AM–12:15 PM	2:15 PM–3:15 PM	3:30 PM–4:30 PM
Michigan 2	**Michelle Cirillo, Michael Steele** Facilitating Purposeful, Productive, and Powerful Discourse in Secondary Classrooms Michigan 2 Strand 1 | 6–12 Secondary	**Cynthia Carson, Genie Foster** Online Video Coaching: A New Approach for Supporting Mathematics Teachers Michigan 2 Strand 2 | General	**Rosa Serratore** Defining The Mathematics Classroom Culture We Need To Have and Who Leads It Michigan 2 Strand 3 | General	**Stephanie Verners, Kim Webb** Evaluating the Essentials for an Equitable Math System Through the Lens of Continuous Improvement Michigan 2 Strand 3 | General	
Michigan 3	**Michael Greenlee, Katey Arrington** Using MathCuts Videos for Just-in-Time Professional Learning about how to Spark Interest and Engage Students through Meaningful Mathematics Strategies Michigan 3 Strand 1 | K–5 Elementary	**Pamela Seda, Kyndall Brown** From Theory to Practice: Making Equity More than a Buzzword Michigan 3 Strand 3 | 6–12 Secondary	**Nova Katz** Coaching for Equity: Eliminating Deficit Discourse Michigan 3 Strand 2 | General	**Cheryl Cantin, Juli Dixon, Edward Nolan, Thomasenia Adams, John Ryan, Saba Din** Designing Professional Learning Experiences Across a Large and Diverse Geographic Region: Lessons and Celebrations Michigan 3 Strand 3 | General	
Randolph 1A	**Jacqueline Cooke, Karen Kennedy, Roxanne Malter** Energy and Inspiration: How to Grow a Professional Mathematics Leadership Network in Your Own Backyard Randolph 1A Strand 3 | General	**Lisa Bush, Le Vada Gray** Hope, Belonging, and Curiosity: The Keys That Open the Door to Sense Making Randolph 1A Strand 1 | General	**Emily Fagan, Amy Brodesky** Formative Assessment Probes and Interviews: Powerful Tools to Target Instruction and Empower Mathematics Learners Randolph 1A Strand 4 | 6–8 Middle	**Jennifer Graziano, Nova Katz, Suzie Craig** Equity, Mathematics, and Mindset Randolph 1A Strand 2 | General	
Randolph 1B	**PRESIDENTS EXCHANGE - AMATYC** **Kathryn Kozak** Creating a Lasting Conversation Between Mathematics Teachers in High School, Community College, and University Randolph 1B Strand 3 | General	**Paul Gray, Jr., Gwen Zimmermann, Christina Lincoln-Moore, Michelle Rinehart, Desha Williams** Exploring the Framework for Mathematics Leadership: Design and Empower Randolph 1B Strand 0 | General	**James Burnett** Connecting Computational Thinking to Current Curriculum Content Randolph 1B Strand 1 | K–5 Elementary	**Carole Greenes** Identify and Capitalize on Students' Interests and Hidden Mathematical Talents with STEM Projects Randolph 1B Strand 1 | 6–12 Secondary	
Randolph 2	**Jennifer Bonham, Jennifer Trievel, Jason Rogers** How Goal Based Grading Changed Our Mindsets About Formative Assessment in the Middle School Math Classroom. Randolph 2 Strand 4 | 6–8 Middle	**Dianne Willson** Professional Learning that Increases Student Achievement Randolph 2 Strand 3 | 6–12 Secondary	**Diane Briars** Productive Strategies to Support Students' Engagement in Productive Struggle Randolph 2 Strand 1 | General	**Suzanne Mitchell** Discover Grants and Scholarships Availability to Build Innovation in Mathematics Education Randolph 2 Strand 1 | General	
Randolph 3	**Molly Daley** Mathematizing Spaces: Making our Schools Math Curious Places Randolph 3 Strand 1 | K–5 Elementary	**Paula Jakopovic** We're Meeting to Talk About Math, but Aren't Making Progress! Randolph 3 Strand 2 | General	**Johannah Nikula** Design Features of Mathematics Lessons that Support Emergent Bilingual Students Randolph 3 Strand 1 | 3–8 Upper Elementary/ Middle	**Jim Ewing** Hope for Teachers: Developing Emergent Bilinguals' Language in Mathematics Class Randolph 3 Strand 1 | 3–8 Upper Elementary/ Middle	
Roosevelt 3A	**Carrie Cutler** Math-Positive Mindsets: How to Leverage Family Engagement to Extend Growth Mindsets Beyond Classroom Walls Roosevelt 3A Strand 1 | K–5 Elementary	**Astrid Fossum, Dawn Williams** Student Benefits in Mathematically Coherent Structures: Instruction, Practice and Assessment Roosevelt 3A Strand 4 | General		**Bernard Frost, Natalie Crist** NCSM Initiative: Communication Exchange Roosevelt 3A Strand 0 | General	

TUESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–2:00 PM	4:45 PM–5:15 PM
Grand Ballroom CD South & EF	**TUESDAY BREAKFAST** **Alizé Carrère** Environmental Change: What's Math Got to Do with It? Sponsored by: Big Ideas Learning Grand Ballroom CD South & EF | General	**TUESDAY LUNCHEON** **Peter Balyta** Essential Actions for All Math Leaders Sponsored by: Texas Instruments Grand Ballroom CD South & EF | General	Columbus G **MEETING** **Mona Toncheff, Linda Griffith** NCSM Annual Business Meeting and State of the Organization Report Columbus G | Strand 0 | General

	8:15 AM–9:15 AM	10:00 AM–11:00 AM	11:15 AM–12:15 PM	2:15 PM–3:15 PM	3:30 PM–4:30 PM
Roosevelt 3B	**Karen Riley Jeffers, Donicka Herod, Regina Walters, Carlene Young** From Obscurity to Focus: One District's Journey in Bringing Clarity and Purpose to Data Dialogues Roosevelt 3B Strand 4 | General	**Jessica Breur** Collaborative Coaching with the Eight Effective Teaching Practices As Our Guide Roosevelt 3B Strand 2 | 6–8 Middle	**PRESIDENTS EXCHANGE – TODOS** **Diana Ceja** Influencing the Culture that Marginalizes Our Children Roosevelt 3B Strand 3 | General	**Heidi Sabnani, Sue Looney, Heather Johnson, Molly Vokey** The Anxiety in the Room: Strategies for Coaching Teachers with Math Anxiety Roosevelt 3B Strand 2 | General	
Columbus AB	**Hilary Kreisberg, Dina Mendola** Move Over Pedagogy – It's Time to Get Andragogical! Columbus AB Strand 2 | General	**Heather Kohn** Where Is the Language Love? Content Objectives Are Not Enough Columbus AB Strand 1 | 6–12 Secondary		**Jennifer Bay-Williams, Maggie McGatha** Coaching to Illuminate Effective (and Ineffective) Ways to Support Diverse Learners Columbus AB Strand 1 | General	**CAUCUS** **Sue Vohrer** NCSM Regional Caucus: Eastern Region 2 Columbus AB Strand 0 | General
Columbus CD	**Susan Jo Russell** Putting Representation at the Center: Students Acting as Mathematicians Columbus CD Strand 1 | K–5 Elementary	**Shephali Chokshi, Anabela Jones, Marie Peixoto** A Tag-Team Approach: Leveraging the Collaborative Relationship Between Consultants-Principals-Coaches-Teachers to Increase Student Growth Columbus CD Strand 3 | General	**EQUITY LECTURE** **Thomasenia Adams** Kay Gilliland Equity Lecture: From the Perils of Inequity to the Champion of Equity - The Reign of Mathematical Power Columbus CD Strand 3 | General	**Daniel Ilaria, Michelle Rinehart** Leading Conversations: Questioning Your Own Mathematics Language Columbus CD Strand 3 | 6–12 Secondary	**CAUCUS** **Katey Arrington** NCSM Regional Caucus: Southern Region 2 Columbus CD Strand 0 | General
Columbus EF	**Sharon Rendon, Erin Lehmann** NCSM Administrators' Day Kickoff Columbus EF Strand 0 | General	**Bill Barnes** NCSM Essential Actions - Instructional Leadership in Action Columbus EF Strand 4 | General	**Laurie Boswell** Build Mathematical Capacity: Develop Understanding of the Attributes of Polygons Columbus EF Strand 1 | 3–5 Intermediate	**Stacy Cortez, Keri Heusdens, Camille Schroeder, Mandy Taylor, Timothy Nickel, Kim Hailer** Leading by Design: Aligning Professional Learning, Educator Effectiveness, and School-Wide Mathematics Goals Columbus EF Strand 3 | General	**CAUCUS** **Sharon Rendon** NCSM Regional Caucus: Central Region 2 Columbus EF Strand 0 | General
Columbus G	**David Wilson, Nilam Yagielski** TRU Video Case Studies: A Professional Development Model Using Formative Assessment Lessons Columbus G Strand 3 | 6–12 Secondary	**Kit Norris, Hilary Kreisberg** Preparing Mathematical Thinkers for the Future Using Structured Discourse Columbus G Strand 1 | 3–5 Intermediate	**Karen Fuson** Relating Decimals, Fractions, and Ratios for Deeper Understanding: How Are They Alike and How Are They Different? Columbus G Strand 1 3–8 Upper Elementary/Middle	**Shannon Kiebler** Is Your Math Vision Leaking? Columbus G Strand 3 | K–5 Elementary	**CAUCUS** **Bernard Frost** NCSM Regional Caucus: Southern Region 1 Columbus G Strand 0 | General
Columbus H	**Chris Shore** The Concepts-Procedures-Application Unit Progression Columbus H Strand 1 | 6–12 Secondary	**Keith Krone, Chance Whitmore** Building Capacity to Increase Student Achievement in a High-Poverty Elementary School: A Blueprint of Commitment and Collaboration Columbus H Strand 1 | K–5 Elementary	**PRESIDENTS EXCHANGE – NCTM** **Robert Q. Berry, III** Catalyzing Change: Initiating Critical Conversations in Mathematics Teaching and Learning Columbus H Strand 3 | General	**Kimberly Rimbey** "Let's Get the Manipulatives Out of the Closet" and Other Ways for Administrators and Coaches to Partner Columbus H Strand 3 | General	**CAUCUS** **Bill Barnes** NCSM Regional Caucus: International Columbus H Strand 0 | General

TUESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–2:00 PM	4:45 PM–5:15 PM
Grand Ballroom CD South & EF	**TUESDAY BREAKFAST** **Alizé Carrère** Environmental Change: What's Math Got to Do with It? Sponsored by: Big Ideas Learning Grand Ballroom CD South & EF | General	**TUESDAY LUNCHEON** **Peter Balyta** Essential Actions for All Math Leaders Sponsored by: Texas Instruments Grand Ballroom CD South & EF | General	Columbus G **MEETING** **Mona Toncheff, Linda Griffith** NCSM Annual Business Meeting and State of the Organization Report Columbus G | Strand 0 | General

	8:15 AM–9:15 AM	10:00 AM–11:00 AM	11:15 AM–12:15 PM	2:15 PM–3:15 PM	3:30 PM–4:30 PM
Columbus IJ	**ROSS TAYLOR/GLENN GILBERT SERIES** **Gail Burrill** Ross Taylor/Glenn Gilbert Speaker Series: Why Teach Mathematics? How Do We Help Teachers Convince Students that Learning Mathematics is Important? Columbus IJ Strand 1 | 6–12 Secondary	**John SanGiovanni** 6 Actions for Productive Struggle in the Mathematics Classroom Columbus IJ Strand 3 | General	**Zalman Usiskin** Why Study Algebra, and When? Columbus IJ Strand 1 | General	**Sherry Parrish** Leveraging the Principles of Number Talks to Promote Change in the Mathematics Classroom Columbus IJ Strand 1 | General	**CAUCUS** **Denise Trakas** NCSM Regional Caucus: Western Region 1 Columbus IJ Strand 0 | General
Columbus KL	**Haiwen Chu, Lizzy Hull Barnes** Observing for Quality Opportunities to Interact with Peers: A Framework and Tools Columbus KL Strand 1 | 6–8 Middle	**Zandra de Araujo** How to Support Teachers who Flip: Considerations and Cautions Columbus KL Strand 2 | 6–12 Secondary	**Jill Gough** Be Both Author and Illustrator of Mathematical Understanding Columbus KL Strand 1 | 3–8 Upper Elementary/ Middle	**Mary Davis, David Foster** Real Classrooms; Real Teachers; Real Opportunities for Rich Shared Learning Columbus KL Strand 2 | 6–12 Secondary	**CAUCUS** **Cathy Boutin** NCSM Regional Caucus: Eastern Region 1 Columbus KL Strand 0 | General
Grand Suite 1					**CAUCUS** **Connie Schrock** NCSM Past President Caucus Grand Suite 1 Strand 0 | General
Exhibit Hall	**8:30 AM–9:30 AM SPONSOR SHOWCASE #1** **Laura Marie Coleman** Great Minds: Leveraging Coherence to Promote Student Learning Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Joanie Funderburk** Texas Instruments:Teaching Strategies for Success in Mathematics Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Shannon McCaw** EdGems Math: Moving Away From Teacher Talk Exhibit Hall | General	**SPONSOR SHOWCASE #1** **Stephanie Ely, Kyle Falting** Zearn: Building a Middle School Curriculum that Supports All Learners Exhibit Hall | General	
Exhibit Hall	**8:30 AM–9:30 AM SPONSOR SHOWCASE #2** **Melissa Waggoner, Peg Hartwig** Discovery Education: Beyond Think-Pair-Share: Effective Math Language Routines to Develop Conceptual Understanding for All Students (Target: Grades 6 – 12) Exhibit Hall | General	**SPONSOR SHOWCASE #2** **Brett Felton** Agile Mind: An Approach to Intensification Using Agile Mind Exhibit Hall | General	**SPONSOR SHOWCASE #2** **Maria Blanton, Angela Gardiner** Didax: The Impact of Algebra in the Elementary Math Curriculum Exhibit Hall | General	**SPONSOR SHOWCASE #2** **Sunil Singh** Amplify: Broadening Equity Discussions In Math Education Through Rehumization Efforts in our Communities Exhibit Hall | General	

TUESDAY SESSIONS BY STRAND

STRAND 0: NCSM BUSINESS

LEVEL	LOCATION	START	END
GEN	COLUMBUS EF	8:15 AM	9:15 AM
GEN	RANDOLPH 1B	10:00 AM	11:00 AM
GEN	ROOSEVELT 3A	2:15 PM	3:15 PM
GEN	COLUMBUS AB	3:30 PM	4:30 PM
GEN	GRAND BALLROOM D NORTH	3:30 PM	4:30 PM
GEN	GRAND SUITE 1	3:30 PM	4:30 PM
GEN	COLUMBUS G	3:30 PM	4:30 PM
GEN	GRAND BALLROOM A & C NORTH	3:30 PM	4:30 PM
GEN	COLUMBUS EF	3:30 PM	4:30 PM
GEN	COLUMBUS KL	3:30 PM	4:30 PM
GEN	COLUMBUS CD	3:30 PM	4:30 PM
GEN	COLUMBUS IJ	3:30 PM	4:30 PM
GEN	GRAND BALLROOM B	3:30 PM	4:30 PM
GEN	COLUMBUS H	3:30 PM	4:30 PM

STRAND 1: BUILD MATHEMATICAL CAPACITY

LEVEL	LOCATION	START	END
6–12	COLUMBUS H	8:15 AM	9:15 AM
K–5	ROOSEVELT 3A	8:15 AM	9:15 AM
6–12	MICHIGAN 1C	8:15 AM	9:15 AM
K–5	MICHIGAN 3	8:15 AM	9:15 AM
6–12	MICHIGAN 2	8:15 AM	9:15 AM
K–5	COLUMBUS CD	8:15 AM	9:15 AM
6–8	COLUMBUS KL	8:15 AM	9:15 AM
K–5	RANDOLPH 3	8:15 AM	9:15 AM
GEN	GRAND BALLROOM A & C NORTH	8:15 AM	9:15 AM
6–12	COLUMBUS IJ	8:15 AM	9:15 AM
K–5	COLUMBUS H	10:00 AM	11:00 AM
3–5	COLUMBUS G	10:00 AM	11:00 AM
GEN	MICHIGAN 1B	10:00 AM	11:00 AM
PK-2	GRAND BALLROOM B	10:00 AM	11:00 AM
6–12	MICHIGAN 1A	10:00 AM	11:00 AM
6–12	COLUMBUS AB	10:00 AM	11:00 AM
GEN	RANDOLPH 1A	10:00 AM	11:00 AM
K–5	RANDOLPH 1B	11:15 AM	12:15 PM
3–8	COLUMBUS G	11:15 AM	12:15 PM
GEN	GRAND BALLROOM B	11:15 AM	12:15 PM
3–8	COLUMBUS KL	11:15 AM	12:15 PM
3–8	RANDOLPH 3	11:15 AM	12:15 PM
GEN	RANDOLPH 2	11:15 AM	12:15 PM
3–5	COLUMBUS EF	11:15 AM	12:15 PM
GEN	COLUMBUS IJ	11:15 AM	12:15 PM
3–8	RANDOLPH 3	2:15 PM	3:15 PM
6–12	RANDOLPH 1B	2:15 PM	3:15 PM
GEN	GRAND BALLROOM B	2:15 PM	3:15 PM
GEN	COLUMBUS IJ	2:15 PM	3:15 PM
GEN	COLUMBUS AB	2:15 PM	3:15 PM
GEN	RANDOLPH 2	2:15 PM	3:15 PM

STRAND 2: CONSTRUCT IMPACTFUL MATHEMATICS COACHING

LEVEL	LOCATION	START	END
6–12	MICHIGAN 1A	8:15 AM	9:15 AM
GEN	COLUMBUS AB	8:15 AM	9:15 AM
6–12	COLUMBUS KL	10:00 AM	11:00 AM
GEN	MICHIGAN 2	10:00 AM	11:00 AM
6–8	ROOSEVELT 3B	10:00 AM	11:00 AM
GEN	RANDOLPH 3	10:00 AM	11:00 AM
GEN	MICHIGAN 3	11:15 AM	12:15 PM
GEN	ROOSEVELT 3B	2:15 PM	3:15 PM
6–12	COLUMBUS KL	2:15 PM	3:15 PM
PK-2	MICHIGAN 1C	2:15 PM	3:15 PM
GEN	RANDOLPH 1A	2:15 PM	3:15 PM

STRAND 3: DESIGN SYSTEMIC STRUCTURES WITHIN THE MATHEMATICS EDUCATION COMMUNITY

LEVEL	LOCATION	START	END
GEN	RANDOLPH 1A	8:15 AM	9:15 AM
6–12	MICHIGAN 1B	8:15 AM	9:15 AM
K–5	GRAND BALLROOM D NORTH	8:15 AM	9:15 AM
6–12	COLUMBUS G	8:15 AM	9:15 AM
GEN	GRAND BALLROOM B	8:15 AM	9:15 AM
9–12	RANDOLPH 1B	8:15 AM	9:15 AM
GEN	COLUMBUS CD	10:00 AM	11:00 AM
GEN	COLUMBUS IJ	10:00 AM	11:00 AM
6–12	MICHIGAN 3	10:00 AM	11:00 AM
6–12	RANDOLPH 2	10:00 AM	11:00 AM
GEN	GRAND BALLROOM A & C NORTH	10:00 AM	11:00 AM
GEN	GRAND BALLROOM A & C NORTH	11:15 AM	12:15 PM
K–5	GRAND BALLROOM D NORTH	11:15 AM	12:15 PM
6–12	MICHIGAN 1B	11:15 AM	12:15 PM
GEN	COLUMBUS AB	11:15 AM	12:15 PM
GEN	MICHIGAN 2	11:15 AM	12:15 PM
GEN	ROOSEVELT 3B	11:15 AM	12:15 PM
GEN	COLUMBUS H	11:15 AM	12:15 PM
GEN	COLUMBUS CD	11:15 AM	12:15 PM
GEN	MICHIGAN 2	2:15 PM	3:15 PM
GEN	GRAND BALLROOM A & C NORTH	2:15 PM	3:15 PM
GEN	COLUMBUS EF	2:15 PM	3:15 PM
6–12	COLUMBUS CD	2:15 PM	3:15 PM
GEN	MICHIGAN 3	2:15 PM	3:15 PM
GEN	COLUMBUS H	2:15 PM	3:15 PM
K–5	COLUMBUS G	2:15 PM	3:15 PM

STRAND 4: MONITOR EVIDENCE OF EQUITABLE MATHEMATICS LEARNING

LEVEL	LOCATION	START	END
6–8	RANDOLPH 2	8:15 AM	9:15 AM
GEN	ROOSEVELT 3B	8:15 AM	9:15 AM
GEN	COLUMBUS EF	10:00 AM	11:00 AM
GEN	GRAND BALLROOM D NORTH	10:00 AM	11:00 AM
GEN	MICHIGAN 1C	10:00 AM	11:00 AM
GEN	ROOSEVELT 3A	10:00 AM	11:00 AM
GEN	MICHIGAN 1A	11:15 AM	12:15 PM
K–5	MICHIGAN 1C	11:15 AM	12:15 PM
6–8	RANDOLPH 1A	11:15 AM	12:15 PM
K–5	MICHIGAN 1B	2:15 PM	3:15 PM
3–8	MICHIGAN 1A	2:15 PM	3:15 PM
6–12	GRAND BALLROOM D NORTH	2:15 PM	3:15 PM

TUESDAY SESSIONS

HOW TO READ THIS SPEAKER PROGRAM:

TITLE OF PRESENTATION
Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience
Description of presentation.
Speaker Name, Position/Affiliation, City, State

TUESDAY LEADERSHIP EXCHANGE—EXHIBIT HALL		
TIME	**FACILITATOR**	**TOPIC**
8:30 AM–9:00 AM	Annie Fetter	The Power of Ideas: Letting Students' Thinking Take Center Stage
10:15 AM–10:45 AM	Dan Finkel	How to Motivate and Sustain Student Engagement in Rich Learning Tasks
2:30 PM–3:00 PM	Peter Liljedahl	Thinking about the Triangulation of Evidence from Different Perspectives: Points vs. Data

TUESDAY BREAKFAST

ENVIRONMENTAL CHANGE: WHAT'S MATH GOT TO DO WITH IT?

7:00 AM–8:00 AM | Grand Ballroom CD South & EF | General

We've heard it once and we'll hear it time and time again from our students about math: "When am I ever going to use this?" This lunch session with National Geographic Explorer, Alizé Carrère, will shed some light on how math is used in many careers, including her own which involves researching and documenting how people live with—and adapt to—environmental change.

Alizé Carrère, National Geographic Explorer

Sponsored by
BIG IDEAS LEARNING®

TUESDAY SESSIONS

8:15 AM–9:15 AM

Major Presentation

WHY ARE THERE STILL ELEPHANTS IN THE (MATHEMATICS CLASS-) ROOM?

8:15 AM–9:15 AM | Grand Ballroom A & C North | Strand 1 | General

Why are there still elephants in the mathematics classroom? These "elephants" often present roadblocks to students' engagement and learning. Such elephants might include the following: Inaccurate and unfounded conceptions about girls learning mathematics

1. Inaccurate and unfounded conceptions about students of color learning mathematics
2. Missed opportunities for secondary students to learn from hands-on experience
3. Reliance on memorization and procedures to "do" mathematics
4. Using "let me show you how to do it" as a primary method of teaching

The presenter will integrate experiences, research, and classroom video to examine related points and provide challenges for changing the narrative to release the elephants from the mathematics classroom.

Thomasenia Lott Adams is a professor of mathematics education in the College of Education at the University of Florida. She currently serves as the Associate Dean for Research and Faculty Development and the mathematics officer for the UF Lastinger Center for Learning. She is a member of the editorial board of Mathematics Teacher: Learning and Teaching PK-12. Her most recent publication, Making Sense of Mathematics for Teaching • Girls in Grades K-5 (Solution Tree, 2019), is reflective of her dedication of making mathematics accessible to all students. Dr. Adams is a leader of DNA Mathematics. She is proud of the being published in the very first issue of NCSM Journal of Mathematics Education Leadership.

Thomasenia Adams, University of Florida, Gainesville, Florida

Presider, Paul Gray, NCTM Representative, Dallas, Texas

Spotlight Speaker

COMMIT TO A STRONG INDUCTION PROGRAM FOR YOUR NEW TEACHERS – CONSTRUCT A STRUCTURE FOR EVERY LEARNERS SUCCESS

8:15 AM–9:15 AM | Grand Ballroom B | Strand 3 | General

New teachers have barely scratched the surface of what they know about teaching. Their preparation programs are vastly different. The variations in their previous classroom experiences are extreme. What knowledge and skills are missing? What do they know and understand about equity? Come discuss the needs for a strong induction program that is foundational for success in the classroom. What components must each program Include? We'll continue by sharing strengths from participants' programs.

Connie Schrock, NCSM Immediate Past President, Emporia, Kansas

Presider, Stephen Shadel, NCSM C1 Regional Director, Skokie, Illinois

MAKING ROOM FOR NUMBER SENSE

8:15 AM–9:15 AM | Grand Ballroom D North | Strand 3 | K-5 Elementary

Number sense is often not a part of the curriculum that elementary teachers are using, yet it's a foundational concept of mathematics that students need to build. In this session we will explore ways to empower teachers to include number sense by helping them see 1) the importance of including number sense and 2) how to use a structure to ensure number sense is woven into their daily math time.

Christina Tondevold, Build Math Minds, Orofino, Idaho

AFFIRMING STUDENT VOICE THROUGH TEACHER COACHING IN MATHEMATICS

8:15 AM–9:15 AM | Michigan 1A | Strand 2 | 6-12 Secondary

Engaging students in mathematical thinking and discourse is imperative for 21st century learning. Participants in this session will learn techniques and coaching strategies to help new and developing mathematics teachers to sequence instruction and student work so that they can cultivate rich discourse in the classroom. This particular session is geared toward mathematic coaches, leaders, and teacher preparation faculty for the secondary math

Brandon Frost, Urban Teachers/Johns Hopkins University, Batlimore, Maryland

TUESDAY SESSIONS

COACHING PARTNERSHIPS TO DETRACK AND SUPPORT HIGH-QUALITY MATHEMATICS INSTRUCTION

8:15 AM–9:15 AM | Michigan 1B | Strand 3 | 6-12 Secondary

We will share how a coaching partnership improved teacher teams' ability to actualize the shifts of the CCSSM standards and provide ALL students access to high-quality mathematics instruction. Participants will explore how to detrack courses by first focusing on curricular alignment. We will share resources and discuss the role that learning progressions have in developing differentiated curriculum.

Kerin Sancken, Hinsdale South High School, Hinsdale, Illinois

Crystal Conley, Consortium for Educational Change, Lombard, Illinois

STUDENTS' VOICES MATTER: SUPPORTING TEACHERS IN BUILDING EQUITY AND LITERACY WITH MATH LANGUAGE ROUTINES

8:15 AM–9:15 AM | Michigan 1C | Strand 1 | 6-12 Secondary

Student discourse is important so how do we foster meaningful opportunities to discuss math? Come engage in strategies such as 5 practices, which one doesn't belong, and other language and instructional routines that provide access for all students. We will experience the strategies while discussing how we as coaches and specialists can create buy-in, emphasizing coaching moves in and out of the classroom. Examples from the new Illustrative Mathematics curriculum will be used.

Sean Nank, American College of Education, Indianapolis, Indiana

FACILITATING PURPOSEFUL, PRODUCTIVE, AND POWERFUL DISCOURSE IN SECONDARY CLASSROOMS

8:15 AM–9:15 AM | Michigan 2 | Strand 1 | 6-12 Secondary

We focus on meaningful mathematical discourse through the exploration of two cases of teaching. Particular research-based moves for facilitating rich discourse and the kinds of tasks that foster meaningful discourse will be considered. We argue that discourse is a tool for: formative assessment, creating opportunities for all students to learn mathematics content, supporting students to gain facility with increasingly precise mathematical communication, and positioning students as people who are capable of making sense of mathematics.

Michelle Cirillo, University of Delaware, Newark, Delaware

Michael Steele, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

USING MATHCUTS VIDEOS FOR JUST-IN-TIME PROFESSIONAL LEARNING ABOUT HOW TO SPARK INTEREST AND ENGAGE STUDENTS THROUGH MEANINGFUL MATHEMATICS STRATEGIES

8:15 AM–9:15 AM | Michigan 3 | Strand 1 | K-5 Elementary

Are you looking to enhance your math instruction and engage diverse learners? MathCuts are open-access videos made for teachers that showcase research-based mathematics teaching strategies in a quick, accessible, and immediately applicable way. The strategies shown spark interest through visual approaches perfect for number talks that support diverse learners in your classroom! Come talk to the creators about building routines around collaboratively exploring strategies presented in MathCuts, identifying key takeaways and planning for classroom use.

Michael Greenlee, Charles A. Dana Center at The University of Texas, Austin, Texas

Katey Arrington, Charles A. Dana Center, The University of Texas, Austin, Texas

ENERGY AND INSPIRATION: HOW TO GROW A PROFESSIONAL MATHEMATICS LEADERSHIP NETWORK IN YOUR OWN BACKYARD

8:15 AM–9:15 AM | Randolph 1A | Strand 3 | General

Hey, Math Leaders, how do you find inspiration? Consider growing your own math leadership network. The Mathematics Coaching and Leadership Network (MCLN) was created to support those in our region who are in positions of mathematics TOSAs, teacher leaders, instructional coaches, math interventionists, department chairs, university faculty, etc. This presentation will identify some of the components of successful MCLN meetings that energize and encourage professional growth of mathematics leadership in our local community.

Jacqueline Cooke, Multnomah Education Service District, Portland, Oregon

Karen Kennedy, Portland State University, Portland, Oregon

Roxanne Malter, Multnomah Education Service District, Portland, Oregon

Presidents Exchange—AMATYC

CREATING A LASTING CONVERSATION BETWEEN MATHEMATICS TEACHERS IN HIGH SCHOOL, COMMUNITY COLLEGE, AND UNIVERSITY

8:15 AM–9:15 AM | Randolph 1B | Strand 3 | General

This presentation will discuss a model that is used by a unified school district, a local community college, and a local university to facilitate conversations between their mathematics teachers. The mathematics faculty meet three to four times a year to discuss expectations of their students, placement requirements, dual enrollment courses, university and community college curriculum, transfer issues, and institutional updates.

Kathryn Kozak, Coconino Community College, Flagstaff, Arizona

HOW GOAL BASED GRADING CHANGED OUR MINDSETS ABOUT FORMATIVE ASSESSMENT IN THE MIDDLE SCHOOL MATH CLASSROOM.

8:15 AM–9:15 AM | Randolph 2 | Strand 4 | 6-8 Middle

Many of us know the Common Core State Standards (CCSS) and of Formative Assessment as defined by D. Wiliam (2011), but how are we really using that formative assessment? This session is for coaches, teacher leaders, and administrators who want to hear about how our journey from traditional grading to goal based grading changed how we thought about and used formative assessment.

Jennifer Bonham, Colonial School District, New Castle, Delaware

Jennifer Trievel, Colonial School District, New Castle, Delaware

Jason Rogers, George Read Middle School, Colonial School District, New Castle, Delaware

MATHEMATIZING SPACES: MAKING OUR SCHOOLS MATH CURIOUS PLACES

8:15 AM–9:15 AM | Randolph 3 | Strand 1 | K-5 Elementary

Math is all around us, but often goes unnoticed. How can we use playful provocations in and around our schools to fuel math thinking, talk, and wonder among students and adults? Learn simple strategies teachers or parents can use to invite more students to do more math in more places.

Molly Daley, Educational Service District 112, Vancouver, Washington

MATH-POSITIVE MINDSETS: HOW TO LEVERAGE FAMILY ENGAGEMENT TO EXTEND GROWTH MINDSETS BEYOND CLASSROOM WALLS

8:15 AM–9:15 AM | Roosevelt 3A | Strand 1 | K-5 Elementary

Elementary teachers are tasked with building students' math-positive mindsets but are sometimes undermined by parents' fixed attitudes. Learn how to grow familial mindsets by leveraging traditional family engagement structures—parent conferences, school newsletters, and family math night—as well as innovative approaches like take-home math literacy bags. We'll share how we've adapted Stanford's Project for Education Research that Scales (2015) to teach families the malleability of intelligence and growth mindset beliefs, actions, and language.

Carrie Cutler, University of Houston, Houston, Texas

FROM OBSCURITY TO FOCUS: ONE DISTRICT'S JOURNEY IN BRINGING CLARITY AND PURPOSE TO DATA DIALOGUES

8:15 AM–9:15 AM | Roosevelt 3B | Strand 4 | General

Explore how the Prince George's County Public Schools Elementary Mathematics Department used the implementation of a data inquiry protocol, self-assessments, reflections, and collaborative sessions to bring focus and purpose to data dialogues and the process of monitoring data. Evaluate data indicating the shift in the amount of schools analyzing data, determining goals, and developing action plans to achieve those goals. Engage in collaborative activities and observe how the department modeled this process for participants.

Karen Riley Jeffers, Prince George's County Public Schools, Upper Marlboro, Maryland

Donicka Herod, Prince George's County Public Schools, Oxon Hill, Maryland

Regina Walters, Prince George's County Public Schools, Upper Marlboro, Maryland

Carlene Young, Prince George's County Public Schools, Upper Marlboro, Maryland

MOVE OVER PEDAGOGY – IT'S TIME TO GET ANDRAGOGICAL!

8:15 AM–9:15 AM | Columbus AB | Strand 2 | General

Coaches play an important role in our educational system—their greatest role is in transforming adult behavior. Most coaches are former teachers, who have studied pedagogy their entire lives, but have received little to no training on adult learning theory. If we want to transform adult behavior, we have to know about how adults learn. Come to this session where we will get andragogical and focus on US, adults.

Hilary Kreisberg, Lesley University, Cambridge, Massachusetts

Dina Mendola, US Math Recovery Council, Apple Valley, Minnesota

TUESDAY SESSIONS

PUTTING REPRESENTATION AT THE CENTER: STUDENTS ACTING AS MATHEMATICIANS

8:15 AM–9:15 AM | Columbus CD | Strand 1 | K-5 Elementary

Through making connections between visual representations and mathematical abstractions, elementary students dig below the surface of computation to construct mathematical explanations. By interacting with each other's representations, they grapple with foundational ideas about the properties and behaviors of the operations. Video clips, including examples from urban public schools, illustrate depth and rigor of student thinking, how teachers focus on conceptual understanding of the operations, and how the brilliance of all students is respected and supported.

Susan Jo Russell, TERC, Cambridge, Massachusetts

ADMINISTRATORS' DAY KICKOFF

8:15 AM–9:15 AM | Columbus EF | Strand 0 | General

Come join us for a networking and celebration session designed to "kick-off" the Administrator Leadership Strand. We will introduce the newest NCSM resource for site-level leaders entitled, "NCSM Essential Actions: Instructional Leadership in Mathematics Education." The book supports site-based administrators with strengthening classroom instruction by improving the quality of instructional conversations that occur before, during, and after the lesson.

Sharon Rendon, NCSM C2 Regional Director, Summerset, South Dakota

Erin Lehmann, Rapid City Area Schools, Rapid City, South Dakota

TRU VIDEO CASE STUDIES: A PROFESSIONAL DEVELOPMENT MODEL USING FORMATIVE ASSESSMENT LESSONS

8:15 AM–9:15 AM | Columbus G | Strand 3 | 6-12 Secondary

This session will share a professional development model that features Professional Learning Communities exploring the OER Formative Assessment Lessons (FALs) using the Teaching for Robust Understanding (TRU) framework as a lens for their study (map.mathshell.org). Video case studies provide opportunities for teachers to study episodes of student's reasoning and communication that took place while completing FALs. (tle.soe.umich.edu/MFA/) Discussion structures based on the TRU dimensions support enhanced content and pedagogical knowledge.

David Wilson, Buffalo State, State University of New York, Buffalo, New York

Nilam Yagielski, Sweet Home Central School District, Amherst, New York

THE CONCEPTS-PROCEDURES-APPLICATION UNIT PROGRESSION

8:15 AM–9:15 AM | Columbus H | Strand 1 | 6-12 Secondary

In order to fully understand mathematics, students need to experience math topics in a progression that begins with conceptual understanding, then continues to procedural fluency, and moves onto application of the skills. Experience a journey of an actual unit of study that embraces this C-P-A progression and see the phenomenal results that occurred with students.

Chris Shore, Murrieta Valley Unified School District, Murrieta, California

Equity Lecture

ROSS TAYLOR/GLENN GILBERT SPEAKER SERIES: WHY TEACH MATHEMATICS? HOW DO WE HELP TEACHERS CONVINCE STUDENTS THAT LEARNING MATHEMATICS IS IMPORTANT?

8:15 AM–9:15 AM | Columbus IJ | Strand 1 | 6-12 Secondary

Much of the focus on what students should know in mathematics has been on college and career readiness. NCTM's Catalyzing Change suggests there is more to mathematics. What does this mean for teachers? Is knowing what factors are and how they connect to the roots of a function more important than being able to factor? Let's consider how we can help teachers make choices that will engage all students in the mathematics in meaningful ways.

Gail Burrill, Michigan State University, East Lansing, Michigan

OBSERVING FOR QUALITY OPPORTUNITIES TO INTERACT WITH PEERS: A FRAMEWORK AND TOOLS

8:15 AM–9:15 AM | Columbus KL | Strand 1 | 6-8 Middle

Session participants will learn about three key characteristics of quality peer interactions: sustained talk, reciprocal interactions, and substantive mathematical focus. Participants will use observable indicators of practice to characterize whether students have equitable opportunities to talk with peers about mathematics. District leaders will describe how they use these data, and participants will also be introduced to a toolkit that offers a suite of options for coaches to offer teachers to enhance their practice.

Haiwen Chu, WestEd, San Francisco, California

Lizzy Hull Barnes, San Francisco Unified School District, San Francisco, California

TUESDAY SESSIONS

8:30 AM–9:30 AM

Sponsor Showcase #1

LEVERAGING COHERENCE TO PROMOTE STUDENT LEARNING

8:30 AM – 9:30 AM | Exhibit Hall | General

What does a coherent curriculum really feel like? Join Great Minds as we discuss how students and teachers benefit from the expertly crafted learning experiences found in the comprehensive PK-12 Eureka Math curriculum. Participants will discover how instruction and student learning progress from number sense, to fractions, to algebra, and beyond.

Laura Marie Coleman, Great Minds, Washington, District of Columbia

Sponsor Showcase #2

BEYOND THINK-PAIR-SHARE: EFFECTIVE MATH LANGUAGE ROUTINES TO DEVELOP CONCEPTUAL UNDERSTANDING FOR ALL STUDENTS (TARGET: GRADES 6 – 12)

8:30 AM–9:30 AM | Exhibit Hall | General

Integrating a variety of math language routines facilitate discourse beyond the traditional think-pair-share. Come experience how these routines can improve conceptual understanding and math practices while developing English learners' language skills. Effective student discourse increases productive and receptive language functions when developing comprehension of high-cognitive demand concepts. We will discuss how to lead the implementation of three effective math language routines which can be used in most lessons and across grade levels.

Melissa Waggoner, Peg Hartwig, Discovery Education, Charlotte, North Carolina

10:00 AM–11:00 AM

Major Presentation

BOLD MATHEMATICS LEADERSHIP: CREATE A CULTURE OF CONTINUOUS IMPROVEMENT USING NCSM LEADERSHIP ESSENTIAL ACTIONS

10:00 AM–11:00 AM | Grand Ballroom A & C North | Strand 3 | General

Every mathematics leader is charged with forging a path leading to improved student learning through meaningful commitments to those they serve. What does it take to live a courageous and bold mathematics leadership life? Through examples, Mona will explore the second guiding principle of the newly released Framework for Mathematics Leadership. Walk away with bold leadership strategies to empower a culture of productive professionalism and continuous improvement.

Mona Toncheff, an education consultant and author, worked as both a mathematics teacher and as a mathematics specialist for the Phoenix Union High School District in Arizona. In the latter role, she coached and provided professional development to high school teachers and administrators related to quality mathematics teaching and learning and working in effective collaborative teams. She currently serves as a supervisor teacher for the University of Arizona Teach Program.

Mona has supervised the culture change from teacher isolation to professional learning communities, creating articulated standards and relevant district common assessments and providing ongoing professional development on best practices, equity and access, technology, response to intervention, high-quality grading practices, and assessment for learning.

As a writer and consultant, Mona works with educators and leaders nationwide to build collaborative teams, empowering them with effective strategies for aligning curriculum, instruction, and assessment to ensure all students receive high-quality mathematics instruction.

Mona is currently the President of NCSM – Leadership in Mathematics Education and has served NCSM in the roles of secretary (2007–2008), director of Western Region 1 (2012–2015), Second Vice-President (2015-2016), First Vice President (2016-2017), Marketing and E-news Editor (2017-2018), and President-elect (2018-2019). In addition to her work with NCSM, Mona has served as the president of Arizona Mathematics Leaders (2016-2018) and is the current past-president. She was named 2009 Phoenix Union High School District Teacher of the Year and in 2014, she received the Copper Apple Award for leadership in mathematics from the Arizona Association of Teachers of Mathematics.

Mona earned a bachelor of science from Arizona State University and a master of education in educational leadership from Northern Arizona University.

Mona Toncheff, NCSM President, Phoenix, Arizona

Presider, Donna Simpson Leak, NCSM Nominations Chair, Sauk Village, Illinois

TUESDAY SESSIONS

Spotlight Speaker

SEE IT, MOVE IT, GRASP IT: MATH WITH VIRTUAL MANIPULATIVES

10:00 AM–11:00 AM | Grand Ballroom B | Strand 1 | Pk-2 Primary

Manipulatives are important tools that help young mathematicians make sense of complex mathematical ideas. Technology provides opportunities for students to engage with virtual manipulatives alongside or in place of concrete ones, but what changes and what stays the same when students "drag and drop" instead of pick up and place? In this session, we will discuss opportunities and limitations of virtual manipulatives using a free virtual manipulatives app—bring your own device!

Christine Newell, Stanislaus County Office of Education, Modesto, California

Presider, Kathlan Latimer, NCSM W2 Regional Director, Davis, California

COACHING FROM THE ADMINISTRATOR ROLE: TOOLS AND UNDERSTANDING TO SUPPORT AND LEAD AMBITIOUS TEACHING IN MATHEMATICS

10:00 AM–11:00 AM | Grand Ballroom D North | Strand 4 | General

Ambitious teaching in mathematics does not happen overnight. It takes sustained effort over time. School administrators play a critical role in this work as they hold their teams to the vision, make resources available, and provide ongoing feedback to teachers regarding implementation progress. This session will provide practical tools and understanding to help building and district leaders build capacity in their teachers and give the feedback necessary to move their teachers forward.

Thomas Stricklin, Salem-Kiezer Public School, Salem, Oregon

Sharon Rendon, NCSM C2 Regional Director, Summerset, South Dakota

USING INSTRUCTIONAL ROUTINES TO SUPPORT TEACHERS USING DYNAMIC DIGITAL REPRESENTATIONS

10:00 AM–11:00 AM | Michigan 1A | Strand 1 | 6-12 Secondary

Dynamic digital representations of mathematical ideas have the potential to allow children to see mathematical ideas more easily than ever before. However, novices do not see mathematical representations the same way as more experienced mathematicians so in this session I will share some ways we can support teachers in using dynamic representations of mathematics in ways that increase the odds that all children understand the key mathematical ideas communicated by the representation.

David Wees, Dreambox Learning, Bellevue, Washington

DEVELOPING AN INSTRUCTIONAL ROUTINE TO DEVELOP STUDENTS' CAPACITY TO MODEL WITH MATHEMATICS: A WINDOW INTO THE PROCESS

10:00 AM–11:00 AM | Michigan 1B | Strand 1 | General

Modeling with mathematics requires development and application of thinking that needs to be fostered in explicit, inclusive ways. Instructional routines are the most powerful lever to do so. In this session, we will share a draft instructional routine as an example and explore how to design an instructional routine with specific math practice goals and repeatable designs for interaction that provide access and engagement for all students and equitable teaching practices in buildings and districts.

Amy Lucenta, Fostering Math Practices, Natick, Massachusetts

Grace Kelemanik, Fostering Math Practices, Natick, Massachusetts

GATHERING EVIDENCE AND REFRAINING FROM JUDGMENT: FOCUSING ON EVIDENCE IN STUDENT WORK TO MEET ALL STUDENTS' LEARNING GOALS

10:00 AM–11:00 AM | Michigan 1C | Strand 4 | General

The Student Work Clinic model for professional learning targets data contained in the student work generated in classrooms each day. In an SWC, a team of educators targets a mathematical goal and dives deeply into a set of student work samples, working collaboratively to detail evidence of student understanding. Using learning trajectories as guides, the team gathers evidence of understanding but resists forming judgments, reporting only on the evidence. A SWC protocol will be provided.

Kimberly Morrow-Leong, George Mason University, Fairfax, Virginia

ONLINE VIDEO COACHING: A NEW APPROACH FOR SUPPORTING MATHEMATICS TEACHERS

10:00 AM–11:00 AM | Michigan 2 | Strand 2 | General

Online Video Coaching (OVC) provides access to high quality coaching for teachers where face-to-face coaching cycles are difficult to sustain. OVC uses technology to provide more equitable access for all teachers to content-specific, one-to-one coaching. We will share our model of OVC that offers enhanced opportunities for both the coach preparing for the phases of the coaching cycle, and for the teacher engaging in reflective practices. Attendees will consider the affordances and challenges of OVC.

Cynthia Carson, Warner School of Education, Rochester, New York

Genie Foster, University of Rochester, Rochester, New York

TUESDAY SESSIONS

FROM THEORY TO PRACTICE: MAKING EQUITY MORE THAN A BUZZWORD

10:00 AM–11:00 AM | Michigan 3 | Strand 3 | 6-12 Secondary

The math education community has been talking about "equity" in mathematics for over a decade. However, teachers need concrete strategies for making equitable mathematics instruction a reality in their classrooms. In this interactive session, participants will learn how to implement an equity framework with concrete strategies that build on the cultural strengths of diverse learners, and help them overcome the negative stereotypes and messages regarding who is mathematically smart.

Pamela Seda, Griffin-Spalding County Schools, Griffin, Georgia

Kyndall Brown, University of California, Los Angeles, California

HOPE, BELONGING, AND CURIOSITY: THE KEYS THAT OPEN THE DOOR TO SENSE MAKING

10:00 AM–11:00 AM | Randolph 1A | Strand 1 | General

This hands on session will both inspire and challenge you. You'll engage in rich mathematical tasks that spark curiosity, foster belonging, and require sense making of core mathematical ideas. We'll spend time examining structures that nurture hope or crush it, practices that build a culture of equity and belonging or block them; and tasks that force sense making for each and every member of the learning community.

Lisa Bush, Math Solutions, Boston, Arizona

Le Vada Gray, Math Solutions, Sausalito, California

EXPLORING THE FRAMEWORK FOR MATHEMATICS LEADERSHIP: DESIGN AND EMPOWER

10:00 AM–11:00 AM | Randolph 1B | Strand 0 | General

NCSM is proud to present NCSM Essential Actions: A Framework for Mathematics Leadership, a new resource for mathematics leaders to think about bold leadership in their particular role. Come and hear from a selection of the authors of the framework as we focus our discussions on two of the four guiding principles: "DESIGN and implement structures that support high-quality mathematics teaching and learning for every teacher" and "EMPOWER and nurture a culture of productive professionalism."

Paul Gray, Jr., NCTM Representative, Dallas, Texas

Gwen Zimmermann, NCSM Associate Newsletter Editor, Lincolnshire, Illinois

Christina Lincoln-Moore, Los Angeles Unified School District, Marina Del Rey, California

B. Michelle Rinehart, HowWeTeach Consulting, Fort Davis, Texas

Desha Williams, Georgia College & State University, Milledgeville, Georgia

PROFESSIONAL LEARNING THAT INCREASES STUDENT ACHIEVEMENT

10:00 AM–11:00 AM | Randolph 2 | Strand 3 | 6-12 Secondary

Improving instruction is hard work. In this session, learn how a large district has refined its approach to professional learning, resulting in improved instruction and increased student achievement. Participants will explore the features of their site's/district's professional learning to see where they can capitalize on their strengths to create a cohesive approach to professional learning that improves instruction.

Dianne Willson, Elk Grove Unified School District, Elk Grove, California

WE'RE MEETING TO TALK ABOUT MATH, BUT AREN'T MAKING PROGRESS!

10:00 AM–11:00 AM | Randolph 3 | Strand 2 | General

Participants will engage with coaching vignettes to determine some of the typical barriers to having productive conversations that get teachers thinking about mathematical teaching practices. We will discuss alternative coaching strategies and tips to help focus conversations with classroom teachers in productive ways.

Paula Jakopovic, University of Nebraska Omaha, Omaha, Nebraska

STUDENT BENEFITS IN MATHEMATICALLY COHERENT STRUCTURES: INSTRUCTION, PRACTICE AND ASSESSMENT

10:00 AM–11:00 AM | Roosevelt 3A | Strand 4 | General

Cincinnati Public Schools (CPS) and Student Achievement Partners (SAP) spent a year critically examining current practices in middle school mathematics instruction in the district. Identified areas for growth and strengths based on observational data and internal curriculum review shaped relevant recommendations leading to positive change. Newly defined professional learning arcs and materials review are the gateway to redefined success for all CPS learners. Hear the successes and challenges and whether a similar approach would work in your district!

Astrid Fossum, Student Achievement Partners, New York, New York

Dawn Williams, Cincinnati Public Schools, Cincinnati, Ohio

COLLABORATIVE COACHING WITH THE EIGHT EFFECTIVE TEACHING PRACTICES AS OUR GUIDE

10:00 AM–11:00 AM | Roosevelt 3B | Strand 2 | 6-8 Middle

Each and every student deserves access to high quality mathematics instruction and learning every day. NCTM's Principles to Actions describes eight effective teaching practices to engage each learner. The goal of this session is to engage leaders to unpack those teaching practices and develop a continuum of "look-fors" when supporting teachers. When math coaches and teachers work collaboratively to identify growth areas along a continuum, the impact for students and teachers is profound.

Jessica Breur, Mounds View Public Schools, Shoreview, Minnesota

TUESDAY SESSIONS

WHERE IS THE LANGUAGE LOVE? CONTENT OBJECTIVES ARE NOT ENOUGH

10:00 AM–11:00 AM | Columbus AB | Strand 1 | 6-12 Secondary

Examining math tasks through a language lens allows us to identify key demands students need to understand to engage in productive math discourse. As leaders, we can help our teachers develop a common understanding of effective language objectives in order to write targets that will be beneficial for not only English Learners, but all students. Participants will leave with professional development strategies and structures that can be implemented in their own schools.

Heather Kohn, Marlborough Public Schools, Marlborough, Massachusetts

A TAG-TEAM APPROACH: LEVERAGING THE COLLABORATIVE RELATIONSHIP BETWEEN CONSULTANTS-PRINCIPALS-COACHES-TEACHERS TO INCREASE STUDENT GROWTH

10:00 AM–11:00 AM | Columbus CD | Strand 3 | General

What are key ingredients in creating a shared culture of professionalism and productive engagement? Which specific actions create the most impact, and by whom? Learn how one school shifted its culture to collaboratively support each other and create a mathematically rich environment based on curiosity. We will share the 5 key ingredients that fostered these changes and how we leveraged relationships between stakeholders to intrinsically engage teachers. Examples with classroom videos and hands-on materials.

Shephali Chokshi, Teachers 21, Wellesley, Massachusetts

Anabela Jones, Taunton Public Schools, Taunton, Massachusetts

Marie Peixoto, Taunton Public Schools, Taunton, Massachusetts

NCSM ESSENTIAL ACTIONS—INSTRUCTIONAL LEADERSHIP IN ACTION

10:00 AM–11:00 AM | Columbus EF | Strand 4 | General

School-Based and District-Level leaders of mathematics are challenged to develop systems and structures that create conditions conducive to high levels of student learning. In this session, learn how leaders in one district revitalized school improvement in an effort to ensure that each and every child receives high quality mathematics instruction every day. During this highly collaborative and reflective session, participants will use tools and resources from NCSM's Essential Actions—Instructional Leadership in Mathematics Education.

Bill Barnes, Howard County Public School System, Ellicott City, Maryland

PREPARING MATHEMATICAL THINKERS FOR THE FUTURE USING STRUCTURED DISCOURSE

10:00 AM–11:00 AM | Columbus G | Strand 1 | 3-5 Intermediate

According to the World Economic Forum, 65% of students entering elementary schools today will end up in jobs that don't yet exist. As jobs shift to more 'non-routine' work that is reliant on critical thinking skills, we need to ensure our students are ready for the future. How? Come join us as we share ways to support teachers in implementing meaningful tasks to challenge students' thinking and deepen their learning through structured discourse.

Kit Norris, Consultant, Hudson, Massachusetts

Hilary Kreisberg, Lesley University, Cambridge, Massachusetts

BUILDING CAPACITY TO INCREASE STUDENT ACHIEVEMENT IN A HIGH-POVERTY ELEMENTARY SCHOOL: A BLUEPRINT OF COMMITMENT AND COLLABORATION

10:00 AM–11:00 AM | Columbus H | Strand 1 | K-5 Elementary

Learn how one high-poverty elementary school has committed to building its mathematical capacity since 2015 by connecting and collaborating with the mathematics education staff at a local university at several different levels. Participants in this session will learn how the partnership evolved, what intentional steps were taken to increase mathematics achievement, and how teachers now lead the process.

Keith Krone, Boise State University, Boise, Idaho

Chance Whitmore, Nampa School District, Nampa, Idaho

6 ACTIONS FOR PRODUCTIVE STRUGGLE IN THE MATHEMATICS CLASSROOM

10:00 AM–11:00 AM | Columbus IJ | Strand 3 | General

For some, productive struggle has become little more than a buzz phrase with few strategies available to realize it. We know that it is critically important. Yet, how is it valued, provoked, and supported? In this session, participants will identify five actions for productive struggle. Participants will learn about strategies for developing these actions in the mathematics programs they lead. Practical and ready-to-use resources will be shared to support each of these actions.

John SanGiovanni, Howard County Public School System, Ellicott City, Maryland

HOW TO SUPPORT TEACHERS WHO FLIP: CONSIDERATIONS AND CAUTIONS

10:00 AM–11:00 AM | Columbus KL | Strand 2 | 6-12 Secondary

Although a majority of teachers in the United States have reported using flipped instruction (the use of videos to teach content prior to in-class activity), few teachers have received any professional learning regarding flipped instruction. In this interactive session, we discuss and examine specific cases of mathematics teachers who are flipping their instruction to understand and develop approaches to support their continued instructional improvement.

Zandra de Araujo, University of Missouri, Columbia, Missouri

TUESDAY SESSIONS

Sponsor Showcase #1

TEACHING STRATEGIES FOR SUCCESS IN MATHEMATICS

10:00 AM–11:00 AM | Exhibit Hall | General

This session will focus on current best practices and research for effective teaching strategies. The goals of the session will include: analysis of how visual and open tasks contribute to the implementation of effective teaching practices in mathematics, identification of teaching strategies that deepen a teacher's understanding of effective teaching practices in mathematics, and an exploration of how students' responses can be used to advance the understanding of the class as a whole.

Joanie Funderburk, Texas Instruments, Dallas, Texas

Sponsor Showcase #2

AN APPROACH TO INTENSIFICATION USING AGILE MIND

10:00 AM–11:00 AM | Exhibit Hall | General

This session reviews a research foundation about intensification approaches designed to support the learning needs of all students. It will showcase Agile Mind and how teachers and students succeed in Mathematics. Regardless of curricula, Agile Mind offers an innovative approach to re-engage students in rich, effective mathematics thinking, discourse, and learning. See firsthand how Agile Mind's blended learning approach supports all student populations, from special needs to advanced learners, offering a rigorous and standards-aligned engagement.

Brett Felton, Agile Mind, Grapevine, Texas

11:15 AM–12:15 PM

Major Presentation

STARTING WITH ME: TRANSFORMING MATHEMATICS EDUCATION FROM THE INSIDE OUT

11:15 AM–12:15 PM | Grand Ballroom A & C North | Strand 3 | General

How might we transform the organizations we serve by first transforming ourselves? In order to lead mathematics education forward, we must understand ourselves as leaders and learners, including our strengths, preferences, blind spots, and limitations. Without attending to these aspects of our leadership personas, we are likely to limit or undermine our professional effectiveness. In this session, we'll explore how to effectively transform ourselves in order to transform mathematics education in our spheres of influence.

Michelle Rinehart helps educators shift their instruction along the student engagement continuum through actionable strategies that leverage high-impact teaching practices to increase student ownership and learning. Michelle is currently a doctoral candidate in the Doctor of Education Leadership (Ed.L.D.) program at Harvard University, where she is learning to lead systems-level transformation in education. Her work focuses on procuring and providing leadership and learning opportunities for mathematics and computer science educators.

Michelle speaks nationally about topics in mathematics and computer science education, with a particular focus on effective instructional practices and conceptual development for secondary mathematics, as well as fostering teacher growth as teacher leaders, reflective practitioners, and collaborative professionals. Michelle recently served as a West Texas Team Leader for NCSM and as the National Council of Teachers of Mathematics (NCTM) Representative on the Texas Association of Supervisors of Mathematics (TASM) board.

Prior to this work, Michelle taught high school mathematics and science at rural schools in West Texas. She is the 2018 recipient of the Nita Beth Camp Legacy Award for a lifetime of service to mathematics and science teachers, a 2012 finalist for the Classroom Teacher of the Year award from the Texas Computer Education Association, and the 2009 Region 18 Gifted and Talented Rising Star Teacher of the Year. Follow her on Twitter @HowWeTeach.

Michelle Rinehart, HowWeTeach Consulting, Fort Davis, Texas

Presider, Gwen Zimmermann, NCSM Associate Newsletter Editor, Bolingbrook, Illinois

TUESDAY SESSIONS

Spotlight Speaker

WHERE AM I IN MY EQUITY WALK? WHERE WILL YOU BE IN 2025?

11:15 AM–12:15 PM | Grand Ballroom B | Strand 1 | General


How might we improve the teaching and learning of mathematics for each and every student? Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability(NCSM/TODOS, 2016),calls for "mathematics teachers and leaders to take multiple actions to create and sustain institutional structures, policies, and practices that lead to just and equitable learning opportunities, experiences, and outcomes for children." Join us as we reflect and discuss key actions to deepen and sustain your equity work.

John Staley, Baltimore County Public Schools, Towson, Maryland

Julia Aguirre, University of Washington, Tacoma, Washington

Presider, Ronni David, NCSM Sponsor Liaison, Plainview, New York

OUR PROFESSIONAL DEVELOPMENT SYSTEM IS BROKEN, AND HOW TO FIX IT

11:15 AM–12:15 PM | Grand Ballroom D North
Strand 3 | K-5 Elementary

Traditional professional development systems often run contradictory to research-based best practices, leading to miscommunication and a general lack of buy-in. Most importantly, they tend to leave out our most valuable asset: teacher leaders. Join us as we study a large, urban district which has utilized the Mathematics Teacher Leader Institute over the past three years to transform the way its elementary schools engage in professional learning that is content-focused, sustained, and meaningful.

Lukas Hefty, Pinellas County Schools, Largo, Florida

CAPTURING REAL-TIME INTERACTIONS WITHIN THE MATHEMATICS INSTRUCTIONAL CORE

11:15 AM–12:15 PM | Michigan 1A | Strand 4 | General

Curious how educators can collect evidence about student learning in real time so they can rapidly adjust instruction to meet student needs? Learn how to co-construct a measurement tool that reflects individual passions and measurable look-fors for growing students as problem solvers, self-regulated learners, and mathematical thinkers.

Cyndia Acker-Ramirez, Culver City Unified School District, Culver City, California

Katie Laskasky, Loyola Marymount University, Los Angeles, California

Katharine Clemmer, Loyola Marymount University, Los Angeles, California

Tatiana Mirzaian, Wonderful College Prep Academy, Delano, California

EXPLICITLY TARGETING THE MATHEMATICS TEACHER CRISIS BY SUPPORTING AND RETAINING EARLY CAREER SECONDARY MATHEMATICS TEACHERS

11:15 AM–12:15 PM | Michigan 1B | Strand 3 | 6-12 Secondary

This session tells the stories of first-year, secondary mathematics teachers who were involved in a year-long intervention intended to provide targeted, timely, research-based, professional support regarding PLCs and their relationships with mentors and administrators. The intervention was designed to be time effective, to be feasible for national implementation with little funding, to be transferable to a broader group of teachers, and to ideally impact job satisfaction and retention in a positive way.

Lisa Amick, University of Kentucky, Lexington, Kentucky

BUILDING FLUENCY FLEXIBILITY WITH FORMATIVE INSTRUCTION CYCLES AND ROUTINES

11:15 AM–12:15 PM | Michigan 1C | Strand 4 | K-5 Elementary

Using and connecting mathematics representations builds concepts of computational fluency. Moving from diagnostic to formative instruction requires high levels of student involvement in a collaborative, inquisitive and reflective learning environment. Come learn a process to support teachers in using a powerful formative instruction cycle that combines mathematics probes with specific routines to build and assess students' ability to make connections between mathematics representations. Leave with numerous resources to introduce teachers to the cycle and content.

Cheryl Tobey, Maine Mathematics and Science Alliance, Augusta, Maine

Kate Greeley, MSAD 75, Topsham, Maine

TUESDAY SESSIONS

DEFINING THE MATHEMATICS CLASSROOM CULTURE WE NEED TO HAVE AND WHO LEADS IT

11:15 AM–12:15 PM | Michigan 2 | Strand 3 | General

Building the capacity of teacher leaders via inquiry and improvement science so that problems of instructional practice are collaboratively addressed can support district-wide change. Reflect on how you empower others in your mathematics community to affect change at the classroom and school-wide levels. Learn how teams of teachers embraced and embedded professional learning in their mathematics program to model and share best practices needed for ALL students' learning.

Rosa Serratore, Santa Monica-Malibu Unified, Santa Monica, California

COACHING FOR EQUITY: ELIMINATING DEFICIT DISCOURSE

11:15 AM–12:15 PM | Michigan 3 | Strand 2 | General

"These kids can't." "They're just bad at math." "They just don't try." Statements like these are at the root of perpetuated systems of oppression. To shift away from deficit discourse, we must first learn to recognize and interrupt these habits within our system. Walk away with practical next steps for coaching courageous conversations. Shifting the way we talk about our students is the first step in creating math equity for all.

Nova Katz, Sacramento City Unified City School District, Sacramento, California

FORMATIVE ASSESSMENT PROBES AND INTERVIEWS: POWERFUL TOOLS TO TARGET INSTRUCTION AND EMPOWER MATHEMATICS LEARNERS

11:15 AM–12:15 PM | Randolph 1A | Strand 4 | 6-8 Middle

Formative assessment probes are focused, research-based diagnostic tools designed to provide actionable information about students' mathematical understandings, difficulties and misconceptions. Probes support teachers in planning targeted instruction and guide students in self-assessing their progress toward learning goals. This session explores how rational number probe tasks can be implemented in an interview format to support teachers in prioritizing learning and promote teaching questioning skills and the student-teacher learning relationship.

Emily Fagan, Education Development Center, Waltham, Massachusetts

Amy Brodesky, Education Development Center, Waltham, Massachusetts

CONNECTING COMPUTATIONAL THINKING TO CURRENT CURRICULUM CONTENT

11:15 AM–12:15 PM | Randolph 1B | Strand 1 | K-5 Elementary

Computational Thinking is the recognized prerequisite to coding and computer science in general. However, current references to "computational thinking" can be difficult to interpret. This session will examine the four recognized key aspects of computational thinking as they relate to elementary school mathematics—decomposition, patterning, algorithm thinking, and the process of abstracting. Practical activities from the current content of typical K-5 mathematics curricula will be used to demonstrate the four aspects.

James Burnett, ORIGO Education, Earth City, Missouri

PRODUCTIVE STRATEGIES TO SUPPORT STUDENTS' ENGAGEMENT IN PRODUCTIVE STRUGGLE

11:15 AM–12:15 PM | Randolph 2 | Strand 1 | General

Engaging students in tasks that involve reasoning and problem solving is essential for developing the conceptual understanding, procedural fluency, and productive habits of mind they need for their futures. Yet, these tasks are the most difficult to implement effectively. Learn strategies to increase students' willingness to engage in challenging tasks and to promote their positive mathematics identities, along with common pitfalls to avoid. We'll also discuss how you can support teachers in using these strategies.

Diane Briars, Self-Employed Consultant, Pittsburgh, Pennsylvania

DESIGN FEATURES OF MATHEMATICS LESSONS THAT SUPPORT EMERGENT BILINGUAL STUDENTS

11:15 AM–12:15 PM | Randolph 3 | Strand 1 | 3-8 Upper Elementary/Middle

Integrating support for language access and language production into mathematics instruction is essential for emergent bilingual students. This session will explore lesson design features used during a study of fraction division lessons that support student use of visual representations, pairs work and discussion, and mathematical problem-solving and communication. Ideas for how to develop teachers' use of these design features will be discussed.

Johannah Nikula, Education Development Center, Waltham, Massachusetts

Presidents Exchange—TODOS

INFLUENCING THE CULTURE THAT MARGINALIZES OUR CHILDREN

11:15 AM–12:15 PM | Roosevelt 3B | Strand 3 | General

It falls upon educators to be activist on behalf of our children. The system that we know and are comfortable in does not work for our children. The exclusive culture is deeply ingrained and inequities are unrecognizable. Let's spend some time together reflecting on how we can influence this culture. How can we be a catalyst for a change of hearts and minds?

Diana Ceja, Riverside County Office of Education, Riverside, California

TUESDAY SESSIONS

Equity Lecture

KAY GILLILAND EQUITY LECTURE: FROM THE PERILS OF INEQUITY TO THE CHAMPION OF EQUITY—THE REIGN OF MATHEMATICAL POWER

11:15 AM–12:15 PM | Columbus CD | Strand 3 | General

Power. To make connections, we might have a "power lunch". For high-stakes interactions, we might play a "power game". There's also "mathematical power". When those who have power engage in practices that hinder those who do not have power, inequities flourish, and the less powerful and the powerless suffer. This also applies to mathematical power. To advocate for the less powerful and the powerless requires self-examination and a change in the perspective of power.

Thomasenia Adams, University of Florida, Gainesville, Florida

Presider, Samantha Wuttig, NCSM Awards Chair, Fairbanks, Alaska

BUILD MATHEMATICAL CAPACITY: DEVELOP UNDERSTANDING OF THE ATTRIBUTES OF POLYGONS

11:15 AM–12:15 PM | Columbus EF | Strand 1 | 3-5 Intermediate

Many of the attributes of polygons: side length, angle measure, symmetry, perimeter, and area, can be explored using paper folding, perimeter pieces, square tiles, and grid paper. We'll work through a series of tasks that help students make sense of these attributes. Tasks are designed to have entry levels for all students.

Laurie Boswell, Big Ideas Learning, Author, Franconia, New Hampshire

RELATING DECIMALS, FRACTIONS, AND RATIOS FOR DEEPER UNDERSTANDING: HOW ARE THEY ALIKE AND HOW ARE THEY DIFFERENT?

11:15 AM–12:15 PM | Columbus G | Strand 1 | 3-8 Upper Elementary/Middle

This presentation and participant discussion of connections within and across decimals, fractions, and ratios focuses on how leaders can help students and teachers build conceptual webs of understandings from Grades 2 to 6. We together will articulate and relate learning paths in these domains, describe common student errors that arise from confusions among these concepts, and discuss how to overcome such errors. I will share and participants will discuss research-based approaches in these domains.

Karen Fuson, Northwestern University, Fallbrook, California

Presidents Exchange – NCTM

CATALYZING CHANGE: INITIATING CRITICAL CONVERSATIONS IN MATHEMATICS TEACHING AND LEARNING

11:15 AM–12:15 PM | Columbus H | Strand 3 | General

The National Council of Teachers of Mathematics formed three writing teams at the early childhood/elementary, middle school, and high school levels with the intent to initiate the critical conversations needed to address issues in school mathematics. The Catalyzing Change series focuses on recommendations in school mathematics with the purpose of initiating critical conversations for improving mathematics teaching and learning in school mathematics. This session will focus on initiating critical conversations based on the key recommendations from the Catalyzing Change series.

Robert Q. Berry, III, University of Virginia, Charlottesville, Virginia

WHY STUDY ALGEBRA, AND WHEN?

11:15 AM–12:15 PM | Columbus IJ | Strand 1 | General

Why is algebra so important that it is required of all students and occupies such a large part of the school mathematics curriculum? And why has there been pressure to move that study into earlier and earlier grades?

Zalman Usiskin, University of Chicago, Chicago, Illinois

BE BOTH AUTHOR AND ILLUSTRATOR OF MATHEMATICAL UNDERSTANDING

11:15 AM–12:15 PM | Columbus KL | Strand 1 | 3-8 Upper Elementary/Middle

How might we redirect the focus of teaching and learning to center on empowering each and every student as sense-makers and doers of mathematics as they develop their mathematical identities and become agents of their own learning? We want every learner in our care to be BOTH the author and illustrator of their mathematical understanding. Explore how to deepen understanding, promote productive struggle, and increase flexibility by using and connecting mathematical representations. Providing multiple pathways to success invites diverse learners' ideas to the conversation. We will sketch and compute to develop a visual, vertical understanding of numeracy and how to connect learning between grades and courses.

Jill Gough, Trinity School, Atlanta, Georgia

15th Annual Presentation of the Iris Carl Travel Grants

Iris Carl was an international leader in mathematics education, an NCSM Past-President, and a Glenn Gilbert Award recipient, who worked tirelessly to support other mathematics education leaders. NCSM honors her through the presentation of the NCSM Iris Carl Travel Grant.

NCSM established the Iris Carl Mathematics Leadership Fund, within the NCSM Charitable Trust, which endows the Grant. As long as there are sufficient funds, NCSM will annually provide up to three Iris Carl Grant Awards for Travel to eligible NCSM members to attend the NCSM Annual Conference.

The fund continues to grow through generous contributions. A special collection will be made during today's luncheon. Please make your check out to NCSM Charitable Trust. Cash will be accepted and donors are encouraged to enclose contact information. NCSM will mail a thank you letter suitable for use in informing the IRS that no goods or services were provided in return for the contribution.

The Iris Carl Travel Grant application and criteria can be found at *mathedleadership.org*. Applications are being accepted through December 1, 2020, for the 2021 Award.

2020 Iris Carl Awardees for Chicago

Elizabeth Pruitt
Port St. Lucie, FL

Jessica Breur
Shoreview, MN

Luke McDonald
Unalakleet, AK

Sponsor Showcase #1

MOVING AWAY FROM TEACHER TALK

11:15 AM–12:15 PM | Exhibit Hall | General

Teachers are drawn to the efficiency and management benefits of "lecture" in middle school math classrooms, but research shows that these are not effective practices for increasing student achievement in mathematics. Learn how an instructionally balanced math curriculum can allow teachers to meet the needs of all types of learners by allowing students to process mathematics in a variety of ways.

Shannon McCaw, EdGems Math

Sponsor Showcase #2

THE IMPACT OF ALGEBRA IN THE ELEMENTARY MATH CURRICULUM

11:15 AM–12:15 PM | Exhibit Hall | General

Learn the impact teaching algebraic ideas in the elementary grades can have on algebra readiness in middle school and beyond. Scientists at TERC, U. WI and U. TX have developed-LEAP-Learning through an Early Algebra Progression. LEAP offers a coherent approach to developing core algebraic thinking practices to enhance students' access to authentic algebraic experiences. Presenters will share classroom vignettes to demonstrate the impact that minutes of instruction per week can have on student achievement.

Maria Blanton, TERC, Didax, Cambridge, Massachusetts

Angela Gardiner, TERC, Didax, Cambridge, Massachusetts

TUESDAY SESSIONS

12:30 PM–2:00 PM

TUESDAY LUNCHEON

ESSENTIAL ACTIONS FOR ALL MATH LEADERS

12:30 PM–2:00 PM | Grand Ballroom CD South & EF | General

NCSM asks the question "what are the essential actions for all math leaders?" Join us for a dynamic panel discussion featuring leaders in mathematics education with a variety of perspectives about this question. The conversation will include important and relevant topics, such as equity in mathematics education, the impact that quality mathematics coaching has on classroom experiences, and ways the mathematics education community can form support systems to promote better teaching and learning.

Peter Balyta, President, Education Technology, Texas Instruments, Dallas, Texas

Sponsored by:

Texas Instruments

2:15 PM–3:15 PM

Major Presentation

THE NEW CULTURE CODE: SIMPLIFYING THE COMPLEX RULES OF CHANGE!

2:15 PM–3:15 PM | Grand Ballroom A & C North | Strand 3 | General

We can simplify the complex problem of systemic change through a relentless culture code that values: Improving the emotional impact of every teacher, leading the respectful treatment of every teacher of mathematics, and leading through a simple set of rules that stimulate complex, collaborative and intricate behaviors benefiting students. The teachers you lead can solve extremely complex problems using just a few rules of thumb. In this actively engaged session, we discover and discuss those rules!

Dr. Timothy D. Kanold is an educator, husband, father, friend, runner, author, presenter and a Past-President of NCSM. A nationally recognized K-12 mathematics education leader from Illinois, he served as the Director of Mathematics and Science and as school district Superintendent at the number one rated public high school (open enrollment) district (Stevenson HSD 125 in Lincolnshire) as rated by niche.com. His 2017 book HEART: Fully Forming Your Professional Teaching and Leading Life! became a national best-seller and received the Gold Medal Independent Publishers award in New York, for the field of Education in 2018. His current mathematics books include a 2020 K-12 textbook series for Houghton Mifflin Harcourt, Into Math and a four book 2019 K-12 mathematics professional development series for Solution Tree, Every Student Can Learn Mathematics. A recipient of NCSM's Glenn Gilbert/ Ross Taylor award, he currently lives in Northern California with his wife Susan and their golden retriever, named Fibonacci.

Timothy Kanold, Loyola University, Chicago, Illinois

Presider, Charlene Chausis, NCSM Technology Liaison, Buffalo Grove, Illinois

TUESDAY SESSIONS

Spotlight Speaker

POWERFUL MOMENTS IN MATH CLASS: WHY CERTAIN EXPERIENCES STAND OUT AND HOW WE CREATE MORE OF THEM

2:15 PM–3:15 PM | Grand Ballroom B | Strand 1 | General

As teachers, we want our lessons to leave a long-lasting impression on students. When we understand the psychology behind memories, we can use that knowledge to design powerful moments for our students. According to Heath and Heath (2018) memorable positive experiences contain one or more of the following elements: elevation, insight, pride, and connection. We will learn how to leverage each of these elements in math class to create meaningful and memorable experiences for all students.

Mike Flynn, Mount Holyoke College, South Hadley, Massachusetts

Presider, Nanci Smith, NCSM Affiliate Coordinator, Peoria, Arizona

CHANGING MATHEMATICAL MINDSETS WITH HIGH SCHOOL NUMBER TALKS: A STORY OF OUR RESEARCH

2:15 PM–3:15 PM | Grand Ballroom D North | Strand 4 | 6-12 Secondary

At our high school, Number Talks create a classroom culture of risk-taking, encourage mathematical discourse, and give voice to all students. We investigated the impact of Number Talks on mathematical mindsets, building upon prior work by Carol Dweck and Jo Boaler. We will share the research and results including student and teacher testimonials. As a leader in the New Decade, you will leave this session empowered to explore the power of Number Talk routines.

Jackie Palmquist, Indian Prairie School District 204, Aurora, Illinois

Alyssa Schneider, Metea Valley High School, Aurora, Illinois

Pat Baltzley, Independent Mathematics Consultant, Gardiner, Montana

INTERIM/DIAGNOSTIC ASSESSMENT DATA: A PRACTICAL APPROACH FOR THE IMPLEMENTATION OF A CYCLE OF INQUIRY TO INFORM TEACHING AND LEARNING

2:15 PM–3:15 PM | Michigan 1A | Strand 4 | 3-8 Upper Elementary/Middle

You've given an interim or diagnostic assessment to your students. It's been scored and now you have evidence of what your students know. Now what? Let's explore four tenants of how to Analyze, Interpret, Identify and Support students in their learning progression of mathematics. We will use a lens of access and equity, ensuring all students are given the opportunity to expand their learning or to complete unfinished learning as evidenced by the data.

Terri Gibbs-Burke, San Luis Obispo County Office of Education, San Luis Obispo, California

EVALUATING CURRICULUM-EMBEDDED MATH ASSESSMENTS: ARE "CHAPTER TESTS" GOOD EVIDENCE OF STUDENT LEARNING?

2:15 PM–3:15 PM | Michigan 1B | Strand 4 | K-5 Elementary

Curriculum-embedded assessments are often used by teachers to evaluate whether students are meeting grade-level standards. This session explores methods of analyzing and adapting such assessments to ensure that they appropriately target conceptual understanding, procedural skill and fluency, and/or application called for by the standards they are designed to measure. We'll explore some common issues and hear how the Illustrative Mathematics K-5 team is working to address these issues in their upcoming curriculum.

Shelbi Cole, Student Achievement Partners, New York, New York

Bill McCallum, Illustrative Mathematics, Tucson, Arizona

RE-ENVISIONING COACHING FRAMEWORKS: HOW TEN-MINUTE REASONING ROUTINES AND COMPARATIVE TEACHING CAN BE USED TO IMPROVE TEACHER PRACTICE

2:15 PM–3:15 PM | Michigan 1C | Strand 2 | Pk-2 Primary

A primary goal of coaching is to develop high-leverage teaching practices. To do this, coaches need to have sustained time coaching a teacher, which is often not the reality. To remedy this dilemma, we have been experimenting with a new coaching model called comparative teaching. In this session, we will explore how we used this model and ten-minute reasoning routines to dramatically improve teacher practice. A video case study will be used to highlight our learning.

Antonia Cameron, Metamorphosis Teaching Learning Communities, New York, New York

Deanna Catanzaro, Metamorphosis Teaching Learning Communities, New York, New York

Lynn Ann Fox, Department of Education, New York, New York

TUESDAY SESSIONS

EVALUATING THE ESSENTIALS FOR AN EQUITABLE MATH SYSTEM THROUGH THE LENS OF CONTINUOUS IMPROVEMENT

2:15 PM–3:15 PM | Michigan 2 | Strand 3 | General

Examine your current mathematics system& move forward in designing equitable access for all students. Improvement Science research & tools will be utilized to analyze your current system & help to identify the essential actions needed to answer,"What is it we're trying to improve?"

Stephanie Verners, Tulare County Office of Education, Visalia, California

Kim Webb, Tulare County Office of Education, Visalia, California

DESIGNING PROFESSIONAL LEARNING EXPERIENCES ACROSS A LARGE AND DIVERSE GEOGRAPHIC REGION: LESSONS AND CELEBRATIONS

2:15 PM–3:15 PM | Michigan 3 | Strand 3 | General

Coordinating long-term and large-scale professional development is challenging. What roles should outside consultants play? How are teachers recruited and prepared and how are local coaches empowered? How should local coaches continue the learning and assess their own growth and that of teachers and students? Learn from the results of a 4-year professional learning experience sponsored in part by the Leadership Committee for English Education in Quebec (LCEEQ)that included420teachers, 20coaches and as many as 9 external consultants.

Cheryl Cantin, NCSM, Magog, Quebec, Canada

Juli Dixon, University of Central Florida, Orlando, Florida

Edward Nolan, Towson University, Towson, Maryland

Thomasenia Adams, University of Florida, Gainesville, Florida

John Ryan, Leadership Committee for English Education in Quebec (LCEEQ), Pierrefonds, Quebec, Canada

Saba Din, McGill University, Montreal, Quebec, Canada

EQUITY, MATHEMATICS, AND MINDSET

2:15 PM–3:15 PM | Randolph 1A | Strand 2 | General

This session will highlight some of Jo Boaler's work around growth mindset and equity in mathematics. During our time together, we will reflect on current beliefs, structures, and practices in our systems, experience mathematical tasks that incorporate effective strategies for increasing equitable access and outcomes for all students, consider relevant current research, engage in conversations with colleagues, and identify ways to bring reflective conversations about equitable practices into our work with others in our communities.

Jennifer Graziano, Sacramento City Unified School District, Sacramento, California

Nova Katz, Sacramento City Unified City School District, Sacramento, California

Suzie Craig, Sacramento City Unified School District, Sacramento, California

IDENTIFY AND CAPITALIZE ON STUDENTS' INTERESTS AND HIDDEN MATHEMATICAL TALENTS WITH STEM PROJECTS

2:15 PM–3:15 PM | Randolph 1B | Strand 1 | 6-12 Secondary

Results of five externally-funded programs for middle and high school students demonstrated the power of long-term projects to identify and develop students' hidden mathematical talents, and sustain their interest in studying more mathematics and the sciences. All projects were developed based on assessments of students' interests, use of technologies (particularly phone apps), and include assessment techniques. Participants will receive copies of several examples.

Carole Greenes, Arizona State University, Tempe, Arizona

DISCOVER GRANTS AND SCHOLARSHIPS AVAILABILITY TO BUILD INNOVATION IN MATHEMATICS EDUCATION

2:15 PM–3:15 PM | Randolph 2 | Strand 1 | General

Do you want to improve your mathematical knowledge and your leadership, collaboration, and professional development skills in order to grow your influence in the mathematics education world? The Mathematics Education Trust (MET) provides grants, scholarships, and awards that support teachers, mathematics leaders, and mathematics researchers with funds for materials, lesson development, conference travel, coursework, professional development, technology, in-service, and action research. Come join us for an interactive session on grant writing!

Suzanne Mitchell, Arkansas State University, Jonesboro, Arkansas

HOPE FOR TEACHERS: DEVELOPING EMERGENT BILINGUALS' LANGUAGE IN MATHEMATICS CLASS

2:15 PM–3:15 PM | Randolph 3 | Strand 1 | 3-8 Upper Elementary/Middle

This motivating, research-based session reveals how you can easily develop emergent bilinguals' language in mathematics. There is a myth that mathematics is straightforward for emergent bilinguals because it is a universal language and yet these students are struggling (Author, 2018). Committed educators understand that emergent bilinguals will not improve unless we develop students' language in every subject. Attend this event to obtain foolproof strategies that your teachers can implement immediately to develop mathematical language.

Jim Ewing, Stephen F. Austin State University, Nacogdoches, Texas

NCSM INITIATIVE: COMMUNICATION EXCHANGE

2:15 PM–3:15 PM | Roosevelt 3A | Strand 0 | General

In this session, participants will learn how NCSM: Leadership in Mathematics Education created the communication exchange to ensure the consistency among our resources, branding and messaging to our members. The communication exchange ultimately brands us as the premier mathematics education leadership organization.

Bernard Frost, NCSM S1 Regional Director, Chesnee, South Carolina

Natalie Crist, NCSM Web Editor, Towson, Maryland

THE ANXIETY IN THE ROOM: STRATEGIES FOR COACHING TEACHERS WITH MATH ANXIETY.

2:15 PM–3:15 PM | Roosevelt 3B | Strand 2 | General

How do math coaches distinguish between teachers' resistance to changing teaching styles and having math anxiety? Can middle and high school teachers who are content specialists still have math anxiety? This session will explore research and stories from the field of teacher math anxiety. The presenter, someone who has experienced math anxiety, will share strategies from research and experiences from working with teachers that can be utilized by math coaches and administrators.

Heidi Sabnani, Looney Math Consulting, North Easton, Massachusetts

Sue Looney, Looney Math Consulting, North Easton, Massachusetts

Heather Johnson, Looney Math Consulting, North Easton, Massachusetts

Molly Vokey, Looney Math Consulting, North Easton, Massachusetts

COACHING TO ILLUMINATE EFFECTIVE (AND INEFFECTIVE) WAYS TO SUPPORT DIVERSE LEARNERS

2:15 PM–3:15 PM | Columbus AB | Strand 1 | General

Effective mathematics teaching includes supporting and challenging students. Yet, many strategies for supporting emergent multilingual students and students with special needs fall short of this goal (e.g., pre-teach vocabulary). We will explore research-based effective (and ineffective) mathematics teaching strategies for these learners, then investigate professional learning activities and coaching tools that help teachers become more effective in supporting their diverse students.

Jennifer Bay-Williams, University of Louisville, Louisville, Kentucky

Maggie McGatha, Self-employed, Louisville, Kentucky

LEADING CONVERSATIONS: QUESTIONING YOUR OWN MATHEMATICS LANGUAGE

2:15 PM–3:15 PM | Columbus CD | Strand 3 | 6-12 Secondary

The use of proper mathematical language is important when learning mathematical content. Many times though we use phrases in an attempt to help student understanding, but in reality they can hinder learning by hiding key mathematical ideas. This session will discuss how to build common language agreements in order to design and implement language supports that promote high quality mathematics teaching and learning.

Daniel Ilaria, West Chester University, West Chester, Pennsylvania

Michelle Rinehart, HowWeTeach Consulting, Fort Davis, Texas

LEADING BY DESIGN: ALIGNING PROFESSIONAL LEARNING, EDUCATOR EFFECTIVENESS, AND SCHOOL-WIDE MATHEMATICS GOALS

2:15 PM–3:15 PM | Columbus EF | Strand 3 | General

Explore a systemic design for leading school growth by aligning student, educator, and professional learning outcomes. Learn how to leverage your educator effectiveness process to maximize time, streamline support, and focus professional learning efforts on increasing student achievement in mathematics. Investigate how to cultivate teacher ownership of student learning outcomes using classroom level data to reflect on the impact instructional shifts have on student success with the Standards for Mathematical Practices.

Stacy Cortez, Keri Heusdens, Camille Schroeder,

Mandy Taylor, Timothy Nickel, Kim Hailer, Kenosha Unified School District, Kenosha, Wisconsin

IS YOUR MATH VISION LEAKING?

2:15 PM–3:15 PM | Columbus G | Strand 3 | K-5 Elementary

We know we want the discourse to increase in classrooms. We may even have a vision for what we want by year-end. But does your vision leak throughout the year? Do you start strong, but somewhere along the way, lose focus, determination, or tools to meet your original goal? Do teachers know and understand the vision and feel they have the road map to achieve the desired result? In this workshop, we will engage in effective roadmaps that allow schools and leaders to go from vision to reality. We will learn from and use effective research-based rubrics, continuums, PD/coaching cycles, and backward design mapping to keep visions from leaking and instead lead teachers and students to desired outcomes.

Shannon Kiebler, Empower Consulting, Littleton, Colorado

"LET'S GET THE MANIPULATIVES OUT OF THE CLOSET" AND OTHER WAYS FOR ADMINISTRATORS AND COACHES TO PARTNER

2:15 PM–3:15 PM | Columbus H | Strand 3 | General

Collaborative leadership lays the groundwork for classroom transformation. When teacher leaders, coaches, and administrators work together strategically, great things can happen. Join us as we explore research-supported strategies used by real coaches and administrators to maximize the impact of planning, curriculum, instruction, and assessment in every classroom every day.

Kimberly Rimbey, KP Mathematics/Buckeye Elementary School District, Glendale, Arizona

LEVERAGING THE PRINCIPLES OF NUMBER TALKS TO PROMOTE CHANGE IN THE MATHEMATICS CLASSROOM

2:15 PM–3:15 PM | Columbus IJ | Strand 1 | General

How can the underlying principles of Number Talks be used to support student agency, reach a diverse population of learners, and encourage best teaching practices? Through video analysis, mathematics tasks, and discussions, we will explore how to leverage four essential principles of Number Talks as integral components of all aspects of the mathematics classroom.

Sherry Parrish, Author and Independent Consultant, Birmingham, Alabama

REAL CLASSROOMS; REAL TEACHERS; REAL OPPORTUNITIES FOR RICH SHARED LEARNING.

2:15 PM–3:15 PM | Columbus KL | Strand 2 | 6-12 Secondary

Principles to *Actions* provides teachers with essential practices to connect with our students, collaborate with our peers and commit to excellence. The Dana Center has taken these practices and created Innovation Configuration Maps providing clear, specific descriptions of what these practices look like when coaches are supporting teachers' classrooms. We will use these valuable tools as we step inside a virtual classroom from *Inside Mathematics* filmed through the Silicon Valley Math Initiative.

Mary Davis, UT Dana Center, Austin, Texas

David Foster, Silicon Valley Mathematics Initiative, Morgan Hill, California

Sponsor Showcase #1

DEEPENING DAILY INSTRUCTIONAL CHOICES WITH INNOVATIVE CURRICULUM-ALIGNED PROFESSIONAL DEVELOPMENT

1:45 PM–2:45 PM | Exhibit Hall | General

This session will provide an exclusive preview to new curricular materials being developed by Zearn, the publisher of the only EdReports greenlit curriculum to connect hands-on instruction and immersive digital learning. In this session, participants will experience firsthand how Zearn Math for Middle School ensures all students can deeply learn grade-level math and be prepared for success in Algebra and beyond.

Stephanie Ely, Zearn, New York, New York

Kyle Falting, Zearn, New York

Sponsor Showcase #2

BROADENING EQUITY DISCUSSIONS IN MATH EDUCATION THROUGH REHUMIZATION EFFORTS IN OUR COMMUNITIES

2:15 PM–3:15 PM | Exhibit Hall | General

In order to facilitate the richest, equity conversations in math education, it is critical that we look through the widest possible lens to see emergent and recessed issues with clarity and illumination. In this presentation, Sunil Singh will present ideas for how math leaders can better participate in the full spectrum of such equity discussions. Attendees will also learn how Amplify is creating a core curriculum that brings more humanness to classroom mathematics.

Sunil Singh, Amplify, Brooklyn, New York

TUESDAY SESSIONS

CAUCUSES, 3:30 PM–4:30 PM

The caucus provides opportunities for you to connect, network, and celebrate regional success with fellow leaders. Your NCSM Regional Director and team leaders will share information on NCSM initiatives, important issues, and future events. Join us and provide input into the direction and work of our organization. There will be door prizes! We look forward to seeing you.

NCSM REGIONAL CAUCUS: INTERNATIONAL

2020-712 | Columbus H | Strand 0 | General

Bill Barnes, NCSM Historian, Ellicott City, Maryland

NCSM REGIONAL CAUCUS: CANADA

2020-705 | Grand Ballroom D North | Strand 0 | General

Cheryl Cantin, NCSM Canadian Regional Director, Magog, Quebec, Canada

NCSM PAST PRESIDENT CAUCUS

2020-709 | Grand Suite 1 | Strand 0 | General

Connie Schrock, NCSM Immediate Past President, Emporia, Kansas

NCSM REGIONAL CAUCUS: EASTERN REGION 1

2020-700 | Columbus KL | Strand 0 | General

Cathy Boutin, NCSM E1 Regional Director, West Warwick, Rhode Island

NCSM REGIONAL CAUCUS: EASTERN REGION 2

2020-701 | Columbus AB | Strand 0 | General

Sue Vohrer, NCSM E2 Regional Director, Towson, Maryland

NCSM REGIONAL CAUCUS: SOUTHERN REGION 1

2020-697 | Columbus G | Strand 0 | General

Bernard Frost, NCSM S1 Regional Director, Chesnee, South Carolina

NCSM REGIONAL CAUCUS: SOUTHERN REGION 2

2020-702 | Columbus CD | Strand 0 | General

Katey Arrington, NCSM S2 Regional Director, Austin, Texas

NCSM REGIONAL CAUCUS: CENTRAL REGION 1

2020-698 | Grand Ballroom A & C North | Strand 0 | General

Steven Shadel, NCSM C1 Regional Director, Skokie, Illinois

NCSM REGIONAL CAUCUS: CENTRAL REGION 2

2020-699 | Columbus EF | Strand 0 | General

Sharon Rendon, NCSM C2 Regional Director, Summerset, South Dakota

NCSM REGIONAL CAUCUS: WESTERN REGION 1

2020-703 | Columbus IJ | Strand 0 | General

Denise Trakas, NCSM W1 Regional Director, Reno, Nevada

NCSM REGIONAL CAUCUS: WESTERN REGION 2

2020-704 | Grand Ballroom B | Strand 0 | General

Kathlan Latimer, NCSM W2 Regional Director, Suisun City, California

4:45 PM–5:15 PM

NCSM ANNUAL BUSINESS MEETING AND STATE OF THE ORGANIZATION REPORT

4:45 PM–5:15 PM | Columbus G | Strand 0 | General

NCSM President Mona Toncheff will present the State of the Organization, including our Annual Membership and Financial Reports. Mona will describe the progress on the 2019–2020 initiatives, position papers, and other strategic priorities for the coming year. New NCSM Affiliates will receive their certificates. All members are welcome and encouraged to attend to learn about opportunities involved in NCSM.

Mona Toncheff, NCSM President, Phoenix, Arizona

Linda Griffith, NCSM Treasurer, Quitman, Arkansas

CONNECT. COLLABORATE. COMMIT.

MOVING MATHEMATICS LEADERSHIP INTO THE NEW DECADE

WEDNESDAY PROGRAM

52nd NCSM Annual Conference

March 30–April 1, 2020 • Chicago, IL

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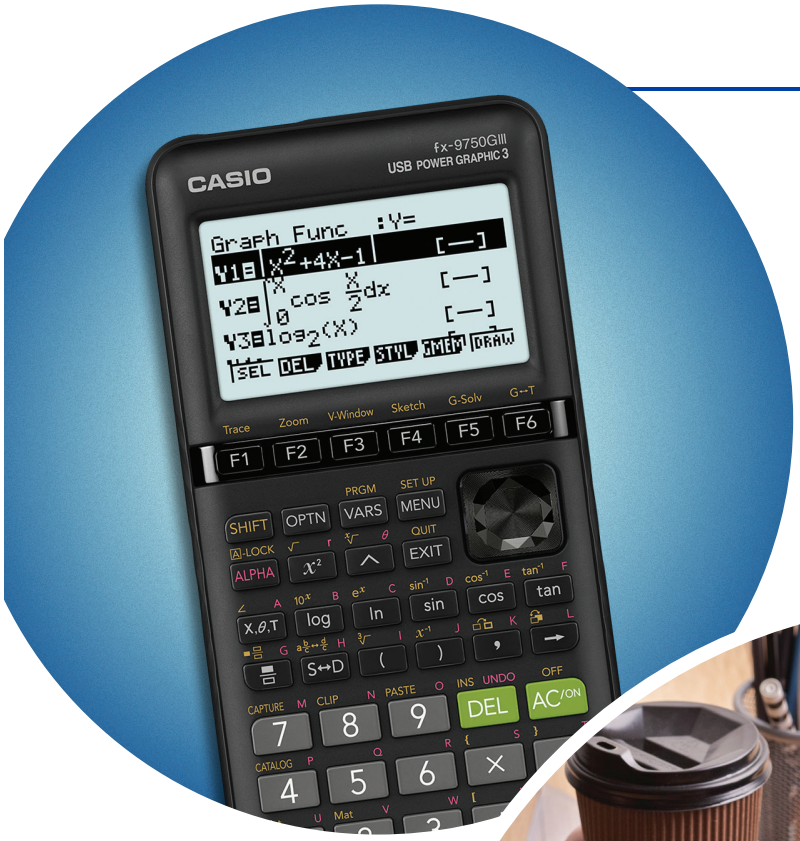

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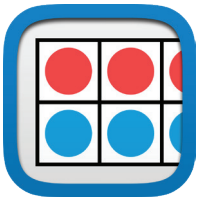
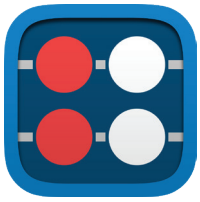
Money Pieces 

 Number Frames

Number Line 

 Number Pieces

Number Rack 

 Pattern Shapes

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PROGRAM SUMMARY INFORMATION

WEDNESDAY, APRIL 1

See page 5 for Conference Strand descriptions.

WEDNESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–1:30 PM
Grand Ballroom CD South & EF	**WEDNESDAY BREAKFAST** **Marilyn Burns** Focusing on Teaching Practices Partially sponsored by: Math Solutions Grand Ballroom CD South & EF | General	**WEDNESDAY LUNCHEON** **Grace Kelemanik, Amy Lucenta, Danielle Curran** Routines and teacher Moves that Engage Students in Learning Partially sponsored by: Curriculum Associates Grand Ballroom CD South & EF | General

	8:15 AM–9:15 AM	9:30 AM–10:30 AM	10:45 AM–11:45 PM	1:45 PM–2:45 PM
Grand Ballroom A & C North	**MAJOR PRESENTATION** **Christina Lincoln-Moore** Talk Number 2 Me: Mathematics & Mindfulness Grand Ballroom A & C North Strand 1 | General	**MAJOR PRESENTATION** **Peter Liljedahl** Building Thinking Classrooms Grand Ballroom A & C North Strand 1 | General	**MAJOR PRESENTATION** **Brea Ratliff** This is Us! Connecting Mathematics to Life Experiences Grand Ballroom A & C North Strand 1 | General	**MAJOR PRESENTATION** **Eli Luberoff** Creating Interesting Ways for Students to Be Right and Wrong Columbus IJKL - Note Room Change Strand 1 | General
Grand Ballroom B	**SPOTLIGHT SPEAKER** **Courtney Baker, Melinda Knapp** Why be a Lucky Coach, When You Can be a Great Coach? Grand Ballroom B Strand 2 | General	**SPOTLIGHT SPEAKER** **Grace Kelemanik, Amy Lucenta** Targeted Coaching for Equitable Teaching Practices: Activities to Develop Four Essential Teaching Strategies Grand Ballroom B Strand 2 | General	**SPOTLIGHT SPEAKER** **Tracy Zager** Lost in Translation: From Writers' Workshop to Leveled Math Groups Grand Ballroom B Strand 1 | K–5 Elementary	**SPOTLIGHT SPEAKER** **Steve Leinwand** Blunt Observations and Practical Strategies for Orchestrating Far More Impactful PD in Mathematics Columbus CDEF - Note Room Change Strand 3 | General
Grand Ballroom D North	**Judy Dunmire** Facilitating the Implementing of NCSM's Essential Actions as a First Year District Mathematics Specialist Grand Ballroom D North Strand 3 | General	**Jennifer Wilson, Vanessa Cerrahoglu** Cultivating Agency, Mathematical Understanding, and Conversation through Mathematical Language Routines Grand Ballroom D North Strand 1 | 6–12 Secondary	**Farshid Safi, George Roy, Lybrya Kebreab, Aline Abassian** Modeling Equitable Teaching Practices: Focusing on Identity, Intentionality and Privilege to Achieve Desired Learning Outcomes Grand Ballroom D North Strand 4 | General	
Michigan 1A	**June Mark, Deborah Spencer** Supporting Success in Algebra for Underprepared Ninth Graders Michigan 1A Strand 1 | 6–12 Secondary	**Kristina Roehrig, Michelle Daml, Samantha Wuttig** A District's Journey to Competency-based Education in Mathematics K–12 Columbus AB Strand 3 | General	**Jennifer Lawler** Building Mathematics Leadership Capacity in Elementary Schools Michigan 1A Strand 3 | K–5 Elementary	**Patrick Callahan** Problems with Placement Tests: Rigor and Equity Michigan 1A Strand 3 | General
Michigan 1B	**LeShell Smith, Lisa McDonough** Removing Obstacles for English Language Learners in the Mathematics Classroom Michigan 1B Strand 4 | General	**Sue Vohrer, BCPS Team** Leading for Change: Systemic Innovation with the Residency Model Michigan 1B Strand 3 | General	**Joshua Males, Jerel Welker** Adopting New Curriculum Materials: An Opportunity for Change through Professional Learning and Teacher Supports Michigan 1B Strand 3 | 6–12 Secondary	**Tara Becker-Utess, Jennifer Bricarell** We Know Coaching Works, but How Do You Build an Impactful and Sustainable Coaching Program Across Multiple Districts? Michigan 1B Strand 2 | General
Michigan 1C	**Rachel Croft, Carolyn Cook** Positive Coaching: Increasing Teacher Resiliency in Mathematics Michigan 1C Strand 2 | K–5 Elementary	**Elizabeth Flegar** Did I Do That? Harnessing the Power of Video for Teacher Reflection and Improved Practice Michigan 1C Strand 2 | General	**Travis Lemon** What Does it Mean to Take a Transformational Perspective with Secondary Geometry? Helping Teachers Understand This Approach Michigan 1C Strand 1 | 6–12 Secondary	**Stephen Sebelski, Rolanda Baldwin** Great Curriculum is Not Enough: Strategies for Overcoming Implementation Challenges Michigan 1C Strand 1 | 6–8 Middle
Michigan 2	**Ruth Heaton, Jill Board** A Tool to Support Leaders in Formatively Assessing Implementation of Equitable Mathematics Teaching and Learning Practices Michigan 2 Strand 4 | General	**Crystal Walcott, Doris Mohr, Michael Daiga** Using Challenging Tasks to Coach for Shifts in Classroom Practice That Promote Mathematical Proficiency Michigan 2 Strand 2 | 3–8 Upper Elementary/Middle	**Samantha Wuttig, Kristina Roehrig** Using Instructional Routines to Create Classrooms Where Everyone Believes They Can Learn Michigan 2 Strand 1 | 3–8 Upper Elementary/Middle	**Toni Osterbuhr** Increase Learning Power with Probe Power! Michigan 2 Strand 4 | K–5 Elementary
Michigan 3	**PRESIDENTS EXCHANGE – AMTE** **Michael Steele, Margaret Smith, Miriam Sherin** The Five Practices in Practice: Successfully Orchestrating Mathematics Discussions in Your High School Classroom Michigan 3 Strand 1 | 9–12 High School	**Sarah Burns, Debbie Leslie** Using High-Quality Instructional Materials as a Tool for Professional Collaboration and Systemic Change Michigan 3 Strand 3 | K–5 Elementary	**Darshan Jain, Michelle Gammelgaard, Sue Ellen Vozza** Developing a Culture of Teacher Inquiry and Self-Efficacy Using Embedded Instructional Learning Walks Michigan 3 Strand 2 | 6–12 Secondary	**Tracy Sola** A Deeper Look: Re-Engagement for Primary Learners Michigan 3 Strand 1 | PK–2 Primary

WEDNESDAY SUMMARY

	7:00 AM–8:00 AM	12:30 PM–1:30 PM
Grand Ballroom CD South & EF	**WEDNESDAY BREAKFAST** **Marilyn Burns** Focusing on Teaching Practices Partially sponsored by: Math Solutions Grand Ballroom CD South & EF | General	**WEDNESDAY LUNCHEON** **Grace Kelemanik, Amy Lucenta, Danielle Curran** Routines and teacher Moves that Engage Students in Learning Partially sponsored by: Curriculum Associates Grand Ballroom CD South & EF | General

	8:15 AM–9:15 AM	9:30 AM–10:30 AM	10:45 AM–11:45 PM	1:45 PM–2:45 PM
Randolph 1A	**Pamela Harris** Using an Instructional Routine to Inform Choices in Discretionary Spaces Randolph 1A Strand 1 | General	**Denise Porter, Kathryn Flores** Making Effective Assessment Habits Routine: Looking at Case Studies of Practice Randolph 1A Strand 4 | K–5 Elementary	**Brittany Goerig, Catherine Castillo, Tabitha Eutsler, Cary Sikes** One District's Successful Journey to Solve the Number Sense Struggle Randolph 1A Strand 1 | K–5 Elementary	**Janet Sutorius** Sense-making, the Ultimate Intervention Randolph 1A Strand 1 | 6–12 Secondary
Randolph 1B	**Susie Katt, Lacey Eddy, Megan Fleischman** Building a Community of Mathematical Thinkers in K-2 Classrooms Randolph 1B Strand 1 | PK–2 Primary	**Lynn Smith, Stephanie Fisher** Making the Right Choice: Aligned Instructional Materials, K-8 Mathematics Randolph 1B Strand 1 | 3–8 Upper Elementary/Middle	**Nicole Howard, Mary Rathlev** Teach them to Fish: How Model Lessons Promote the Use of Manipulatives, Representations, and Algorithms and Increase Access for All. Randolph 1B Strand 1 | 6–8 Middle	**Jennifer Kruger, Melissa Staloff, Stephanie Martin** Building a Community of Coaches: Ongoing Professional Learning to Support Reflective and Evolving Coaching Systems Randolph 1B Strand 2 | General
Randolph 2	**Alden Edson, Yvonne Slanger-Grant, Elizabeth Phillips** Unpacking the Mathematics Needed for Proportional Reasoning Randolph 2 Strand 1 | 6–12 Secondary	**Le Vada Gray** Comprehension is a Two-Way Street! Supporting Teachers who are Teaching the English Language and Mathematics Simultaneously Randolph 2 Strand 1 | PK–2 Primary	**Melissa Becerra, Emily Stewart, Catherine Fosnot** Formative Assessment in the K-2 Classroom: Capturing in the Moment What Really Matters Randolph 2 Strand 4 | PK–2 Primary	**Rachelle Farmer, Joanna Jauchen** Coaching the Mathematician Randolph 2 Strand 3 | General
Randolph 3	**Rebecca Afghani, Kyoko Weber-Sickler, Frances Reade** Coaches Coaching Principals: Developing a System to Support Principals' Instructional Leadership for CCSS-M Implementation in Long Beach Unified School District Randolph 3 Strand 2 | 3–8 Upper Elementary/Middle	**Megan Gundogdu, Nicora Placa** Build a Dynamic and Collaborative Mathematic Teacher Team, One Lesson Study at a Time Randolph 3 Strand 3 | 6–8 Middle	**Jessica Hunt, Sararose Lynch** How Do I Support Diverse Student Thinking? Differentiating Instruction to Support Productive Struggle in Elementary and Middle School Classrooms Randolph 3 Strand 1 | 3–8 Upper Elementary/Middle	**Jamie Garner, Duane Habecker** Ensuring High-Quality Mathematics Instruction for Students with Disabilities Randolph 3 Strand 1 | General
Roosevelt 3A	**Karin Lee, Jordan Smith Jr.** Allies, Bridges, Creations: The ABC's of Making Math Fun Roosevelt 3A Strand 1 | K–5 Elementary	**Ryan Gillespie, Cynthia Carson, Julie Amador** Coaching Discursive Moves: Digging into the "Nitty-Gritty" of How Coaches Talk with Teachers Roosevelt 3A Strand 2 | General	**Dennis McDonald, Michele Glenn** Who Said Talk is Cheap? Structures and Strategies to Engage Learners with Mathematics and Foster Mathematical Literacy for All Roosevelt 3A Strand 1 | K–5 Elementary	**Andrea Kotowski, Sara Moore** When Content is Not Enough: Clarity in Learning Intentions Roosevelt 3A Strand 1 | K–5 Elementary
Roosevelt 3B	**Robin Moore** A Balanced Approach to Making Fact Fluency Assessment Meaningful Roosevelt 3B Strand 4 | K–5 Elementary	**Paola Stzajn, Kristen Malzahn, Daniel Heck, Reema Alnizami** Improving Elementary Teachers' Mathematics Discourse Practices: A Success Story of One 40-hour Professional Development Program Roosevelt 3B Strand 1 | K–5 Elementary	**Rachel Fruin, Kathleen Williams** Coaching PLCs to Move Beyond Admiring Data Roosevelt 3B Strand 2 | 6–12 Secondary	**Brenda Konicke, Brandon Harms** Meeting the Needs of Diverse Learners: Identifying Language Demands and Instructional Goals to Design Math Lessons Roosevelt 3B Strand 1 | PK–2 Primary
Columbus AB	**Douglas Sovde,Connie Schrock, Robert Q. Berry, III, Uri Treisman, Brea Ratliff, Elisha Smith Arrillaga** Equity-Minded Transformation of Secondary Mathematics Education: Rigorous and Relevant Math at the Right Time for Each Student Columbus AB Strand 3 | 9–12 High School	**Alisa Brown, Emma Trevino, Toni Allen** We Are Smarter Together! Columbus AB Strand 2 | 6–12 Secondary	**Elizabeth Phillips, Yvonne Slanger-Grant** Not Your Grandparents' Algebra: Connecting Mathematical Content and Mathematical Practices Through Rich Algebraic Tasks Columbus AB Strand 1 | 6–12 Secondary	**Jennifer Lempp, Skip Tyler** Changing the Story: Using Math Workshop to Help Teachers and Students Reach Their Full Potential Columbus AB Strand 1 | 3–8 Upper Elementary/Middle

WEDNESDAY SUMMARY

	7:00 AM–8:00 AM		12:30 PM–1:30 PM	
Grand Ballroom CD South & EF	WEDNESDAY BREAKFAST	**Marilyn Burns** Focusing on Teaching Practices Partially sponsored by: Math Solutions Grand Ballroom CD South & EF | General	WEDNESDAY LUNCHEON	**Grace Kelemanik, Amy Lucenta, Danielle Curran** Routines and teacher Moves that Engage Students in Learning Partially sponsored by: Curriculum Associates Grand Ballroom CD South & EF | General

	8:15 AM–9:15 AM	9:30 AM–10:30 AM	10:45 AM–11:45 PM	1:45 PM–2:45 PM
Columbus CD	**Lori Ramsey, Sarah Hogg** Coaching with a Growth Mindset Columbus CD Strand 2 | General	**Kyle Pearce, Yvette Lehmann** Gaining Clarity in The Muddy Waters of Proportional Reasoning Columbus CD Strand 1 | 3–8 Upper Elementary/Middle	**Julie Dill** Coaching for Equity: Commit to Transforming Mathematics Lessons for English Language Learners Columbus CD Strand 2 | K–5 Elementary	
Columbus EF	**Sara VanDerWerf, Chris Luzniak** The Beauty of Movement: Increasing Discourse in Mathematics Classrooms Columbus EF Strand 1 | 6–12 Secondary	**Ivan Cheng, Lucy Rodriguez** Teaching Standards-Based Lessons for Social Justice: How to Adapt Traditional Textbook Activities to be Culturally Relevant Columbus G Strand 1 | 6–8 Middle	**Sara Moore, Kimberly Morrow-Leong, Linda Gojak** Mathematize It! Building a Systemic Plan to Encourage Early Problem-Solving and Mathematical Modeling Capacity Across Grades K-8 Columbus EF Strand 3 | 3–8 Upper Elementary/Middle	
Columbus G	**Caroline Ebby, Lindsay Goldsmith-Markey** Responsive Math Teaching and Coaching: A Practice-Based Approach to Developing Instructional Leadership for High-Quality Mathematics Instruction Columbus G Strand 3 | General	**Treve Brinkman** The Concrete-Representation-Abstract Trajectory: Moving All Students from Sense-Making to Algorithms Columbus G Strand 1 | 3-5 Intermediate	**Abi Leaf, Bryan Meyer, Brian Lawler** Beyond "Islands of Hope": Structures for Improving Mathematics Teaching and Learning Across a System Columbus G Strand 3 | 6–12 Secondary	**Susan Loveless** Creating Clarity, Building Capacity, Growing Leaders: One District's Story of Change Columbus G Strand 3 | K–5 Elementary
Columbus H	**Stephanie Slabic, Antonia Cameron, Jennifer Costanzo, Renee McShane** Dynamic Partnerships: How the Principal/Coach Relationship Can Be Used to Create Lasting Change in School Culture Columbus H Strand 2 | K–5 Elementary	**Chris Wright, Brett Parker** Structures for Desmos Professional Learning to Achieve School and District Goals [Desmos expertise not required!] Columbus H Strand 3 | 6–12 Secondary	**Chepina Rumsey, Jody Guarino** Discourse and Mathematical Argumentation in Primary Grades: Building Capacity through Instructional Routines Columbus H Strand 1 | PK–2 Primary	**Barbara Post, Nita Walker** Using Manipulatives to Assess Student Understanding of Geometry Columbus H Strand 1 | 3–8 Upper Elementary/Middle
Columbus IJ	**Jo Boaler, Tanya LaMar, Lizzy Hull Barnes, Miriam Leshin** Youcubed Study of Algebra 1 in San Francisco's De-tracked Mathematics Sequence Columbus IJ Strand 1 | College	**Ted Coe, Josh Recio, Kathi Cook** What is Really Equivalent to Algebra II? Columbus IJ Strand 1 | 9–12 High School	**Sarah Schuhl** Coaching Mathematics Teams – Which Actions Produce Results? Columbus IJ Strand 2 | General	
Columbus KL	**Patricia Campbell** Framing School-wide and District-wide Policy and Procedures to Support the Work of Mathematics Coaches Columbus KL Strand 3 | K–5 Elementary	**Christine Moynihan** It's A Wrap: Making Sense of Lesson Closure Columbus KL Strand 1 | K–5 Elementary	**Rebeca Itzkowich, Veronica Castro, Daley Chen, Patrick Hewett, Julie Brookes** Teachers and Math Coaches Can't Do it Alone! Coaching School Administrators to Nurture Shifts in Mathematics Instruction at Their School. Columbus KL Strand 2 | PK–2 Primary	

CLOSING SESSIONS 3:00 PM–4:00 PM		
Robert Kaplinsky How to Help Students Become Problem Solvers, Not Math Robots 2020-014 | Columbus AB Strand 1 | 6–12 Secondary	**Karen Karp, Sarah Bush, Barbara Dougherty** Can the Whole School Agree? Terms? Notation? Rules? Models? 2020-722 | Columbus CDEF Strand 3 | General	**Jo Boaler** Limitless: Learn, Lead and Live without Barriers 2020-713 | Columbus IJKL Strand 4 | General

WEDNESDAY SESSIONS BY STRAND

STRAND 1: BUILD MATHEMATICAL CAPACITY

LEVEL	LOCATION	START	END
GEN	GRAND BALLROOM A & C NORTH	8:15 AM	9:15 AM
6–12	MICHIGAN 1A	8:15 AM	9:15 AM
GEN	RANDOLPH 1A	8:15 AM	9:15 AM
PK–2	RANDOLPH 1B	8:15 AM	9:15 AM
6–12	RANDOLPH 2	8:15 AM	9:15 AM
K–5	ROOSEVELT 3A	8:15 AM	9:15 AM
6–12	COLUMBUS EF	8:15 AM	9:15 AM
COLLEGE	COLUMBUS IJ	8:15 AM	9:15 AM
GEN	GRAND BALLROOM A & C NORTH	9:30 AM	10:30 AM
6–12	GRAND BALLROOM D NORTH	9:30 AM	10:30 AM
3–8	RANDOLPH 1B	9:30 AM	10:30 AM
PK–2	RANDOLPH 2	9:30 AM	10:30 AM
K–5	ROOSEVELT 3B	9:30 AM	10:30 AM
3–8	COLUMBUS CD	9:30 AM	10:30 AM
6–8	COLUMBUS EF	9:30 AM	10:30 AM
3–5	COLUMBUS G	9:30 AM	10:30 AM
9–12	COLUMBUS IJ	9:30 AM	10:30 AM
K–5	COLUMBUS KL	9:30 AM	10:30 AM
GEN	GRAND BALLROOM A & C NORTH	10:45 AM	11:45 AM
K–5	GRAND BALLROOM B	10:45 AM	11:45 AM
6–12	MICHIGAN 1C	10:45 AM	11:45 AM
3–8	MICHIGAN 2	10:45 AM	11:45 AM
K–5	RANDOLPH 1A	10:45 AM	11:45 AM
6–8	RANDOLPH 1B	10:45 AM	11:45 AM
3–8	RANDOLPH 3	10:45 AM	11:45 AM
K–5	ROOSEVELT 3A	10:45 AM	11:45 AM
6–12	COLUMBUS AB	10:45 AM	11:45 AM
PK–2	COLUMBUS H	10:45 AM	11:45 AM
GEN	COLUMBUS IJKL	1:45 PM	2:45 PM
6–8	MICHIGAN 1C	1:45 PM	2:45 PM
PK–2	MICHIGAN 3	1:45 PM	2:45 PM
6–12	RANDOLPH 1A	1:45 PM	2:45 PM
GEN	RANDOLPH 3	1:45 PM	2:45 PM
K–5	ROOSEVELT 3A	1:45 PM	2:45 PM
PK–2	ROOSEVELT 3B	1:45 PM	2:45 PM
3–8	COLUMBUS AB	1:45 PM	2:45 PM
3–8	COLUMBUS H	1:45 PM	2:45 PM
6–12	COLUMBUS AB	3:00 PM	4:00 PM

STRAND 2: CONSTRUCT IMPACTFUL MATHEMATICS COACHING

LEVEL	LOCATION	START	END
GEN	GRAND BALLROOM B	8:15 AM	9:15 AM
K–5	MICHIGAN 1C	8:15 AM	9:15 AM
3–8	RANDOLPH 3	8:15 AM	9:15 AM
GEN	COLUMBUS CD	8:15 AM	9:15 AM
K–5	COLUMBUS H	8:15 AM	9:15 AM
GEN	GRAND BALLROOM B	9:30 AM	10:30 AM
GEN	MICHIGAN 1C	9:30 AM	10:30 AM
3–8	MICHIGAN 2	9:30 AM	10:30 AM
GEN	ROOSEVELT 3A	9:30 AM	10:30 AM
6–12	COLUMBUS AB	9:30 AM	10:30 AM
6–12	MICHIGAN 3	10:45 AM	11:45 AM
6–12	ROOSEVELT 3B	10:45 AM	11:45 AM
K–5	COLUMBUS CD	10:45 AM	11:45 AM
GEN	COLUMBUS IJ	10:45 AM	11:45 AM
PK–2	COLUMBUS KL	10:45 AM	11:45 AM
GEN	MICHIGAN 1B	1:45 PM	2:45 PM
GEN	RANDOLPH 1B	1:45 PM	2:45 PM

STRAND 3: DESIGN SYSTEMIC STRUCTURES WITHIN THE MATHEMATICS EDUCATION COMMUNITY

LEVEL	LOCATION	START	END
GEN	GRAND BALLROOM D NORTH	8:15 AM	9:15 AM
9–12	COLUMBUS AB	8:15 AM	9:15 AM
GEN	COLUMBUS G	8:15 AM	9:15 AM
K–5	COLUMBUS KL	8:15 AM	9:15 AM
GEN	MICHIGAN 1B	9:30 AM	10:30 AM
K–5	MICHIGAN 3	9:30 AM	10:30 AM
6–8	RANDOLPH 3	9:30 AM	10:30 AM
6–12	COLUMBUS H	9:30 AM	10:30 AM
K–5	MICHIGAN 1A	10:45 AM	11:45 AM
6–12	MICHIGAN 1B	10:45 AM	11:45 AM
3–8	COLUMBUS EF	10:45 AM	11:45 AM
6–12	COLUMBUS G	10:45 AM	11:45 AM
GEN	COLUMBUS CDEF	1:45 PM	2:45 PM
GEN	MICHIGAN 1A	1:45 PM	2:45 PM
GEN	RANDOLPH 2	1:45 PM	2:45 PM
K–5	COLUMBUS G	1:45 PM	2:45 PM
GEN	COLUMBUS CDEF	3:00 PM	4:00 PM

STRAND 4: MONITOR EVIDENCE OF EQUITABLE MATHEMATICS LEARNING

LEVEL	LOCATION	START	END
GEN	MICHIGAN 1B	8:15 AM	9:15 AM
GEN	MICHIGAN 2	8:15 AM	9:15 AM
K–5	ROOSEVELT 3B	8:15 AM	9:15 AM
K–5	RANDOLPH 1A	9:30 AM	10:30 AM
GEN	GRAND BALLROOM D NORTH	10:45 AM	11:45 AM
PK–2	RANDOLPH 2	10:45 AM	11:45 AM
K–5	MICHIGAN 2	1:45 PM	2:45 PM
GEN	COLUMBUS IJKL	3:00 PM	4:00 PM

WEDNESDAY SESSIONS

HOW TO READ THIS SPEAKER PROGRAM:

TITLE OF PRESENTATION
Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience
Description of presentation.
Speaker Name, Position/Affiliation, City, State

WEDNESDAY BREAKFAST

FOCUSING ON TEACHING PRACTICES: MARILYN'S CURRENT THINKING

7:00 AM–8:00 AM | Grand Ballroom CD South & EF | General

As we move math leadership into the new decade, we need to continue examining our teaching practices and our interactions with students. After more than 55 years of teaching, Marilyn continues to learn. Hear about her most recent experiences.

Marilyn Burns, Math Solutions, Boston, Massachusetts

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WEDNESDAY SESSIONS

8:15 AM–9:15 AM

MAJOR PRESENTATION

TALK NUMBER 2 ME: MATHEMATICS & MINDFULNESS

8:15 AM–9:15 AM | Grand Ballroom A & C North | Strand 1 | General

What is school for? To educate? Do we draw out students' talents and passion for mathematics? Social-Emotional Intelligence is the key component to engendering formidable mathematical learning. Dynamic Mindfulness is a trauma-informed mindfulness program that strengthens students' identities as sense-makers and problem solvers. Let's examine how the TRU Framework and Emotional Intelligence will build powerful mathematical identities and master the Standards of Mathematical Practice.

Christina Lincoln-Moore is an innovative Constructivist educational leader who is tenacious and profoundly dedicated to mindful project-based learning to engender formidable mathematics identities. She taught for LAUSD from 1996 until 2014. She is the new Assistant Principal at Westside Global Awareness Magnet. Her goal is to transform the mathematics programming by infusing mindfulness and powerful best practices. Christina presents as a Featured Speaker nationally focusing on equity and access of African-Americans to algebra. Her professional presentations include the National Council of Supervisors of Mathematics, National Council of Teachers of Mathematics, California STEAM Symposium, California Mathematics Council, Georgia Council of Teachers of Mathematics, California STEAM Symposium, and ACSA: Women In Leadership.

Christina serves as the Equity, Access, and Empowerment Chairperson of the California Mathematics Council: Southern Section (CMCS). The committee is dedicated to designing and the implementation of dynamic resources to re-humanize mathematics for traditionally marginalized students and provide its CMCS members resources necessary to meet the needs of and reflect the diverse communities they serve.

Christina Lincoln-Moore, Los Angeles Unified School District, Marina Del Rey, California

Presider, Kathlan Latimer, NCSM W2 Regional Director, Davis, California

SPOTLIGHT SPEAKER

WHY BE A LUCKY COACH, WHEN YOU CAN BE A GREAT COACH?

Grand Ballroom B | Strand 2 | General

Too often we leave things to chance. Learn how to become a proactive leader by experiencing the Decision-Making Protocol for Mathematics Coaching. Guide leaders through complex choices as they work with audiences of individual teachers, teams, and administrators. Increase your impact by developing an agenda that balances your school context with NCTM Math Teaching Practices. Ensure equity by developing your ability to have courageous conversations to address contextual factors and respond to diverse student backgrounds.

Courtney Baker, George Mason University, Fairfax, Virginia

Melinda Knapp, Oregon State University-Cascades, Bend, Oregon

Presider, Katey Arrington, NCSM S2 Regional Director, Austin, Texas

FACILITATING THE IMPLEMENTING OF NCSM'S ESSENTIAL ACTIONS AS A FIRST YEAR DISTRICT MATHEMATICS SPECIALIST

8:15 AM–9:15 AM | Grand Ballroom D North | Strand 3 | General

Focusing on Beliefs, Vision, Equity, and Relationships, we will share how our district used NCSM's Essential Actions (specifically Coaching in Mathematics Education) to build structures for effective coaching, which includes building and maintaining relationships, identifying and prioritizing building and district needs, and providing support and leadership for the benefit of our students and our team.

Judy Dunmire, Camden Fairview School District, Camden, Arkansas

WEDNESDAY SESSIONS

SUPPORTING SUCCESS IN ALGEBRA FOR UNDERPREPARED NINTH GRADERS

8:15 AM–9:15 AM | Michigan 1A | Strand 1 | 6–12 Secondary

Learn about resources designed for algebra support classes that provide underprepared students with additional instructional time and a curriculum to help students succeed in algebra by building the logic of algebra, and connecting arithmetic pattern and algebraic structure. This session will also share the work of an NSF-funded implementation study that is collaborating with over 25 districts to examine the effects of the algebra support curriculum on ninth grade students' attitudes and achievement in mathematics.

June Mark, Education Development Center, Waltham, Massachusetts

Deborah Spencer, Education Development Center, Waltham, Massachusetts

REMOVING OBSTACLES FOR ENGLISH LANGUAGE LEARNERS IN THE MATHEMATICS CLASSROOM

8:15 AM–9:15 AM | Michigan 1B | Strand 4 | General

English Language Learners (ELLs) come up against many obstacles in the mathematics classroom. What evidence can be used to determine and remove obstacles for our ELLs? What structures are needed to ensure high quality math instruction for ELLs? Ideas will be explored using work samples from ELLs, research from Access & Equity: Promoting High Quality Mathematics and Beyond Good Teaching: Advancing Mathematics Education for ELLs.

LeShell Smith, Alabama Math, Science, and Technology Initiative, Huntsville, Alabama

Lisa McDonough, AMSTI UAH, Huntsville, Alabama

POSITIVE COACHING: INCREASING TEACHER RESILIENCY IN MATHEMATICS

8:15 AM–9:15 AM | Michigan 1C | Strand 2 | K–5 Elementary

In this session participants will learn how to build capacity in mathematics by implementing a system of positive coaching that supports resilience and growth mindset in teachers. Presenters will share professional learning examples and tools, which could be implemented with any curriculum to support a structure of equitable mathematics learning and resilience in teachers.

Rachel Croft, Carson City School District, Carson City, Nevada

Carolyn Cook, Carson City School District, Carson City, Nevada

A TOOL TO SUPPORT LEADERS IN FORMATIVELY ASSESSING IMPLEMENTATION OF EQUITABLE MATHEMATICS TEACHING AND LEARNING PRACTICES

8:15 AM–9:15 AM | Michigan 2 | Strand 4 | General

This session introduces the Math Habits and Routines Tool (MHRT) iPad App for formative assessment of K-12 math instruction. Participants will learn how the tool is used to implement math instruction characterized by high cognitive demand and rich discourse thereby empowering all learners to reason mathematically. Participants will also use the MHRT App to code video clips, analyze MHRT App generated data, and create plans for teachers' learning supportive of equitable math practices.

Ruth Heaton, Teachers Development Group, West Linn, Oregon

Jill Board, Teachers Development Group, West Linn, Oregon

PRESIDENTS EXCHANGE—AMTE

THE FIVE PRACTICES IN PRACTICE: SUCCESSFULLY ORCHESTRATING MATHEMATICS DISCUSSIONS IN YOUR HIGH SCHOOL CLASSROOM

8:15 AM–9:15 AM | Michigan 3 | Strand 1 | 6–12 Secondary

There are many challenges that teachers face when facilitating productive mathematics discussions in high school, including identifying meaningful mathematical goals and rich tasks, launching a task in ways to provide students with a path to success, and supporting students as they individually and collaboratively make sense of the mathematical ideas. This session will provide teachers and leaders with strategies for orchestrating productive discussions in high school classrooms in ways that support all students' mathematical learning.

Michael Steele, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin

Margaret Smith, University of Pittsburgh, Pittsburgh, Pennsylvania

Miriam Sherin, Northwestern University, Evanston, Illinois

USING AN INSTRUCTIONAL ROUTINE TO INFORM CHOICES IN DISCRETIONARY SPACES

8:15 AM–9:15 AM | Randolph 1A | Strand 1 | General

A problem string is a multiple-entry, purposefully designed sequence of related problems that helps students mentally construct mathematical relationships and nudges them toward major, efficient strategies, models, or big ideas. I show how problem strings can be leveraged for changing student perceptions of the nature of mathematics and doing mathematics. Because facilitating problem strings requires teachers to showcase student strategies, this instructional routine provides excellent opportunities to disrupt notions of who can do mathematics.

Pamela Harris, Texas State University, San Marcos, Texas

BUILDING A COMMUNITY OF MATHEMATICAL THINKERS IN K-2 CLASSROOMS

8:15 AM–9:15 AM | Randolph 1B | Strand 1 | PK–2 Primary

It is vital that primary teachers set the foundation for how students perceive mathematics. This session will highlight the intentional decisions teachers make throughout the year to foster a community of mathematical thinkers and doers. We will discuss how leaders can encourage teacher reflection to capitalize on instructional moments in order to build rich learning communities within primary classrooms and support young students in developing their mathematical identities.

Susie Katt, Lincoln Public Schools, Lincoln, Nebraska

Lacey Eddy, Lincoln Public Schools, Lincoln , Nebraska

Megan Fleischman, Lincoln Public Schools, Lincoln, Nebraska

UNPACKING THE MATHEMATICS NEEDED FOR PROPORTIONAL REASONING

8:15 AM–9:15 AM | Randolph 2 | Strand 1 | 6–12 Secondary

Let's build our capacity to help teachers and students develop deep understandings of proportionality. Understanding proportional relationships is critical for mathematical proficiency in mathematics. But what does it mean to develop a deep understanding of proportionality? How can we make proportional reasoning more visible in number, algebra, measurement, geometry, probability, and statistics? Bring your ideas as we look at what it takes to support teachers in developing student proportional reasoning in deep and flexible ways.

Alden Edson, Michigan State University, East Lansing, Michigan

Yvonne Slanger-Grant, Michigan State University, East Lansing, Michigan

Elizabeth Phillips, Michigan State University, East Lansing, Michigan

COACHES COACHING PRINCIPALS: DEVELOPING A SYSTEM TO SUPPORT PRINCIPALS' INSTRUCTIONAL LEADERSHIP FOR CCSS-M IMPLEMENTATION IN LONG BEACH UNIFIED SCHOOL DISTRICT

8:15 AM–9:15 AM | Randolph 3 | Strand 2 | 3–8 Upper Elementary/Middle

This presentation will explore Long Beach Unifide's efforts to support K-8 principals to become instructional leaders for CCSS-M implementation at their sites. District leaders will describe their work with coaches to build principals' knowledge of mathematics instruction and their familiarity with the district's math improvement efforts. Participants will learn about providing a foundation for principals to understand the CCSS-M, better collaborate with teachers and teacher groups, monitor mathematics instruction, and provide high-quality feedback to teachers.

Rebecca Afghani, Long Beach Unified School District, Signal Hill, California

Kyoko Weber-Sickler, Long Beach Unified School District, Signal Hill, California

Frances Reade, WestEd, San Francisco, California

ALLIES, BRIDGES, CREATIONS: THE ABC'S OF MAKING MATH FUN

8:15 AM–9:15 AM | Roosevelt 3A | Strand 1 | K–5 Elementary

How do you start a movement within your community to make math fun and engaging for parents, students, and teachers? Follow our journey to increase parental engagement in elementary mathematics, provide equitable opportunities, decrease the achievement gap and eradicate the fixed mindset about mathematics. Experience the process and leave with captivating ideas for creating and implementing an effective program that builds an avalanche of engagement for learning mathematical concepts in your school, classroom, and district.

Karin Lee, San Jacinto Unified School District, San Jacinto, California

Jordan Smith Jr, San Jacinto Unified School District, San Jacinto, California

A BALANCED APPROACH TO MAKING FACT FLUENCY ASSESSMENT MEANINGFUL

8:15 AM–9:15 AM | Roosevelt 3B | Strand 4 | K–5 Elementary

Fact fluency mastery is rooted in flexibility, efficiency, and accuracy; however, many fact fluency assessments focus on accuracy and speed. Are you wanting to assess fact fluency more effectively than with timed tests? Learn about a district's journey to create homegrown comprehensive formative assessments that drive fact fluency instruction and improved student outcomes. Experience the process and leave with ideas for creating and implementing an effective fact fluency practice in your classroom, school, or district.

Robin Moore, EdAdvance, Litchfield, Connecticut

WEDNESDAY SESSIONS

EQUITY-MINDED TRANSFORMATION OF SECONDARY MATHEMATICS EDUCATION: RIGOROUS AND RELEVANT MATH AT THE RIGHT TIME FOR EACH STUDENT

8:15 AM–9:15 AM | Columbus AB | Strand 3 | 9-12 High School

Increasingly, post-secondary institutions are recognizing the limited usefulness of the singular pathway to Calculus to serve all students. Join leaders from NCTM, NCSM, CBMS, the Education Trust, and the Benjamin Banneker Association for a panel discussion on the progress several states have made in modernizing Algebra 2 and its follow-on courses to support multiple pathways.

Douglas Sovde, Charles A. Dana Center, Austin, Texas

Connie Schrock, Emporia State University, Emporia, Kansas

Robert Q. Berry, III, University of Virginia, Charlottesville, Virginia

Uri Treisman, Charles A. Dana Center, The University of Texas, Austin, Texas

Brea Ratliff, Me 2 The Power Of 3 / Benjamin Banneker Association, Dallas, Texas

Elisha Smith Arrillaga, Executive Director, The Education Trust-West, Oakland, California

COACHING WITH A GROWTH MINDSET

8:15 AM–9:15 AM | Columbus CD | Strand 2 | General

We ask teachers to believe in the ability of every student to learn. How do we as leaders reflect the belief that each teacher is capable of learning and developing as a professional educator? This session builds on Dweck's growth mindset research as well as Killion and Harrison's characteristics of effective coaches to collaborate and create examples of growth mindset statements to express these beliefs to each person they coach.

Lori Ramsey, HMH/Math Solutions, Sausalito, California

Sarah Hogg, Math Solutions HMHCO, Orlando, Florida

THE BEAUTY OF MOVEMENT: INCREASING DISCOURSE IN MATHEMATICS CLASSROOMS

8:15 AM–9:15 AM | Columbus EF | Strand 1 | 6–12 Secondary

The joyful sound of every student engaging in rich mathematical discourse is possible with a commitment to MOVEMENT. We will share why movement in your classroom is a non-negotiable and model practical ideas of how to make movement a professional development and classroom norm. Be prepared to move and speak about mathematics during this session.

Sara VanDerWerf, VanDerWerf Educational Consulting, Minneapolis, Minnesota

Chris Luzniak, The Archer School, Los Angeles, California

RESPONSIVE MATH TEACHING AND COACHING: A PRACTICE-BASED APPROACH TO DEVELOPING INSTRUCTIONAL LEADERSHIP FOR HIGH-QUALITY MATHEMATICS INSTRUCTION

8:15 AM–9:15 AM | Columbus G | Strand 3 | General

This session focuses on a practice-based approach to developing instructional leadership. We will illustrate how pedagogies of enactment (Grossman et al., 2009), including representation, decomposition, and approximation, can be incorporated into professional development and coaching to help teachers learn and implement new instructional practices. At the center of this work is the Responsive Mathematics Teaching model for high quality mathematics instruction that is responsive to both student thinking and the mathematical content.

Caroline Ebby, CPRE, Graduate School of Education, University of Pennsylvania, Philadelphia, Pennsylvania

Lindsay Goldsmith-Markey, University of Pennsylvania, Philadelphia, Pennsylvania

DYNAMIC PARTNERSHIPS: HOW THE PRINCIPAL/ COACH RELATIONSHIP CAN BE USED TO CREATE LASTING CHANGE IN SCHOOL CULTURE

8:15 AM–9:15 AM | Columbus H | Strand 2 | K–5 Elementary

A strong partnership with administration is essential for any successful coaching initiative. The Principal/Coach relationship is one that needs to be developed and nurtured so that a common vision of mathematics teaching and learning can be created and sustained. In this session, we will share specific tools for how to create a dynamic collaboration between coaches and building leaders. We will also share specific assessment tools we have used to guide our work.

Stephanie Slabic, Metamorphosis Teaching Learning Communities, New York, New York

Antonia Cameron, Metamorphosis Teaching Learning Communities, New York, New York

Jennifer Costanzo, Metamorphosis Teaching Learning Communities, New York, New York

Renee McShane, Metamorphosis TLC, New York, New York

YOUCUBED STUDY OF ALGEBRA 1 IN SAN FRANCISCO'S DE-TRACKED MATHEMATICS SEQUENCE

8:15 AM–9:15 AM | Columbus IJ | Strand 1 | College

A common pattern in urban school systems is that students repeatedly take, fail, and repeat algebra. San Francisco is disrupting this pattern by moving to heterogenous classrooms and delaying mathematics acceleration until after Algebra 1. Youcubed at Stanford has partnered with SFUSD to study this change. Through classroom observations and interviews with students and teachers, youcubed is building an understanding of what equitable Algebra 1 teaching looks like in SFUSD. Come hear our early findings.

Jo Boaler, Stanford University, Stanford, California

Tanya LaMar, Stanford University, Stanford, California

Lizzy Hull Barnes, San Francisco Unified School District, San Francisco, California

Miriam Leshin, Stanford University, Stanford, California

FRAMING SCHOOL-WIDE AND DISTRICT-WIDE POLICY AND PROCEDURES TO SUPPORT THE WORK OF MATHEMATICS COACHES

8:15 AM–9:15 AM | Columbus KL | Strand 3 | K–5 Elementary

The preparation and continuing professional advancement that mathematics coaches receive will influence their effectiveness, but so will administrative decisions about how coaches are positioned, supported, and utilized in schools. This session will share research findings identifying district- and school-level policies that impact the quality, context, and quantity of mathematics coaching as delivered in schools and will engage participants in discussion of critical local leadership strategies for supporting coaches and high leverage coaching.

Patricia Campbell, University of Maryland, College Park, Maryland

9:30 AM–10:30 AM

Major Presentation

BUILDING THINKING CLASSROOMS

9:30 AM–10:30 AM | Grand Ballroom A & C North | Strand 1 | General

We know that problem solving is an effective way for students to learn to think mathematically and to acquire deep knowledge and understanding of the mathematics they are learning. Simply problematizing the mathematics curriculum, however, does not help constitute the practice that teachers want or students need. Equally, infusion of problem-based learning into the mathematics curriculum does not help with the transformations we want to see in our classrooms. What we need are a set of practices that, along with good problems, can build thinking classrooms. In this presentation, Dr. Peter Liljedahl looks at a series of such practices, emerging from 15 years of research, that can help to build an environment conducive to problem-based learning. He will unpack his research that has demonstrates that a problem-based learning environment and culture can quickly be established, even in classrooms where students resist change.

Dr. Peter Liljedahl is a Professor of Mathematics Education in the Faculty of Education. He is the former president of the International Group for the Psychology of Mathematics Education (PME), and the current president of the Canadian Mathematics Education Study Group (CMESG), as well as a senior editor for the International Journal of Science and Mathematics Education (IJSME). Peter is a former high school mathematics teacher who has kept his research interest and activities close to the classroom. He consults regularly with teachers, schools, school districts, and ministries of education on issues of teaching and learning, assessment, and numeracy.

Peter Liljedahl, Simon Fraser University, Burnaby, British Columbia

Presider, Cheryl Cantin, NCSM Canadian Regional Director, Magog, Quebec, Canada

Spotlight Speaker

TARGETED COACHING FOR EQUITABLE TEACHING PRACTICES: ACTIVITIES TO DEVELOP FOUR ESSENTIAL TEACHING STRATEGIES

9:30 AM–10:30 AM | Grand Ballroom B | Strand 2 | General


Ensuring every teacher develops equitable teaching practices requires targeted and sustained coaching. Start by focusing on high-leverage teaching moves that engage every student in meaningful mathematics. Next, leverage the repeatable nature of instructional routines that incorporate those moves to regularly coach mathematics content and teaching. In this session learn how to coach around four high leverage teaching strategies inside an instructional routine so that every student can come to expect a high-quality learning experience.

Grace Kelemanik, Fostering Math Practices, Natick, Massachusetts

Amy Lucenta, Fostering Math Practices, Natick, Massachusetts

Presider, Georgina Rivera, NCSM Professional Learning Director, Hartford, Connecticut

CULTIVATING AGENCY, MATHEMATICAL UNDERSTANDING, AND CONVERSATION THROUGH MATHEMATICAL LANGUAGE ROUTINES

9:30 AM–10:30 AM | Grand Ballroom D North | Strand 1 | 6–12 Secondary

How do we prepare learners to take an active role in their own sense-making of mathematics? How might we support all students in developing mathematical language to communicate their thinking through writing and speaking? Let's consider how Mathematical Language Routines both create a need for students to converse with others about mathematics and empower students to share their ideas around mathematical problems in ways that foster understanding.

Jennifer Wilson, Illustrative Mathematics, Black Mountain, North Carolina

Vanessa Cerrahoglu, Orange County Department of Education, Costa Mesa, California

A DISTRICT'S JOURNEY TO COMPETENCY-BASED EDUCATION IN MATHEMATICS K-12

9:30 AM–10:30 AM | Michigan 1A | Strand 3 | General

Fairbanks North Star Borough School District in Fairbanks, Alaska is on a journey to reach every student. All curriculum guides are being revised from a list of standards to a series of standards-based competencies. This presentation will chronicle the district's journey from gathering community input on mathematics, to organizing volunteer teams of teachers as we look at how we currently organize the standards and restructure each grade level in terms of clear, measurable learning outcomes.

Kristina Roehrig, Fairbanks North Star Borough School District, Fairbanks, Alaska

Michelle Daml, Fairbanks North Star Borough School District, Fairbanks, Alaska

Samantha Wuttig, Fairbanks North Star Borough School District, Fairbanks, Alaska

LEADING FOR CHANGE: SYSTEMIC INNOVATION WITH THE RESIDENCY MODEL

9:30 AM–10:30 AM | Michigan 1B | Strand 3 | General

How does one large district become a change agent to increase teacher capacity in a systemic way? Baltimore County Public Schools has implemented the Residency Model to provide job-embedded professional learning as research consistently suggests that sustained professional learning has the greatest impact on teachers. Join this session to learn how the Residency Model is changing the face of professional learning in the district, and how to implement this change in your district. Handouts provided.

Sue Vohrer, Baltimore County Public Schools, Towson, Maryland

BCPS Team, BCPS, Towson, Maryland

DID I DO THAT? HARNESSING THE POWER OF VIDEO FOR TEACHER REFLECTION AND IMPROVED PRACTICE

9:30 AM–10:30 AM | Michigan 1C | Strand 2 | General

Recording ourselves can be an unnerving experience, but the benefits are vast. Discover the potential and importance of video-taping, the impact it can have on instruction, and the myriad settings in which it is an effective tool for reflection and, ultimately, student achievement. Explore when and how to intentionally use video to create a productive, equitable, and thoughtful mathematics classroom and learn specific, successful strategies for framing video-based reflection.

Elizabeth Flegar, Naugatuck Board of Education, Naugatuck, Connecticut

USING CHALLENGING TASKS TO COACH FOR SHIFTS IN CLASSROOM PRACTICE THAT PROMOTE MATHEMATICAL PROFICIENCY

9:30 AM–10:30 AM | Michigan 2 | Strand 2 | 3–8 Upper Elementary/Middle

A goal for coaches, instructional leaders, and teachers alike is mathematical proficiency for all students. Towards that goal, participants will engage in activities and discourse around instruction that encourages students to do mathematics and build conceptual understandings of big mathematical ideas. The PD model shared in this session marries the lessons from Mathematical Thinking: From Assessment Items to Challenging Tasks with the Leading for Mathematical Proficiency Framework (LMP) to promote shifts in classroom practice.

Crystal Walcott, Indiana University Purdue University Columbus, Columbus, Indiana

Doris Mohr, University of Southern Indiana, Evansville, Indiana

Michael Daiga, Wittenberg University, Springfield, Ohio

USING HIGH-QUALITY INSTRUCTIONAL MATERIALS AS A TOOL FOR PROFESSIONAL COLLABORATION AND SYSTEMIC CHANGE

9:30 AM–10:30 AM | Michigan 3 | Strand 3 | K–5 Elementary

Schools often adopt math instructional materials with an assumption that materials alone will produce changes in teaching and learning, rather than thoughtfully and intentionally planning to support teachers with using these tools as resources for working toward desired reforms. In this session, we will discuss ways we have worked with schools to use shared instructional materials as powerful levers for promoting professional learning and collaboration and changing school-wide teaching practices in meaningful and coherent ways.

Sarah Burns, The University of Chicago, Chicago, Illinois

Debbie Leslie, The University of Chicago, Chicago, Illinois

MAKING EFFECTIVE ASSESSMENT HABITS ROUTINE: LOOKING AT CASE STUDIES OF PRACTICE

9:30 AM–10:30 AM | Randolph 1A | Strand 4 | K–5 Elementary

Teachers understand the importance of formative assessment and thoughtfully observe as students engage in math. However, without efficient ways to gather data, they may struggle to set a routine. We will explore two case studies of teachers who has routinized effective assessment practice for various formats, including games and small-group lessons.

Denise Porter, UChicago STEM Education, Chicago, Illinois

Kathryn Flores, UChicago STEM Education, Chicago, Illinois

MAKING THE RIGHT CHOICE: ALIGNED INSTRUCTIONAL MATERIALS, K-8 MATHEMATICS

9:30 AM–10:30 AM | Randolph 1B | Strand 1 | 3–8 Upper Elementary/Middle

High quality and equitable mathematics instruction begins with instructional materials aligned to College and Career Ready Standards. Now, schools and districts have choices for aligned instructional materials, but how do they know what to use? In this session we will explore how to prioritize local needs and use EdReports.org to make informed decisions about which materials to use, with attention to the coherence of the K-8 content standards.

Lynn Smith, EdReports, The Woodlands, Texas

Stephanie Fisher, EdReports, Durham, North Carolina

COMPREHENSION IS A TWO-WAY STREET! SUPPORTING TEACHERS WHO ARE TEACHING THE ENGLISH LANGUAGE AND MATHEMATICS SIMULTANEOUSLY

9:30 AM–10:30 AM | Randolph 2 | Strand 1 | PK–2 Primary

How can we support mathematics teachers of emergent bilinguals to teach content, everyday language and specialized academic vocabulary? Students need language to think and to express their own understanding. To this end, language and math goals are critical to deep understanding. Leaders and coaches will learn how to identify the linguistic demands of a lesson in order to support teachers in selecting instructional strategies that allow learners to share their thinking and develop deep understanding.

Le Vada Gray, Math Solutions, Sausalito, California

BUILD A DYNAMIC AND COLLABORATIVE MATHEMATIC TEACHER TEAM, ONE LESSON STUDY AT A TIME

9:30 AM–10:30 AM | Randolph 3 | Strand 3 | 6–8 Middle

Investigative. Interesting. Practical. Engaging. These were some of the words teachers used to describe lesson study. Come learn how we made lesson study a part of the Math Department's culture in an urban middle school. We will watch videos from our work, share best practices and provide tools that you can use to implement lesson study in your school in order to build a dynamic teacher team and improve teacher practice.

Megan Gundogdu, New York City Department of Education, Bronx, New York

Nicora Placa, Hunter College, New York, New York

COACHING DISCURSIVE MOVES: DIGGING INTO THE "NITTY-GRITTY" OF HOW COACHES TALK WITH TEACHERS

9:30 AM–10:30 AM | Roosevelt 3A | Strand 2 | General

In this session, we focus on the unique ways coaches talk with teachers during planning and debriefing conversations. We will briefly share our research findings and framework for categorizing the discursive tendencies of mathematics coaches. Then, using our framework and sample data, participants will engage in collaborative activities such as analyzing transcripts and video clips of coaching conversations to deepen their thinking about coaching discursive moves and the impact on teacher learning.

Ryan Gillespie, University of Idaho, Coeur d'Alene, Idaho

Cynthia Carson, Warner School of Education, Rochester, New York

Julie Amador, University of Idaho, Coeur d'Alene, Idaho

IMPROVING ELEMENTARY TEACHERS' MATHEMATICS DISCOURSE PRACTICES: A SUCCESS STORY OF ONE 40-HOUR PROFESSIONAL DEVELOPMENT PROGRAM

9:30 AM–10:30 AM | Roosevelt 3B | Strand 1 | K–5 Elementary

This session will highlight a year-long professional development program focused on supporting productive mathematics discourse in early elementary grades, and share findings from design and development research, and effectiveness studies of the program. It will emphasize professional development design features that have positively influenced elementary teachers' knowledge and practices and students' engagement in discourse. Participants will engage with an activity from the professional development, discuss research findings, and consider opportunities and implications for their work.

Paola Stzajn, North Carolina State University, Raleigh, North Carolina

Kristen Malzahn, Horizon Research, Inc., Chapel Hill, North Carolina

Daniel Heck, Horizon Research, Inc., Chapel Hill, North Carolina

Reema Alnizami, North Carolina State University, Raleigh, North Carolina

WE ARE SMARTER TOGETHER!

9:30 AM–10:30 AM | Columbus AB | Strand 2 | 6–12 Secondary

San Francisco middle school math coaches in the Problem Solving Cycle, a partnership with Stanford University, have grown their community partnerships to include the work of UC Riverside and the use of a small group student survey (Practical Measures) that quantifies students' perceptions of participation in math class. Hear how math coaches engaged with a meta-coach in inquiry cycles with teachers around the closure of a lesson and the impact on students' mathematical thinking.

Alisa Brown, SFUSD, San Francisco, California

Emma Trevino, UC Riverside, Riverside, California

Toni Allen, SFUSD, San Francisco, California

GAINING CLARITY IN THE MUDDY WATERS OF PROPORTIONAL REASONING

9:30 AM–10:30 AM | Columbus CD | Strand 1 | 3–8 Upper Elementary/Middle

This session will explore tasks that address one of the most challenging and misunderstood concepts from K through Grade 8, with accessible entry points for diverse learners. Let's unpack the necessary mathematical understandings students must develop before they are able to begin thinking proportionally as well as the many nuances that exist through the exploration of ratio and rate as we build a Roadmap to Proportional Relationships.

Kyle Pearce, Greater Essex County District School Board, Windsor, Ontario

Yvette Lehmann, Greater Essex County District School Board, Windsor, Ontario

TEACHING STANDARDS-BASED LESSONS FOR SOCIAL JUSTICE: HOW TO ADAPT TRADITIONAL TEXTBOOK ACTIVITIES TO BE CULTURALLY RELEVANT

9:30 AM–10:30 AM | Columbus EF | Strand 1 | 6–8 Middle

If math is a tool, what is it a tool for? For math to be accessible and equitable, students need to use mathematics as tools for understanding the world around them while developing competencies in grade-level content standards. Come see how we modified textbook activities to engage students in culturally relevant lessons that focused on issues of social justice while staying aligned to content standards. Practical tips for implementation and ready-to-use activities will be shared.

Ivan Cheng, CSU Northridge, Northridge, California

Lucy Rodriguez, Vaughn Next Century Learning Center, San Fernando, California

THE CONCRETE-REPRESENTATION-ABSTRACT TRAJECTORY: MOVING ALL STUDENTS FROM SENSE-MAKING TO ALGORITHMS

9:30 AM–10:30 AM | Columbus G | Strand 1 | 3-5 Intermediate

There is a trajectory of development that all students follow as they build fluency and proficiency. The learning trajectory moves from models to strategies and, finally, to algorithms. Struggles for students often arise when instruction begins with algorithms. In this session we are going to examine and deepen our understanding of this trajectory and how the trajectory supports access and equity in the classroom.

Treve Brinkmans, Math Solutions, Sausalito, California

STRUCTURES FOR DESMOS PROFESSIONAL LEARNING TO ACHIEVE SCHOOL AND DISTRICT GOALS [DESMOS EXPERTISE NOT REQUIRED!]

9:30 AM–10:30 AM | Columbus H | Strand 3 | 6–12 Secondary

Participants will develop action steps for bringing Desmos professional learning to mathematics teachers and leaders in their school/district. Presenters will share their experiences in learning, planning, and delivering Desmos professional development to whole group, small group, and individual teachers and leaders in their large, diverse district. Participants will reflect upon their district goals and the shared experiences of the presenters to assist in developing action steps that bring Desmos professional learning opportunities to their school/district.

Chris Wright, Baltimore County Public Schools, Towson, Maryland

Brett Parker, Baltimore County Public Schools, Towson, Maryland

WHAT IS REALLY EQUIVALENT TO ALGEBRA II?

9:30 AM–10:30 AM | Columbus IJ | Strand 1 | 9-12 High School

As colleges increasingly employ pathways that offer an alternative to the algebra to calculus route, the definition of what it means to be college-ready is changing. This change will necessitate rethinking the mathematics that students experience in high school. Come engage in a discussion around course design principles and student learning outcomes for Algebra II equivalent pathways, based on current work at the Charles A. Dana Center.

Ted Coe, Achieve, Washington, District of Columbia

Josh Recio, Charles A. Dana Center, University of Texas, Austin, Texas

Kathi Cook, Charles A. Dana Center, University of Texas, Austin, Texas

IT'S A WRAP: MAKING SENSE OF LESSON CLOSURE

9:30 AM–10:30 AM | Columbus KL | Strand 1 | K–5 Elementary

One of the most challenging aspects of instruction is in being able to provide lesson closure that is consistent, doable, and productive for both students and teachers. Participants will be provided with a framework that identifies key elements of lesson closure that will help teachers wrap lessons with consistency, quality, and purpose, leading them to believe that the "trade off" of time from instruction is beneficial and will aid in building mathematical capacity for all.

Christine Moynihan, Taunton Public Schools, Taunton, Massachusetts

10:45 AM–11:45 AM

Major Presentation

THIS IS US! CONNECTING MATHEMATICS TO LIFE EXPERIENCES

10:45 AM–11:45 AM | Grand Ballroom A & C North | Strand 1 | General

The tiniest events in our lives impact who we become. Each of us has a story–a story that could be used to facilitate the teaching of mathematics with real-world application. To nurture the desire for students to learn and educators to diversify mathematics instruction, we have to think outside of the box. Participants will learn how to support the design of clear, well-organized mathematical tasks reflective of best practices and appropriate for diverse learners.

Brea Ratliff has taught mathematics at the elementary, middle, high school and collegiate levels, served as a high school academic coach for mathematics and science, Master Math Teacher, and a K-12 District Mathematics Supervisor. She was also the Secondary Mathematics Research Coordinator for the SMU Research in Mathematics Education (RME) Unit and an adjunct lecturer at the university.

As a published author, Brea has written several curriculum guides and teaching materials, and published her first novel in 2017. She is also developing a children's book series about mathematics and science. She is also the founder of Me to the Power of Three, LLC, a consulting company which specializes in developing programs and resources to support teaching and learning at all levels.

Brea is the immediate Past-President of the Benjamin Banneker Association, Inc; a national organization established to advocate for high quality mathematics instruction for all students, with an emphasis on students of African ancestry.

Brea Ratliff, Auburn University, Auburn, Alabama

Presider, Paul Gray, NCTM Representative, Dallas, Texas

WEDNESDAY SESSIONS

Spotlight Speaker

LOST IN TRANSLATION: FROM WRITERS' WORKSHOP TO LEVELED MATH GROUPS

10:45 AM–11:45 AM | Grand Ballroom B | Strand 1 | K–5 Elementary

In K-5, we often take ideas from literacy and apply them to math. Sometimes that works well, e.g., sense-making strategies for story problems. Sometimes, however, we oversimplify an approach, losing its power and purpose. In this session, we'll look at grouping formats used in elementary math today (such as math workshop or guided math) through this lens. What were the original ideas? What have they morphed into? What does that transformation mean for students?

Tracy Zager, Portland Public Schools/Stenhouse Publishers, Portland, Maine

Presider, Bernard Frost, NCSM S1 Regional Director, Chesnee, South Carolina

MODELING EQUITABLE TEACHING PRACTICES: FOCUSING ON IDENTITY, INTENTIONALITY AND PRIVILEGE TO ACHIEVE DESIRED LEARNING OUTCOMES

10:45 AM–11:45 AM | Grand Ballroom D North | Strand 4 | General

Participants will be engaged in equitable teaching practices with a focus on teacher professional development for current and prospective teachers. This session prioritizes attending to effectively monitor, leverage and follow-up on evidence of student mathematical thinking while engaging and empowering students individually, in small groups, and during whole class discussions. As educators and teacher leaders, we will share experiences regarding identity and privilege through intentionality in instructional moves during mathematical learning.

Farshid Safi, University of Central Florida, Orlando, Florida

George Roy, University of South Carolina, Columbia, South Carolina

Lybrya Kebreab, University of Central Florida, Orlando, Florida

Aline Abassian, University of Central Florida, Orlando, Florida

BUILDING MATHEMATICS LEADERSHIP CAPACITY IN ELEMENTARY SCHOOLS

10:45 AM–11:45 AM | Michigan 1A | Strand 3 | K–5 Elementary

Ensuring that all students have access to high-quality math instruction requires a shared vision and strong leadership that extends beyond the principal's office. This session will share one district's efforts, in partnership with a local mathematics education non-profit, to increase math leadership capacity in preparation for the implementation of new instructional materials in grades K–5.

Jennifer Lawler, Kenosha Unified School District, Kenosha, Wisconsin

ADOPTING NEW CURRICULUM MATERIALS: AN OPPORTUNITY FOR CHANGE THROUGH PROFESSIONAL LEARNING AND TEACHER SUPPORTS

10:45 AM–11:45 AM | Michigan 1B | Strand 3 | 6–12 Secondary

New state standards and an assessment that have raised the expectations for our students emphasized that our curriculum materials were not supporting our students or teachers. In this session, we will discuss the district curriculum adoption process and how we have been supporting teachers in implementing these materials over the last three years. Participants will reflect on how this might look in their own district and discuss with colleagues.

Joshua Males, Lincoln Public Schools, Lincoln, Nebraska

Jerel Welker, Lincoln Public Schools, Lincoln, Nebraska

WHAT DOES IT MEAN TO TAKE A TRANSFORMATIONAL PERSPECTIVE WITH SECONDARY GEOMETRY? HELPING TEACHERS UNDERSTAND THIS APPROACH

10:45 AM–11:45 AM | Michigan 1C | Strand 1 | 6–12 Secondary

Taking a transformational approach to geometry is much different than teaching transformations. What does it mean to take a transformational perspective? How can we help teachers develop mathematical knowledge for teaching geometry when transformations are to be used as the main approach? We will look at tasks that embrace CCSS geometry standards and promote thinking with transformations. Rich connections between transformations, symmetry, constructions, congruence, and proof will be shared.

Travis Lemon, Mathematics Vision Project, Lehi, Utah

USING INSTRUCTIONAL ROUTINES TO CREATE CLASSROOMS WHERE EVERYONE BELIEVES THEY CAN LEARN

10:45 AM–11:45 AM | Michigan 2 | Strand 1 | 3–8 Upper Elementary/Middle

Learn what makes an instruction routine and how implementing them can impact the culture of teaching and the culture of the classroom. We will explore routines such as Which One Doesn't Belong, Number Talk Images, and Same/Different as ways to allow all students access to math. With these routines, we will explore why they provide access and equity in the classroom and how they can help change teacher perceptions of students.

Samantha Wuttig, Fairbanks North Star Borough School District, Fairbanks, Alaska

Kristina Roehrig, Fairbanks North Star Borough School District, Fairbanks, Alaska

DEVELOPING A CULTURE OF TEACHER INQUIRY AND SELF-EFFICACY USING EMBEDDED INSTRUCTIONAL LEARNING WALKS

10:45 AM–11:45 AM | Michigan 3 | Strand 2 | 6–12 Secondary

Teacher to teacher learning is a transformational model for professional development. Just as health care specialists "round" to develop effective patient support, we will present "learning walks" as a way to improve teacher efficacy and student learning. This flexible alternative to formalized professional development provides choice in learning as teachers "walk" with colleagues/specialist to glean best practices. Structured protocols for observation, discussion, and reflection will be presented as well as improved teacher efficacy and practices.

Darshan Jain, Adlai E. Stevenson High School, Lincolnshire, Illinois

Michelle Gammelgaard, Adlai E. Stevenson HS, Lincolnshire, Illinois

Sue Ellen Vozza, Adlai E. Stevenson HS, Lincolnshire, Illinois

ONE DISTRICT'S SUCCESSFUL JOURNEY TO SOLVE THE NUMBER SENSE STRUGGLE

10:45 AM–11:45 AM | Randolph 1A | Strand 1 | K–5 Elementary

Come learn how Springfield Public School (MO) implemented instructional change to improve student scores and math mindsets. Explore number strings and math talks as tools to teach and reinforce mental math strategies. Move from theory to action in instructional change and see results in test scores and engagement. We will walk through our process, tools and data so that you can implement and succeed.
Brittany Goerig, hand2mind, Vernon Hills, Illinois

Catherine Castillo, Springfield Public Schools, Springfield, Missouri

Tabitha Eutsler, Springfield Public Schools, Springfield, Missouri

Cary Sikes, Springfield Public Schools, Springfield, Missouri

TEACH THEM TO FISH: HOW MODEL LESSONS PROMOTE THE USE OF MANIPULATIVES, REPRESENTATIONS, AND ALGORITHMS AND INCREASE ACCESS FOR ALL.

10:45 AM–11:45 AM | Randolph 1B | Strand 1 | 6–8 Middle

Why did middle schools throw manipulatives out with the bath water? Anne Arundel County Public Schools [AACPS] demonstrates bold leadership with the action of purchasing manipulatives for every middle school student and writing over 75 Model Lessons that showcase conceptual understanding of the Common Core State Standards through a trajectory of learning. Join AACPS as they share their district designed non-negotiable Model Lessons in their curriculum that foster conceptual development at the highest level.

Nicole Howard, Anne Arundel County Public Schools, Annapolis, Maryland

Mary Rathlev, Anne Arundel County Public Schools, Annapolis, Maryland

FORMATIVE ASSESSMENT IN THE K-2 CLASSROOM: CAPTURING IN THE MOMENT WHAT REALLY MATTERS

10:45 AM–11:45 AM | Randolph 2 | Strand 4 | PK–2 Primary

Most formative assessments are designed to pick up "deficits"—what a child doesn't know in relation to end of year outcomes. Data driven approaches that result are then about "fixing the gaps." This session is an opportunity to look at formative assessment differently: how, when, and what we assess will be examined using a developmental framework for numeracy, with related teaching implications that ensure equity and access in contrast to labels of deficits, with technology used as a tool.

Melissa Becerra, Shaker Heights City Schools, Shaker Heights, Ohio

Emily Stewart, Stone Ridge School, Bethesda, Maryland

Catherine Fosnot, New Perspectives on Learning, New London, Connecticut

HOW DO I SUPPORT DIVERSE STUDENT THINKING? DIFFERENTIATING INSTRUCTION TO SUPPORT PRODUCTIVE STRUGGLE IN ELEMENTARY AND MIDDLE SCHOOL CLASSROOMS

10:45 AM–11:45 AM | Randolph 3 | Strand 1 | 3–8 Upper Elementary/Middle

Most teachers are familiar with the concept of differentiated instruction (DI) (Tomlinson & Imbeau 2010)—a process through which teachers can increase access to content by considering unique characteristics of students as they plan instructional experiences. Even though differentiation is clearly needed to ensure that all students have access to their own ways of making sense, it is not always clear how to differentiate in ways that maintain mathematical goals. We unpack how teachers can differentiate instructional tasks using knowledge of student thinking and productive struggle.

Jessica Hunt, North Carolina State University, Raleigh, North Carolina

Sararose Lynch, Westminster College, Wilmington, Pennsylvania

WEDNESDAY SESSIONS

WHO SAID TALK IS CHEAP? STRUCTURES AND STRATEGIES TO ENGAGE LEARNERS WITH MATHEMATICS AND FOSTER MATHEMATICAL LITERACY FOR ALL

10:45 AM–11:45 AM | Roosevelt 3A | Strand 1 | K–5 Elementary

In order for every student to become mathematically literate, they must be fully engaged in mathematics every day. Daily mathematics discourse provides an opportunity to build students' reasoning and apply mathematical language and syntax, key components of mathematical literacy. In this interactive session, participants will explore structures and strategies to help every student engage in meaningful mathematical discourse and leave with concrete ideas for supporting teachers in building mathematical literacy in every student.

Dennis McDonald, Howard County Public Schools, Ellicott City, Maryland

Michele Glenn, Howard County Public Schools, Ellicott City, Maryland

COACHING PLCS TO MOVE BEYOND ADMIRING DATA

10:45 AM–11:45 AM | Roosevelt 3B | Strand 2 | 6–12 Secondary

Data plays a key role in meeting the needs of today's diverse student population. Many PLC teams look at data, but are they using it to change practice? Participants will see how to effectively lead a PLC team through a data protocol in order to differentiate instruction. Come experience a data cycle moving through the stages of understanding, analyzing, looking at root causes and responding to student work.

Rachel Fruin, Independent Consulting, Chicago, Illinois

Kathleen Williams, NCUSD 203, Naperville, Illinois

NOT YOUR GRANDPARENTS' ALGEBRA: CONNECTING MATHEMATICAL CONTENT AND MATHEMATICAL PRACTICES THROUGH RICH ALGEBRAIC TASKS

10:45 AM–11:45 AM | Columbus AB | Strand 1 | 6–12 Secondary

This talk will examine some algebraic tasks from a contextual, problem-based curriculum. Evidence of students' mathematical understanding and sense making will be discussed through classroom videos, student work, and longitudinal research data. This discussion will focus on deepening understanding by how teachers can support student use of the mathematical practices as they build on prior knowledge and make visible new concept connections.

Elizabeth Phillips, Michigan State University, East Lansing, Michigan

Yvonne Slanger-Grant, Michigan State University, East Lansing, Michigan

COACHING FOR EQUITY: COMMIT TO TRANSFORMING MATHEMATICS LESSONS FOR ENGLISH LANGUAGE LEARNERS

10:45 AM–11:45 AM | Columbus CD | Strand 2 | K–5 Elementary

Roughly three-fourths of all U.S. classrooms have at least one English Language Learner. We will consider what research says about providing these students with access to high-quality mathematics content and instruction. Through examples, we will discuss and reflect on several tools coaches can utilize during coaching cycles that make content accessible and provide structure for communication. These distinctive strategies support a focus on the use of concrete and visual materials as well as comprehensible input.

Julie Dill, Wicomico County Board of Education, Salisbury, Maryland

MATHEMATIZE IT! BUILDING A SYSTEMIC PLAN TO ENCOURAGE EARLY PROBLEM-SOLVING AND MATHEMATICAL MODELING CAPACITY ACROSS GRADES K-8

10:45 AM–11:45 AM | Columbus EF | Strand 3 | 3–8 Upper Elementary/Middle

What does it mean to see the world through a uniquely human mathematical lens—to mathematize? Mathematizing is a foundational skill for translating real world situations into mathematical models. Mathematizing requires a robust understanding the work of the four operations (+ – x ÷). Join us to plan a systemic approach to consistent language about the problem types and appropriate use of representations so that students learn to mathematize and develop understanding of the operations.

Sara Moore, ORIGO Education, Earth City, Missouri

Kimberly Morrow-Leong, George Mason University, Fairfax, Virginia

Linda Gojak, Mathematics Consultant, Willowick, Ohio

BEYOND "ISLANDS OF HOPE": STRUCTURES FOR IMPROVING MATHEMATICS TEACHING AND LEARNING ACROSS A SYSTEM

10:45 AM–11:45 AM | Columbus G | Strand 3 | 6–12 Secondary

We are unlikely to fulfill our profession's calling for equity when our reform efforts allow us to be content with "islands of hope," or pockets of great teaching. Each and every student deserves to have consistently high-quality classroom experiences. In this session, we describe the structures our district has used to advance mathematics teaching and learning across our entire system. We will share a timeline for change, as well as successes and challenges.

Abi Leaf, Escondido Union High School District, Escondido, California

Bryan Meyer, Escondido Union High School District, Escondido, California

Brian Lawler, Kennesaw State University, Kennesaw, Georgia

DISCOURSE AND MATHEMATICAL ARGUMENTATION IN PRIMARY GRADES: BUILDING CAPACITY THROUGH INSTRUCTIONAL ROUTINES

10:45 AM–11:45 AM | Columbus H | Strand 1 | PK–2 Primary

Do you support elementary teachers through professional development in the area of discourse and mathematical argumentation? This session focuses on leveraging instructional routines to open opportunities for argumentation, which consists of the layers of noticing and wondering, conjecturing, justifying, and sharing. Participants will learn about the connection between the layers and instructional routines, how to support teachers as they incorporate instructional routines and argumentation, and guiding questions to ask at each layer of argumentation.

Chepina Rumsey, Kansas State University, Manhattan, Kansas

Jody Guarino, Orange County Department of Education, Costa Mesa, California

COACHING MATHEMATICS TEAMS—WHICH ACTIONS PRODUCE RESULTS?

10:45 AM–11:45 AM | Columbus IJ | Strand 2 | General

Teachers working in collaborative teams can greatly impact student learning. How does a mathematics coach work with teams to strengthen the learning of both teachers and students? What are the foundational team actions required to do the work well? How do protocols help teams make sense of standards, design common assessments, and analyze data and respond? A coach is a key part of building team and teacher capacity to plan for and analyze student learning.

Sarah Schuhl, Math Coach and Author, Gresham, Oregon

TEACHERS AND MATH COACHES CAN'T DO IT ALONE! COACHING SCHOOL ADMINISTRATORS TO NURTURE SHIFTS IN MATHEMATICS INSTRUCTION AT THEIR SCHOOL

10:45 AM–11:45 AM | Columbus KL | Strand 2 | PK–2 Primary

Teaching for understanding is not about thinking outside the box. It's about changing the box itself. Helping administrators harness their essential role in supporting shifts in mathematics instruction at their school. Examine a planning conversation around a math experience and develop a plan for a reflecting conversation based on student work to support teacher growth. Leave with tools for how to support ongoing teacher development around mathematics embedded within the school day.

Rebeca Itzkowich, Erikson Institute, Chicago, Illinois

Veronica Castro, Erikson Institute, Chicago, Illinois

Daley Chen, Latin School of Chicago, Chicago, Illinois

Patrick Hewett, Latin School of Chicago, Chicago, Illinois

Julie Brookes, Latin School of Chicago, Chicago, Illinois

12:00 PM–1:30 PM

WEDNESDAY LUNCHEON

ROUTINES AND TEACHER MOVES THAT ENGAGE STUDENTS IN LEARNING

12:00 PM–1:30 PM | Grand Ballroom CD South & EF | General

Join us as we share manageable routines and teacher moves that can be implemented immediately to help teachers engage students in their learning, making connections, and better retaining what they learn. You'll leave with materials that include best practices and cautions that you can use to guide your classroom coaching.

Grace Kelemanik, Amy Lucenta, Danielle Curran, Curriculum Associates, Billerica, Massachusetts

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1:45 PM–2:45 PM

Major Presentation

CREATING INTERESTING WAYS FOR STUDENTS TO BE RIGHT AND WRONG

1:45 PM–2:45 PM | Columbus IJKL | Strand 1 | General

Correct math depends on right answers. But meaningful math celebrates both right and wrong answers, allowing students to intrepidly explore and express their reasoning in varied and interesting ways. In this session, we'll examine high- and low-tech ways for teachers to celebrate diverse work and build on student thinking in every form.

Desmos CEO **Eli Luberoff's** two dueling loves are learning and programming. He combined those loves in Desmos, a math technology company used by millions of students and teachers around the world. Before Desmos, Eli founded and sold a tutoring software platform, and studied Math and Physics at Yale, where he graduated Summa Cum Laude with distinction in both majors. When not glued to his computer, Eli blows off steam by playing piano or kicking around a soccer ball -- both mostly at random.

Eli Luberoff, Desmos, San Francisco, California

Presider, Sue Vohrer, NCSM E2 Regional Director, Towson, Maryland

WEDNESDAY SESSIONS

Spotlight Speaker

BLUNT OBSERVATIONS AND PRACTICAL STRATEGIES FOR ORCHESTRATING FAR MORE IMPACTFUL PD IN MATHEMATICS

1:45 PM–2:45 PM | Columbus CDEF | Strand 3 | General

It is clear that what passes for PD of teachers of mathematics is seriously under performing. Rarely does typical PD change teacher knowledge or classroom practice, which is why it so rarely improves student achievement. This session will take a careful look at why this is so and how we need to make accessible but radical changes in what passes for PD and what has a much more likely chance of improving student achievement.

Steve Leinwand, American Institutes for Research, Washington, District of Columbia

Presider, Katey Arrington, NCSM S2 Regional Director, Austin, Texas

PROBLEMS WITH PLACEMENT TESTS: RIGOR AND EQUITY

1:45 PM–2:45 PM | Michigan 1A | Strand 3 | General

Many districts use placement tests. These seemingly straightforward tools are meant to help provide information to decide what course would be the best fit for each student. We will make a case that instead of helping these tests often cause far more harm than good. We will show how they undermine the rigor of programs, lack validity, and amplify inequities. We will discuss some viable alternatives.

Patrick Callahan, Callahan Consulting, Coronado, California

WE KNOW COACHING WORKS, BUT HOW DO YOU BUILD AN IMPACTFUL AND SUSTAINABLE COACHING PROGRAM ACROSS MULTIPLE DISTRICTS?

1:45 PM–2:45 PM | Michigan 1B | Strand 2 | General

The research shows that job-embedded instructional coaching is more powerful in changing teacher practice than traditional professional learning. However, there are many factors to consider in building a coaching model from the ground up. In this session, we will discuss how we considered the needs of individual districts, research from coaching experts, and sustainability to build and improve our coaching program over the last three years.

Tara Becker-Utess, Ingham ISD, Mason, Michigan

Jennifer Bricarell, Ingham ISD, Mason, Michigan

GREAT CURRICULUM IS NOT ENOUGH: STRATEGIES FOR OVERCOMING IMPLEMENTATION CHALLENGES

1:45 PM–2:45 PM | Michigan 1C | Strand 1 | 6–8 Middle

New curricula are often seen as magic bullets: giving teachers the right tool should lead to student learning, right? However, many schools face unexpected challenges when they begin using a new curriculum. This session will present research into why better curricula don't necessarily lead to increased achievement, and what leaders can do about it.

Stephen Sebelski, UnboundEd, Brooklyn, New York

Rolanda Baldwin, UnboundEd, Greensboro, North Carolina

INCREASE LEARNING POWER WITH PROBE POWER!

1:45 PM–2:45 PM | Michigan 2 | Strand 4 | K–5 Elementary

Misconceptions are a natural part of the learning process, right? But, how can they be uncovered in a safe and engaging way that informs and increases learning power? This session will showcase a fresh approach to formative assessments. Probes coach us to listen to our students, foster curiosity, boost social-emotional and growth-mindsets! Participants will walk away with their own "Probe Power" Toolkit.

Toni Osterbuhr, McGraw Hill Education, Wichita, Kansas

A DEEPER LOOK: RE-ENGAGEMENT FOR PRIMARY LEARNERS

1:45 PM–2:45 PM | Michigan 3 | Strand 1 | PK–2 Primary

Re-Engagement gives all learners the chance to look at past work from a different angle. By examining and responding to actual student work samples, students who struggled the first time around get another chance to consider the mathematics and successful students get the chance to make sense of solution paths different from their own. Strategies for analyzing student work, choosing and ordering student work samples, and facilitating rich re-engagement lessons will be highlighted. Authentic student work will be featured.

Tracy Sola, Silicon Valley Mathematics Initiative, Morgan Hill, California

SENSE-MAKING, THE ULTIMATE INTERVENTION

1:45 PM–2:45 PM | Randolph 1A | Strand 1 | 6–12 Secondary

A common but misguided intervention for struggling students is to remove the mathematics from a context and focus on procedures. This practice prevents students from relying on logic and using their own reasoning abilities to do math. Struggling students need a contextual framework the most. Students work and video will support this assertion.

Janet Sutorius, Mathematics Vision Project, Murray, Utah

BUILDING A COMMUNITY OF COACHES: ONGOING PROFESSIONAL LEARNING TO SUPPORT REFLECTIVE AND EVOLVING COACHING SYSTEMS

1:45 PM–2:45 PM | Randolph 1B | Strand 2 | General

"It is crucial that the support we hope to give to students and teachers through the coaching is also provided to the coaches" (West, 2007). Learn how we created a coaching learning community in an effort to build the capacity of mathematics coaches in our region. In this session, we will share collaborative experiences our coaches engaged in to deepen their understanding of coaching and how it impacts the teaching and learning of mathematics.

Jennifer Kruger, University of Rochester, Rochester, New York

Melissa Staloff, University of Rochester, Rochester, New York

Stephanie Martin, University of Rochester, Rochester, New York

COACHING THE MATHEMATICIAN

1:45 PM–2:45 PM | Randolph 2 | Strand 3 | General

More authentic K-12/University partnerships must emerge to support pre-service teachers to cultivate positive mathematical identities and develop agency as elementary mathematics teachers. We envisioned a novel partnership in which a coach and a university mathematics instructor met weekly to collaboratively plan for a content course for pre-service teachers. We examined coaching moves that were present in our weekly conversations, and how those coaching moves impacted the teaching practice of the mathematics instructor.

Rachelle Farmer, Fairfax County Public Schools, Falls Church, Virginia

Joanna Jauchen, George Mason University, Fairfax, Virginia

ENSURING HIGH-QUALITY MATHEMATICS INSTRUCTION FOR STUDENTS WITH DISABILITIES

1:45 PM–2:45 PM | Randolph 3 | Strand 1 | General

Providing high-quality mathematics instruction to ALL students means including those with special needs and IEPs too! Join us as we share best practices for adapting common mathematics routines to support sense-making in students with learning challenges and consider how administrators and leaders can guide the process for doing so. This session is appropriate for teachers and mathematics leaders of ALL grade levels.

Jamie Garner, Stanislaus County Office of Education, Modesto, California

Duane Habecker, Merced County Office of Education, Merced, California

WHEN CONTENT IS NOT ENOUGH: CLARITY IN LEARNING INTENTIONS

1:45 PM–2:45 PM | Roosevelt 3A | Strand 1 | K–5 Elementary

Learners are included when they truly understand what success looks like. Join us to learn to craft learning intentions which provide clarity & direction for learners. It's about the math AND about how we help students interact with the math.

Andrea Kotowski, ORIGO Education, Earth City, Missouri

Sara Moore, ORIGO Education, Earth City, Missouri

MEETING THE NEEDS OF DIVERSE LEARNERS: IDENTIFYING LANGUAGE DEMANDS AND INSTRUCTIONAL GOALS TO DESIGN MATH LESSONS

1:45 PM–2:45 PM | Roosevelt 3B | Strand 1 | PK–2 Primary

To meet the needs of English language learners in developing their mathematical understanding and communication of thinking, teachers need to determine the linguistic demands of their lessons. Participants engage in a method for doing this as they experience a lesson designed for native English speakers and reflect on the language they had to understand and use for success. Participants learn that determining linguistic demands of a math lesson helps identify barriers for English language learners.

Brenda Konicke, Math Solutions, New York, New York

Deepa Bharath, Math Solutions, Boston, Massachusetts

CHANGING THE STORY: USING MATH WORKSHOP TO HELP TEACHERS AND STUDENTS REACH THEIR FULL POTENTIAL

1:45 PM–2:45 PM | Columbus AB | Strand 1 | 3–8 Upper Elementary/Middle

How can we 'change the story' for students who don't participate or suffer from math anxiety? Math workshop allows teachers to differentiate for the varying needs in classrooms and creates an environment where students feel less anxious, take risks, engage in discourse, and aren't afraid to participate. This session explores how moving to a workshop model is best for teachers and students by creating a space for small group instruction, meaningful learning tasks, and reflection.

Jennifer Lempp, Fairfax County Public Schools, Fairfax, Virginia

Skip Tyler, Henrico County Public Schools, Richmond, Virginia

CREATING CLARITY, BUILDING CAPACITY, GROWING LEADERS: ONE DISTRICT'S STORY OF CHANGE

1:45 PM–2:45 PM | Columbus G | Strand 3 | K–5 Elementary

As mathematics leaders, ensuring clarity of expectations for those we support can be challenging. Come learn about one district's efforts to implement structures that support high quality mathematics teaching and learning through collaborative teams. Learn how these teams were supported with professional learning experiences that built capacity and developed leaders. Leave with ideas on how to implement these tests of change in your own school or district.

Susan Loveless, Rutherford County Schools, Murfreesboro, Tennessee

USING MANIPULATIVES TO ASSESS STUDENT UNDERSTANDING OF GEOMETRY

1:45 PM–2:45 PM | Columbus H | Strand 1 | 3–8 Upper Elementary/Middle

Mathematics leaders will engage in meaningful tasks, which provide opportunities to sort, classify, and organize geometric shapes into a concept matrix. They will defend their reasoning and justify their responses, while using the five practices of productive discussion. This session supports diverse learners by building their mathematical literacy through defining geometric figures by their sides and angles, finding similarities and congruence, and using precise terminology.

Barbara Post, Retired, Orange, California

Nita Walker, Cal State Fullerton, Fullerton, California

3:00 PM–4:00 PM

HOW TO HELP STUDENTS BECOME PROBLEM SOLVERS, NOT MATH ROBOTS

3:00 PM–4:00 PM | Columbus AB | Strand 1 | 6–12 Secondary

If your teachers' students seem like they understand… until teachers see their test scores, then you should introduce teachers to problems with open middles. They help teachers clearly see what their kids know, unlock student thinking, and have them begging for more.

Robert Kaplinsky, Robert Kaplinsky, Long Beach, California

Presider, Pat Baltzley, NCSM Marketing and eNews Editor, Gardiner, Montana

LIMITLESS: LEARN, LEAD AND LIVE WITHOUT BARRIERS

3:00 PM–4:00 PM | Columbus IJKL | Strand 4 | General

Recent years have seen an explosion of scientific evidence showing that there is a different way to learn, lead and live, available to us all. When people take a limitless approach to learning—in mathematics and in life—different pathways open up, leading to higher, more equitable and more enjoyable achievement. Mindset messages are important but they do not take root unless they are accompanied by a different approach to content and life. In this session we will consider what this different approach is. We will think together about ways to learn, lead and live without barriers.

Jo Boaler, Stanford University, Stanford, California

Presider, Sandy Gilliam, NCSM Newsletter Editor, Colorado Springs, Colorado

CAN THE WHOLE SCHOOL AGREE? TERMS? NOTATION? RULES? MODELS?

3:00 PM–4:00 PM | Columbus CDEF | Strand 3 | General

Can you confirm that everyone in your school is using the same terms or notation? Can you be assured that students see the building of the use of models over the years—like number lines? Are you confident that instruction focuses on a consistent plan across the grades without any emphasis on rules that expire? Join us to hear more about helping students see the regularity of mathematics when we teach as a team.

Karen Karp, Johns Hopkins University, Baltimore, Maryland

Sarah Bush, University of Central Florida, Orlando, Florida

Barbara Dougherty, University of Hawaii, Honolulu, Hawaii

Presider, Connie Schrock, NCSM Immediate Past President, Emporia, Kansas

NOTES

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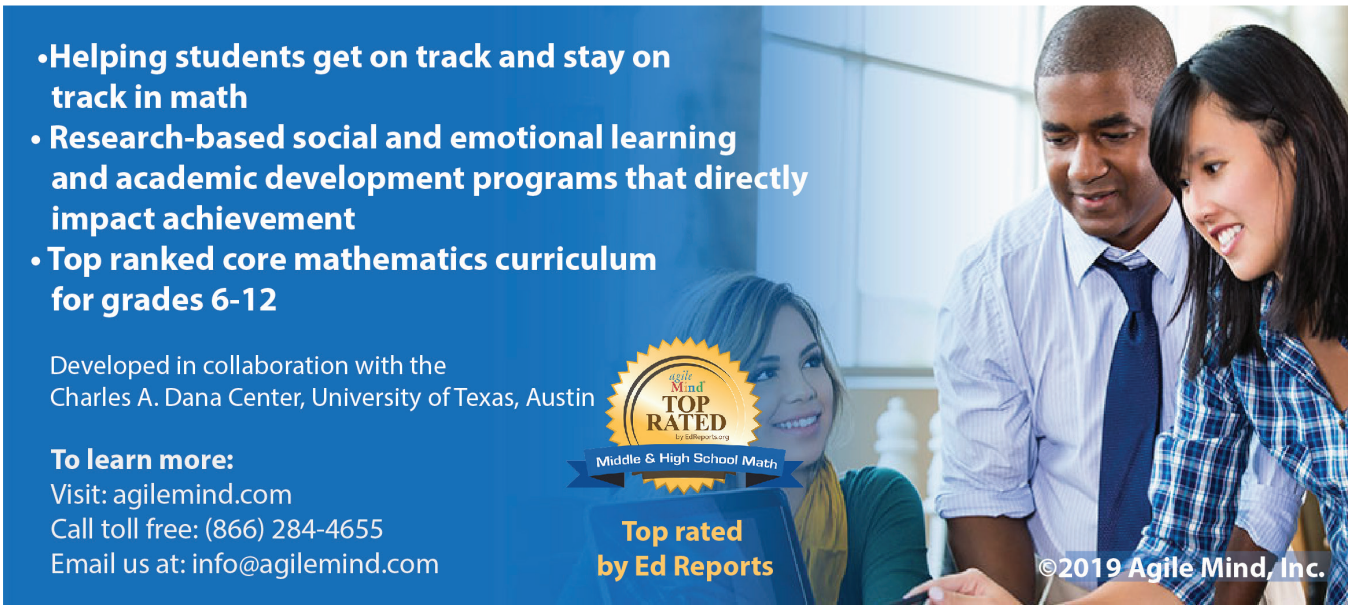

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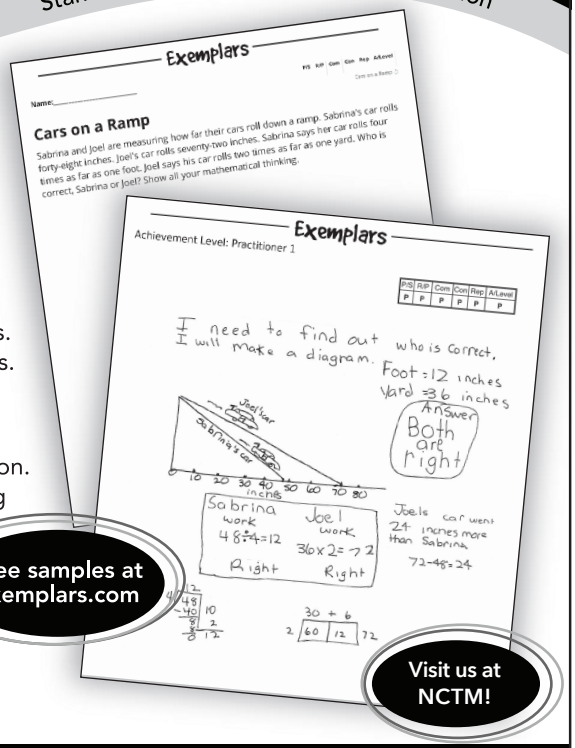

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NCSM MISSION

NCSM is a mathematics education leadership organization that equips and empowers a diverse education community to engage in leadership that supports, sustains, and inspires high-quality mathematics teaching and learning every day for each and every learner.

NCSM VISION

NCSM is the premiere mathematics education leadership organization. Our bold leadership in the mathematics education community develops vision, ensures support, and guarantees that all students engage in equitable, high-quality mathematical experiences that lead to powerful, flexible uses of mathematical understanding to affect their lives and to improve the world. High quality leadership is vital to this vision. NCSM is committed to:

Developing and Informing Vision

- Provide leadership to influence issues and policies affecting mathematics education in ways consistent with the mission and vision of NCSM;
- Equip leaders to be critical consumers of educational information, research, and policy to become change agents in their communities;
- Support leaders to develop an actionable vision of mathematics instruction consistent with a view of mathematics as a sense-making endeavor.

Ensuring Support to All Stakeholders

- Develop networking and communication opportunities that connect the mathematics education community, as well as the broader education community;
- Equip leaders with the tools to create and sustain systems that fully align with the vision of mathematics and mathematics instruction promoted by NCSM;
- Equip leaders with the understanding, knowledge, and skills to continue their own personal growth, support emerging leaders, and further develop excellence in mathematics teaching.

Guaranteeing All Students Engage in Equitable, High-Quality Mathematical Experiences

- Provide advocacy and support regarding issues and policies affecting mathematics education in ways consistent with the mission and vision of NCSM;
- Provide resources for implementation of research-informed instruction to ensure students engage in relevant and meaningful learning experiences that promote mathematics as a sense-making endeavor;
- Advocate for each and every student to have access to rigorous mathematics that develops their understanding, skills, and knowledge, along with the confidence to leverage their learning, in order to improve their world.

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Sharon Rendon, Rapid City, SD

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Amy E. Reid, Seattle Public Schools, Seattle, WA
Kim Romain, CGIMath Teaching Learning Center, Little Rock, AR
Laurie Speranzo, University of Pittsburgh, Pittsburgh, PA

NCSM GRANTS, AWARDS, AND CERTIFICATES

SUPPORT THE NCSM IRIS CARL TRAVEL GRANT FUND

This award will be available for the 2020 Bold Leadership Summit in St. Louis. The NCSM Iris Carl Mathematics Travel Grant endows up to three travel grants per year to NCSM members who have not attended an NCSM conference for the past three years. The deadline for applications for the 2020 Iris Carl Grant to the NCSM Summit is June 1, 2020.

The fund is supported by generous donations from individuals. To support the fund, **you may use the QR code to donate via the Facebook Fundraiser or you** can mail a check in any amount payable to: NCSM Charitable Trust and mail to: Linda Griffith, NCSM Treasurer, PO Box 3406, Englewood, CO 80155. Information about the Iris Carl Grant for Travel and an application form are available on the NCSM Website, www.mathedleadership.org.

ROSS TAYLOR/GLENN GILBERT NATIONAL LEADERSHIP AWARD

Nominations are open for the Ross Taylor/Glenn Gilbert National Leadership Award. Any member of NCSM may submit a nomination. The Ross Taylor/Glenn Gilbert National Leadership Award annually recognizes an individual who has demonstrated leadership in, and has made outstanding, unique, and dedicated contributions to the field of mathematics education. Award criteria and nomination procedures are available at mathedleadership.org. The deadline for nominations for the 2021 Award is May 1, 2021.

KAY GILLILAND EQUITY LECTURE SERIES AWARD

Nominations are open for the 2020 Kay Gilliland Equity Lecture Series. Any member of NCSM may submit a nomination. This award is given annually to an outstanding mathematics educator who has made a significant and lasting contribution to the cause of promoting equity achievement in mathematics education. The lecture series serves to acknowledge and honor Kay Gilliland's service to NCSM and to promote the cause of equity in mathematics education in perpetuity. Award criteria and nomination procedures are available at mathedleadership.org. The deadline for nominations for the 2021 Award is April 1, 2021.

MATHEMATICS STUDENT RECOGNITION AWARD

The Mathematics Student Recognition Program was created to provide a means for honoring outstanding students who excel in the study of mathematics. All public, parochial, and private schools, colleges, and universities that have at least one NCSM member in the area are eligible to participate. The number of awards should not exceed two per year per graduating class or grade level. Award certificates are available at Conference Registration Area or may be ordered from NCSM Office, PO Box 3406, Englewood, CO 80155, (303) 317-6595, office@mathedleadership.org. More information about the Student Recognition Awards is available at www.mathedleadership.org.

ROSS TAYLOR/GLENN GILBERT NATIONAL LEADERSHIP AWARD

Previous Ross Taylor/Glenn Gilbert Awardees

2019	Gail Burrill	2000	Francis (Skip) Fennell
2018	Diane Briars	1999	F. Joe Crosswhite
2017	Tim Kanold	1998	Robert B. Davis
2016	Philip Uri Treisman	1997	Frankin Demana and Bert Waits
2015	Steve Leinwand	1996	Marilyn Burns
2014	Phil Daro	1995	James D. Gates
2013	Kay Gilliland	1994	Zalman P. Usiskin
2012	Carol Edwards	1993	Dale Seymour
2011	Carole Greenes	1992	Iris M. Carl
2010	Mark Driscoll	1991	Dorothy S. Strong
2009	Solomon Garfunkel	1990	Stanley J. Bezuszka
2008	James M. Rubillo	1989	David R. Johnson
2007	Glenda T. Lappan	1988	Tom Rowan
2006	L. Carey Bolster	1987	Al Shulte
2005	Charleen Mitchell DeRidder	1986	Shirley Frye
2004	Irvin E. Vance	1985	Ross Taylor
2003	Mary Laycock	1984	Alexander Tobin
2002	Miriam A. Leiva	1983	John Del Grand
2001	Margaret (Peg) Kenney		

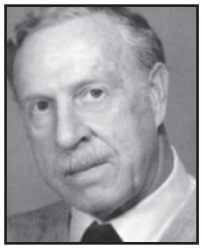
HISTORY OF THE AWARD

In 1982, the Glenn Gilbert Award was first established to honor its namesake and to provide a vehicle to annually recognize a person who exhibited the same kind of unique and dedicated contributions to mathematics education.

In 1995, the name of the award was changed to the "Glenn Gilbert National Leadership Award" to further recognize Glenn's legacy and capture the respect and stature that the award symbolizes within the mathematics education community.

In 2009, the award was renamed the "Ross Taylor / Glenn Gilbert National Leadership Award" to further exemplify the prestige of this national recognition and to further distinguish the unique dedication and contribution of its recipients.

The Ross Taylor/Glenn Gilbert nomination and criteria can be found at mathedleadership.org. Nominations are opened through May 1, 2021.



Glenn Gilbert

NCSM is an organization whose membership is made up of leaders in the field of mathematics education. One of those members who gave especially of his time and energy was Glenn Gilbert. He was a mathematics teacher and leader from Boulder, Colorado. Glenn was a mathematics teacher and mathematics supervisor for many years. He was a long time member of NCSM and served as NCSM Treasurer and Board Member from 1976 until his untimely death in 1981. In 1982, NCSM President at the time, Shirley Frye, wrote, "One of the special benefits of a professional organization is the association with unique individuals who set a standard of quality. Glenn Gilbert was such a person! He exemplified the respected mathematics educator who loves his/her work and students. Glenn's positive attitude supported his beliefs that students can succeed and that teaching is a reward. His leadership will be recognized and remembered in NCSM."

Ross Taylor

Bennett "Ross" Taylor was a part of the heart and soul of NCSM for the past 4 decades, a "Leader of Leaders" in mathematics education, and a driving force behind the birth of NCSM. Ross led the first planning and organizational meeting of NCSM in Minneapolis in 1969 and served as the second President of the organization from 1971–1973. When mathematics education was faced with a national "basic skills" movement, he led the 1976 development of an NCSM Position Paper, New Basic Skills, which redefined basic skills to include problem solving and the use of calculators.

Ross's legacy lies in the hearts, minds, and actions of all who benefited from his leadership, his work, his actions, his passion, his purpose, his voice, and from his courage. The NCSM Board, with the support of the NCSM Past Presidents, honored Bennett "Ross" Taylor's immense contributions to NCSM by renaming its most prestigious award, the Ross Taylor/Glenn Gilbert National Leadership Award. Announced on the last day of the 2009 NCSM Annual Conference, the newly named award was presented beginning with the 42nd NCSM Annual Conference.

NCSM AFFILIATES

Central 1:	Illinois Council of Teachers of Mathematics (ICTM) Michigan Council of Teachers of Mathematics (MCTM) Michigan Mathematics Consultants and Coordinators (M2C2)
Central 2:	Missouri Council of Supervisors of Mathematics (MoCSM) North Dakota Council of Teachers of Mathematics (NDCTM)
Eastern 1:	Associated Teachers of Mathematics in Connecticut (ATOMIC) Association of Mathematics Teachers of New York State (AMTNYS) Association of Teachers of Mathematics in Maine (ATOMIM) Association of Teachers of Mathematics in New England (ATMNE) Boston Area Mathematics Specialists (BAMS) Nassau County Association of Mathematics Supervisors (NCAMS) New Hampshire Teachers of Mathematics (NHTM) New York State Association of Mathematics Supervisors (NYSAMS) Rhode Island Mathematics Teachers Association (RIMTA) Vermont Council of Teachers of Mathematics (VCTM)
Eastern 2:	Association of Mathematics Teachers of New Jersey (AMTNJ) Delaware Mathematics Coalition (DMC) Maryland Council of Supervisors of Mathematics (MCSM) New Jersey Association of Mathematics Supervisors and Leaders (NJAMSL)
Southern 1:	Florida Association of Mathematics Supervisors (FAMS) Georgia Council of Supervisors of Mathematics (GCSM) South Carolina Leaders of Mathematics Education (SCLME)
Southern 2:	Arkansas Association of Mathematics Leaders (AAML) Mississippi Mathematics Specialists Network (MMSN) Texas Association of Supervisors of Mathematics (TASM) Texas Council of Teachers of Mathematics (TCTM)
Western 1:	Arizona Mathematics Leaders (AML) Colorado Mathematics Leaders (CML) Nevada Mathematics Education Leadership Council (N-MELC)
Western 2:	California Mathematics Council (CMC) Oregon Council of Teachers of Mathematics (OCTM) Teachers of Teachers of Mathematics (Oregon – TOTOM)
Canada:	Ontario Mathematics Coordinators Association (OMCA) British Columbia Association of Mathematics Teachers (BCAMT)
National:	Council of Presidential Awardees in Mathematics (CPAM) Women and Mathematics Education (WME)

Join us during the conference to connect with your local affiliate, share your affiliate's activities, or learn how to organize an affiliate.

Look for the Membership Information Table in the Registration/Sponsor Display Area: Check the sign to see if your organization is an NCSM affiliate and then grab an affiliate ribbon if it is.

Meet with NCSM Affiliate Coordinator and NCSM affiliate leaders (by invitation) on Monday, March 30 from 7:00 am–8:00 am.

See NCSM acknowledge our affiliates at the Tuesday, March 31 Luncheon.

Attend the Business Meeting on Tuesday, March 31 at 4:30 pm–5:00 pm.

This list reflects affiliates as of January 1, 2020. If your mathematics organization is interested in organizing an affiliate in your area, contact the 2019–2021 NCSM Affiliate Coordinator, Nanci Smith, nsmith@mathedleadership.org. You can also find helpful information and application forms in the ***Affiliates*** section of the NCSM Website at *www.mathedleadership.org*.

NCSM JOURNAL OF MATHEMATICS EDUCATION LEADERSHIP

The purpose of the *Journal of Mathematics Education Leadership* is to advance the mission and vision of the National Council of Supervisors of Mathematics by disseminating knowledge related to research, issues, trends, programs, policy, and practice in mathematics education and relevant to leaders in mathematics education.

In addition, the journal aims to foster inquiry into key challenges of mathematics education leadership, raise awareness about key challenges of mathematics education leadership, and engage the attention and support of other education stakeholders in order to broaden as well as strengthen mathematics education leadership. Manuscripts should fit within one or more of the following categories.

- Key topics in leadership and leadership development
- Case studies of mathematics education leadership work in schools and districts or at the state level and the lessons learned from this work
- Reflections on what it means to be a mathematics education leader and what it means to strengthen one's leadership practice
- Research reports with implications for mathematics education leaders
- Professional development efforts including how these efforts are situated in the larger context of professional development and implications for leadership practice

Across each of these categories, evidence of the impact of the work is expected along with connections to the existing knowledge base. In addition, manuscripts should be consistent with the *NCTM Principles and Standards* and should be relevant to *NCSM* members. In particular, manuscripts should make clear to mathematics leaders the implications of its content for their leadership practice.

The *JMEL* uses a double-blind review process. Manuscripts are reviewed by at least two volunteer reviewers and a member of the editorial panel. Reviewers are chosen on the basis of their expertise related to the content of the manuscript and are asked to evaluate the merits of the manuscripts according to the guidelines listed above.

Manuscripts should be formatted according to the guidelines of the *Publication Manual of the American Psychological Association* (6th edition).

Manuscripts should be submitted via e-mail to *ncsmJMEL@mathedleadership.org*. Submissions should include:

- A word file with the body of the manuscript without any author identification;
- A word file with author information; and
- An abstract of no more than 300 words.

Manuscripts may be submitted at any time, although deadlines of January 1st and July 1st are established to support timely review and publication.

Carolyn Briles, Editor

IMPORTANT FUTURE NCSM DATES

FUTURE NCSM CONFERENCES

ANNUAL NCSM SUMMER LEADERSHIP ACADEMY
June 29–July 1, 2020, Baltimore, MD

NCSM 2020 Bold Leadership Summit
October 19–21, 2020, St. Louis, MO

53rd NCSM Annual Conference
September 20–23, 2021, Atlanta, GA

54th NCSM Annual Conference
September 25–28, 2022, Anaheim, CA

Visit *www.mathedleadership.org* for more details.

NCSM COMMUNICATIONS

NCSM INSPIRATION
The NCSM Inspiration promotes networking and collaboration among NCSM members and other stakeholders in the education community and welcomes submissions from members. The purpose of the *NCSM Inspiration* is to advance the mission and vision of NCSM by informing the membership of the ongoing activities of the NCSM Board and by publishing current information about issues, trends, programs, policy, and practices in mathematics education.

The *NCSM Inspiration* is published electronically four times a year—fall, winter, spring, and summer. Each issue is emailed to all NCSM members and access to all issues is available on our website. You will be prompted to log in with your membership information when clicking on an issue.

Deadlines for Submissions
Fall 2020 NCSM Inspiration—July 1, 2020
Winter 2020 NCSM Inspiration—September 1, 2020
Spring 2021 NCSM Inspiration—December 1, 2020
Summer 2021 NCSM Inspiration—March 1, 2020
Please visit *mathedleadership.org* for more information and submission procedures.

NCSM INSIDER
The NCSM Insider is published monthly. It provides the NCSM community with current happenings for both the NCSM organization and mathematics education.

NCSM WEBINARS
Visit *mathedleadership.org/events/webinars* for future Webinar topics and dates. Previous Webinars are available at this link to view any time after they have posted.

NCSM EVENTS ARCHIVE
We have handouts, PowerPoints, materials, etc. from conferences, leadership academies, and fall seminars on our website at: *mathedleadership.org/events/conferences/index.* You may want to refer to this section to support your leadership work.

GET CONNECTED THROUGH NCSM'S SOCIAL MEDIA NETWORKS
Whether you are a newbie to technology, or one who could not teach, work, or live without it, sooner or later you may find yourself participating in one or more online social networks. There are many web tools and web sites that allow mathematics education leaders to connect, share and collaborate with one another. These tools are part of the Internet's social networking landscape, and provide a means for leaders to build and maintain communities of practice. In an effort to harness the power of these collaborative opportunities to help connect its membership with rich conversations, NCSM participates in several social networking services.

Links to these conversations from the Get Connected tab on our website *mathedleadership.org/networks/index.*

NCSM POSITION PAPERS

The NCSM Board proudly offers our membership the *Improving Student Achievement Position Paper* series that can be found at *www.mathedleadership.org/resources/position.* We hope these papers are informative, supportive and challenging as our members lead efforts in their local districts to improve student achievement in mathematics.

The process of developing research-informed leadership *Position Papers* on issues critical to the future of mathematics education began in the summer of 2006. Past President, Steven Leinwand, strongly recommended that the Board provide a long-term series of practical, research-informed *Position Papers* as part of the NCSM's strategic plan. During his presidency, Tim Kanold pursued the initiative and created the following format for all position papers:

- The stated Position of
- A summary of research that supports the Position
- Specific leadership actions to assist implementation of the Position
- References that support further investigation into the Position

The process for developing each paper begins with identifying an author to create an initial draft on a specific topic. The draft is edited and sent out to individuals for critique. The paper is revised based on that feedback, returned to the author, and sent to *NCSM*'s Board of Directors for review. The paper undergoes a final edit and then is submitted again to the Board for approval. This extensive and collaborative process reflects our collective voices and contributes to the power of these position papers. NCSM expresses its thanks and appreciation to all who have contributed to this series. We welcome suggestions for future papers, as well as volunteers to write or review.

Current *Position Papers* include:

- *Computer Science and K-12 Mathematics* (no. 18, Spring 2018)
- *Building STEM Education on a Sound Mathematical Foundation (a joint position paper from NCSM and NCTM)* (no. 17, Spring 2018)
- *Mathematics Education Through the Lens of Social Justice: Acknowledgement, Actions, and Accountability* (A joint position paper from NCSM and TODOS) (no. 16, Spring 2016)
- *Mathematics Education in the Digital Age* (no. 15, Spring 2015)
- *Improving Student Achievement in Mathematics Through Formative Assessment in Instruction* (A joint position of AMTE and NCSM) (no. 14, Spring 2014)
- *Improving Student Achievement by Implementing Highly Effective Teacher Evaluation Practices* (no. 13, Spring 2014)
- *Improving Student Achievement by Infusing Highly Effective Instructional Strategies into RtI Tier I Instruction* (no. 12, Spring 2013)
- *Improving Student Achievement in Mathematics by Using Manipulatives with Classroom Instruction* (no. 11, Spring 2013)
- *Improving Student Achievement in Mathematics by Expanding Learning Opportunities for the Young* (no. 10, Spring 2012)
- *Improving Student Achievement in Mathematics by Expanding Opportunities for Our Most Promising Students of Mathematics*
- (no. 9, Spring 2012)
- *Improving Student Achievement in Mathematics by Systematically Integrating Effective Technology* (no.8, Spring 11)
- *The Role of Elementary Mathematics Specialist in the Teaching and Learning of Mathematics* (A joint position of AMTE, ASSM, NCSM, and NCTM in response to the release of Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Degree Programs [AMTE, 2010)](Winter, 2010)
- *Improving Student Achievement in Mathematics by Promoting Positive Self-Beliefs* (no. 7, Spring 2010)
- *Improving Student Achievement in Mathematics by Addressing the Needs of English Language Learners* (no. 6, Fall 2009)
- *Improving Student Achievement by Leading Highly Effective Assessment Practices* (no. 5, Spring 2009)
- *Improving Student Achievement in Mathematics for Students with Special Needs* (no. 4, Winter 2008)
- *Improving Student Achievement by Leading the Pursuit of a Vision for Equity* (no. 3, Spring 2008)
- *Improving Student Achievement by Leading Sustained Professional Learning for Mathematics Content and Pedagogical Knowledge Development* (no. 2, Fall 2007)
- *Improving Student Achievement by Leading Effective and Collaborative Teams of Mathematics Teachers* (no. 1, Fall 2007*)
- *A Position Paper on the Development of Numerical Power from the National Council of Supervisors of Mathematics* (September 1999)
- *Focusing the Dialogue: Suggestions for Engaging in Productive Discourse on the Future of School Mathematics, A National Council of Supervisors of Mathematics (NCSM) Position Statement* (Fall 1998)
- *Improving Student Achievement Through Designated District and School Mathematics Program Leaders* (January 1998)
- *Leadership in Mathematics Education: A Position Paper of the National Council of Supervisors of Mathematics* (1994)
- *Essential Mathematics for the 21st Century: The Position of the National Council of Supervisors of Mathematics* (June 1988)
- *National Council of Supervisors of Mathematics Position Paper on Basic Mathematical Skills* (January 1977)

*The *Position Papers* beginning in 2007 are part of The *National Council of Supervisors of Mathematics Improving Student Achievement Series*.

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Emma Treviño

Leadership: Paying Attention to What Matters; Student Thinking

Elham Kazemi, Tracy Zager

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How Do I Know What They Know?

Cathy Seeley

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- Include meals and snacks
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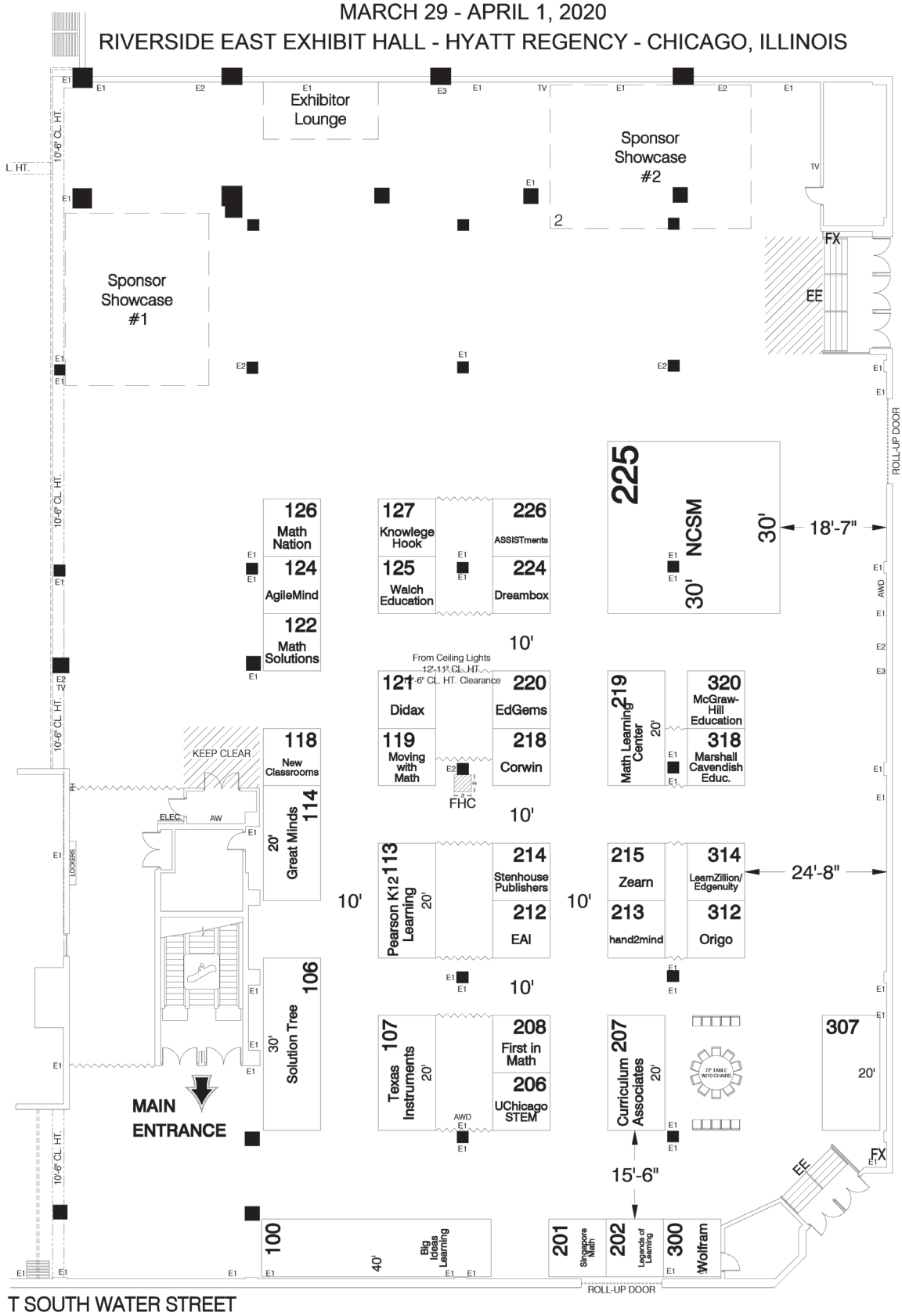

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2020 CONFERENCE PLANNER

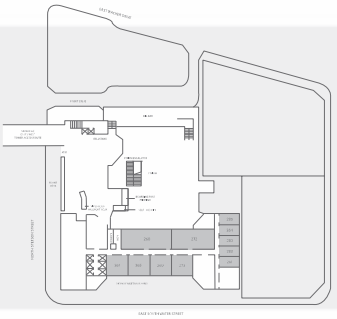
Date & Time	Event	Location
Monday, March 30		
6:45 AM–5:00 PM	**On-Site Registration**	**Grand Ballroom Foyer**
7:00 AM–7:30 AM	**First-Timer's Session – Special Gifts**	**Columbus CD**
8:00 AM–9:15 AM	**Opening Session & Keynote** – Jennie Magiera	**Grand Ballroom CD South & EF**
9:00 AM–5:00 PM	**Sponsor/Exhibitor Display Area**	**Riverside East Exhibit Hall**
9:00 AM–5:00 PM	**NCSM Bookstore, Membership Booth, & Coaches Center**	**Riverside East Exhibit Hall**
9:30 AM–10:30 AM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
10:30 AM–11:15 AM	**Special Focus on Sponsor/Exhibitors**	**Riverside East Exhibit Hall**
11:15 AM–5:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
12:30 PM–1:30 PM	**Luncheon** *(Ticket Required)*	**Grand Ballroom CD South & EF**
2:00 PM–2:30 PM	**Leadership Exchange** – Sunil Singh	**Riverside East Exhibit Hall**
3:15 PM–3:45 PM	**Leadership Exchange** – Thomasina Adams	**Riverside East Exhibit Hall**
4:30 PM–5:00 PM	**Leadership Exchange** – Chrissy Newell	**Riverside East Exhibit Hall**
5:30 PM - 7:00 PM	**Reception – Sponsored by Pearson K12 Learning** *(Ticket Required)*	**Grand Ballroom CD South & EF**
Tuesday, March 31		
6:45 AM–5:00 PM	**On-Site Registration**	**Grand Ballroom Foyer**
7:00 AM–8:00 AM	**Breakfast – Sponsored by Big Ideas Learning** *(Ticket Required)*	**Grand Ballroom CD South & EF**
8:15 AM–12:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
8:30 AM–9:00 AM	**Leadership Exchange** – Annie Fetter	**Riverside East Exhibit Hall**
8:30 AM–4:00 PM	**Sponsor/Exhibitor Display Area**	**Riverside East Exhibit Hall**
8:30 AM–4:00 PM	**NCSM Bookstore, Membership Booth, & Coaches Center**	**Riverside East Exhibit Hall**
9:15 AM –10:00 AM	**Special Focus on Sponsor/Exhibitors**	**Riverside East Exhibit Hall**
10:15 AM–10:45 AM	**Leadership Exchange** – Dan Finkel	**Riverside East Exhibit Hall**
12:30 PM–2:00 PM	**Luncheon – Sponsored by Texas Instruments** *(Ticket Required)*	**Grand Ballroom CD South & EF**
2:15 PM–3:15 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
2:30 PM–3:00 PM	**Leadership Exchange** – Peter Liljedahl	**Riverside East Exhibit Hall**
3:30 PM–4:30 PM	**Caucuses**	**Refer to Tuesday Tab for Schedule**
4:45 PM–5:15 PM	**NCSM Business Meeting & State of the Organization Report**	**Columbus G**
Wednesday, April 1		
7:00 AM–8:00 AM	**Breakfast – Sponsored by Math Solutions & NCSM** *(Ticket Required)*	**Grand Ballroom CD South & EF**
7:30 AM–10:30 AM	**On-Site Registration**	**Grand Ballroom Foyer**
8:15 AM–11:45 AM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**
12:00 PM–1:30 PM	**Luncheon – Sponsored by Curriculum Associates & NCSM** *(Ticket Required)*	**Grand Ballroom CD South & EF**
1:45 PM–4:00 PM	**Major, Spotlight, Regular, and Sponsor Showcase Sessions**	**Check Daily Summary Pages for Locations**

Schedule Planner Notes:

HYATT REGENCY CHICAGO FLOOR PLANS

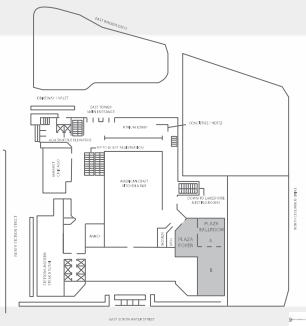
HYATT REGENCY® CHICAGO

EAST TOWER



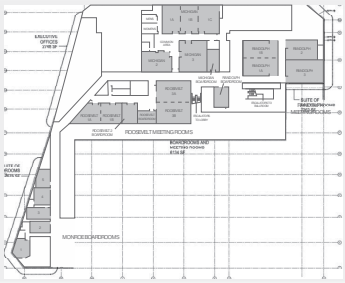
SKYWAY LEVEL

Hotel Front Desk
Bell Desk
BIG Bar
Walkway to West Tower



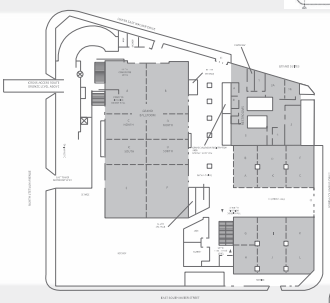
LOBBY LEVEL

American Craft Kitchen and Bar
Stetsons Modern Steak + Sushi
Market Chicago
Hotel Concierge
Hertz Car Rental



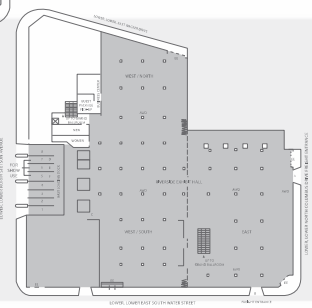
CONCOURSE LEVEL

Breakouts in Randolph, Michigan and Roosevelt meeting rooms
Hotel Gift Shop
Walkway to West Tower



BALLROOM LEVEL

Registration
Meals in Grand Ballroom CD South + EF
Major Sessions in Grand Ballroom A+C North
Spotlight Sessions in Grand Ballroom B
Breakouts in Grand Ballroom D North and Columbus Hall



EXHIBITION LEVEL

Exhibits in Riverside East
Hotel Business Center and Package Room

NCSM 2020 Professional Learning Events

2020 SUMMER LEADERSHIP ACADEMY

Join us in Baltimore, Maryland!

June 29–July 1, 2020

SAVE THE DATE!

Mathematics Leaders: Agents of Change for ALL Learners

Vision. Influence. Action.

Ready to make a real difference in the teaching and learning of mathematics for each and every learner? Bold mathematics leadership and coaching is recognized as one of the most powerful ways to build teacher capacity and increase student learning outcomes.

To meet the vision of all students learning mathematics at high levels, understanding the framework for leadership and leading strong mathematics coaching programs is key. Join us this summer to:

- EMPOWER mathematics leaders and teachers using the guiding principles and four foundational elements of the framework
- DESIGN a shared vision for mathematics instruction through an equity lens
- ADVOCATE for high leverage teaching strategies for mathematics including culturally relevant practices
- MONITOR and learn practices to ensure a system for coaching to build collective efficacy

Join us along with our professional learning directors for the NCSM Summer Leadership Academy in Baltimore, Maryland, June 29–July 1, 2020. Mathematics Leaders will leave equipped to develop a shared vision for mathematics instruction, implement high leverage teaching strategies, develop coaching structures, and monitor student learning for ALL students through an equity lens. If you are a teacher leader, coach, department chair, administrator or supervisor you won't want to miss out on these three days of learning!

REGISTRATION INCLUDES THE FOLLOWING RESOURCES:

NCSM Essential Actions: Framework for Leadership in Mathematics Education (Release April 2020)

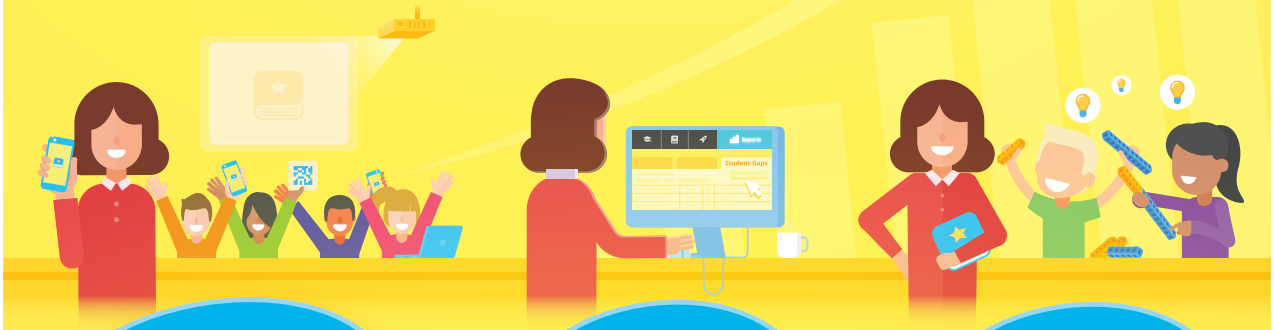
NCSM
LEADERSHIP IN MATHEMATICS EDUCATION

www.mathedleadership.org

JOIN THE MOVEMENT

to enable great math teaching

Designed by world leading numeracy experts, Knowledgehook measures and supports key teaching activities that lead to student success in **3rd grade to Algebra I Math.**



FUN ASSESSMENTS to check for understanding

IMMEDIATE INSIGHTS that uncover gaps

TARGETED SUPPORTS to guide your instruction

Knowledgehook

VISIT BOOTH #127 TO PICK UP YOUR FREE COFFEE AND LEADERS' TOOLKIT