

# LEADING MATHEMATICS INTO THE FUTURE

INSPIRING MONUMENTAL CHANGE



**50**  
years

50TH NCSM ANNUAL CONFERENCE • APRIL 23-25, 2018

# BIG IDEAS MATH<sup>®</sup>

BY RON LARSON AND LAURIE BOSWELL

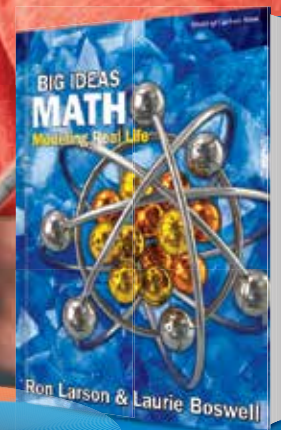
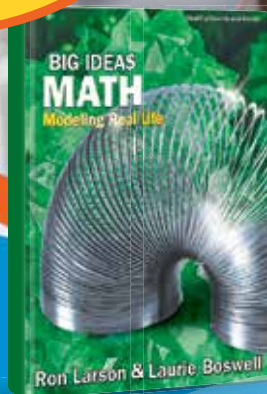
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**LEADING MATHEMATICS INTO THE FUTURE  
INSPIRING MONUMENTAL CHANGE**



**50th NCSM Annual Conference  
April 23-25, 2018  
Washington, D.C.**

**REGISTRATION**

Registration takes place at the Conference Registration booth on the Concourse Level (Level C) of the Walter E. Washington Convention Center at the following times:

- Sunday, April 22, 2:00 pm–6:00 pm**
- Monday, April 23, 6:45 am–5:00 pm**
- Tuesday, April 24, 6:45 am–5:00 pm**
- Wednesday, April 25, 7:30 am–10:30 am**

**SPONSOR/EXHIBITOR DISPLAY AREA**

Visit sponsors and engage in stimulating professional dialogue with colleagues in Hall A on the Lower Level (Level L) of the Walter E. Washington Convention Center, during the following times:

- Monday, April 23, 9:00 am–5:00 pm**
- Tuesday, April 24, 8:30 am–4:00 pm**

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

**CAUCUSES**

Caucuses for NCSM regions, International attendees, and Past Presidents will be held Tuesday afternoon, April 24 at 3:30 pm–4:15 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, April 24 at 4:30 pm–5:15 pm in 145A of the Convention Center. All members are invited and encouraged to attend and learn about the “State of the Organization” and opportunities for getting involved in NCSM.

**TABLE OF CONTENTS**

- President's Message** 2
- Welcome** 3
- 2017–18 Conference Planning Committee** 3
- Program Support Committees** 4
- Program Overview** 5
- General Information**
  - NCSM Annual Conference Sponsors 7
  - Spotlight Speakers 7
  - Hot Topics 8
  - Sponsor Showcases 7
  - Conference Badges and Bags 6
  - Conference App 6
  - Conference Feedback 8
  - Conference Planner 6
  - Emergency Information 6
  - Fire Code 6
  - Kay Gilliland Equity Lecture 62
  - Lost and Found 8
  - NCSM Bookstore & Coaching Table 8
  - NCSM Membership Booth 8
  - NCTM Research Conference, Bookstore & Opening 8
  - NCSM Caucuses and Business Meeting 6
  - Non-Smoking Policy 6
  - Session Changes 6
  - Session Seating 6
  - Sponsor/Exhibitor Display Area 7
  - Student Recognition Certificates 7
  - Taping, Recording, or Photographing Sessions 6
  - Ticketed Functions 7
  - Tips for a Successful Conference Experience 6
  - Conference Schedule Overview 9
  - Shuttle Service 6
- Program Summary Information**
  - Monday 12
  - Tuesday 46
  - Wednesday 74
- Full Program Details**
  - Monday 17
  - Tuesday 51
  - Wednesday 79
- About NCSM**
  - NCSM Mission and Vision 100
  - NCSM Board Members 101
  - Request for Nominations: 2018 NCSM Board Positions 102
  - NCSM Project Committees 103
  - NCSM Governance Committees 104
  - NCSM Grants, Awards, and Certificates 106
  - Ross Taylor Glenn Gilbert Award 107
  - NCSM Affiliates 108
  - Leadership Academy 109
  - Important Future NCSM Dates 110
  - NCSM Communications 111
  - NCSM Position Papers 112
- Conference Information**
  - 2018–19 NCSM Sponsors 113
  - Guide to Exhibitors 116
  - Floor Plans Sponsor/Exhibitor Display Area 117
  - Sponsor Showcases 118
  - Index of Speakers 119
  - Index of Presiders 121
  - Lead Speaker Contact Information 122
- Conference Planner** 126
- Convention Center Floor Plan** 127





## PRESIDENT'S MESSAGE

Dear Colleagues,

We are excited that you have made the decision to join us at the 50th NCSM Annual Conference as we celebrate our first 50 years of mathematics leadership with the goal of *Leading Mathematics into the Future, Inspiring Monumental Change*. On behalf of the NCSM Board of Directors and the Washington D.C. Conference Committee, it is my pleasure to welcome you. I am honored that you have joined us to celebrate our first 50 years as an organization. *NCSM* will benefit from conversations that focus on fostering productive change to support a vision of mathematics education leadership that increases access, excellence, and learning for each and every student!

More than 400 speakers with over 300 sessions focused on the following conference strands will provide you with a very diverse experience:

- o Equity in Practice
- o Cultivating a Mathematics Coaching Practice
- o Evidence and Experiences from the Field
- o Developing Mathematical Knowledge for Teaching
- o Leading Mathematics into the Future

Please read the information that is included within this program book to enhance your conference experience. Consider the app and the different ways to interact with the program. Look at all of the valuable information included in your conference bag. Check out the options for transportation that will be provided for the first time this year. In addition to the many sessions, we have built in dedicated time for you to network with our sponsors and other conference attendees.

Before I close, I'd like to thank each of you for bringing your expertise to our annual meeting and joining us for a memorable experience. You, as mathematics education leaders, have the vision, the knowledge and the experience to help us pave our way into the future. *NCSM* hopes to help you enhance your leadership and professional practice as you help us pave our way into the future. You are truly our greatest asset today and tomorrow, and we could not accomplish what we do without your support and leadership. Throughout this conference, I ask you to stay engaged, keep us focused on relevant issues and help us shape the future of *NCSM*. My personal respect and thanks goes out to all of you. And most of all enjoy our celebration to *Inspire Monumental Change*.

Sincerely,

Connie S. Schrock  
*NCSM* President





# WELCOME TO WASHINGTON, D.C. AND THE 50TH NCSM ANNUAL CONFERENCE



We are glad you have joined us for the 50th Annual Conference. These three days promise to be an exciting learning experience, offering you an opportunity to take advantage of over 300 sessions and events. Here is a quick overview.

## Monday, April 23, 2018

- The first-timers welcome and orientation session, *What's It All About? An Orientation for Those New to the NCSM Annual Conference*, provided for new attendees will be 7:15 am–7:45 am in 145A.
- Pastries and coffee provided by ETA hand2mind before the Welcome and Keynote in Hall A.
- Monday morning is the Opening Session and Keynote Address with Connie Schrock, NCSM President, and Kimberly Morrow-Leong, Program Chair. The Keynote Address *Equity and Deeper Learning in Mathematics* will be by Pedro Noguera, Distinguished Professor of Education at the Graduate School of Education and Information Studies and Faculty Director for the Center for the Transformation of Schools at UCLA.
- Following the opening session, there are a variety of Major Speakers, Spotlight Speakers, Sponsor Showcases, and regular sessions that address the conference strands across different grade levels.
- A special NCSM Coaching Kick-Off session will be offered at 9:30 am–10:30 am in 146C for coaches, specialists, and teacher leaders.
- Sponsor/Exhibitor Display Area will be in Hall A (Level L) of the Convention Center. Be sure to visit often!
- New this year, staggered Hot Topic sessions on both Monday and Tuesday. Your first opportunity with Hot Topics will be on Monday from 11:15 am–12:00 noon, located in Hall A (Level L), where you can discuss important issues for leaders in mathematics.
- Tonight's 50th Anniversary Celebration is a pre-purchased ticketed event only. If you have a ticket, we look forward to celebrating with you at the National Geographic Museum beginning at 5:30 pm. Tickets will not be available for purchase on-site. If you have a ticket, bus transportation is available.

## Tuesday, April 24, 2018

- The first event is a ticketed breakfast sponsored by Pearson. If you do not receive a ticket you will be welcome to attend and hear the speaker after the breakfast.
- The day continues with numerous sessions and powerful speakers, as well as another opportunity to visit the Sponsor/Exhibitor Display Area that is open from 8:30 am–4:00 pm. There is dedicated time between 9:15 am and 10:00 am to visit the Sponsor/Exhibitor Display Area.
- Hot Topics will be located in Hall A. The first session starts at 8:15 am–9:00 am where you will have the opportunity to visit personally with the speakers. The rest of the Hot

Topic session times can be found in Tuesday's section of the program book.

- There is a ticketed luncheon from 12:15 pm–2:00 pm, compliments of Texas Instruments.
- NCSM State/Provincial Team Leaders Meeting with Regional Directors will be from 2:15 pm–3:15 pm in 143B.
- The afternoon brings another round of sessions, followed by NCSM Caucuses and the Business Meeting. At your Regional Caucus meeting you will meet your NCSM Regional Director and visit with other conference attendees from your region. At the NCSM Business meeting in 145A you will have the opportunity to hear about the "State of the Organization" and honor the new Affiliates as they receive their official charters.
- The day ends with a ticketed reception at 5:30 pm sponsored by McGraw Hill Education in the Ballroom Pre-Function space on Level 3 of the Walter E. Washington Convention Center.

## Wednesday, April 25, 2018

- The first event is a ticketed breakfast sponsored by ExploreLearning. If you do not receive a ticket you will be welcome to attend and hear the speaker after the breakfast.
- The day offers a full complement of Major Speakers, Spotlight Speakers, Sponsor Showcases, and regular sessions.
- There is a ticketed luncheon from 12:15 pm–2:00 pm, partially sponsored by DreamBox Learning.
- Join us for the NCSM Musical, *Celebrating 50 years of NCSM*. This "Special Session" will be offered at 3:30 pm in 146BC.

## We want 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 interest and efforts help to make the conference a rewarding experience for all those in attendance.
- Those who submitted proposals to speak for your willingness to share your ideas and experience with your colleagues.
- Program proposal reviewers for your time and efforts in carefully reviewing the many proposals that were 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 to ensure a smooth-running conference.
- Volunteers for graciously giving of their time.
- The staff of the Walter E. Washington Convention Center for supporting logistics and on-site needs.
- NCSM Office for their support throughout the planning process and "in the moment" at the conference, helping make things run ever so smoothly. Thank you!

## 2017-2018 CONFERENCE PLANNING COMMITTEE



**Connie Schrock**  
President  
Emporia, KS



**Kimberly Morrow-Leong**  
First Vice-President and 2018 Program Chair  
Fairfax, VA



**William Barnes**  
Second Vice President and 2018 Recruitment and Volunteer Chair  
Ellicott City, MD



**Sara Delano Moore**  
2018 - 2019 Conference Coordinator  
Kent, OH



**Mona Tonceff**  
Marketing and eNews Editor  
Phoenix, AZ



**Jim Matthews**  
Sponsor Liaison  
Loudonville, NY



**Jenny Tsankova**  
Sponsor Liaison  
Bristol, RI



**Jon Wray**  
Local Arrangements Chair  
Marriottsville, MD



**Sue Vohrer**  
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**John W. Staley**  
Past President  
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**Dorothy Shadrick**  
Executive Director  
Denver, CO



**Stacie Emarine**  
Director of Conferences  
Denver, CO



## 2018 PROGRAM PROPOSAL REVIEWERS

<b>Kimberly Morrow-Leong</b> Program Chair Fairfax, VA	<b>Kellie Conlon</b> Crowley, TX	<b>Lorie Huff</b> Fayetteville, AR	<b>Kathleen Pitvorec</b> Chicago, IL	<b>John Staley</b> Towson, MD
<b>Polly Allred</b> Kingsville, TX	<b>Ralph Connelly</b> St. Catharines, ON, Canada	<b>David Johnston</b> San Antonio, TX	<b>Carrie Plank</b> Decatur, AL	<b>Susan Tauer</b> Boston, MA
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<b>Courtney Baker</b> Fairfax, VA	<b>Kristine Cunningham</b> Phoenix, AZ	<b>Beverly Kimes</b> Birmingham, AL	<b>Laura Potter</b> Towson, MD	<b>Aleshia Taylor</b> Zachary, LA
<b>Sherene Bellinfantie</b> Kingwood, TX	<b>Ronda Davis</b> Albuquerque, NM	<b>Jennifer Levy</b> Chicago, IL	<b>Sharon Rendon</b> Summerset, SD	<b>Kendra Thurmond</b> Lancaster, TX
<b>Chryste Berda</b> Scottsdale, AZ	<b>Dianne DeMille</b> Anaheim, CA	<b>Rebecca Lewis</b> Redding, CA	<b>Michelle Reynolds</b> Santa Fe, NM	<b>Mona Toncheff</b> Phoenix, AZ
<b>Barbara Beske</b> Mullica Hill, NJ	<b>Kristie Donovan</b> Irvine, CA	<b>Suzanne Libfeld</b> Bronx, NY	<b>Michelle Rinehart</b> Midland, TX	<b>Cassandra Turner</b> Fort Collins, CO
<b>Valerie Blackburn</b> Webster, TX	<b>Sarah Donovan</b> Jinqiao, Pudong, Shanghai, China	<b>Eileen Littel</b> Grand Prairie, TX	<b>Jamie Robarge</b> Phoenix, AZ	<b>Glenn Waddell, Jr.</b> Reno, NV
<b>Lisa Blank</b> Watertown, NY	<b>Tracey Dunn</b> Visalia, CA	<b>Amy Lucenta</b> Boston, MA	<b>Kristina Roehrig</b> Fairbanks, AK	<b>Natara Warren</b> Santa Monica, CA
<b>Drew Brody</b> Santa Monica, CA	<b>Wendy Foreman</b> Wake Forest, NC	<b>Joshua Males</b> Lincoln, NE	<b>Kitty Rutherford</b> Raleigh, NC	<b>Susan Weiss</b> Newton, MA
<b>Lisa Brown</b> Austin, TX	<b>Astrid Fossum</b> Milwaukee, WI	<b>Audrey Mendivil</b> San Diego, CA	<b>Angela Schieffer</b> Chicago, IL	<b>Alison Whittington</b> Chicago, IL
<b>Patricia Campbell</b> College Park, MD	<b>Dr. Lisa Friesen</b> Kansas City, MO	<b>Tricia Miller</b> Lake Charles, LA	<b>Denise Schultz</b> Rochester, NY	<b>Dina Williams</b> Los Angeles, CA
<b>Cheryl Cantin</b> Brossard, QC, Canada	<b>Terrie Galanti</b> Fairfax, VA	<b>Sara Moore</b> Kent, OH	<b>Robin Schwartz</b> Bronx, NY	<b>Theresa Wills</b> Fairfax, VA
<b>Marcelline Carr</b> Little Rock, AR	<b>Robbyn Glinsmann</b> Oklahoma City, OK	<b>Edward Nolan</b> Towson, MD	<b>Jeanette Scott</b> Laveen, AZ	<b>Karen Wootton</b> Sacramento, CA
<b>Cynthia Carson</b> Rochester, NY	<b>Linda Gojak</b> Willowick, OH	<b>Janice Novakowski</b> Richmond, BC, Canada	<b>Pamela Seda</b> Ellenwood, GA	<b>Samantha Wuttig</b> Fairbanks, AK
<b>Suyi Chuang</b> Ashburn, VA	<b>Amber Grady</b> Missouri City, TX	<b>Phenicia Nunn</b> Montgomery, AL	<b>Melinda (Mindy) Shacklett</b> San Diego, CA	<b>Samuel Yusim</b> River Forest, IL
<b>Kelly Clawitter</b> Stuttgart, AZ	<b>Marni Greenstein</b> New York, NY	<b>Janet Nuzzie</b> Pasadena, TX	<b>Donella Sherry</b> Maryville, MO	<b>Traci Ziebarth</b> Grand Prairie, TX
<b>Bianca Coker</b> Rockwall, TX	<b>Tracy Hall</b> Southlake, TX	<b>Diane Owen-Rogers</b> Kalamazoo, MI	<b>Jeanne Simpson</b> Huntsville, AL	<b>Annette Zook</b> Colorado Springs, CO
	<b>Shannon Hart</b> Atlanta, GA	<b>Catherine Parker</b> Greeley, CO	<b>Dawne Spangler</b> Phoenix, AZ	
		<b>Tracy Pattat</b> League City, TX		

## 2018 ON-SITE PROGRAM COMMITTEE

<b>Christine Avila</b> Hanford, CA	<b>Ralph Connelly</b> St. Catherines, ON, Canada	<b>Bernard Frost</b> Spartanburg, SC	<b>Kathleen Matson</b> McLean, VA	<b>Kendra Thurmond</b> Lancaster, TX
<b>Courtney Baker</b> Fairfax, VA	<b>Kristine Cunningham</b> Phoenix, AZ	<b>Robbyn Glinsmann</b> Oklahoma City, OK	<b>Carol Matsumoto</b> Winnipeg, MB, Canada	<b>Theresa Wills</b> Fairfax, VA
<b>Chuck Biehl</b> North East, MD	<b>Maria Everett</b> Towson, MD	<b>Beverly Kimes</b> Birmingham, AL	<b>Michelle B. Rinehart</b> Midland, TX	<b>Annette Zook</b> Colorado Springs, CO
<b>Sara Birkhead</b> Reston, VA		<b>Eileen Littel</b> Grand Prairie, TX	<b>Jeanette Scott</b> Laveen, AZ	

## 2018 LOCAL ARRANGEMENTS AND REGIONAL SUPPORT COMMITTEE

<b>Jon Wray</b> Local Arrangements Chair, Marriottsville, MD	<b>Holly Cheung</b> Columbia, MD	<b>Megan Gittermann</b> Sykesville, MD	<b>Damitra Newsome</b> Laurel, MD	<b>Melissa Waggoner</b> Laurel, MD
<b>Sue Vohrer</b> Eastern 2 Regional Director, Cockysville, MD	<b>Matt Cox</b> Sykesville, MD	<b>Lindsay Kelley</b> Columbia, MD	<b>Greta Richard</b> Columbia, MD	<b>Robin White</b> Owings Mills, MD
<b>Meredith Adams</b> Columbia, MD	<b>Christy Dellota</b> Severna Park, MD	<b>Andrea Lang</b> Woodbine, MD	<b>Shanti Stone</b> Columbia, MD	<b>Tara Wilson</b> Ellicott City, MD
	<b>Jenna DeMario</b> Sykesville, MD	<b>Anne Metzbower</b> Columbia, MD	<b>AnnMarie Varlotta</b> Cooksville, MD	<b>Liz Zinger</b> Columbia, MD

# PROGRAM OVERVIEW



## Strands

**1. Equity in Practice.** Achieving equity for each and every student requires active efforts toward cultural change in every classroom, school, and district. Presentations will address systemic challenges such as access, tracking, and deficit thinking.

**2. Cultivating a Mathematics Coaching Practice.** Presentations in this strand strive to build the capacity of each and every mathematics coach. Acting as necessary instructional change agents, coaches impact learning for all stakeholders within a profession that is continually evolving. Presentations share the latest research and reports on successful coaching practices that support the mathematical learning of teachers and their students.

**3. Evidence and Experiences from the Field.** Consider the impact of assessments grounded in evidence of student thinking, action research projects, lesson study, studio teaching, coaching acts that show results, or innovative school-level programs that make a difference in students' mathematical learning. Educational initiatives that come directly from districts, schools, and classrooms inspire this strand.

**4. Developing Mathematical Knowledge for Teaching.** The field of mathematics education research is bright and thriving, particularly in the areas of task implementation, learning trajectories, mathematical modeling, and the investigation of students' mathematical thinking. Presentations for this strand share recent research findings and explore the implications for assessment, curriculum planning, and task design.

**5. Leading Mathematics into the Future.** The 50th Anniversary strand invites presenters to reflect on the past accomplishments of NCSM members and look ahead to the most innovative plans and goals for the future of mathematics education. This strand is open to presentations that offer fresh and innovative ideas for leaders in mathematics education.

**Visit the NCSM Website at [mathedleadership.org](http://mathedleadership.org) for the latest information and complete listing of conference sessions.**

## SESSION TYPES



- Opening Session with Keynote Address—Monday morning
- First-Timer's Session—Monday morning
- Affiliate Leaders Meeting—Monday morning
- Hot Topics—Monday and Tuesday
- Kay Gilliland Equity 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
- Administrators Day Kickoff Session—Wednesday morning

### SESSION NUMBER EXPLANATION

The first digit corresponds to the day of the week (1 for Monday, 2 for Tuesday, and 3 for Wednesday). The second digit corresponds to a common time span, for example on Monday, the 3 in the second digit corresponds to the time span of 11:15 am–12:15 pm. Finally, the last two digits correspond to a room, for example all sessions in 146B will have a session number ending in 14. So session number 1314 is on Monday at 11:15 in 146B.

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

2018 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 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 Sessions** at 7:15 am in 145A on Monday morning at 7:30 am, prior to the Opening Session/Keynote. 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 Sponsor Display Area in Hall A of the Convention Center on Monday or 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 the Sponsor Showcases in 149AB 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 2018 Annual Conference in Washington D.C. 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 PHOTGRAPHING 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, April 24, 3:30 pm to 4:15 pm. Details and a full schedule of caucuses 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 NCSM Business Meeting will be held on Tuesday, April 24 at 4:30 pm–5:15 pm in 145A of the Convention Center. All members are invited and encouraged to attend and learn about the “State of the Organization” and opportunities for getting involved in NCSM.

## SHUTTLE SERVICE

NCSM will provide bus service to and from the outlying hotels to the convention center in the morning and afternoon. Please check the signage in the hotel lobby for exact times.

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



# GENERAL INFORMATION



## SPONSOR SHOWCASES

Sponsor Showcases are provided by Elite Sponsors and are an opportunity to learn more information about the products and materials offered by our Sponsors. These sessions will be held Monday, Tuesday, and Wednesday in room 149AB.

## 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 Sponsor Display Area in Exhibit Hall A. Wear your conference name badge to gain entrance.

Hours: **Monday April 23, 9:00 am–5:00 pm**  
**Tuesday April 24, 8:30 am–4:00 pm**

Extended time has been allotted to visit the Sponsor Display Area on Monday from 10:30 am–11:15 am and Tuesday from 9:15 am–10:00 am. All attendees are encouraged to visit the Sponsors during these times.

## 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 50th Annual Conference.

- Conference Bags – **Casio**
- Conference Neck Wallet – **CPM**
- 50th Anniversary Booklet – **Big Ideas Learning**
- Memberships and Registration – **Texas Instruments**
- 50th Anniversary Monograph – **Big Ideas Learning**
- Volunteer T-shirts – **Casio**
- Monday Keynote Breakfast – **ETA hand2mind**
- Monday Box Lunch – **ORIGO Education**
- Monday Evening Reception – **Big Ideas Learning**
- Tuesday Breakfast – **Pearson**
- Tuesday Luncheon – **Texas Instruments**
- Tuesday Evening Reception – **McGraw Hill Education**
- Wednesday Breakfast – **ExploreLearning**
- Wednesday Lunch – **Partially Sponsored by DreamBox Learning**

## TICKETED FUNCTIONS

Attendees with tickets for events are encouraged to arrive promptly. Except for the off-site 50th Anniversary Celebration on Monday, open seats will be available on a first-come, first-served basis after all attendees with tickets are seated.

Tickets will not be available on-site for the 50th Anniversary Celebration, those tickets were to be purchased in advance of the event.

## 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 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 select 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 on the Concourse Level C of the Convention Center. 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. Depending on the function, there is generally a good chance of getting in, especially if you get in line early! There will be no waiting lines for the off-site reception on Monday.

## 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.

## 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](http://mathedleadership.org).





## GENERAL INFORMATION

### 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 the planners of the 51st Annual Conference to be held in San Diego, CA, April 1–3, 2019.

### 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 on the Concourse Level of the Convention Center. Articles will be held there until 10:30 am on Wednesday, at which time they will be turned over to the Convention Center.

### NCSM BOOKSTORE, MEMBERSHIP BOOTH, AND COACHING TABLE

Visit the Bookstore, Membership, and Coaching tables on Sunday, April 22, from 2:00 pm–6:00 pm on the Concourse Level (Level C) near the Registration Desk. Then on Monday we move to the NCSM Booth 509, located in Hall A (Level L). Hours are Monday, April 23 from 9:00 am–5:00 pm, and Tuesday, April 24, 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 Washington D.C. 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.

### NCTM RESEARCH CONFERENCE, BOOKSTORE, AND ANNUAL MEETING

NCSM registrants wearing their NCSM Conference badges are welcome to attend these NCTM events:

- Opening Session of the NCTM Annual Meeting on Wednesday, April 25 at 5:30 pm in Ballroom ABC of the Walter E. Washington Convention Center.
- Sessions of the NCTM Research Conference located on Level 2 of the Walter E. Washington Convention Center.
- The NCTM Bookstore is open to all NCSM registrants on Wednesday, April 25 from 10:00 am – 5:00 pm in Exhibit Hall DE for registrants wearing their NCSM Conference badges.

### HOT TOPICS CONVERSATION CAFÉ

#### NETWORKING AND ROUND TABLE DISCUSSIONS

Stop by the Hot Topic tables located near the NCSM Membership Booth 509 in **Hall A** of the Convention Center to join casual conversations with several of the Major and Spotlight Speakers throughout the day on Monday and Tuesday. Check the schedule for exact times. Topics of interest to mathematics education leaders will include: having a positive impact, equity, access and relevance, addressing gaps in prerequisite knowledge, equity through a professional learning community, promoting growth mindsets, and approaches to acceleration and compression.





# 2018 CONFERENCE SCHEDULE OVERVIEW

**Note:** Commercial Sessions = Sponsor Showcases • All Sessions – *Convention Center*

Date & Time	Event	Location
<b>Monday, April 23</b>		
6:45 am–5:00 pm	Advance & On-Site Registration	Concourse C
7:00 am–8:00 am	Continental Breakfast – Sponsored by ETA hand2mind	Hall A
7:15 am–7:45 am	First-Timers Session – Special Gifts	145A, Street Level
8:00 am–9:15 am	Opening Session & Keynote – Pedro Noguera	Hall A
9:00 am–5:00 pm	Sponsor/Exhibitor Display Area	Hall A
9:00 am–5:00 pm	NCSM Bookstore, Membership Booth, & Coaches Center	Hall A
9:15 am–10:30 am	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
10:30 am–11:15 am	Special Focus on Sponsor/Exhibitors	Hall A
11:15 am–3:00 pm	Hot Topics	Hall A
12:30 pm–1:30 pm	Boxed Lunch – Sponsored by ORIGO Education <i>(Ticket Required)</i>	Hall A
11:15 pm–5:15 pm	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
5:30 pm–7:30 pm	50th Reception – Sponsored by Big Ideas Learning <i>(Ticket Required)</i> <i>Shuttles will depart from the Convention Center beginning at 5:30 pm</i>	Off-Site: National Geographic Museum
<b>Tuesday, April 24</b>		
6:45 am–5:00 pm	Advance & On-Site Registration	Concourse C
7:00 am–8:00 am	Breakfast – Sponsored by Pearson <i>(Ticket Required)</i>	Hall A
8:30 am–4:00 pm	Sponsor/Exhibitor Display Area	Hall A
8:30 am–4:00 pm	NCSM Bookstore, Membership Booth, & Coaches Center	Hall A
8:45 am–12:15 pm	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
9:15 am –10:00 am	Special Focus on Sponsor/Exhibitors	Hall A
8:15 am–3:15 pm	Hot Topics	Hall A
12:15 pm–2:00 pm	Luncheon – Sponsored by Texas Instruments <i>(Ticket Required)</i>	Hall A
2:15 pm–3:15 pm	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
2:15 pm–3:15 pm	State Team Leaders Meeting	143B
3:30 pm–4:15 pm	Caucuses	100 Rooms
4:30 pm–5:15 pm	NCSM Business Meeting & State of the Organization Report	145A, Street Level
5:30 pm–7:00 pm	Reception – Sponsored by McGraw Hill Education <i>(Ticket Required)</i>	Ballroom Pre-Function Space – Level 3
<b>Wednesday, April 25</b>		
7:30 am–10:30 am	Advance & On-Site Registration	Concourse C
7:30 am–8:30 am	Breakfast – Sponsored by ExploreLearning <i>(Ticket Required)</i>	Hall A
8:45 am–12:15 pm	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
12:30 pm–2:00 pm	Luncheon – Partially Sponsored by DreamBox <i>(Ticket Required)</i>	Hall A
2:15 pm–4:30 pm	Major, Spotlight, Regular, and Sponsor Showcase Sessions	Salon G/H, I, 100 Rooms
3:30 pm–4:30 pm	NCSM Musical	146BC, Street Level







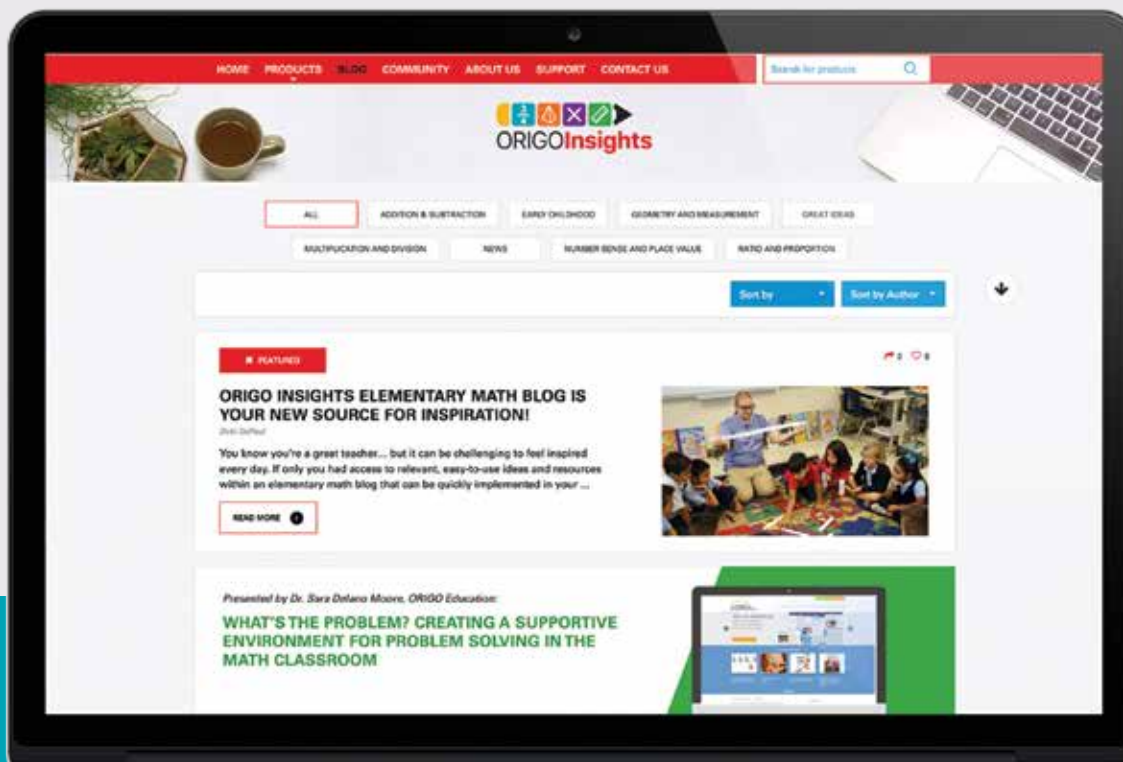
**50** NCSM  
CELEBRATING 50 YEARS  
of  
LEADERSHIP IN MATHEMATICS EDUCATION



Introducing



# ORIGO Insights



A new blog from ORIGO Education providing advice and support in helping you learn methods, ideas, and strategies to support the mathematics development of elementary learners.

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# Make an IMPACT on student learning!

## SHOWCASE SESSION

Improve Fluency  
with Math Talks and  
Number Strings

Monday April 23rd, 9:30am  
Brittany Goerig

Don't miss this  
**Sneak Peek**  
at our new  
**Fluency Resources**



Supplement your core  
curriculum with hands-on  
resources for:

- Daily Math Fluency
- Math Tasks
- Guided Math
- Differentiated Instruction
- Skills Practice

Stop by booth  
#303 for more  
details!



Proud Silver Sponsor of 2018 NCSM Conference







*Martin Luther King, Jr. memorial  
Carol M. Highsmith [Public domain], via Wikimedia Commons*



PROGRAM SUMMARY INFORMATION  
**MONDAY, APRIL 23**

*See page 5 for Conference Strand descriptions.*

## MONDAY SUMMARY

<b>150B</b>	<b>7:00 AM–8:00 AM</b>		<b>145A</b>	<b>7:15 AM–7:45 AM</b>		
	<p><b>Nanci Smith</b> Affiliate Leaders Meeting Session 1023   150B   General</p>			<p><b>Sandie Gilliam, Jessica McIntyre, Carol Matsumoto</b> What's It All About? An Orientation for Those New to the NCSM Annual Conference Session 1014   145A   General</p>		
<b>Hall A</b>	<b>8:00 AM–8:30 AM</b>		<b>8:30 AM–9:15 AM</b>		<b>10:30 AM–11:15 AM</b>	
	<p><b>Connie Schrock, Kimberly Morrow-Leong, Jeff Weld, PhD</b> Welcome Presenters Session 1003   General</p>		<b>KEYNOTE PRESENTER</b>		<p><b>Pedro Noguera</b> Equity and Deeper Learning in Mathematics Session 1103   Strand 1   General</p>	
<b>SALON G/H</b>	<b>9:30 AM–10:30 AM</b>	<b>11:15 AM–12:15 PM</b>	<b>12:30 PM–1:30 PM</b>	<b>1:45 PM–2:45 PM</b>	<b>3:00 PM–4:00 PM</b>	<b>4:15 PM–5:15 PM</b>
	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>
	<p><b>Judith Jacobs</b> Examining Gender and Race Inequities in Mathematics Education Session 1201   Salon G/H Strand 1   General</p>	<p><b>Tracy Zager</b> Teachers First—Everything Else Follows Session 1301   Salon G/H Strand 5   General</p>	<p><b>Megan Franke</b> How and Why Attention to Student Thinking Supports Teacher and Student Learning: The Case of Cognitively Guided Instruction (CGI) Session 1401   Salon G/H Strand 4   PK–2, 3–5, 6–8</p>	<p><b>Sophie Murphy</b> Teacher Talk in Mathematics! The Power of Language and Questioning in the Classroom Session 1501   Salon G/H Strand 4   PK–2, 3–5, 6–8, 9–12</p>	<p><b>Douglas Clements, Julie Sarama</b> Learning Trajectories at the Core: Effective and Powerful Professional Development Session 1601   Salon G/H Strand 4   General</p>	<p><b>Nicole Rigelman, Maggie McGatha, Francis (Skip) Fennell, Robert Kaplinsky, Aimee Ellington, Fran Arbaugh, Valerie L. Mills, Diane Briars</b> Supporting and Inspiring Mathematics Specialists, Leaders, and Coaches Session 1701   Salon G/H Strand 2   General</p>
<b>SALON I</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>
	<p><b>Robert Kaplinsky</b> Challenging Problems Worth Solving Session 1202   Salon I Strand 4   6–8, 9–12</p>	<p><b>John W. Staley</b> Where Am I in My Equity Walk? Session 1302   Salon I Strand 1   General</p>	<p><b>Lucy West, Antonia Cameron</b> Content Coaching: It Transforms Instruction Session 1402   Salon I Strand 2   General</p>	<p><b>Sherry Parrish</b> Number Talks: Shifting the Classroom Culture Session 1502   Salon I Strand 1   General</p>	<p><b>Jo Boaler, Shelah Feldstein, Robin Anderson</b> The Creation and Development of Mathematical Mindset Coaching Tools: A Partnership Between Youcubed at Stanford University and Tulare County Session 1602   Salon I Strand 2   General</p>	<p><b>Zalman Usiskin</b> Electronic vs. Paper Textbook Presentations of Various Aspects of Mathematics Session 1702   Salon I Strand 5   General</p>
<b>145A</b>	<p><b>Karen Fuson</b> Connecting Geometric Measurement, Other Measures, and Data Use Standards to Each Other and to Standards in Other CCSS Domains Session 1211   145A Strand 4   PK–2, 3–5, 6–8</p>	<p><b>Jere Confrey, Meetal Shah, Michael Belcher, William McGowan</b> Overthrowing the Tyranny of “Percent Correct” as the Measure of Proficiency Session 1311   145A Strand 3   6–8</p>	<p><b>Marc Garneau</b> Concepts and Routines for High School Classrooms: What We Can Learn from Elementary Classrooms Session 1411   145A Strand 4   6–8, 9–12</p>	<p><b>Michelle Rinehart</b> Math Talks: Adapting the Number Talks Structure for Secondary Mathematics Classrooms Session 1511   145A Strand 3   6–8, 9–12</p>	<p><b>Jon Manon</b> Learning Mathematics for Social Justice: Moving from Local Contexts to Issues of Global Significance Session 1611   145A Strand 1   General</p>	<p><b>Diane Owen-Rogers, Danielle Seabold</b> Disrupting the Status Quo: Empowering Students by Teaching for Robust Understanding (TRU) of Mathematics Session 1711   145A Strand 1   General</p>
	<b>145B</b>	<p><b>Richard Seitz, David Erickson</b> Mathematics Education: Where Have We Been and Where Are We Going? What Will a Future Lesson Look Like? Session 1212   145B Strand 5   6–8, 9–12, General</p>	<p><b>Nancy Anderson, Doana Marcellus</b> How to Talk Mathematics so Students Learn Session 1312   145B Strand 3   General</p>	<p><b>Jeanne Simpson, Andrea Word</b> There's More to Mathematics Than Numbers—Teacher Talk, Word Problems, and English Language Learners Session 1412   145B Strand 1   6–8</p>	<b>PRESIDENTS EXCHANGE—AMTE</b>	<p><b>Lynn Columba</b> Strategies to Create Math Talk Communities Session 1612   145B Strand 2   PK–2, 3–5</p>
<b>146A</b>		<p><b>Diane Briars</b> Productive Strategies to Support Students' Engagement in Productive Struggle Session 1213   146A Strand 1   General</p>	<p><b>Jennifer Bay-Williams, Maggie McGatha</b> Coaching That Connects Teaching Practices to Developing Students' Mathematical Proficiency Session 1313   146A Strand 2   General</p>	<b>ROSS TAYLOR PAST PRESIDENTS' SESSION</b>	<p><b>Emma Druitt, Mikila Fetzer</b> Alternative Professional Development Structures for Teachers (Summer Math Institute) Session 1513   146A Strand 2   PK–2, 3–5, 6–8, 9–12</p>	
	<p><b>50TH ANNIVERSARY CELEBRATION</b> Buses start departing at 5:30 for National Geographic Museum, Sponsored by Big Ideas Learning</p>					

## MONDAY SUMMARY

<b>150B</b>	<b>7:00 AM–8:00 AM</b>		<b>145A</b>	<b>7:15 AM–7:45 AM</b>		
	<p><b>Nanci Smith</b> Affiliate Leaders Meeting Session 1023   150B   General</p>			<p><b>Sandie Gilliam, Jessica McIntyre, Carol Matsumoto</b> What's It All About? An Orientation for Those New to the NCSM Annual Conference Session 1014   145A   General</p>		
<b>Hall A</b>	<b>11:15 AM–12:00 PM</b>		<b>12:30 PM–1:15 PM</b>		<b>12:30 PM–1:30 PM</b>	
	<p><b>Hot Topic:</b> Gender Bias and Political Power <b>Judith Jacobs</b> Session 1303   Hall A   Strand 1   General</p>		<p><b>Hot Topic:</b> Understanding the Resistant Teacher—Why Change is Harder for Some People and How We Can Support Them <b>Mike Flynn</b> Session 1403   Hall A   Strand 2   General</p>		<p><b>Box Lunch</b> Sponsored by ORIGO Education (ticket required) Boxed Lunch   12:30 PM – 1:30 PM   Hall A   General</p>	
<b>146B</b>	<b>9:30 AM–10:30 AM</b>	<b>11:15 AM–12:15 PM</b>	<b>12:30 PM–1:30 PM</b>	<b>1:45 PM–2:45 PM</b>	<b>3:00 PM–4:00 PM</b>	<b>4:15 PM–5:15 PM</b>
	<p><b>Stephen Weimar, Max Singerman, Ray-Riek</b> Valuing Teachers and Teaching: Online Communities for Professional Growth Session 1214   146B Strand 5   General</p>	<p><b>Bill McCallum, Tammy Baumann</b> Curricular Coherence and Teaching Routines: Designing Scalable Mathematics Curriculum for All Classrooms Session 1314   146B Strand 5   6-8, 9-12</p>	<p><b>Gail Burrill</b> Six Strategies to Help Teachers Make Connections that Support Learning Session 1414   146B Strand 2   6-8, 9-12</p>	<p><b>Delise Andrews, Beth Kobett</b> Principles for Designing Powerful, Engaging, and Effective Professional Learning Experiences Session 1514   146B Strand 2   General</p>	<p><b>David Foster</b> Concept Lessons: How They Are Designed and Taught Session 1614   146B Strand 3   3-5, 6-8, 9-12</p>	<p><b>Christine Newell</b> Building Mathematical Language and Precision Through Routines Session 1714   146B Strand 4   General</p>
<b>146C</b>	<p><b>Nanci Smith, Denise Brady, Sara Frisbie, Jason Gauthier, Donna Karsten</b> NCSM Coaching Kickoff 2018 Session 1215   146C Strand 2   General</p>		<p><b>Meghan Shaughnessy, Nicole Garcia, Deborah Ball</b> Using Video to Support the Improvement of Teaching Practice Session 1315   146C Strand 2   General</p>		<p><b>Sunil Singh</b> Social Media, Global Connectedness, and the Collapse of Trust Institutions: Creating a Global Curriculum with Decision-Making Mathematics Session 1415   146C Strand 5   General</p>	
	<p><b>Patrick Callahan</b> Systemwide Consequences of Misunderstanding Mathematical Rigor Session 1515   146C Strand 5   General</p>		<p><b>Jennifer Lempp</b> Math Workshop: Improving Core Instruction with Guided Mathematics, Learning Stations, Student Reflection, and More Session 1615   146C Strand 3   PK-2, 3-5</p>		<p><b>Kristopher Childs, Deborah Crocker, Irma Cruz-White, Linda Fulmore, Sandie Gilliam, Paul D. Gray, Jr., Karen Hyers, Kathlan Latimer, Kimberly Morrow-Leong</b> A Framework for Infusing Equity and Social Justice into Mathematics Curriculum and Instruction Session 1715   146C Strand 1   PK-2, 3-5, 6-8, 9-12</p>	
<b>147A</b>	<p><b>Lisa Brown, Brian Newsom, Emma Trevino, Danielle Seabold</b> The Perils and Promises of Growth Mindset Session 1216   147A Strand 1   6-8, 9-12</p>		<p><b>Sol Garfunkel, Kathleen Snook</b> After GAIMME—Mathematical Modeling In The Classroom Session 1316   147A Strand 5   9-12</p>		<p><b>Kellian Hughes</b> Coaching Through Co-Teaching Models to Foster Mathematical Learning of Teachers and Students Session 1416   147A   Strand 2   PK-2, 3-5, 6-8, 9-12</p>	
	<p><b>Diane J. Briars, M. Kathleen Heid, Suzanne Mitchell, Steven Viktora, Patricia Wilson, James W. Wilson, Rose Mary Zbiek, Glen Blume</b> NCSM Situations: Using Classroom-Based Scenarios to Build Mathematical Knowledge for Teaching Session 1516   147A Strand 4   9-12</p>		<p><b>Arjan Khalsa</b> One to One Million: Number Sense Progressions for K-5 Session 1616   147A Strand 4   PK-2, 3-5</p>		<p><b>Farshid Safi, Jennifer Eli</b> Working Together: Building Mathematical Knowledge for Teaching Through Equitable Teaching Practices Session 1716   147A Strand 4   6-8, 9-12</p>	
<b>147B</b>	<p><b>Susan Jo Russell</b> But Why Does It Work? Using Examples to Investigate Structure Session 1317   147B   Strand 4   3-5</p>		<p><b>Shelbi Cole, Marni Greenstein</b> Don't Make Every Strategy a Separate Lesson: Developing Understanding and Skill with K-3 Operations Session 1417   147B Strand 4   PK-2</p>		<p><b>Scott Hendrickson, Sterling Hilton</b> CPR for the Common Core: Using the Comprehensive Mathematics Instruction (CMI) Framework to Unpack Standards Across a Learning Cycle Session 1517   147B Strand 4   9-12</p>	
	<p><b>Kimberly Hayden</b> "Why Do They Do That?" Using Research to Improve Problem Solving Session 1617   147B Strand 4   PK-2, 3-5, 6-8</p>		<p><b>Shannon Larsen, Cheryl Tobey</b> Exploring Problems of Practice Through Role Play Session 1717   147B Strand 2   General</p>			
<b>SPONSOR SHOWCASE</b>						
<b>149AB</b>	<p><b>Brittany Goerig</b> Improve Fluency with Math Talks and Number Strings Session 1221   149AB Strand 3   PK2-2, v-5</p>		<p><b>Michelle Rinehart, Andi Parr</b> Coding: An Application of STEM in the Math Classroom Session 1321   149AB Strand 3   6-8, 9-12</p>		<p><b>Raj Shah</b> Promoting a Mathematics Positive Culture Session 1421   149AB Strand 5   PK-2, 3-5, 9-12</p>	
	<p><b>Mike Reiners</b> Unifying the Mathematics Education Experience—and Your Technology! Session 1521   149AB Strand 5   6-8, 9-12, College, General</p>		<p><b>Juli Dixon</b> Six Essential Expectations for Effective Mathematics Instruction Session 1621   149AB Strand 5   General</p>		<p><b>Lauren Stott</b> Connecting Big Ideas for Young Mathematicians: When Rigor &amp; Relevance Meet Collaboration Session 1721   149AB Strand 5   General</p>	
<b>150A</b>	<p><b>Patricia Campbell</b> Advocating for and Maximizing the Impact of Elementary Coaches: Lessons Learned from Research and the Field Session 1222   150A Strand 3   PK-2, 3-5, 6-8</p>		<p><b>Sarah Caban, Deborah Hatt, Nancy Harriman, Janet Delmar, Carolyn Watkins</b> Response to Intervention: Amplify Instruction; Don't Simplify Content Session 1322   150A Strand 1   PK-2, 3-5, 9-12</p>		<p><b>RunningHorse Livingston, Bobbi Jo Erb</b> A White Girl and A Brown Guy Get Real About Culturally Responsive Instruction (Teaching Culturally—Teaching Culture) Session 1422   150A Strand 1   General</p>	
	<p><b>Patsy Kanter, Steve Leinwand</b> Helping Teachers Develop Mathematical Knowledge for Using Properties to Build Critical Numerical Fluency with Operations Session 1522   150A Strand 4   PK-2, 3-5</p>		<p><b>Duane Habecker</b> Number Talks as Professional Development Session 1722   150A Strand 2   PK-2, 3-5</p>			

**50TH ANNIVERSARY CELEBRATION** Buses start departing at 5:30 for National Geographic Museum, Sponsored by Big Ideas Learning

## MONDAY SUMMARY

	<b>7:00 AM–8:00 AM</b>		<b>7:15 AM–7:45 AM</b>			
<b>150B</b>	<p><b>Nanci Smith</b> Affiliate Leaders Meeting Session 1023   150B   General</p>	<b>145A</b>	<p><b>Sandie Gilliam, Jessica McIntyre, Carol Matsumoto</b> What's It All About? An Orientation for Those New to the NCSM Annual Conference Session 1014   145A   General</p>			
<b>Hall A</b>	<b>1:45 PM–2:00 PM</b>					
	<p><i>Hot Topic:</i> Integrating Mathematics and Social Justice into our Work <b>Nora Ramirez</b> Session 1503   Hall A   Strand 1   General</p>					
<b>150B</b>	<b>9:30 AM–10:30 AM</b>	<b>11:15 AM–12:15 PM</b>	<b>12:30 PM–1:30 PM</b>	<b>1:45 PM–2:45 PM</b>	<b>3:00 PM–4:00 PM</b>	<b>4:15 PM–5:15 PM</b>
	<p><b>Vicki Jacobs, Susan Empson, Dinah Brown, Joan Case</b> Integrating Interactive Experiences with Children into Professional Development Session 1223   150B Strand 5   3–5</p>	<p><b>Pamela Harris, Kara Imm</b> Problem Strings for All: Developing Student and Teacher Mathematics Session 1323   150B Strand 4   9–12</p>	<p><b>Rebecca Lewis</b> Mathematics and Curiosity Magnified! Engaging in STEM with Primary Students Session 1423   150B Strand 3   PK–2</p>	<p><b>Edward Nolan</b> Making Sense of Mathematics for Coaching and Engaging High School Teachers Session 1523   150B Strand 4   9–12</p>	<p><b>Genni Steele, Michael Gould</b> Listening: A Piece of the Coaching Puzzle Session 1623   150B Strand 2   General</p>	<p><b>Ryan Timmons, Brian Newsom</b> The Future of Mathematics Professional Development Session 1723   150B Strand 5   3–5, 6–8, 9–12</p>
<b>151A</b>	<p><b>Pamela Buffington, Shannon Larsen, Lisa Coburn</b> Creating Mathematically Rich Discourse and Learning with Mobile Tablets in Early Elementary Classrooms: A Research and Practice Collaboration Session 1224   151A Strand 3   PK–2</p>	<p><b>Laurie Speranzo, Kristin Klingensmith</b> Learning from Students: Building Teacher Content Knowledge Session 1324   151A Strand 4   General</p>	<p><b>Shelley Kriegler</b> Mathematics Intervention: Strategies to Help Students Catch Up Session 1424   151A Strand 1   6–8, 9–12</p>	<p><b>Lisa Rogers, Amy Mayfield</b> How Do You Support Primary Teachers in Building Number Sense? Session 1524   151A Strand 4   PK–2</p>	<p><b>Fran Roy, Catherine Fosnot</b> Reweaving the Tapestry Session 1624   151A Strand 3   PK–2, 3–5, General</p>	<p><b>Vicky Armstrong, Deb Wickman, Dianne Wilson</b> Are Your Teachers Sitting and Getting OR Learning and Applying? Session 1724   151A Strand 3   PK–2, 3–5, 6–8, 9–12</p>
<b>151B</b>	<p><b>Harriette Stevens, Jennifer Knudsen</b> Building Mathematical Knowledge for Teaching the Mathematical Practices: A Four-Part Model for Argumentation Session 1225   151B Strand 4   6–8</p>	<p><b>Kristen Reed, Jessica Young, E. Paul Goldenberg, Deborah Spencer</b> Games for Young Mathematicians: Promoting Equity in Early Childhood Mathematics Through Games That Foster Persistence and a Learning Mindset Session 1325   151B Strand 1   PK–2</p>		<p><b>Angela Torres, Emma Trevino, Aisa Brown</b> Starting with a Vision of Equity: Supporting Detracking Through Professional Development Session 1525   151B Strand 1   General</p>	<p><b>Denise Porter, Cate Stallmeyer-Gerard, Polly Hill, Alison Whittington</b> Teacher University and Summer Math Camp: Powerful Learning for Teachers and Students Session 1625   151B Strand 3   3–5, General</p>	<p><b>Susie Håkansson</b> Use Discourse to Access Language and Mathematics for English Learners Session 1725   151B Strand 1   General</p>
<b>152A</b>	<p><b>Denise Thornton, Mary Davis</b> A Deeper Look: Teaching High School Students to Speak the Language of Mathematics Session 1226   152A Strand 4   General</p>	<p><b>Melissa Canham, Glenda Martinez, Julie Yearsley</b> Orchestrating Productive Discourse in the Classroom Session 1326   152A Strand 2   PK–2, 3–5</p>	<p><b>Melissa Waggoner, Lindsay Kelley</b> The Productive Struggle Is Real Session 1426   152A Strand 3   6–8</p>	<p><b>Ruth Parker</b> Transforming Teaching and Learning Through Number Talks: Preparing Next Generation Mathematics Leaders Session 1526   152A Strand 5   General</p>	<p><b>Marjan Hong, Joanne Whitley</b> Creating an Environment for Student-Centered Instruction Session 1626   152A Strand 4   6–8, 9–12</p>	<p><b>Christine Avila, Cory Bennett</b> Supporting Implementation of Effective Mathematics Teaching Practices by Establishing and Nurturing Mutually Supportive Relationships with District and School Leadership Session 1726   152A Strand 3   General</p>
<b>152B</b>	<p><b>Amy Lucenta, Grace Kelemanik</b> Decide and Defend: An Instructional Routine to Support Teacher and District Attention to Equity in the Classroom Session 1227   152B Strand 1   General</p>	<p><b>Jessica Bobo</b> Early Learning: Cultivating Effective Student Discourse to Enhance Mathematical Understandings Session 1327   152B Strand 4   PK–2</p>	<p><b>Donna Sorila, Melissa Eastwood, Sonja Kuokkanen, Nataliya Paquette</b> Coaching in the Moment: Moving Beyond Observation and Debrief Session 1427   152B Strand 2   PK–2, 3–5, 6–8, 9–12</p>	<p><b>Erick Hofacker, Kathryn Ernie</b> Empowerment of Teachers Through Rich Mathematical Tasks and the Standards for Mathematical Practice Session 1527   152B Strand 3   General</p>	<p><b>Kimberly Morrow-Leong, Bill Barnes, Mona Toncheff, Maria Everett, Sara Moore, Cynthia Schneider, Connie Schrock, John W. Staley</b> How to Successfully Write Conference Proposals for NCSM Session 1627   152B General</p>	<p><b>Will Johnston, Aika Arora, Kim Gattis</b> Supporting STEM Teaching—Planning and Orchestrating Mathematics Learning in Next Generation Science Standards Contexts Session 1727   152B Strand 5   6–8</p>

**50TH ANNIVERSARY CELEBRATION** Buses start departing at 5:30 for National Geographic Museum, Sponsored by Big Ideas Learning



## MONDAY SUMMARY

	<b>7:00 AM–8:00 AM</b>		<b>7:15 AM–7:45 AM</b>
<b>150B</b>	<p><b>Nanci Smith</b> Affiliate Leaders Meeting Session 1023   150B   General</p>	<b>145A</b>	<p><b>Sandie Gilliam, Jessica McIntyre, Carol Matsumoto</b> What's It All About? An Orientation for Those New to the NCSM Annual Conference Session 1014   145A   General</p>

	9:30 AM–10:30 AM	11:15 AM–12:15 PM	12:30 PM–1:30 PM	1:45 PM–2:45 PM	3:00 PM–4:00 PM	4:15 PM–5:15 PM
<b>143A</b>	<p><b>Linda Smith, Cecilio Dimas</b> Making an IMPACT: Initial Results of a Formative Assessment Training and Coaching Grant Session 1231   143A Strand 3   3–5, 6–8, 9–12</p>	<p><b>Shelly Jones, Georgina Rivera</b> Equity in Practice: Improving Student Achievement Through Social Justice Mathematics Session 1331   143A Strand 1, 3–5, 6–8, 9–12</p>	<p><b>John Sessoms, Janet Pittock</b> Re-Envision Mathematics Instruction for English Language Learners Session 1431   143A Strand 1   General</p>	<p><b>Travis Lemon, Barbara Kuehl</b> Engaged in Coaching: Come Take Part in a Coaching Cycle! Session 1531   143A Strand 2   6–8, 9–12, General</p>	<p><b>Alden Edson, Elizabeth Phillips, Yvonne Grant</b> Inscriptions: Developing and Communicating Deep Learning of Mathematics in Digital Learning Environments Session 1631   143A Strand 5   6–8</p>	<p><b>Amanda Merritt, Leslie Texas</b> Using Mathematical Tasks to Change the Conversation Session 1731   143A Strand 4   3–5, 6–8, 9–12</p>
<b>143B</b>	<p><b>Melinda Knapp, Courtney Baker, Kimberly Hayden</b> The Decision-Making Protocol for Mathematics Coaching: A Tool to Empower Mathematics Teacher Leaders in Supporting Equitable Teaching Practices Session 1232   143B Strand 1   PK–2, 3–5, 6–8, 9–12</p>		<p><b>Annette Zook, Allyson Fox</b> Coaching Heavy Through the Debrief Process Session 1432   143B Strand 2   General</p>	<p><b>Susan McMillen</b> Supporting Teachers to Support Students as They Work with Bar Models Session 1532   143B Strand 4   General</p>	<p><b>Connie Laughlin, Stefanie Hassan</b> Building Coherence: A Look at the Use of Models Across the Grades Session 1632   143B Strand 4   General</p>	<p><b>Sara Baranauskas, Robin Moore</b> A Balanced Approach to Making Fact Fluency Assessments Meaningful Session 1732   143B Strand 3   PK–2, 3–5</p>
<b>143C</b>	<p><b>Mary Abele-Austin, Karen Reinhardt</b> What's the Good News? Division Understanding Can Be Developed Through the Analysis of Students' Preexisting Knowledge Session 1233   143C Strand 4   3–5, 6–8</p>	<p><b>Steve Wyborney</b> Photo-Driven Data Meetings Session 1333   143C Strand 3   General</p>	<p><b>Nicholas Lee-Romagnolo</b> The Big Investments: Leveraging Four Areas of Focus to Improve District-Wide Instructional Practices Session 1433   Strand 3   General</p>	<p><b>Sarah Burns, Debbie Leslie, Andy Isaacs, Ellen Dairyko</b> Building Teacher Capacity to Support Productive Struggle Through Questioning and Discourse Session 1533   143C Strand   PK–2, 3–5</p>	<p><b>Ellen Edmonds</b> Techno-Mathematical Discourse (TMD)—What's That? Session 1633   143C Strand 4   PK–2, 3–5, 6–8</p>	<p><b>Kim Romain</b> The Conversation IS the Relationship: Coaching with Positive Presupposition and Positive Intent Session 1733   143C Strand 2   General</p>
<b>144A</b>	<p><b>Marni Greenstein, Aubree Short, Kim Schoenau</b> Coaching for Mathematical Mindset and Standards-Based Instruction Session 1234   144A Strand 2   3–5, 6–8</p>	<p><b>Pat Baltzley, Jackie Palmquist</b> Opportunities for NCSM Professional Learning Leadership Events Session 1334   Strand 5 General</p>	<p><b>Astrid Fossum, Barbara Beske</b> Supporting English Language Learners: Best Practices, Top Research, New Resources Session 1434   144A Strand 1   General</p>	<p><b>Theresa Wills, Molly Rawding</b> Positive and Productive Coaching Mindsets Session 1534   144A Strand 2   PK–2, 3–5, 6–8</p>	<p><b>Antonia Cameron, Renee McShane, Veronica Najjar</b> Start with Heart: Transforming Teacher Practice by Exploring Our Own Beliefs and Assumptions About Teaching, Learning and Leadership Session 1634   144A Strand 3   General</p>	<p><b>Jen Munson</b> Side-by-Side Coaching: How to Grow Teaching, During Teaching Session 1734   144A Strand   PK–2, 3–5, 6–8</p>
<b>144B</b>	<p style="text-align: center;"><b>PRESIDENTS EXCHANGE—SSMA</b></p>	<p><b>James Ryan, Noam Szoke, Alyssa Foss</b> Improvement by Design: Wisdom from Teachers Drives Revision of San Francisco's Mathematics Core Curriculum Session 1335   144B Strand 5   General</p>	<p><b>Brianna Donaldson</b> Math Teachers' Circles: Collaborating to Build K–20 Capacity in Mathematics Session 1435   144B Strand 5   General</p>	<p><b>Monica Kendall, Lori Ramsey</b> Stop, Look, and Listen: Strengthening Coaching Partnerships and Supporting Students' Mathematical Discourse Through Empathic Listening Session 1535   144B Strand 2   General</p>	<p><b>Miriam Gates, Eden Badertscher, Una MacDowell</b> Opportunity Gap Diagnostic: Measuring (In)Equity in Our Students' Opportunities to Learn Mathematics Session 1635   144B Strand 1   6–8, 9–12</p>	<p><b>Mary Jo Tavormina</b> Moving from Teacher Isolation to Peer Collaboration Session 1735   144B Strand 3   6–8, 9–12</p>
<b>144C</b>	<p><b>Mardi Gale</b> Coaching for Rigor: Essential Elements Session 1236   144C Strand 2   General</p>	<p><b>Emma Trevino, Alisa Brown, Tierra Fender</b> Coaching to Disrupt Racialized Participation Patterns Session 1336   144C Strand 1   3–5, 6–8, 9–12</p>	<p><b>Alice Artzt, Frances Curcio, Alan Sultan, Mara Markinson, Eric Glatz, Kathleen Lyons</b> 20 Years of Lessons Learned about Recruitment and Retention from a Four-Year Undergraduate Cohort Model Program Session 1436   144C Strand 5   9–12, College</p>	<p><b>Tracy Sola, Cherie Foster</b> We Talk Mathematics: Supporting Powerful Student Mathematical Discourse at the Primary Level Session 1536   144C Strand 3   PK–2</p>	<p><b>Rebecca Afghani, Kyoko Weber-Sickler, Nanette Seago, Catherine Carroll</b> Using <i>Principles to Actions</i> as a Tool for Supporting Principals to Observe Mathematics Instruction and Provide Teacher Feedback Session 1636   144C Strand 3   3–5, 6–8</p>	<p><b>Marta Garcia, Kaneka Turner</b> The Challenge of Capturing the Action of Operations: Representations at Work Session 1736   144C Strand 4   PK–2, 3–5</p>

**50TH ANNIVERSARY CELEBRATION** Buses start departing at 5:30 for National Geographic Museum, Sponsored by Big Ideas Learning

## MONDAY SESSIONS BY STRAND

### STRAND 1: EQUITY IN PRACTICE

SESSION	LOCATION	TIME
1103	HALL A	8:30–9:15
1201	SALON G/H	9:30–10:30
1213	146A	9:30–10:30
1216	147A	9:30–10:30
1227	152B	9:30–10:30
1232	143B	9:30–10:30
1303	HALL A	11:15–12:00
1302	SALON I	11:15–12:15
1322	150A	11:15–12:15
1325	151B	11:15–12:15
1331	143A	11:15–12:15
1336	144C	11:15–12:15
1412	145B	12:30–1:30
1422	150A	12:30–1:30
1424	151A	12:30–1:30
1431	143A	12:30–1:30
1434	144A	12:30–1:30
1503	HALL A	1:45–2:30
1502	SALON I	1:45–2:45
1525	151B	1:45–2:45
1611	145A	3:00–4:00
1635	144B	3:00–4:00
1711	145A	4:15–5:15
1715	146C	4:15–5:15
1725	151B	4:15–5:15

### STRAND 2: CULTIVATING A MATHEMATICS COACHING PRACTICE

SESSION	LOCATION	TIME
1215	146C	9:30–10:30
1234	144A	9:30–10:30
1236	144C	9:30–10:30
1313	146A	11:15–12:15
1315	146C	11:15–12:15
1326	152A	11:15–12:15
1403	HALL A	12:30–1:15
1402	SALON I	12:30–1:30
1414	146B	12:30–1:30
1416	147A	12:30–1:30
1427	152B	12:30–1:30
1432	143B	12:30–1:30
1513	146A	1:45–2:45
1514	146B	1:45–2:45
1531	143A	1:45–2:45
1533	143C	1:45–2:45
1534	144A	1:45–2:45
1535	144B	1:45–2:45
1602	SALON I	3:00–4:00
1612	145B	3:00–4:00
1623	150B	3:00–4:00
1701	SALON G/H	4:15–5:15
1717	147B	4:15–5:15
1722	150A	4:15–5:15
1733	143C	4:15–5:15
1734	144A	4:15–5:15

### STRAND 3: EVIDENCE AND EXPERIENCES FROM THE FIELD

SESSION	LOCATION	TIME
1221	149AB	9:30–10:30
1222	150A	9:30–10:30
1224	151A	9:30–10:30
1231	143A	9:30–10:30
1311	145A	11:15–12:15
1312	145B	11:15–12:15
1321	149AB	11:15–12:15
1333	143C	11:15–12:15
1423	150B	12:30–1:30
1426	152A	12:30–1:30
1433	143C	12:30–1:30
1511	145A	1:45–2:45
1527	152B	1:45–2:45
1536	144C	1:45–2:45
1614	146B	3:00–4:00
1615	146C	3:00–4:00
1624	151A	3:00–4:00
1625	151B	3:00–4:00
1634	144A	3:00–4:00
1636	144C	3:00–4:00
1713	146A	4:15–5:15
1724	151A	4:15–5:15
1726	152A	4:15–5:15
1732	143B	4:15–5:15
1735	144B	4:15–5:15

### STRAND 5: LEADING MATHEMATICS INTO THE FUTURE

SESSION	LOCATION	TIME
1212	145B	9:30–10:30
1214	146B	9:30–10:30
1223	150B	9:30–10:30
1301	SALON G/H	11:15–12:15
1314	146B	11:15–12:15
1316	147A	11:15–12:15
1334	144A	11:15–12:15
1335	144B	11:15–12:15
1413	146A	12:30–1:30
1415	146C	12:30–1:30
1421	149AB	12:30–1:30
1435	144B	12:30–1:30
1436	144C	12:30–1:30
1515	146C	1:45–2:45
1521	149AB	1:45–2:45
1526	152A	1:45–2:45
1621	149AB	3:00–4:00
1631	143A	3:00–4:00
1702	SALON I	4:15–5:15
1721	149AB	4:15–5:15
1723	150B	4:15–5:15
1727	152B	4:15–5:15

### STRAND 4: DEVELOPING MATHEMATICAL KNOWLEDGE FOR TEACHING

SESSION	LOCATION	TIME
1202	SALON I	9:30–10:30
1211	145A	9:30–10:30
1225	151B	9:30–10:30
1226	152A	9:30–10:30
1233	143C	9:30–10:30
1235	144B	9:30–10:30
1317	147B	11:15–12:15
1323	150B	11:15–12:15
1324	151A	11:15–12:15
1327	152B	11:15–12:15
1401	SALON G/H	12:30–1:30
1411	145A	12:30–1:30
1417	147B	12:30–1:30
1501	SALON G/H	1:45–2:45
1512	145B	1:45–2:45
1516	147A	1:45–2:45
1517	147B	1:45–2:45
1522	150A	1:45–2:45
1523	150B	1:45–2:45
1524	151A	1:45–2:45
1532	143B	1:45–2:45
1601	SALON G/H	3:00–4:00
1616	147A	3:00–4:00
1617	147B	3:00–4:00
1626	152A	3:00–4:00
1627	152B	3:00–4:00
1632	143B	3:00–4:00
1633	143C	3:00–4:00
1712	145B	4:15–5:15
1714	146B	4:15–5:15
1716	147A	4:15–5:15
1731	143A	4:15–5:15
1736	144C	4:15–5:15



# MONDAY SESSIONS



## HOW TO READ THIS SPEAKER PROGRAM:

### TITLE OF PRESENTATION

Session Number | Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience

Description of presentation.

**Speaker Name**, Position, Affiliation

### AFFILIATE LEADERS MEETING

Session 1023 | 7:00 AM–8:00 AM | 150B | General

Gather with NCSM Affiliate Leaders from across North America as we share ideas, discuss concerns and resolutions, and find ways to serve the leaders of mathematics in our areas. We will look at how NCSM can support your organization in your goals for leadership development and support. Come meet and share with new colleagues. This meeting is for invited Affiliate leaders only.

**Nanci Smith**, NCSM Affiliate Group Chair, Peoria, Arizona

## CONFERENCE ORIENTATION – FIRST-TIMER’S SESSION

### WHAT’S IT ALL ABOUT?

#### AN ORIENTATION FOR THOSE NEW TO THE NCSM ANNUAL CONFERENCE

Session 1014 | 7:15 AM–7:45 AM | 145A | General

This session is for those 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.

**Sandie Gilliam**, NCSM W1 Regional Director, Colorado Springs, Colorado

**Jessica McIntyre**, NCSM Volunteer Chair, Barrington, Illinois

**Carol Matsumoto**, Former NCSM Board Member, Winnipeg, Manitoba, Canada

## OPENING NCSM SESSION: WELCOME FOR ALL



**Connie Schrock**



**Kimberly Morrow-Leong**



**Jeff Weld**

### WELCOME PRESENTERS

Session 1003 | 8:00 AM–8:30 AM | Hall A | General

Welcome to Washington, D.C. and the 50th NCSM Annual Conference. Join us for greetings from the NCSM President, 2018 Program Chair, and remarks from a local dignitary.

**Connie Schrock**, NCSM President, Emporia, Kansas

**Kimberly Morrow-Leong**, 1st Vice President and Program Chair, Fairfax, Virginia

**Jeff Weld, PhD**, Senior Policy Advisor and Assistant Director, STEM Education, Executive Office of the President, Washington, D.C.





# MONDAY SESSIONS

8:30 AM–9:15 AM

## KEYNOTE PRESENTER

### EQUITY AND DEEPER LEARNING IN MATHEMATICS

Session 1103 | 8:30 AM–9:15 AM | Hall A | Strand 1 | General

While the movement for standards and accountability has largely succeeded in bringing greater attention to the issues surrounding student achievement (i.e. the fact that poor students, students of color, English language learners and students with special needs are consistently performing at lower levels), surprisingly little attention has been given to the strategies and conditions that are necessary to make higher achievement more likely. Missing from much of the policy debate related to student achievement is how to support and cultivate effective teaching in schools and how to motivate and engage students through teaching strategies that foster deeper learning and the utilization of higher order thinking skills. This presentation will describe strategies that have proven effective elsewhere at supporting teaching in mathematics and promoting deeper learning for all types of students. It will also explore how schools can develop strategies to support teachers of mathematics in their efforts to raise achievement.



**Pedro Noguera**, UCLA Graduate School of Education & Information Studies, Los Angeles, California  
Pedro Antonio Noguera, Ph.D.

Pedro Noguera is the Distinguished Professor of Education at the Graduate School of Education and Information Studies at UCLA. His research focuses

on the ways in which schools are influenced by social and economic conditions, as well as by demographic trends in local, regional and global contexts. He is the author of eleven books and over 200 articles and monographs. He serves on the boards of numerous national and local organizations and appears as a regular commentator on educational issues on CNN, MSNBC, National Public Radio, and other national news outlets. Prior to joining the faculty at UCLA he served as a tenured professor and holder of endowed chairs at New York University (2003–2015) Harvard University (2000–2003) and the University of California, Berkeley (199–2000). From 2009–2012 he served as a Trustee for the State University of New York (SUNY) as an appointee of the Governor. In 2014 he was elected to the National Academy of Education. Noguera recently received awards from the Center for the Advanced Study of the Behavioral Sciences, from the National Association of Secondary Principals, and from the McSilver Institute at NYU for his research and advocacy efforts aimed at fighting poverty.

9:30 AM–10:30 AM

## MAJOR PRESENTATION

### EXAMINING GENDER AND RACE INEQUITIES IN MATHEMATICS EDUCATION

Session 1201 | 9:30 AM–10:30 AM | Salon G/H | Strand 1 | General

Building a communal understanding of the role inequities have played in our own lives enables leaders, and the teachers with whom they work, to address the inequities their own students experience. By taking time to explore leaders' and teachers' awareness of inequitable practices, leaders can provide a clearer pathway to reducing and eliminating gender and racial inequities in their own schools. This presentation will focus attention primarily on a framework that explores how females can advocate for their full participation in mathematics education, but attendees will be able to use the same general framework to develop similar strategies that address racial biases.



**Judith Jacobs**, JEJMath, Ltd., Ann Arbor, Michigan

**President**, Debbie Crocker, NCSM  
S1 Regional Director, Boone, North Carolina

Judith E. Jacobs served mathematics education as the proposer and leader of several associations, - Women and Mathematics (WME) from which she just received a lifetime achievement award on its 40th anniversary; National Council of Teachers of Mathematics (NCTM) from which she also has received a lifetime achievement award; and served on its Board of Directors; and the Association of Mathematics of Teacher Educators (AMTE) where she served as the first Executive Director and President. AMTE established the Judith E. Jacobs Lecture, given at each year's annual meeting, in her honor upon her retirement as Executive Director. Judith has authored or co-authored three books. She is a frequent speaker at professional meetings on gender issues in mathematics education.





# MONDAY SESSIONS



## SPOTLIGHT SPEAKER

### CHALLENGING PROBLEMS WORTH SOLVING

Session 1202 | 9:30 AM–10:30 AM | Salon I | Strand 4 | 6–8, 9–12

This session will offer you practical implementation options for making rigorous problems that build students' conceptual understanding and procedural skills a part of your classroom. You'll love how they remain accessible enough for your struggling students while simultaneously challenging the most advanced students you've ever taught.

**Robert Kaplinsky**, Downey Unified School District, Downey, California

**President**, Nanci Smith, Affiliate Group Chair, Peoria, Arizona

### CONNECTING GEOMETRIC MEASUREMENT, OTHER MEASURES, AND DATA USE STANDARDS TO EACH OTHER AND TO STANDARDS IN OTHER CCSS DOMAINS

Session 1211 | 9:30 AM–10:30 AM | 145A | Strand 4 | PK–2, 3–5, 6–8

This presentation and participant discussion of research from diverse classrooms focuses on how leaders can help students and teachers build conceptual webs of understandings from grades K–8. Together, we will relate conceptual tools used in measurement, data, fractions, and problem solving in OA (Operations & Algebraic Thinking). I will show—and participants will discuss—research-based manipulatives, visual images, and activities that use money and metric measures to build sense-making for place-value concepts and computation including decimals.

**Karen Fuson**, Northwestern University, Fallbrook, California

### MATHEMATICS EDUCATION: WHERE HAVE WE BEEN AND WHERE ARE WE GOING? WHAT WILL A FUTURE LESSON LOOK LIKE?

Session 1212 | 9:30 AM–10:30 AM | 145B | Strand 5 | 6–8, 9–12, General  
Mathematics educators have led this country through years of innovation and growth. We briefly review successes of the past 50+ years of innovations that inspired us and suggest ways that mathematics leaders set the course for a future. The session will present promising future lessons for mathematics teachers using abstraction, technology, and engagement. This session is directly aimed at coaches and leaders for grades 7 to 10.

**Richard Seitz**, Seitz Innovations, Helena, Montana

**David Erickson**, University of Montana, Missoula, Montana

### PRODUCTIVE STRATEGIES TO SUPPORT STUDENTS' ENGAGEMENT IN PRODUCTIVE STRUGGLE

Session 1213 | 9:30 AM–10:30 AM | 146A | 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 needed to prepare them for their futures. This session investigates strategies to increase students' willingness to engage in challenging tasks and how to use these tasks to advance the learning of the entire class. We'll also discuss how leaders can effectively support teachers in engaging their students in productive struggle.

**Diane Briars**, National Council of Teachers of Mathematics, Reston, Virginia

### VALUING TEACHERS AND TEACHING: ONLINE COMMUNITIES FOR PROFESSIONAL GROWTH

Session 1214 | 9:30 AM–10:30 AM | 146B | Strand 5 | General

The Math Forum has been using the internet to connect mathematics educators since before the Web. Now that so many mathematics teachers use Twitter, Facebook, Pinterest, and blogs to connect, what can we learn from the pioneers? One theme from the early days is helping teachers feel valued and to value the work of teaching. We'll share community design principles and how they can apply to today's online communities.

**Stephen Weimar**, The 21st Century Partnership for STEM Education, Conshohocken, Pennsylvania

**Max Singerman Ray-Riek**, Illustrative Mathematics, Philadelphia, Pennsylvania

### NCSM COACHING KICKOFF 2018

Session 1215 | 9:30 AM–10:30 AM | 146C | Strand 2 | General

The NCSM Coaching Committee is excited to share their new resource, NCSM: Coaching Themes and Imperatives. This resource chronicles the essential elements for a successful coaching program as well as the important characteristics of effective coaching. Come join us and network with other coaches as we explore how this resource can be pivotal in supporting and developing excellent programs and coaches.

**Nanci Smith**, Affiliate Group Chair, Peoria, Arizona

**Denise Brady**, Shiawassee RESD, Corunna, Michigan

**Sara Frisbie**, NCSM Secretary, Topeka, Kansas

**Jason Gauthier**, NCSM C1 Regional Director, Dorr, Michigan

**Donna Karsten**, NCTM Representative, Halifax, Nova Scotia, Canada





## MONDAY SESSIONS

### THE PERILS AND PROMISES OF GROWTH MINDSET

Session 1216 | 9:30 AM–10:30 AM | 147A | Strand 1 | 6–8, 9–12

The growth mindset movement has spread quickly as a strategy for bringing about the cultural change (e.g., reduce deficit thinking) required to meet districts' equity goals, especially for students who don't feel a sense of belonging in mathematics. This experienced panel of campus and district leaders will respond to your questions and share their successes and challenges related to these efforts including best practices, knowledge-building, and shared accountability.

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

**Brian Newsom**, Charles A. Dana Center, The University of Texas, Austin, Texas

**Emma Trevino**, San Francisco Unified School District, San Francisco, California

**Danielle Seabold**, Kalamazoo Regional Educational Service Agency, Portage, Michigan

### INTEGRATING INTERACTIVE EXPERIENCES WITH CHILDREN INTO PROFESSIONAL DEVELOPMENT

Session 1223 | 9:30 PM–10:30 PM | 150B | Strand 5 | 3–5

Learn how to integrate interactive experiences with children into professional development. Interactions with children generate excitement for teacher learning and provide simplified instructional contexts in which teachers can develop their in-the-moment expertise in eliciting and building on children's mathematical thinking. Drawing from several professional development projects, we will share benefits, logistical considerations (including how to minimize typical challenges), and multiple models for integration. Participants will also have an opportunity to engage in sample debriefing activities.

**Vicki Jacobs**, University of North Carolina at Greensboro, Greensboro, North Carolina

**Susan Empson**, University of Missouri, Columbia, Missouri

**Dinah Brown**, Del Mar Union School District, San Diego, California

**Joan Case**, Private Consultant-PD Facilitator and Coach, Hesperia, California

### SPONSOR SHOWCASE

#### IMPROVE FLUENCY WITH MATH TALKS AND NUMBER STRINGS

Session 1221 | 9:30 AM–10:30 AM | 149AB | Strand 3 | PK2–2, 3–5

We know timed tests don't teach fluency, but what does? Use number strings to improve student efficiency, accuracy and flexibility with numbers and mathematics talks to improve student's math language and sharing of ideas. Students will learn counting, additive, and multiplicative strategies including fractions and decimals in order to gain confidence in their mathematics skills. Every student can be a math expert!

**Brittany Goerig**, ESC Region 10, Richardson, Texas

#### ADVOCATING FOR AND MAXIMIZING THE IMPACT OF ELEMENTARY COACHES: LESSONS LEARNED FROM RESEARCH AND THE FIELD

Session 1222 | 9:30 AM–10:30 AM | 150A | Strand 3 | PK–2, 3–5, 6–8

The preparation and support that mathematics coaches receive will influence their effectiveness, but so will decisions about how they are positioned and utilized in schools. Come and interpret data from the field documenting coaches' activity patterns and learn of the connection between these patterns and student achievement. We will discuss implications for framing coaches' roles and responsibilities, as well as for establishing local leadership strategies and policies to support coaches and high leverage coaching.

**Patricia Campbell**, University of Maryland, College Park, Maryland

#### CREATING MATHEMATICALLY RICH DISCOURSE AND LEARNING WITH MOBILE TABLETS IN EARLY ELEMENTARY CLASSROOMS: A RESEARCH AND PRACTICE COLLABORATION

Session 1224 | 9:30 AM–10:30 AM | 151A | Strand 3 | PK–2

When used strategically, mobile tablets have the potential to contribute to classrooms where students are engaged in rich mathematical communication, critique, and problem-solving. This session will explore how educators and researchers co-investigated the use of screencasting with iPads to improve mathematics learning and teaching in K–3 classrooms. Strategies used to support students' use of this tool to review, reflect on, and critique their own and other students' thinking in the classroom will be shared.

**Pamela Buffington**, Education Development Center, Gardiner, Maine

**Shannon Larsen**, University of Maine at Farmington, Farmington, Maine

**Lisa Coburn**, Auburn School Department, Auburn, Maine



## MONDAY SESSIONS



### **BUILDING MATHEMATICAL KNOWLEDGE FOR TEACHING THE MATHEMATICAL PRACTICES: A FOUR-PART MODEL FOR ARGUMENTATION**

Session 1225 | 9:30 AM–10:30 AM | 151B | Strand 4 | 6–8

Learn how to help middle school mathematics teachers support argumentation in their classrooms through using a research-based four-part model, decomposing argumentation into stages of generating cases, conjecturing, justifying, and concluding. Once teachers gain this mathematics knowledge for teaching, they can develop a set of moves for each part. Participants will engage in professional development activities from our NSF-funded research project and use GeoGebra to support argumentation in algebra and geometry. Bring your own device!

**Harriette Stevens**, Consultant & Mathematics Educator, San Francisco, California

**Jennifer Knudsen**, SRI International, Austin, California

### **A DEEPER LOOK: TEACHING HIGH SCHOOL STUDENTS TO SPEAK THE LANGUAGE OF MATHEMATICS**

Session 1226 | 9:30 AM–10:30 AM | 152A | Strand 4 | General

After the overwhelming participation at NCSM 2017, we're taking a deeper look at teaching high school students to speak the language of mathematics. Although it can seem daunting, students can learn to articulate their own ideas and participate in a meaningful discussion when they have the instructional support they need. Come see "math talk" in real classrooms and explore the research behind the 5 Practices for Orchestrating Productive Mathematics Discussions by Smith and Stein.

**Denise Thornton**, Charles A. Dana Center, The University of Texas, Austin, Texas

**Mary Davis**, Charles A. Dana Center, The University of Texas, Austin, Texas

### **DECIDE AND DEFEND: AN INSTRUCTIONAL ROUTINE TO SUPPORT TEACHER AND DISTRICT ATTENTION TO EQUITY IN THE CLASSROOM**

Session 1227 | 9:30 AM–10:30 AM | 152B | Strand 1 | General

Learn how the Decide and Defend instructional routine serves as a vessel for districts to enact beliefs regarding equitable access, teachers to develop equitable practices in their classrooms, and students to develop mathematical arguments. Developing mathematical justification and argument builds student agency and is an empowering component of equitable learning. And, the Decide and Defend routine is designed to engage and support ALL learners in this endeavor.

**Amy Lucenta**, Fostering Math Practices, Natick, Massachusetts

**Grace Kelemanik**, Fostering Math Practices, Natick, Massachusetts

### **MAKING AN IMPACT: INITIAL RESULTS OF A FORMATIVE ASSESSMENT TRAINING AND COACHING GRANT**

Session 1231 | 9:30 AM–10:30 AM | 143A | Strand 3 | 3–5, 6–8, 9–12

In 2016, our district applied for and won a Georgia Governor's Office of Student Achievement mathematics grant. This IMPACT grant focused on formative assessment practices and coaching for teachers. In partnership with the Silicon Valley Mathematics Initiative, our first-year qualitative and quantitative results are promising. Come and find out what we strategically did, and intentionally did not do, to produce positive results in just one year, and how we plan to sustain the work moving forward.

**Linda Smith**, Rockdale County Public Schools, Conyers, Georgia

**Cecilio Dimas**, Silicon Valley Mathematics Initiative (SVMI), Morgan Hill, California

### **THE DECISION-MAKING PROTOCOL FOR MATHEMATICS COACHING: A TOOL TO EMPOWER MATHEMATICS TEACHER LEADERS IN SUPPORTING EQUITABLE TEACHING PRACTICES**

Session 1232 | 9:30 AM–10:30 AM | 143B | Strand 1 | PK–2, 3–5, 6–8, 9–12

The Decision-Making Protocol for Mathematics Coaching is a four-phase reflective cycle that guides coaches in supporting teachers to create a culture of effective teaching practices and learning environments for all students. The protocol guides coaches through the complex set of choices they must make as they work with individual teachers, teams of teachers, and administrators in diverse school contexts in their efforts to create a culture of high expectations and equitable classroom practices.

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

**Courtney Baker**, George Mason University, Fairfax, Virginia

**Kimberly Hayden**, Stafford County Public Schools, Stafford County Public Schools, Virginia

### **WHAT'S THE GOOD NEWS? DIVISION UNDERSTANDING CAN BE DEVELOPED THROUGH THE ANALYSIS OF STUDENTS' PREEXISTING KNOWLEDGE**

Session 1233 | 9:30 AM–10:30 AM | 143C | Strand 4 | 3–5, 6–8

Using the Ongoing Assessment Project (OGAP) Multiplicative Reasoning learning trajectory, we will shift from analyzing student work as right/wrong to looking for evidence of developing understandings within the context of whole number division. Participants will generate a plan for next instructional steps based on their analysis of student thinking.

**Mary Abele-Austin**, Chittenden East Supervisory Union, Richmond, Vermont

**Karen Reinhardt**, TeacherWorks / University of Michigan, Ann Arbor, Michigan





## MONDAY SESSIONS

### COACHING FOR MATHEMATICAL MINDSET AND STANDARDS-BASED INSTRUCTION

Session 1234 | 9:30 AM–10:30 AM | 144A | Strand 2 | 3–5, 6–8

Sometimes educators feel a tension between the need to develop a mathematical mindset culture and ensuring all learners meet grade level expectations. In this session, participants will hear from coaches in Tulare City Schools who developed and implemented coaching cycles to support teachers simultaneously on shifting students' mathematical mindsets while ensuring that all students receive standards-based instruction. We will also examine the impact of this two-pronged approach on student learning.

**Marni Greenstein**, Student Achievement Partners, New York, New York

**Aubree Short**, Tulare City School District, Tulare, California

**Kim Schoenau**, Tulare City School District, Tulare, California

### PRESIDENTS EXCHANGE–SSMA

### FOSTERING MATHEMATICAL FLUENCY: PROFESSIONAL DEVELOPMENT FOR MATHEMATICS TEACHERS OF ALL GRADE LEVELS

Session 1235 | 9:30 AM–10:30 AM | 144B | Strand 4 | PK–2, 3–5, 6–8, 9–12

Providing meaningful and sustainable professional development to support teachers in their efforts to help all students gain deep mathematical understanding and procedural fluency has become significantly more difficult with ongoing budget reductions and reduced opportunities for professional development. This session will provide ideas and tasks that you can use for professional development for mathematics teachers at all grade levels that will help students of all ages.

**Stacy Reeder**, University of Oklahoma, Norman, Oklahoma

**Juliana Utley**, Oklahoma State University, Stillwater, Oklahoma

### COACHING FOR RIGOR: ESSENTIAL ELEMENTS

Session 1236 | 9:30 AM–10:30 AM | 144C | Strand 2 | General

Effective mathematics instruction calls for rigor. How do we coach teachers to make it happen? What are the classroom dimensions that matter for learning? We will examine successful models for coaching from Silicon Valley Math Initiative and TRU Math, that support teachers to behave their way into shifting practices. Coaching instruments shared also provide guidance for professional learning community conversations.

**Mardi Gale**, WestEd, Redwood City, California

### 10:30 AM–11:15 PM

### DEDICATED TIME TO VISIT SPONSORS AND EXHIBITORS

Hall A

### 11:15 AM–12:00 PM

### *Hot Topic:*

### GENDER BIAS AND POLITICAL POWER

Session 1303 | 11:15 AM–12:00 PM | Hall A | Strand 1 | General

Gender bias in mathematics is connected to the political power issues raised by the #MeToo movement. Let's talk about these connections and how we can use the public's attention to increase females' achievement and participation in mathematics.

**Judith Jacobs**, JEJMath, Ltd., Ann Arbor, Michigan





# MONDAY SESSIONS



11:15 AM–12:15 PM

## MAJOR PRESENTATION

### TEACHERS FIRST—EVERYTHING ELSE FOLLOWS

Session 1301 | 11:15 AM–12:15 PM | Salon G/H | Strand 5 | General

Throughout NCSM's history, we've seen cyclical attempts to change mathematics education through standards, curriculum, and assessments. At each phase, leaders in mathematics education and our professional associations have reminded us that classroom teachers are the ones who will interpret these standards, implement these curricula, and administer these assessments. Yet we continue to see too much hope placed in the ever-new products, without enough support for the people who use them. In this session, we'll renew our focus on our teachers. We'll discuss ways leaders can partner with educators as they become more effective, joyful, skilled mathematics teachers.

We'll re-dedicate ourselves to relationships—the heart of our work—and discuss coaching techniques that open conversations, build trust, and spark genuine collaboration.



NCSM members spent much of the last 50 years putting essential systems and teacher leaders in place. As we move forward into the next 50 years, let's leverage the power of what we've built to empower teachers.

**Tracy Zager**, Rollinsford Grade School, Rollinsford, New Hampshire

**President**, Marc Garneau, NCSM Canada Regional Director, Surrey, British Columbia, Canada

Tracy is the author of *Becoming the Math Teacher You Wish You'd Had: Ideas and Strategies from Vibrant Classrooms* (Stenhouse, 2017), which grew out of Tracy's work with her colleagues as a math coach, and before that with pre-service teachers and their in-service mentors. Tracy is most in her element in classrooms, learning together with teachers and students over time. She currently splits her time between coaching at the school and district level and editing professional development books for teachers with Stenhouse Publishers. While she loves both types of work dearly, she still secretly pines for her fourth-grade classroom and hopes to return to full-time teaching someday.

## SPOTLIGHT SPEAKER

### WHERE AM I IN MY EQUITY WALK?

Session 1302 | 11:15 AM–12:15 PM | Salon I | Strand 1 | General

Mathematics education leaders must embrace the work that addresses issues related to equity so that all of our students have opportunity and access to rigorous and relevant mathematics learning experiences. During this session participants will engage in a discussion and self reflection of key issues and topics gleaned from the readings that were part of the Call for a Collective Action to Develop Awareness: Equity & Social Justice in Mathematics Education.

**John Staley**, Baltimore County Public Schools, Towson, Maryland

**President**, Paul D. Gray, Jr., NCSM S2 Regional Director, Dallas, Texas

### OVERTHROWING THE TYRANNY OF “PERCENT CORRECT” AS THE MEASURE OF PROFICIENCY

Session 1311 | 11:15 AM–12:15 PM | 145A | Strand 3 | 6–8

This talk reports on new representations of students' progress along learning trajectories: a combination of the typical “percent correct” and a new color-coded representation of progress on the trajectory. Interview data demonstrate how students and teachers interpret and use the two representations in classroom interactions. A more precise proficiency-based measure of progress can help students to participate more fully in learning and help teachers to target their use of materials and groups more effectively.

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

**Meetal Shah**, North Carolina State University, Raleigh, North Carolina

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

**William McGowan**, North Carolina State University, Raleigh, North Carolina

### HOW TO TALK MATHEMATICS SO STUDENTS LEARN

Session 1312 | 11:15 AM–12:15 PM | 145B | Strand 3 | General

There is substantial evidence linking student talk to mathematical learning. But not all talk is productive and more math talk does not necessarily lead to more learning. This session will address the components of “productive math talk” including a set of talk moves that teachers can use to keep the student talk focused on the key ideas of the lesson. Strategies for coaching teachers on the use of math talk will also be addressed.

**Nancy Anderson**, Milton Academy, Milton, Massachusetts

**Doana Marcellus**, Milton Academy, Milton, Massachusetts







## MONDAY SESSIONS

### COACHING THAT CONNECTS TEACHING PRACTICES TO DEVELOPING STUDENTS' MATHEMATICAL PROFICIENCY

Session 1313 | 11:15 AM–12:15 PM | 146A | Strand 2 | General

We will explore how coaches can empower teachers and how teachers can empower students by making explicit connections between the NCTM Principles to Actions' Teaching Practices and students' mathematical proficiency. We will share a framework and tools designed to support coaches as they help teachers shift toward more effective teaching practices, and support teachers as they monitor the extent that such teaching practices impact students' opportunities to engage in and develop mathematical practices.

**Jennifer Bay-Williams**, University of Louisville, Louisville, Kentucky

**Maggie McGatha**, University of Louisville, Louisville, Kentucky

### CURRICULAR COHERENCE AND TEACHING ROUTINES: DESIGNING SCALABLE MATHEMATICS CURRICULUM FOR ALL CLASSROOMS

Session 1314 | 11:15 AM – 12:15 PM | 146B | Strand 5 | 6-8, 9-12

The right materials offer a path to success for all teachers, from recent graduates to veteran educators. During this session, learn how Illustrative Mathematics designed a core program that supports all teachers by providing coherent mathematical pathways and a small set of straightforward teaching routines; hear field observations from both curriculum authors and practicing educators; and discover what we're learning in our first year of distributing the materials as open educational resources (OER).

**Bill McCallum**, Illustrative Mathematics, Tucson, Arizona

**Tammy Baumann**, Open Up Resources, San Francisco, California

### USING VIDEO TO SUPPORT THE IMPROVEMENT OF TEACHING PRACTICE

Session 1315 | 11:15 AM–12:15 PM | 146C | Strand 2 | General

Video records of teaching from a variety of settings are broadly used in teacher development. This session focuses on learning goals for teachers which can be supported through the use of video and the selection of video-based tasks in light of those goals. We will offer specific tools for coaches to use when selecting a video-based task. Participants will engage in examining and designing video activities utilizing resources presented in the session.

**Meghan Shaughnessy**, University of Michigan, Ann Arbor, Michigan

**Nicole Garcia**, University of Michigan, Ann Arbor, Michigan

**Deborah Ball**, University of Michigan, Ann Arbor, Michigan

### AFTER GAIMME—MATHEMATICAL MODELING IN THE CLASSROOM

SESSION 1316 | 11:15 AM–12:15 PM | 147A | Strand 5 | 9–12

This session will address the question of how teachers can begin to introduce mathematical modeling into their high school classrooms, given the constraints of syllabi, high-stakes tests, and the use of standard texts. We will introduce new replacement modules which highlight the modeling process while presenting core content material. The session will be interactive with participants working in groups on modeling tasks, simulating best classroom practice.

**Sol Garfunkel**, COMAP, Inc., Bedford, Massachusetts

**Kathleen Snook**, COMAP, Inc., Bedford, Massachusetts

### BUT WHY DOES IT WORK? USING EXAMPLES TO INVESTIGATE STRUCTURE

Session 1317 | 11:15 AM–12:15 PM | 147B | Strand 4 | 3–5

Many students appear to know how to compute, but what do they understand about the underlying structure of the operations? This talk will use evidence from our classroom-based research, including video clips, to show how, through reasoning about what appear to be simple examples, students dig more deeply into mathematical structure. Participants will consider how looking for and expressing regularity provides opportunities for all students to engage in significant mathematics.

**Susan Jo Russell**, TERC, Cambridge, Massachusetts

### SPONSOR SHOWCASE

#### CODING: AN APPLICATION OF STEM IN THE MATHEMATICS CLASSROOM

Session 1321 | 11:15 AM–12:15 PM | 149AB | Strand 3 | 6–8, 9–12

Are you trying to take the first or next step in bringing STEM into your mathematics classrooms? We'll discuss how teams across our state are collaborating to bring the benefits of STEM learning to mathematics classrooms. We share our experiences in building a professional learning program that equips mathematics teachers with the knowledge and skills to engage students in meaningful learning experiences through coding. Leave with real advice and lessons-learned to help you get started.

**Michelle Rinehart**, Region 18 Education Service Center, Midland, Texas

**Andi Parr**, ESC Region 12, Waco, Texas



## MONDAY SESSIONS



### RESPONSE TO INTERVENTION: AMPLIFY INSTRUCTION; DON'T SIMPLIFY CONTENT

Session 1322 | 11:15 AM–12:15 PM | 150A | Strand 1 | PK–2, 3–5, 9–12

Interventions should focus on amplifying instruction, curriculum, and community, not simplifying content.

All students deserve to participate as an integral part of a community of mathematicians. We will share how we have integrated collaborative teaching, planning, and learning to ensure that strong instruction is the first step in providing equitable and accessible interventions.

**Sarah Caban**, Maranacook School District, Readfield, Maine

**Deborah Hatt**, RSU #38, Readfield, Maine

**Janet Delmar**, Maranacook School District, Readfield, Maine

**Carolyn Watkins**, Maranacook School District, Readfield, Maine

**Nancy Harriman**, Maranacook School District, Readfield, Maine

### PROBLEM STRINGS FOR ALL: DEVELOPING STUDENT AND TEACHER MATHEMATICS

Session 1323 | 11:15 AM–12:15 PM | 150B | Strand 4 | 9–12

Problem strings are not simply purposefully designed sequences of problems, but also a powerful re-organizer of mathematical activity for students and teachers alike. In this dynamic session we will share the purposes of problem strings, model several new algebra strings, and discuss how the routine can be used to increase access to sophisticated mathematics. We show how problem strings can be leveraged for changing secondary students' and teachers' practice.

**Pamela Harris**, Texas State University, San Marcos, Texas

**Kara Imm**, Math in the City, New York, New York

### LEARNING FROM STUDENTS: BUILDING TEACHER CONTENT KNOWLEDGE

Session 1324 | 11:15 AM–12:15 PM | 151A | Strand 4 | General

The CCSSM required a shift in many teachers' thinking. With language in the standards like "analyze," "interpret," "understand," and "relate," teachers have had to build deeper knowledge of why and how the mathematics works, not just how to find the answer. We will look at how examining potential pathways of student learning within a given domain and analyzing student responses to deliberately crafted assessment items expand teacher knowledge of the underlying mathematics.

**Laurie Speranzo**, Institute for Learning, Pittsburgh, Pennsylvania

**Kristin Klingensmith**, Institute for Learning, Pittsburgh, Pennsylvania

### GAMES FOR YOUNG MATHEMATICIANS: PROMOTING EQUITY IN EARLY CHILDHOOD MATHEMATICS THROUGH GAMES THAT FOSTER PERSISTENCE AND A LEARNING MINDSET

Session 1325 | 11:15 AM–12:15 PM | 151B | Strand 1 | PK–2

Learning how preschool children develop mathematical thinking and perseverance through fun, developmentally appropriate games is central to the Games for Young Mathematicians project. In this session, participants will play mathematics games and watch video of Head Start children engaging in mathematics. Participants will learn about research on the importance of early mathematics and perseverance in early childhood and ideas about how, as leaders, to incorporate this work to promote children's lifelong interest in mathematics.

**Kristen Reed**, Education Development Center, Waltham, Massachusetts

**Jessica Young**, Education Development Center, Waltham, Massachusetts

**E. Paul Goldenberg**, Education Development Center, Waltham, Massachusetts

**Deborah Spencer**, Education Development Center, Waltham, Massachusetts

### ORCHESTRATING PRODUCTIVE DISCOURSE IN THE CLASSROOM

Session 1326 | 11:15 AM–12:15 PM | 152A | Strand 2 | PK–2, 3–5

Facilitating productive student-to-student conversations about mathematics is a difficult task. In this session we will observe and discuss strategies around engaging all students in a rich dialogue that moves beyond showing and telling of student strategies to helping students make mathematical connections. We will examine two classroom videos, compare and contrast the coach's intentional moves, and discuss how we have used this format to push both administrators' and teachers' understanding around student discourse.

**Melissa Canham**, Downey Unified School District, Downey, California

**Glenda Martinez**, Downey Unified School District, Downey, California

**Julie Yearsley**, Downey Unified School District, Downey, California

### EARLY LEARNING: CULTIVATING EFFECTIVE STUDENT DISCOURSE TO ENHANCE MATHEMATICAL UNDERSTANDINGS

Session 1327 | 11:15 AM–12:15 PM | 152B | Strand 4 | PK–2

Mathematical discourse can be quite a hurdle at times. We need for our children to learn how to be confident in sharing their mathematical thoughts explicitly and confidently at an early age. Starting in PK and kindergarten, teachers and administrators can use the strategies learned in this session to nurture mathematical language structures, which will in turn, cultivate mathematical discourse in later years.

**Jessica Bobo**, ORIGO Education, Inc., Earth City, Missouri





## MONDAY SESSIONS

### **EQUITY IN PRACTICE: IMPROVING STUDENT ACHIEVEMENT THROUGH SOCIAL JUSTICE MATHEMATICS**

Session 1331 | 11:15 AM–12:15 PM | 143A | Strand 1, 3–5, 6–8, 9–12

In a joint position statement, NCSM and TODOS: Mathematics for ALL, called for using social justice as a lens to teach mathematics. Participants will discuss salient features of social justice mathematics and culturally relevant pedagogy to deepen their understanding of how to make transformative changes to improve student achievement. After a brief introduction of terms and summary of current research, participants will break into leader groups, report back, and leave with classroom resources and look-fors.

**Shelly Jones**, Central Connecticut State University, New Britain, Connecticut

**Georgina Rivera**, Bristol Public Schools, Bristol, Connecticut

### **PHOTO-DRIVEN DATA MEETINGS**

Session 1333 | 11:15 AM–12:15 PM | 143C | Strand 3 | General

Utilizing photographs of written student thinking during data meetings rapidly focuses team discussion on the students' understanding and misconceptions. As photographs are examined, trends clearly emerge and highly purposeful professional development can take place during the data meeting. This highly interactive session will feature numerous examples of how photographs are utilized throughout data meetings.

**Steve Wyborney**, Ontario School District, Ontario, Oregon

### **OPPORTUNITIES FOR NCSM PROFESSIONAL LEARNING LEADERSHIP EVENTS**

Session 1334 | 11:15 AM–12:15 PM | 144A | Strand 5 | General

Your NCSM Professional Learning co-directors will facilitate an active session that informs how NCSM embodies our mission statement to equip mathematics leaders to go back to their districts and empower their teachers to provide high-quality mathematics teaching and learning every day for each and every learner. We will share the professional learning opportunities available for mathematics leaders to access at a seminar, a leadership academy, a planned local event, or an individualized on-demand module.

**Pat Baltzley**, NCSM Professional Learning Co-Director, Gardiner, MT

**Jackie Palmquist**, NCSM Professional Learning Co-Director, Aurora, IL

### **IMPROVEMENT BY DESIGN: WISDOM FROM TEACHERS DRIVES REVISION OF SAN FRANCISCO'S MATHEMATICS CORE CURRICULUM**

Session 1335 | 11:15 AM–12:15 PM | 144B | Strand 5 | General

How do we design for curriculum that balances innovation with a coherent experience for students? In this interactive session, we will share the processes that San Francisco Unified School District has used to develop and iterate on a curriculum that meets the needs of our diverse population in an ever-changing digital world. Participants will also delve into SFUSD's Digital Math Teaching Toolkit, including video podcasts describing the units and professional development modules. Bring a device!

**James Ryan**, San Francisco Unified School District, San Francisco, California

**Noam Szoke**, San Francisco Unified School District, San Francisco, California

**Alyssa Foss**, San Francisco Unified School District, San Francisco, California

### **COACHING TO DISRUPT RACIALIZED PARTICIPATION PATTERNS**

Session 1336 | 11:15 AM–12:15 PM | 144C | Strand 1 | 3–5, 6–8, 9–12

In the San Francisco Unified School District, there is a large opportunity gap for African American and Latino students; something is not working. Middle school coaches have created a tool to collect participation data to surface inequities. As strengths-based coaches, we co-learn with teachers around implicit biases and inequitable participation patterns, creating counternarratives for students. In this session, we will share our experiences and analyze racial patterns of participation to have deep conversations about teaching and learning.

**Emma Trevino**, San Francisco Unified School District, San Francisco, California

**Alisa Brown**, San Francisco Unified School District, San Francisco, California

**Tierra Fender**, San Francisco Unified School District, San Francisco, California

**12:30 PM–1:15 PM**

### *Hot Topic:*

### **UNDERSTANDING THE RESISTANT TEACHER—WHY CHANGE IS HARDER FOR SOME PEOPLE AND HOW WE CAN SUPPORT THEM**

Session 1403 | 12:30 PM–1:15 PM | Hall A | Strand 2 | General

In this interactive session, we will explore the conditions that lead to resistance and how coaches, administrators, and/or teacher leaders can support teachers throughout the change process.

**Mike Flynn**, Mount Holyoke College, South Hadley, Massachusetts



# MONDAY SESSIONS



12:30 PM–1:30 PM

## *Box Lunch* SPONSORED BY ORIGO (TICKET REQUIRED)



Boxed Lunch | 12:30 PM – 1:30 PM | Hall A | General

Do you want to focus instruction on student thinking and increase your teachers' mathematics knowledge? If so, join ORIGO Education for lunch on Monday! Experience hands-on learning at three different stations provided by ORIGO Education. This includes playing interactive games in our Stepping Stones 2.0 program, finding fun intervention resources, or challenging your friends to problem-solving activities.

12:30 PM–1:30 PM

### MAJOR PRESENTATION

## HOW AND WHY ATTENTION TO STUDENT THINKING SUPPORTS TEACHER AND STUDENT LEARNING: THE CASE OF COGNITIVELY GUIDED INSTRUCTION (CGI)

Session 1401 | 12:30 PM–1:30 PM | Salon G/H | Strand 4 | PK–2, 3–5, 6–8

For over 35 years teachers have been engaging in professional development focused on the development of children's mathematical thinking as a part of CGI. This presentation will focus on what we have learned and what the research shows about what matters in supporting teachers to attend to children's thinking and why that matters for meeting the needs of each student.



**Megan Franke**, UCLA, Los Angeles, California

**President**, Linda Fulmore, Positions Paper Editor, Cave Creek, Arizona

Megan Franke, a professor of education at UCLA, supports and studies teachers as they make use of research based information about the development of children's mathematical thinking (CGI) to support student participation and learning. She works with students, teachers, and schools to challenge inequities and create opportunities for each of our students to learn mathematics with understanding. Her research work to support teachers, schools and communities was recognized with the 2012 AERA Research into Practice Award.

### SPOTLIGHT SPEAKER

## CONTENT COACHING: IT TRANSFORMS INSTRUCTION

Session 1402 | 12:30 PM–1:30 PM | Salon I | Strand 2 | General  
Transformation means big change—think caterpillar to butterfly. Coaches challenge and support teachers to take a learning stance and cultivate a growth mindset. Content coaching transforms teaching in ways that dramatically increase teacher content and pedagogical knowledge. Content coaches encourage teachers to think more deeply about the mathematics they teach and the individual students in their care. Together content coaches and teachers dive deeper to become more courageous, nuanced, innovative, and influential educators—come find out how.

**Lucy West**, Metamorphosis Teaching Learning Communities, New York, New York

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

**President**, Mona Toncheff, eNews Editor and Communications Chair, Phoenix, Arizona

## CONCEPTS AND ROUTINES FOR HIGH SCHOOL CLASSROOMS: WHAT WE CAN LEARN FROM ELEMENTARY CLASSROOMS

Session 1411 | 12:30 PM–1:30 PM | 145A | Strand 4 | 6–8, 9–12

Having transitioned from a high school mathematics teacher into a role supporting K–12, I have learned so much from elementary classrooms about how concepts in number and patterning develop across the years. Come explore how these powerful foundations, and classroom routines, can extend into high school level concepts of Number, Algebra, and Functions.

**Marc Garneau**, District Education Centre—Ed. Services, Surrey, British Columbia

## THERE'S MORE TO MATHEMATICS THAN NUMBERS—TEACHER TALK, WORD PROBLEMS, AND ENGLISH LANGUAGE LEARNERS

Session 1412 | 12:30 PM–1:30 PM | 145B | Strand 1 | 6–8

Using the DIAL Model (Differentiating Instructional and Academic Language), we will look at the language of word problems related to ratios and proportional relationships and modify language to reveal the mathematics within. Through this model, complex mathematical concepts will become more accessible to struggling learners, especially English Language Learners.

**Jeanne Simpson**, Alabama Math, Science, and Technology Initiative—UA Huntsville, Huntsville, Alabama

**Andrea Word**, The University of Alabama in Huntsville, Huntsville, Alabama







## MONDAY SESSIONS

### *Ross Taylor Past Presidents' Session:*

#### **SPEED CHATS FOR LEADERS AROUND CRITICAL CHALLENGES AND EFFECTIVE SOLUTIONS**

Session 1413 | 12:30 PM–1:30 PM | 146A | Strand 5  
PK–2, 3–5, 6–8, 9–12, College | General

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

**John Staley**, Baltimore County Public Schools, Towson, Maryland

**Valerie L. Mills**, Oakland Schools, Waterford, Michigan

**Suzanne Mitchell**, Arkansas State University, Jonesboro, Arkansas

**Diane Briars**, National Council of Teachers of Mathematics, Reston, Virginia

**Timothy Kanold**, Loyola University, Chicago, Illinois

**Linda Gojak**, Mathematics Consultant, Willowick, Ohio

**Carole Greenes**, Arizona State University, Tempe, Arizona

**Steve Leinwand**, American Institutes for Research, Washington, D.C.

**Henry Kepner**, University of Wisconsin, Milwaukee, Wisconsin

#### **SIX STRATEGIES TO HELP TEACHERS MAKE CONNECTIONS THAT SUPPORT LEARNING**

Session 1414 | 12:30 PM–1:30 PM | 146B | Strand 2 | 6–8, 9–12

Learning is composed of connecting new ideas to old, different strategies for the same task, multiple representations, and one mathematical domain to another, connections necessary to retain and use knowledge. Participants will consider how to help teachers design classroom opportunities using tasks and facilitating discussions, often involving interactive dynamic technology, to support students in making connections and organizing their learning for understanding.

**Gail Burrill**, Michigan State University, East Lansing, Michigan

#### **SOCIAL MEDIA, GLOBAL CONNECTEDNESS, AND THE COLLAPSE OF TRUST INSTITUTIONS: CREATING A GLOBAL CURRICULUM WITH DECISION-MAKING MATHEMATICS**

Session 1415 | 12:30 PM–1:30 PM | 146C | Strand 5 | General

The revolutions in technology, social media, and collaboration are beginning to have a profound effect on the purpose of mathematics in societies around the world. The speed and depth of conversation have begun to steer mathematics in the direction of a most ambitious goal—to create a unified and portable global mathematics curriculum. In this session participants will not only see evidence for this, but also contribute to building this exciting model of the future of mathematics.

**Sunil Singh**, Scolab/Math Consultant, Montreal, Ontario

#### **COACHING THROUGH CO-TEACHING MODELS TO FOSTER MATHEMATICAL LEARNING OF TEACHERS AND STUDENTS**

Session 1416 | 12:30 PM–1:30 PM | 147A | Strand 2 | PK–2, 3–5, 6–8, 9–12

In this presentation, participants will participate in a jigsaw activity to learn about the elements of six co-teaching models and how to intentionally select a specific model to use in developing teacher leaders in mathematics. Moreover, knowing which method to use during the modeling and observing phase in the coaching cycle will strengthen mentoring strategies and foster high-quality mathematics education for all learners.

**Kellian Hughes**, Houston ISD, Houston, Texas

#### **DON'T MAKE EVERY STRATEGY A SEPARATE LESSON: DEVELOPING UNDERSTANDING AND SKILL WITH K–3 OPERATIONS**

Session 1417 | 12:30 PM–1:30 PM | 147B | Strand 4 | PK–2

Are you ready to put debates about the usefulness of strategies for addition and subtraction to rest? Empower all students with conceptual understanding and procedural skill across grades K–3 by carefully sequencing, representing, and connecting high-leverage strategies for addition and subtraction.

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

**Marni Greenstein**, Student Achievement Partners, New York, New York

### SPONSOR SHOWCASE

#### **PROMOTING A MATHEMATICS POSITIVE CULTURE**

Session 1421 | 12:30 PM–1:30 PM | 149AB | Strand 5 | PK–2, 3–5, 9–12

Children are born with a natural curiosity that includes mathematical notions such as quantity, shape, and patterns. Despite this natural interest, 30% of adults would rather clean the bathroom than solve a mathematics problem. This seminar addresses why negative attitudes towards mathematics are prevalent and how K–12 mathematics leaders and educators can create a positive mathematics culture by reigniting student curiosity, developing student grit, and encouraging growth mindsets.

**Raj Shah**, Math Plus Academy, Powell, Ohio

#### **A WHITE GIRL AND A BROWN GUY GET REAL ABOUT CULTURALLY RESPONSIVE INSTRUCTION (TEACHING CULTURALLY—TEACHING CULTURE)**

Session 1422 | 12:30 PM–1:30 PM | 150A | Strand 1 | General

Hear about lessons learned from a mathematical friendship between an Alaskan rural educator and an Ojibwe urban educator on how to help students achieve success in a diverse classroom. Participants will learn the distinction between teaching culture in mathematics and teaching mathematics culturally. The focus will be on the development of growth mindset through place-based and student-centered instruction.

**RunningHorse Livingston**, Mathematize Inc., Franklin, Wisconsin

**Bobbi Jo Erb**, BE Educational Consulting, LLC, Chugiak, Alaska



## MONDAY SESSIONS



### **MATHEMATICS AND CURIOSITY MAGNIFIED! ENGAGING IN STEM WITH PRIMARY STUDENTS**

Session 1423 | 12:30 PM–1:30 PM | 150B | Strand 3 | PK–2

Embrace students' natural curiosity with STEM lessons that integrate mathematics across subjects in your primary classroom to heighten student engagement. Participants will take part in hands-on STEM activities that transformed teachers' classroom culture to emphasize access and agency for all students.

**Rebecca Lewis**, Shasta County Office of Education, Redding, California

### **MATHEMATICS INTERVENTION: STRATEGIES TO HELP STUDENTS CATCH UP**

Session 1424 | 12:30 PM–1:30 PM | 151A | Strand 1 | 6–8, 9–12

Struggling learners deserve programs that help them catch up. Yet, support classes typically focus on below-grade level skills—an insidious form of tracking that does little to help students do better in their core mathematics class. Based on research and reality, participants will explore six principles that may promote shifts in traditional thinking about mathematics intervention, experience principles in the context of proportional reasoning, and leave ready to address this important equity issue.

**Shelley Kriegler**, Center for Mathematics and Teaching, Porter Ranch, California

### **THE PRODUCTIVE STRUGGLE IS REAL**

Session 1426 | 12:30 PM–1:30 PM | 152A | Strand 3 | 6–8

We lead teachers through identifying big ideas, developing essential questions, designing engaging lessons, and implementing worthwhile tasks, but what if students lack the productive struggle needed for learning to take place? In this interactive session, participants will increase their capacity as a mathematics coach by engaging in a process for guiding a mathematics team through creating effective tools, implementing lessons and inspiring growth mindsets to increase student perseverance.

**Melissa Waggoner**, Howard County Public Schools, Hanover, Maryland

**Lindsay Kelley**, Howard County Public Schools, Columbia, Maryland



### **COACHING IN THE MOMENT: MOVING BEYOND OBSERVATION AND DEBRIEF**

Session 1427 | 12:30 PM–1:30 PM | 152B | Strand 2 | PK–2, 3–5, 6–8, 9–12

Coaching in the Moment enables coaches to move beyond observation and feedback, to side-by-side coaching with teachers. We will guide participants through this differentiated approach of immediate, actionable feedback, and share our experience, research, and results. Participants will analyze video clips, engage in group conversations, and examine documents, such as coaching templates, to see how coaching in the moment can be put into practice to improve instruction and student learning.

**Donna Sorila**, Lexington Public School District, Lexington, Massachusetts

**Melissa Eastwood**, Lexington Public Schools, Lexington, Massachusetts

**Sonja Kuokkanen**, Lexington Public Schools, Lexington, Massachusetts

**Nataliya Paquette**, Lexington Public Schools, Lexington, Massachusetts

### **RE-ENVISION MATHEMATICS INSTRUCTION FOR ENGLISH LANGUAGE LEARNERS**

Session 1431 | 12:30 PM–1:30 PM | 143A | Strand 1 | General

Consider frameworks for shaping instruction for English Language Learners. Explore practical ways to use those frameworks to influence mathematics learning environments. Learn about research and best practices. Debate with and learn from colleagues as we discuss how leaders can support best practices in classrooms.

**John Sessoms**, McGraw-Hill Education, Columbus, Ohio

**Janet Pittock**, McGraw-Hill Education, Columbus, Ohio

### **COACHING HEAVY THROUGH THE DEBRIEF PROCESS**

Session 1432 | 12:30 PM–1:30 PM | 143B | Strand 2 | General

The heart of coaching, for both teachers and coaches, lies in the debrief conversations that occur at the end of the coaching cycle. In order to make a difference, the conversation needs to go beyond the surface and create a process where each adult is held responsible for student success. We will explore a process that we have adopted in order to build capacity for coaching allowing us to become agents of change with teachers.

**Annette Zook**, Harrison School District 2, Colorado Springs, Colorado

**Allison Fox**, Harrison School District 2, Colorado Springs, Colorado





# MONDAY SESSIONS

## THE BIG INVESTMENTS: LEVERAGING FOUR AREAS OF FOCUS TO IMPROVE DISTRICT-WIDE INSTRUCTIONAL PRACTICES

Session 1433 | 2:15 PM–3:15 PM | 144A | Strand 3 | General  
Progressing toward a vision of equitable and excellent district-wide mathematics instruction requires a complex system change that can feel overwhelming and unmanageable. In this session, participants will engage with four simple, repeatable strategies used across all grade levels in Newark Public Schools to powerfully improve professional learning experiences and instructional practices in every mathematics classroom.

**Nicholas Lee-Romagnolo**, Newark Public Schools, Newark, New Jersey

## SUPPORTING ENGLISH LANGUAGE LEARNERS: BEST PRACTICES, TOP RESEARCH, NEW RESOURCES

Session 1434 | 12:30 PM–1:30 PM | 144A | Strand 1 | General  
Engage in collaborative dialogue around a yearlong study focused on supporting ELL students in reaching the expectations of college- and career-ready standards. Recognizing the supports ELL students need in mathematics, Student Achievement Partners embarked on a research-based quest to improve materials for teachers and students. Learn about our process and examine a sampling of our newly modified Achieve the Core resources.

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

**Barbara Beske**, Student Achievement Partners, New York, New York

## MATH TEACHERS' CIRCLES: COLLABORATING TO BUILD K–20 CAPACITY IN MATHEMATICS

Session 1435 | 12:30 PM–1:30 PM | 144B | Strand 5 | General  
Math Teachers' Circles (MTCs) are communities of K–12 teachers and higher-education professors who meet regularly to investigate mathematics together. Flexible and inexpensive, these Circles form a backbone of support for teachers' mathematical and professional growth, while also serving as a lasting structure for collaboration across the K–20 continuum. Learn how you as a mathematics leader can start an MTC, and discover the leadership and mentoring resources available through the national MTC Network.

**Brianna Donaldson**, American Institute of Mathematics, San Jose, California



## 20 YEARS OF LESSONS LEARNED ABOUT RECRUITMENT AND RETENTION FROM A FOUR-YEAR UNDERGRADUATE COHORT MODEL PROGRAM

Session 1436 | 12:30 PM–1:30 PM | 144C | Strand 5 | 9–12, College  
Aspects of the TIME 2000 Program (Teaching Improvements through Mathematics Education) are described that support the recruitment, preparation, and retention of highly competent secondary mathematics teachers. Strategies for recruiting students from high school are shared, as well as program components designed to increase retention of candidates in the program, and in the teaching profession.

**Alice Artzt**, Queens College of CUNY, Flushing, New York

**Frances Curcio**, Queens College of CUNY, Flushing, New York

**Alan Sultan**, Queens College of CUNY, Flushing, New York

**Mara Markinson**, East-West School of International Studies, New York

**Eric Glatz**, PACE High School, New York, New York

**Kathleen Lyons**, PACE High School, New York, New York

## 1:45 PM–2:30 PM

### *Hot Topic:*

### INTEGRATING MATHEMATICS AND SOCIAL JUSTICE INTO OUR WORK

Session 1503 | 1:45 PM–2:30 PM | Hall A | Strand 1 | General

Let's strategize, share ideas and activities so social justice is not an "add-on" but an integral part of our work.

**Nora Ramirez**, Nora Ramirez Consulting, Tempe, Arizona



# MONDAY SESSIONS

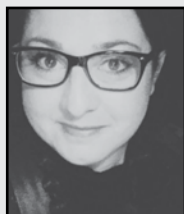


1:45 PM–2:45 PM

## MAJOR PRESENTATION

### TEACHER TALK IN MATHEMATICS! THE POWER OF LANGUAGE AND QUESTIONING IN THE CLASSROOM

Session 1501 | 1:45 PM–2:45 PM | Salon G/H | Strand 4 | PK–2, 3–5, 6–8, 9–12  
Sophie will share her current PhD research and findings that she is doing with Professor John Hattie on the power of language at the University of Melbourne, Australia. Sophie will share findings on high-impact teaching strategies and discuss the most effective ways to use language across primary and secondary mathematics classrooms to create deep level learning, transfer of understandings, effective questioning and classroom discussion. Sophie will provide participants with current research on teacher talk and student voice, and how this can be used in mathematics classrooms K–12.



**Sophie Murphy**, University of Melbourne, Melbourne, Victoria

**President**, Sara Delano Moore, Conference Coordinator, Kent, Ohio

Sophie Murphy is a highly experienced Kinder to Year 12 teacher and a highly acclaimed educational leader in Australia and Internationally. She is currently completing her PhD at the University of Melbourne under the supervision of Professor John Hattie. Sophie has a passion and determination to translate essential educational research to educational settings. She has taught and held leadership positions in both Primary and Secondary settings for over the past 15 years in Australia. More recently, Sophie has been working with high profile sporting teams across Australia to develop meaning and effective teaching and learning for coaches.

Sophie is part of the Science of Learning and Research Centre at the University of Melbourne and a leader of the 2018 Network of Schools at the University of Melbourne. Sophie's PhD research focus is on effective classroom talk and questioning, with a specific focus on student voice in the classroom. Sophie is analyzing of the structure, content, and function of student voice through student experiences in the Interactive Classroom at the University of Melbourne. Sophie is hoping to contribute valuable insights as a forward thinking, relevant and responsive educator into the private world of student voice and classroom discourse at a micro analytic level to increase our understanding of the nature of student's discourse and its contribution to learning, feedback, clarity and the growth and development for all students.

## SPOTLIGHT SPEAKER

### NUMBER TALKS: SHIFTING THE CLASSROOM CULTURE

Session 1502 | 1:45 PM–2:45 PM | Salon I | Strand 1 | General  
How do we shift the classroom culture from passive, didactic learning to one of inquiry, reasoning, and problem solving for all students? This session will explore the use of number talks as a vehicle for changing classroom culture through the lenses of student engagement, classroom discourse, and mathematical mindsets. Participants will participate in number talks and analyze classroom videos of number talks using fractions and whole numbers.

**Sherry Parrish**, Author and Consultant, Birmingham, Alabama

**President**, Kathlan Latimer, NCSM W2 Regional Director, Suisan City, California

### MATH TALKS: ADAPTING THE NUMBER TALKS STRUCTURE FOR SECONDARY MATHEMATICS CLASSROOMS

Session 1511 | 1:45 PM–2:45 PM | 145A | Strand 3 | 6–8, 9–12  
How can effective number talk routines be adapted to meet the needs of secondary classrooms? Explore strategies and resources for implementing math talks in grade 6 algebra based on a regional professional development initiative focused on numeracy, sense-making, and fostering conceptual understanding. See how math talks provide opportunities for students to communicate and justify mathematical ideas, reasoning, and arguments within a concise, organized classroom structure. Consider a coach's role in supporting classroom implementation of these tasks.

**Michelle Rinehart**, Region 18 Education Service Center, Midland, Texas

## PRESIDENTS EXCHANGE–AMTE

### PROFESSIONAL DEVELOPMENT SUPPORTING TEACHERS FOCUSING ON STUDENTS' INFORMAL MATHEMATICAL THINKING: A POSITIVE APPROACH TO NEGATIVE NUMBERS

Session 1512 | 1:45 PM–2:45 PM | 145B | Strand 4 | 3–5, 6–8  
Professional development focusing on students' mathematical thinking is effective for supporting teacher learning, but some content areas are not well studied and we don't yet know how students' ideas develop. By merging research on teacher professional development with research on students' understandings of negative numbers, this session will help those of us working with teachers consider how to support their students to approach integers from a more problem-solving perspective focused on ways of reasoning.

**Randolph Philipp**, SDSU Professor, San Diego, California





## MONDAY SESSIONS

### ALTERNATIVE PROFESSIONAL DEVELOPMENT STRUCTURES FOR TEACHERS (SUMMER MATH INSTITUTE)

Session 1513 | 1:45 PM–2:45 PM | 146A | Strand 2 | PK–2, 3–5, 6–8, 9–12

See how two districts have utilized alternative professional learning structures to meet the needs of teachers through a dynamic Summer Math Institute that has proven to drive teacher buy-in. Teachers walk away from these Summer Math Institutes feeling ownership of the collective district vision for mathematics and are set up for success to improve outcomes for all students.

**Emma Druitt**, Garden Grove Unified School District, Garden Grove, California

**Mikila Fetzer**, Sacramento City Unified School District, Sacramento, California

### PRINCIPLES FOR DESIGNING POWERFUL, ENGAGING, AND EFFECTIVE PROFESSIONAL LEARNING EXPERIENCES

Session 1514 | 1:45 PM–2:45 PM | 146B | Strand 2 | General

Instructional leaders, administrators, and coaches need effective strategies to engage pre-service and in-service participants in mathematical thinking, reasoning, and reflecting. This session will provide leaders in mathematics education with effective and engaging strategies that can be applied to a variety of mathematics topics to enrich and energize professional development experiences for long-term impact.

**Delise Andrews**, Lincoln Public Schools, Lincoln, Nebraska

**Beth Kobett**, Stevenson University, Stevenson, Maryland

### SYSTEMWIDE CONSEQUENCES OF MISUNDERSTANDING MATHEMATICAL RIGOR

Session 1515 | 1:45 PM–2:45 PM | 146C | Strand 5 | General

Schools strive to provide rigorous mathematics courses. Colleges and careers look for evidence of rigor on students' resumes. But what exactly is rigor in mathematics? We will show that the education system gets it wrong. Misunderstanding rigor has significant negative impacts on students and society in general. We will discuss ways to improve courses, pathways, and assessments through a better understanding of mathematical rigor.

**Patrick Callahan**, Callahan Consulting, Coronado, California

### NCSM SITUATIONS: USING CLASSROOM-BASED SCENARIOS TO BUILD MATHEMATICAL KNOWLEDGE FOR TEACHING

Session 1516 | 1:45 PM–2:45 PM | 147A | Strand 4 | 9–12

Daily, teachers use their mathematical knowledge to ask purposeful questions, facilitate discussions, explain ideas, create examples, counter-examples and more. How can we develop this mathematical knowledge for teaching? In this session, you will explore ready-to-use professional development cases from the NCSM *Facilitator's Guidebook for Use of Mathematics Situations in Professional Learning*, which are authentic secondary level episodes. Implications for design of similar learning experiences for teachers in your setting will be discussed.

**Diane J. Briars**, National Council of Teachers of Mathematics, Reston, Virginia

**M. Kathleen Heid**, Penn State, University Park, Pennsylvania

**Suzanne Mitchell**, Arkansas State University, Jonesboro, Arkansas

**Steven Viktora**, NCSM Nominations Chair, Winnetka, Illinois

**Patricia Wilson**, Athens, Georgia

**James W. Wilson**, University of Georgia, Atlanta, Georgia

**Rose Mary Zbiek**, Penn State, University Park, Pennsylvania

**Glen Blume**, Penn State, University Park, Pennsylvania

### CPR FOR THE COMMON CORE: USING THE COMPREHENSIVE MATHEMATICS INSTRUCTION (CMI) FRAMEWORK TO UNPACK STANDARDS ACROSS A LEARNING CYCLE

Session 1517 | 1:45 PM–2:45 PM | 147B | Strand 4 | 9–12

The Comprehensive Mathematics Instruction (CMI) Framework developed by the Brigham Young University Public School Partnership informs teachers on how to align CCSSM content standards along a progression from emerging ideas, strategies, and representations towards more robust conceptual, procedural, and representational understanding. In this session, participants will use the CMI framework to deepen their understand of a subset of high school standards as they select, sequence, and connect these standards across a learning cycle of instruction.

**Scott Hendrickson**, Brigham Young University, Provo, Utah

**Sterling Hilton**, Brigham Young University, Provo, Utah





# MONDAY SESSIONS



## SPONSOR SHOWCASE

### UNIFYING THE MATHEMATICS EDUCATION EXPERIENCE—AND YOUR TECHNOLOGY!

Session 1521 | 1:45 PM–2:45 PM | 149AB | Strand 5 | 6–8, 9–12, College, General

For years, mathematics educators have used various technologies in an attempt to aid visualization and conceptualization, improve student understanding, and increase teaching efficiency. However, as technology has advanced, we find ourselves using several different pieces of hardware and software that don't play very nicely together. Thankfully, Casio has leveraged its 60 years of calculation innovation experience to solve this "technology fragmentation" problem. Come be among the first to experience and try our groundbreaking new platform!

**Mike Reiners**, Casio, Dover, New Jersey

### HELPING TEACHERS DEVELOP MATHEMATICAL KNOWLEDGE FOR USING PROPERTIES TO BUILD CRITICAL NUMERICAL FLUENCY WITH OPERATIONS

Session 1522 | 1:45 PM–2:45 PM | 150A | Strand 4 | PK–2, 3–5

The purpose of this presentation is to help leaders help teachers to realize and utilize the power of properties of operations to develop numerical fluency. These properties deepen student understandings of how and why operations work and increase student reasoning in mathematics. During this presentation, participants will examine number problems, identify the properties involved in finding the solutions, and examine effective ways to include this knowledge in mathematical discussions with students.

**Patsy Kanter**, Mathematics Consultant, New Orleans, Louisiana  
**Steve Leinwand**, American Institutes for Research, Washington, D.C.

### MAKING SENSE OF MATHEMATICS FOR COACHING AND ENGAGING HIGH SCHOOL TEACHERS

Session 1523 | 1:45 PM–2:45 PM | 150B | Strand 4 | 9–12

How do we support teachers to make sense of mathematics for teaching? Explore ways to structure planning and coaching opportunities using the TQE process: select and implement high cognitive demand tasks, develop and ask effective questions, and use evidence of student understanding. Discuss strategies to engage teachers in high-cognitive demand tasks through the planning, implementing, and reflecting process to support making sense of content with depth.

**Edward Nolan**, Towson University, Towson, Maryland

### HOW DO YOU SUPPORT PRIMARY TEACHERS IN BUILDING NUMBER SENSE?

Session 1524 | 1:45 PM–2:45 PM | 151A | Strand 4 | PK–2

This hands-on session will help you support primary teachers unravel the sequence of the many visual tools that can be used to support young students in learning number sense. Experience activities using a variety of tools including ten frames, rekenreks, 100s charts, number paths and lines. The progression is designed to help students make connections to tools, landmark numbers and guide you in helping teachers to do the same.

**Lisa Rogers**, Math Solutions, Sausalito, California

**Amy Mayfield**, Math Solutions, Sausalito, California

### STARTING WITH A VISION OF EQUITY: SUPPORTING DETRACKING THROUGH PROFESSIONAL DEVELOPMENT

Session 1525 | 1:45 PM–2:45 PM | 151B | Strand 1 | General

SFUSD continues our detracking efforts in a fourth year. This session will dive into our professional development (PD) principles and structures that built and shifted our district mathematics culture. Hear our story of lessons learned and challenges in re-culturing teams to work towards an equity vision that all students can make sense of rigorous mathematics in heterogeneous classes. Join in a conversation to explore the connections between PD, curriculum, coaching, and other policies that best support teachers.

**Angela Torres**, San Francisco Unified School District, San Francisco, California

**Emma Trevino**, San Francisco Unified School District, San Francisco, California

**Alisa Brown**, San Francisco Unified School District, San Francisco, California

### TRANSFORMING TEACHING AND LEARNING THROUGH NUMBER TALKS: PREPARING NEXT GENERATION MATHEMATICS LEADERS

Session 1526 | 1:45 PM–2:45 PM | 152A | Strand 5 | General

180 Washington State mathematics teachers of grades 4–20 are preparing to become Number Talk Support Team Leaders. Hear stories of how they are transforming mathematics classrooms as they study the question, "Can digging deeply into the mathematics and pedagogies of number talks transform mathematics classrooms in deep and profound ways?" The design and bedrock principles of the Mathematics Education Collaborative's (MEC) Number Talk Leadership Academy, led by Ruth Parker and Cathy Humphreys, will be shared.

**Ruth Parker**, Mathematics Education Collaborative (MEC), Ferndale, Washington





## MONDAY SESSIONS

### EMPOWERMENT OF TEACHERS THROUGH RICH MATHEMATICAL TASKS AND THE STANDARDS FOR MATHEMATICAL PRACTICE

Session 1527 | 1:45 PM–2:45 PM | 152B | Strand 3 | General

We will discuss our model for professional development that we have used over the last six years that has led to the development of teacher leaders. We provide a continuum for describing teacher and student growth with the Standards for Mathematical Practice. Rich mathematical tasks, which can be used across multiple grade levels, will illustrate how teachers and students are able to move along our continuum.

**Erick Hofacker**, University of Wisconsin–River Falls, River Falls, Wisconsin

**Kathryn Ernie**, University of Wisconsin–River Falls, River Falls, Wisconsin

### ENGAGED IN COACHING: COME TAKE PART IN A COACHING CYCLE!

Session 1531 | 1:45 PM–2:45 PM | 143A | Strand 2 | 6–8, 9–12, General

We will engage in a coaching cycle. You will have the opportunity to observe, reflect on, and contribute to a coaching cycle. An award-winning practicing classroom teacher will engage with an instructional coach in effort to gain insight into his teaching practices. You will carefully consider the role of the instructional coach and view the classroom of the teacher. Throughout the coaching cycle you will reflect on the work and generate growth-promoting questions.

**Travis Lemon**, Mathematics Vision Project, Lehi, Utah

**Barbara Kuehl**, Mathematics Vision Project, Lehi, Utah

### SUPPORTING TEACHERS TO SUPPORT STUDENTS AS THEY WORK WITH BAR MODELS

Session 1532 | 1:45 PM–2:45 PM | 143B | Strand 4 | General

Bar models (also called strip or tape diagrams) are a powerful visual tool for representing and solving mathematics problems. How can you support teachers as they implement this problem-solving strategy? This hands-on session will explore strategies for scaffolding students as they learn to effectively work with bar models. Examine and analyze scaffolding materials teachers created during professional development. Evaluate selected online resources. Familiarity with bar models is assumed.

**Susan McMillen**, SUNY Buffalo State, Buffalo, New York

### BUILDING TEACHER CAPACITY TO SUPPORT PRODUCTIVE STRUGGLE THROUGH QUESTIONING AND DISCOURSE

Session 1533 | 1:45 PM–2:45 PM | 143C | Strand 2 | PK–2, 3–5

Facilitating mathematical discourse and employing purposeful questioning are powerful pedagogical strategies for supporting productive struggle in the mathematics classroom, but they are challenging to implement well. In this session, participants will examine the connections between discourse, questioning, and productive struggle and explore tools and moves coaches can use to support teachers in developing these important instructional skills.

**Sarah Burns**, University of Chicago, Chicago, Illinois

**Debbie Leslie**, University of Chicago, Chicago, Illinois

**Andy Isaacs**, University of Chicago, Chicago, Illinois

**Ellen Dairyko**, UChicago STEM Education, Chicago, Illinois

### POSITIVE AND PRODUCTIVE COACHING MINDSETS

Session 1534 | 1:45 PM–2:45 PM | 144A | Strand 2 | PK–2, 3–5, 6–8

Engage in interactive coaching routines that support all teachers to think about learning in a way that is valued and productive. With techniques such as doing mathematics together, rehearsing interviews, and developing a coaching plan, participants will reflect on how coaching becomes positive and productive with purposeful routines and thoughtful design. This session will provide you with strategies designed to develop your confidence to work with any teacher while keeping the collaboration positive and productive.

**Theresa Wills**, George Mason University, Fairfax, Virginia

**Molly Rawding**, Lexington Public Schools, Lexington, Massachusetts

### STOP, LOOK, AND LISTEN: STRENGTHENING COACHING PARTNERSHIPS AND SUPPORTING STUDENTS' MATHEMATICAL DISCOURSE THROUGH EMPATHIC LISTENING

Session 1535 | 1:45 PM–2:45 PM | 144B | Strand 2 | General

In today's polarized society, finding common ground can pose a challenge for holding connecting conversations. The role of empathic listening, introduced by Jim Knight, has been shown to strengthen coaching partnerships and support students' mathematical discourse. In this session, participants will engage in strategies for empathic listening and consider ways in which these strategies can be applied to building trust-based coaching partnerships. These partnerships are the foundation for fostering deeper student understandings of mathematical concepts.

**Monica Kendall**, Houghton Mifflin Harcourt, Boston, Massachusetts

**Lori Ramsey**, Math Solutions, Sausalito, California



## MONDAY SESSIONS



### WE TALK MATHEMATICS: SUPPORTING POWERFUL STUDENT MATHEMATICAL DISCOURSE AT THE PRIMARY LEVEL

Session 1536 | 1:45 PM–2:45 PM | 144C | Strand 3 | PK–2

In this session, we will watch videos of primary students talking about mathematics, and will discuss and explore how math talks and Problems of the Month promote academic discourse and student engagement. We will showcase video cases and student artifacts from a Title 1 school. We will highlight concrete strategies to support coaches and teachers in creating a discourse-rich mathematical community in the primary classroom.

**Tracy Sola**, Silicon Valley Mathematics Initiative, Morgan Hill, California

**Cherie Foster**, Gilroy Unified School District, Gilroy, California



## 3:00 PM–4:00 PM

### MAJOR PRESENTATION

### LEARNING TRAJECTORIES AT THE CORE: EFFECTIVE AND POWERFUL PROFESSIONAL DEVELOPMENT

Session 1601 | 3:00 PM–4:00 PM | Salon G/H | Strand 4 | General

Learning trajectories have been placed at the core of many standards, curricula, and approaches to teaching. Less attention has been given to placing learning trajectories at the core of professional development efforts. Surprisingly, however, research projects at medium and large scale suggest that effects on teachers are particularly pronounced and sustainable. We will use specific projects to draw implications for policy and practice of inservice and preservice education of all teachers of mathematics.



**Douglas Clements**, University of Denver, Denver, Colorado

**Julie Sarama**, University of Denver, Denver, Colorado

**President**, Pat Baltzley, Professional Learning Co-Chair, Gardiner, Montana

Dr. Douglas Clements, Kennedy Endowed Chair in Early Childhood Learning and Professor at the University of Denver, is widely regarded as a major scholar in the field of early childhood mathematics education, one with equal relevance to the academy, to the classroom, and to the educational policy arena.



At the national, level, his contributions have led to the development of new mathematics curricula, teaching approaches, teacher training initiatives, and models of “scaling up” interventions, as well as having a tremendous impact on educational planning and policy, particularly in the area of mathematical literacy and access. He has served on the U.S. President's National Mathematics Advisory

Panel, the Common Core State Standards Committee of the National Governor's Association and the Council of Chief State School Officers, the National Research Council's Committee on Early Mathematics, the National Council of Teachers of Mathematics national curriculum and Principles and Standards committees, and is co-author each of their reports.

Julie Sarama is the Kennedy Endowed Chair in Innovative Learning Technologies and Professor at the University of Denver. She conducts research on young children's development of mathematical concepts and competencies, implementation and scale-up of educational reform, professional development models and their influence on student learning, and implementation and effects of software environments (including those she has created) in mathematics classrooms.

Dr. Sarama has directed over 24 projects funded by the National Science Foundation (NSF), the U.S. Department of Education's Institute of Education Sciences (IES) and the National Institute of Health (NIH). She is Principal Investigator on her latest NSF award, entitled, “Early Childhood Education in the Context of Mathematics, Science, and Literacy.” She is co-directing three large-scale studies funded by the U.S. Education Department's Institute of Educational Studies (IES).





# MONDAY SESSIONS

## SPOTLIGHT SPEAKER

### THE CREATION AND DEVELOPMENT OF MATHEMATICAL MINDSET COACHING TOOLS: A PARTNERSHIP BETWEEN YOU CUBED AT STANFORD UNIVERSITY AND TULARE COUNTY

Session 1602 | 3:00 PM–4:00 PM | Salon | | Strand 2 | General

What does a classroom look like that cultivates a mathematical mindset? This presentation will highlight a research-practice partnership aimed at studying the impact of a mathematical mindset professional development. Working together, the team has created coaching tools to be used both in conversation and observation. Preliminary findings of how the professional development has changed teacher practice will be shared. This session will give coaches a hands-on experience with research-based coaching tools.

**Jo Boaler**, Stanford University, Stanford, California

**Shelah Feldstein**, Tulare County Office of Education, Visalia, California

**Robin Anderson**, Stanford University, Stanford, California

**President**, Sandie Gilliam, NCSM W1 Regional Director, Colorado Springs, Colorado

### LEARNING MATHEMATICS FOR SOCIAL JUSTICE: MOVING FROM LOCAL CONTEXTS TO ISSUES OF GLOBAL SIGNIFICANCE

Session 1611 | 3:00 PM–4:00 PM | 145A | Strand 1 | General

Teaching mathematics “in context” is an effective strategy to promote learner engagement. When these contexts address issues of social justice, they can promote agency on the part of the learners and the ability to both “read” and “write” their worlds. In this session we will explore contexts that can be mathematized at different levels of complexity with examples from our own teaching in introductory mathematics content courses in 2- and 4-year college programs.

**Jon Manon**, University of Delaware, Newark, Delaware

### STRATEGIES TO CREATE MATH TALK COMMUNITIES

Session 1612 | 3:00 PM–4:00 PM | 145B | Strand 2 | PK–2, 3–5

The exploration of resources and strategies for successful coaching practices to guide young learners to express their mathematical thinking that reflects the CCSSM. Participants will examine strategies such as PEER, Wh-prompts, CROWD, and number talks to engage young children in purposeful discussions to learn mathematics in a welcoming environment. Essential math talk resources for coaches will be examined that guides teachers to orchestrate instruction for discourse, math talk, or intentional talk.

**Lynn Columba**, Lehigh University, Bethlehem, Pennsylvania

### CONCEPT LESSONS: HOW THEY ARE DESIGNED AND TAUGHT

Session 1614 | 3:00 PM–4:00 PM | 146B | Strand 3 | 3–5, 6–8, 9–12

Teaching mathematics effectively requires a shift from teachers’ presentations to facilitating concept lessons. Experts differ in concept lesson designs—how are they alike? This session explores concept lessons and informs the challenging final summary.

**David Foster**, Silicon Valley Mathematics Initiative, Morgan Hill, California

### MATH WORKSHOP: IMPROVING CORE INSTRUCTION WITH GUIDED MATHEMATICS, LEARNING STATIONS, STUDENT REFLECTION, AND MORE

Session 1615 | 3:00 PM–4:00 PM | 146C | Strand 3 | PK–2, 3–5

Participants will learn about the different models of Math Workshop and explore ways to increase student engagement and decrease mathematics anxiety. Come learn tips to begin and maintain this successful structure that creates a classroom environment where students engage in deep discourse, meaningful learning stations, rich problem-solving tasks, and guided mathematics groups. Finding this model of instruction worthwhile, you will want to start immediately and you will have the tools necessary to do it!

**Jennifer Lempp**, Fairfax County Public Schools, Fairfax, Virginia

### ONE TO ONE MILLION: NUMBER SENSE PROGRESSIONS FOR K–5

Session 1616 | 3:00 PM–4:00 PM | 147A | Strand 4 | PK–2, 3–5

How do we tie together number representations to form consistent and deep understandings in our K–5 students? Come explore step-by-step K–5 progressions from number paths to open number lines, and from counting collections to place value disks. Receive free online links and handouts to support number sense through the elementary years.

**Arjan Khalsa**, Conceptua Math, San Rafael, California

### “WHY DO THEY DO THAT?” USING RESEARCH TO IMPROVE PROBLEM SOLVING

Session 1617 | 3:00 PM–4:00 PM | 147B | Strand 4 | PK–2, 3–5, 6–8

“Solving practical problems” is a phrase that plagues coaches and teachers at all levels. But what is it about word problems that make them so elusive for students? This session will present some of the literature on the cognitive processes needed to build strong problem solvers. Arm yourself with information and strategies to initiate an instructional shift toward better student reasoning with word problems.

**Kimberly Hayden**, Stafford County Public Schools, Stafford County Public Schools, Virginia





# MONDAY SESSIONS



## SPONSOR SHOWCASE

### SIX ESSENTIAL EXPECTATIONS FOR EFFECTIVE MATHEMATICS INSTRUCTION

**Session 1621 | 3:00 PM–4:00 PM | 149AB | Strand 5 | 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 all learners. The six expectations are to: teach with coherence, lead with concepts, stay focused, emphasize reasoning, facilitate perseverance, and support practices. Generate a plan for sharing these expectations with teachers.

**Juli Dixon**, University of Central Florida, Orlando, Florida

### LISTENING: A PIECE OF THE COACHING PUZZLE

**Session 1623 | 3:00 PM–4:00 PM | 150B | Strand 2 | General**  
Listening is one of those coaching practices often forgotten. In this session, participants will engage in tasks designed to open the door to listening for understanding. The tasks are designed to identify what it means to listen and highlight those key points of listening for the purpose of shifting teacher practice.

**Genni Steele**, Math Solutions, Sausalito, California

**Michael Gould**, Math Solutions, Sausalito, California

### REWEAVING THE TAPESTRY

**Session 1624 | 3:00 PM–4:00 PM | 151A | Strand 3 | PK–2, 3–5, General**  
This session explores the successful journey of the Fall River Public Schools, a mid-size high-poverty district in Massachusetts, to transform their elementary mathematics program. The district sustained a relentless focus on bringing researched-based knowledge on how children learn mathematics to teachers, resulting in a dramatic increase in student performance from 2009–2016 that far outpaced that of the state. This session will explore the design features and use of innovative resources that supported this change.

**Fran Roy**, Fran Roy, LLC, Portsmouth, Rhode Island

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

### TEACHER UNIVERSITY AND SUMMER MATH CAMP: POWERFUL LEARNING FOR TEACHERS AND STUDENTS

**Session 1625 | 3:00 PM–4:00 PM | 151B | Strand 3 | 3–5, General**  
Learn how a school district partnered with a university to run a successful learning experience for both students and teachers through their Summer Math Camp and Teacher University. Pairing these programs offered teachers real-time opportunities in camp classroom settings, thereby deepening their mathematical content knowledge and their understanding of how children learn mathematics and expanding their pedagogical skills.

**Denise Porter**, UChicago STEM Education, Chicago, Illinois

**Cate Stallmeyer-Gerard**, Champaign Unit 4, Champaign, Illinois

**Polly Hill**, Retired Champaign Unit 4 Elementary Mathematics Coordinator, Champaign, Illinois

**Alison Whittington**, UChicago STEM Education, Chicago, Illinois

### CREATING AN ENVIRONMENT FOR STUDENT-CENTERED INSTRUCTION

**Session 1626 | 3:00 PM–4:00 PM | 152A | Strand 4 | 6–8, 9–12**  
When students are the center of instruction, they are active, engaged, and noisy. Passionate discussion replaces passive absorption. Time passes quickly, and though students will be mentally fatigued, they won't want to leave so they can keep exploring. Sound too good to be true? Come experience an inquiry-based classroom and explore what teacher moves are required to make your students the center of attention.

**Marjan Hong**, Discovery Education, Silver Spring, Maryland

**Joanne Whitley**, Walch Education, Charlotte, North Carolina

### HOW TO SUCCESSFULLY WRITE CONFERENCE PROPOSALS FOR NCSM

**Session 1627 | 3:00 PM–4:00 PM | 152B | Strand 4 | General**  
Have you submitted a proposal and not been accepted? Do you feel like you don't understand the system? We have heard you! Join us as we review the proposal submission process and guidelines and give advice on topics. Our goal is to provide learning and leadership opportunities for all! NCSM Program Chairs and Conference Coordinators will help you practice writing and reviewing proposals during the session.

**Kimberly Morrow-Leong**, NCSM 1st Vice President and Program Chair, Fairfax, Virginia

**Bill Barnes**, NCSM 2nd Vice President and Volunteer Coordinator, Ellicott City, Maryland

**Mona Toncheff**, NCSM Marketing and eNews Editor, Phoenix, Arizona

**Maria Everett**, Baltimore County Schools, Baltimore, MD

**Sara Moore**, Conference Coordinator, Kent, Ohio

**Cynthia Schneider**, Schneider Consulting, Austin, Texas

**Connie Schrock**, NCSM President, Emporia, Kansas

**John W. Staley**, NCSM Past President, Towson, Maryland





## MONDAY SESSIONS

### **INSCRIPTIONS: DEVELOPING AND COMMUNICATING DEEP LEARNING OF MATHEMATICS IN DIGITAL LEARNING ENVIRONMENTS**

Session 1631 | 3:00 PM–4:00 PM | 143A | Strand 5 | 6–8

Inscriptions refer to the external representations of thinking (e.g., text, diagrams, graphical displays, equations) that students use to develop, record, and communicate their mathematical understandings. Meaningful experiences with inscriptions require that students have opportunities to build on their prior experiences in ways where their thinking gets picked up, elaborated, and used in future work. Participants will discuss the many opportunities and complexities teachers face when implementing inscriptions in digital learning environments.

**Alden Edson**, Michigan State University, East Lansing, Michigan

**Elizabeth Phillips**, Michigan State University, East Lansing, Michigan

**Yvonne Grant**, Portland Middle School, Portland, Michigan

### **BUILDING COHERENCE: A LOOK AT THE USE OF MODELS ACROSS THE GRADES**

Session 1632 | 3:00 PM–4:00 PM | 143B | Strand 4 | General

Models help students and teachers visualize relationships between quantities. Models can open the door to efficient problem solving and illustrate the coherence of mathematics across grades. We will examine how number bonds, tape diagrams, and double number lines build mathematical knowledge for teaching in teachers and content knowledge for students.

**Connie Laughlin**, Eureka Math, Muskego, Wisconsin

**Stefanie Hassan**, Eureka Math, Oregon City, Oregon

### **TECHNO-MATHEMATICAL DISCOURSE (TMD)—WHAT'S THAT?**

Session 1633 | 3:00 PM–4:00 PM | 143C | Strand 4 | PK–2, 3–5, 6–8

We all know about the importance of productive discourse in effective and engaging mathematics classrooms. However, with technology being cited routinely as key to students' mathematical success, recent research regarding the integration of discourse and technology tools can be used to help lead today's students to mathematical proficiency. Learn about how a techno-mathematical discourse framework can assist teachers in understanding how technology facilitates classroom discourse and can be taken advantage of to increase students' learning.

**Ellen Edmonds**, W.H. Sadlier, New York, New York

### **START WITH HEART: TRANSFORMING TEACHER PRACTICE BY EXPLORING OUR OWN BELIEFS AND ASSUMPTIONS ABOUT TEACHING, LEARNING AND LEADERSHIP**

Session 1634 | 3:00 PM–4:00 PM | 144A | Strand 3 | General

What do you value and how might your values impede your ability to understand teachers' choices in the classroom? In this session, we will share a video case study that illustrates how our biases led to assumptions and judgments that impacted our effectiveness as leaders. We will also highlight how readjusting our own lens profoundly shifted our interactions with teachers and made them more open to analyzing and changing their practice.

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

**Renee McShane**, Metamorphosis Teaching Learning Communities, Inc., New York, New York

**Veronica Najjar**, PS 89 Manhattan, New York, New York

### **OPPORTUNITY GAP DIAGNOSTIC: MEASURING (IN) EQUITY IN OUR STUDENTS' OPPORTUNITIES TO LEARN MATHEMATICS**

Session 1635 | 3:00 PM–4:00 PM | 144B | Strand 1 | 6–8, 9–12

The Opportunity Gap Diagnostic (OGD) is a tool designed to re-frame the "achievement gap" as a systematic disparity in opportunities provided to certain students, which we have operationalized into four measurable domains. We will discuss operationalizing the definition, describe the OGD as a diagnostic and evaluative tool that measures district-level opportunities in mathematics for our students, and conclude with a description of how this instrument has been applied in pilot districts.

**Miriam Gates**, Education Development Center, Inc., Waltham, Massachusetts

**Eden Badertscher**, Education Development Center, Inc., Waltham, Massachusetts

**Una MacDowell**, Education Development Center, Waltham, Massachusetts



# MONDAY SESSIONS



## USING *PRINCIPLES TO ACTIONS* AS A TOOL FOR SUPPORTING PRINCIPALS TO OBSERVE MATHEMATICS INSTRUCTION AND PROVIDE TEACHER FEEDBACK

Session 1636 | 3:00 PM–4:00 PM | 144C | Strand 3 | 3–5, 6–8

Long Beach Unified School District utilizes the *Principles to Actions* book as a tool in supporting administrators to “know what it looks like” when teachers are implementing the CCSSM. In training, administrators use the tool to look for actions in classroom visits and in video of instruction, and practice writing specific teacher feedback. In this session, LBUSD will share its tool, process, and learnings from their second year of implementation.

**Rebecca Afghani**, Long Beach Unified School District, Signal Hill, California

**Kyoko Weber-Sickler**, Long Beach Unified School District, Signal Hill, California

**Nanette Seago**, WestEd, Riverside, California

**Catherine Carroll**, WestEd, Redwood City, California



## 4:15 PM–5:15 PM

### MAJOR PRESENTATION

## SUPPORTING AND INSPIRING MATHEMATICS SPECIALISTS, LEADERS, AND COACHES

Session 1701 | 4:15 PM–5:15 PM | Salon G/H | Strand 2 | General

This session will feature a panel of experts—from your professional organizations and other groups—involved in supporting Elementary Mathematics Specialists. You will learn about valuable resources and structures to support and inspire you in your work whether you are a mathematics specialist, teacher leader, and/or coach.



(Pictured left to right above)

**Nicole Rigelman**, Portland State University, Portland, Oregon

**Maggie McGatha**, University of Louisville, Louisville, Kentucky

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

**Robert Kaplinsky**, Downey Unified School District, Downey, California

**Aimee Ellington**, Virginia Commonwealth University, Richmond, Virginia

**Fran Arbaugh**, Penn State University/AMTE, University Park, Pennsylvania

**Valerie L. Mills**, Oakland Schools, Waterford, Michigan

**Diane Briars**, National Council of Teachers of Mathematics, Reston, Virginia

**President**, Donna Karsten, NCTM Representative, Halifax, Nova Scotia, Canada







## MONDAY SESSIONS

### SPOTLIGHT SPEAKER

#### ELECTRONIC VS. PAPER TEXTBOOK PRESENTATIONS OF VARIOUS ASPECTS OF MATHEMATICS

Session 1702 | 4:15 PM–5:15 PM | Salon I | Strand 5 | General  
Textbooks now appear in paper form, in electronic form for computers, tablets, or phones, and in hybrids moving among the platforms. Whether an adaptation of a pre-existing paper text or an entirely new book, some aspects of mathematics seem better suited for traditional paper book presentations, while others seem better suited for certain kinds of electronic formats.

**Zalman Usiskin**, University of Chicago, Chicago, Illinois  
**President**, Linda Fulmore, NCSM Positions Paper Editor, Cave Creek, Arizona

#### DISRUPTING THE STATUS QUO: EMPOWERING STUDENTS BY TEACHING FOR ROBUST UNDERSTANDING (TRU) OF MATHEMATICS

Session 1711 | 4:15 PM–5:15 PM | 145A | Strand 1 | General  
Teaching for Robust Understanding of Mathematics (TRU Math) empowers teachers to act on their belief that ALL students, including those from diverse populations, can learn mathematics. TRU Math illuminates high-impact teaching strategies for teachers to enact to disrupt the status quo and ensure students have equitable access to challenging mathematics while developing robust mathematical identities. Leave with focused and ready-to-use strategies to intervene and disrupt systems and structures leading to differential outcomes among student groups.

**Diane Owen-Rogers**, Kalamazoo Regional Educational Service Area, Portage, Michigan

**Danielle Seabold**, Kalamazoo Regional Educational Service Agency, Portage, Michigan

#### CREATING POWERFUL ALGEBRAIC THINKERS USING CLASSROOM ROUTINES FOR REASONING

Session 1712 | 4:15 PM–5:15 PM | 145B | Strand 4 | General  
This summer, we spent a week working with K–12 educators to explore how classroom routines for reasoning can support students in all grade levels in constructing their own understanding of mathematics topics related to the “Operations and Algebraic Thinking” domain. We share the vision for the week, engage in some of the mathematics tasks from the Institute, and discuss how teachers were able to bring new ideas into daily practice in the following school year.

**Angela Knotts**, WestEd, Redwood City, California

**Katie Salguero**, WestEd, Redwood City, California

#### EARLY MATHEMATICS INTERVENTION: IDENTIFYING AND SUPPORTING OUR STRUGGLING MATHEMATICS LEARNERS

Session 1713 | 4:15 PM–5:15 PM | 146A | Strand 3 | PK–2

Come learn how to create an early mathematics intervention program. This session will give you practical tools to identify students’ early numeracy needs. We will share a Number Fluency Developmental Pathway that can guide you in creating an instructional plan for intervention. We will also share how to advocate for an early intervention program in your school or district.

**Judith Campbell**, Winnetka Public Schools, Winnetka, Illinois

**Chi Quach**, Winnetka Public Schools, Winnetka, Illinois

#### BUILDING MATHEMATICAL LANGUAGE AND PRECISION THROUGH ROUTINES

Session 1714 | 4:15 PM–5:15 PM | 146B | Strand 4 | General

How do we help students in our mathematics classes who say nothing because they are afraid they won’t say the perfect thing? Mathematics Language Routines (MLR) provide scaffolding for all students to engage in meaningful discussions by intentionally and systematically developing the language of mathematics. Experience MLRs and see them in action in classrooms as we explore how to build students’ precision by honoring and amplifying their emerging language and ideas.

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

#### A FRAMEWORK FOR INFUSING EQUITY AND SOCIAL JUSTICE INTO MATHEMATICS CURRICULUM AND INSTRUCTION

Session 1715 | 4:15 PM–5:15 PM | 146C | Strand 1 | PK–2, 3–5, 6–8, 9–12

This session will present a framework for infusing equity and social justice into mathematics curriculum and instruction. Participants will have the opportunity to engage in the framework and explore how it can be modified to meet the needs of their respective classroom settings. The presenters will provide applicable examples of the framework.

**Kristopher Childs**, NCSM Newsletter Editor, Lubbock, Texas

**Deborah Crocker**, NCSM S1 Regional Director, Boone, North Carolina

**Irma Cruz-White**, NCSM Awards Chair, Marianna, FL

**Linda Fulmore**, NCSM Positions Paper Editor, Cave Creek, Arizona

**Sandie Gilliam**, NCSM W1 Regional Director, Colorado Springs, Colorado

**Paul D. Gray, Jr.**, NCSM S2 Regional Director, Dallas, Texas

**Karen Hyers**, NCSM Newsletter Associate Editor, Oakdale, Minnesota

**Kathlan Latimer**, NCSM W2 Regional Director, Suisun City, California

**Kimberly Morrow-Leong**, NCSM 1st Vice President and Program Chair, Fairfax, Virginia





## MONDAY SESSIONS



### WORKING TOGETHER: BUILDING MATHEMATICAL KNOWLEDGE FOR TEACHING THROUGH EQUITABLE TEACHING PRACTICES

**Session 1716 | 4:15 PM–5:15 PM | 147A | Strand 4 | 6–8, 9–12**  
Engaging in meaningful tasks provides a valuable opportunity for students to work together to explore and develop greater understanding of mathematical concepts. While groupwork is frequently touted as an effective strategy for improving mathematical learning, teachers and coaches often find such efforts to be largely unsuccessful. In this interactive session, participants will experience the TQE process (Tasks, Questioning, Evidence) to address essential mathematical knowledge for teaching through facilitating productive groupwork and equitable teaching practices.

**Farshid Safi**, University of Central Florida, Orlando, Florida  
**Jennifer Eli**, University of Arizona, Tucson, Arizona

### EXPLORING PROBLEMS OF PRACTICE THROUGH ROLE PLAY

**Session 1717 | 4:15 PM–5:15 PM | 147B | Strand 2 | General**  
How can elementary mathematics specialists navigate through challenges frequently associated with their practice? In this session, participants will engage in role playing scenarios that we have used with mathematics coaches to help them prepare for their work. We will discuss responses to situations and the short and long term implications of the decisions made in each scenario. We will also share findings about the impact of this work from coaches with whom we have worked.

**Shannon Larsen**, University of Maine at Farmington, Farmington, Maine

**Cheryl Tobey**, Maine Department of Education, Augusta, Maine

### SPONSOR SHOWCASE

#### CONNECTING BIG IDEAS FOR YOUNG MATHEMATICIANS: WHEN RIGOR & RELEVANCE MEET COLLABORATION

**Session 1721 | 4:15 PM–5:15 PM | 149AB | Strand 5 | General**  
To instill a life-long love for learning and mathematics in students, we must provide them with opportunities to creatively explore mathematical ideas, build conceptual understanding, and solve engaging, relevant problems. This session focuses on fostering deep mathematical thinking through collaborative problem-solving, discourse, engagement in the Mathematic Practices, and self-assessment. Leave with strategies and activities you can easily implement, along with a clearer picture of how to support students in connecting the big ideas of mathematics.

**Lauren Stott**, Big Ideas Learning, LLC, Erie, Pennsylvania

### NUMBER TALKS AS PROFESSIONAL DEVELOPMENT

**Session 1722 | 4:15 PM–5:15 PM | 150A | Strand 2 | PK–2, 3–5**  
We've all heard of using number talks to improve the number sense of our students. Number talks are also an excellent way to build the computational fluency of our teachers, which in turn increases the likelihood of those teachers using visual representations with their students. Come learn how to use number talks as a safe, low-risk way to discuss mathematics and instructional strategies with your teachers.

**Duane Habecker**, Merced County Office of Education, Merced, California

### THE FUTURE OF MATHEMATICS PROFESSIONAL DEVELOPMENT

**Session 1723 | 4:15 PM–5:15 PM | 150B | Strand 5 | 3–5, 6–8, 9–12**  
Face-to-face professional development (PD) has been a staple for building teacher capacity, however, districts are now facing a shortage of resources. Smaller and rural districts have limited access to quality PD. Is your district prepared to offer quality PD, but yet have an eye toward the future? Come learn how our approach to online PD is more effective and engaging but also changing leaders' and teachers' perception about the future of online learning.

**Ryan Timmons**, Charles A. Dana Center, The University of Texas, Austin, Texas

**Brian Newsom**, Charles A. Dana Center, The University of Texas, Austin, Texas

### ARE YOUR TEACHERS SITTING AND GETTING OR LEARNING AND APPLYING?

**Session 1724 | 4:15 PM–5:15 PM | 151A | Strand 3 | PK–2, 3–5, 6–8, 9–12**  
This session will describe models of professional learning that are research-based and lead to more application and transfer within and between classrooms. We will explore the system-wide approach where professional learning is carried through administrators, coaches, and teachers to ensure coherence within your system. Three districts will share how our Math in Common community of practice learned from each other to improve our instruction.

**Vicky Armstrong**, Dinuba Unified School District, Dinuba, California

**Deb Wickman**, Oceanside Unified School District, Oceanside, California

**Dianne Wilson**, Elk Grove Unified School District, Elk Grove, California





## MONDAY SESSIONS

### USE DISCOURSE TO ACCESS LANGUAGE AND MATHEMATICS FOR ENGLISH LEARNERS

Session 1725 | 4:15 PM–5:15 PM | 151B | Strand 1 | General  
Discourse in the classroom will increase English learners' productive and receptive language functions and their comprehension of high-cognitive demand mathematics concepts. All students need to reason, construct viable arguments, and critique the reasoning of others. Increasing discourse will support students' language development as they engage in these practices.

**Susie Håkansson**, Mathematics Education Consultant, Venice, California

### SUPPORTING IMPLEMENTATION OF EFFECTIVE MATHEMATICS TEACHING PRACTICES BY ESTABLISHING AND NURTURING MUTUALLY SUPPORTIVE RELATIONSHIPS WITH DISTRICT AND SCHOOL LEADERSHIP

Session 1726 | 4:15 PM–5:15 PM | 152A | Strand 3 | General  
In this session, we share our process of establishing and nurturing mutually supportive relationships with district and school leadership to support the implementation of effective mathematics teaching practices. Learn how a three-year study has led to a systemic change in administrators' practice in providing focused and equitable support for each teacher.

**Christine Avila**, Pioneer School District, Hanford, California  
**Cory Bennett**, Idaho State University, Pocatello, Idaho

### SUPPORTING STEM TEACHING—PLANNING AND ORCHESTRATING MATHEMATICS LEARNING IN NEXT GENERATION SCIENCE STANDARDS CONTEXTS

Session 1727 | 4:15 PM–5:15 PM | 152B | Strand 5 | 6–8  
A study comparing the expectations of the Next Generation Science Standards (NGSS) and the National Assessment of Educational Progress (NAEP) Mathematics Framework revealed that the mathematics expectations in the NGSS are more than expected. With careful planning, students can learn mathematics and science together in ways that honor both disciplines. In this hands-on session we will explore mathematics connections and expectations in the NGSS, work through sample tasks, and examine implications for fostering middle school STEM collaboration, keeping the “M” in STEM.

**Will Johnston**, American Institutes for Research, Washington, D.C.

**Alka Arora**, American Institutes for Research, Washington, D.C.

**Kim Gattis**, American Institutes for Research, Washington, D.C.

### USING MATHEMATICAL TASKS TO CHANGE THE CONVERSATION

Session 1731 | 4:15 PM–5:15 PM | 143A | Strand 4 | 3–5, 6–8, 9–12  
Facilitating tasks effectively can lead to rich mathematical discourse among students. In addition, planning and implementing tasks strategically can lead to instructional shifts in the mindset of teachers. Come experience the power tasks can have in transforming classrooms for both teachers and students. This session will take participants through a task as students would engage in it, as well as behind the scenes in the strategic planning that led to the powerful implementation.

**Amanda Merritt**, Southern Regional Education Board, Atlanta, Georgia

**Leslie Texas**, Leslie Texas Consulting LLC, Louisville, Kentucky

### A BALANCED APPROACH TO MAKING FACT FLUENCY ASSESSMENTS MEANINGFUL

Session 1732 | 4:15 PM–5:15 PM | 143B | Strand 3 | PK–2, 3–5  
Want to assess fact fluency more effectively than with timed tests? Learn about how a district's journey to create homegrown comprehensive formative assessments that drive fact fluency instruction improved student outcomes. Focus on our process and leave with ideas for creating and implementing an effective fluency assessment practice in your classroom, school, or district.

**Sara Baranauskas**, Suffield Public Schools, Suffield, Connecticut

**Robin Moore**, Regional School District No. 6, Litchfield, Connecticut

### THE CONVERSATION IS THE RELATIONSHIP: COACHING WITH POSITIVE PRESUPPOSITION AND POSITIVE INTENT

Session 1733 | 4:15 PM–5:15 PM | 143C | Strand 2 | General  
How do you shift thinking and build teacher capacity when you only have a few minutes to converse? Our listening and our intentional mindset in presuming positive intent are key skills in successful coaching conversations. This interactive session will introduce presuming positive intent as a mindset and language skill with attributes and strategies to see others as capable in all conversations. See how this skill is a natural fit to the mathematics coach's identity.

**Kim Romain**, Little Rock School District, Little Rock, Arkansas

### SIDE-BY-SIDE COACHING: HOW TO GROW TEACHING, DURING TEACHING

Session 1734 | 4:15 PM–5:15 PM | 144A | Strand 2 | PK–2, 3–5, 6–8  
Coaching is often relegated to before or after teaching, but teachers' greatest professional learning opportunities occur with children as they teach. In this session, we'll explore how coaches and teachers can work side-by-side during teaching to grow instruction. We'll examine data from a recent research study which found side-by-side coaching can support teachers in learning to respond to student needs in the moment and we'll look at transcript examples of coaching in action.

**Jen Munson**, Stanford University, Stanford, California



## MONDAY SESSIONS



### MOVING FROM TEACHER ISOLATION TO PEER COLLABORATION

Session 1735 | 4:15 PM–5:15 PM | 144B | Strand 3 | 6–8, 9–12

Middle grade and high school teachers in small schools can feel isolated when working to improve mathematics teaching and learning. Learn about an initiative designed to support collaboration across schools. Teachers engaged in ongoing professional learning that included a peer collaboration process focused on planning lessons, observing student thinking and reflection. We will share lessons learned and tools that supported this process.

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

### THE CHALLENGE OF CAPTURING THE ACTION OF OPERATIONS: REPRESENTATIONS AT WORK

Session 1736 | 4:15 PM–5:15 PM | 144C | Strand 4 | PK–2, 3–5

Mathematics operations have distinct characteristics that can be challenging to communicate with words, representations, and symbols. Mathematics ideas can be lost in translation between physical movements to static representations. Symbolic representations can often seem unconnected to the actions that students made to physical objects and can also be implicit in their visual representations. We are looking closely at the support we can offer to guide students in precisely communicating important ideas about the operations.

**Marta Garcia**, ReImagine Math Coaching, Wilmington, North Carolina

**Kaneka Turner**, Independent Consultant, Charlotte, North Carolina

### 50TH ANNIVERSARY CELEBRATION

**50 NCSM**  
CELEBRATING 50 YEARS  
LEADERSHIP IN MATHEMATICS EDUCATION

5:30pm – 7:15pm

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Buses will begin departing the Convention Center at 5:30 pm.

Pre-purchased ticket is required. No on-site sales available.

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*Cherry Blossoms*



PROGRAM SUMMARY INFORMATION  
**TUESDAY, APRIL 24**

*See page 5 for Conference Strand descriptions.*

## TUESDAY SUMMARY

		7:00 AM–8:00 AM	8:15 AM–9:00 AM		9:15 AM–10:00 AM	
<b>Hall A</b>	<b>TUESDAY BREAKFAST</b>	<b>Nicole Rigelman, Maggie McGatha</b> <i>Hot Topic:</i> Leading with Lesson Study to Inspire Change in Mathematics Instruction and Improve Student Learning Session 2103   Strand 2   General			Dedicated Time to Visit Sponsors and Exhibitors Hall A	
	<b>Jennifer Bay-Williams</b> Session 2003   Strand 5   General Sponsored by Pearson (ticket required)					
		<b>8:15 AM–9:15 AM</b>	<b>10:00 AM–11:00 AM</b>	<b>11:15 AM–12:15 PM</b>	<b>2:15 PM–3:15 PM</b>	<b>3:30 PM–4:15 PM</b>
		<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	<b>MAJOR PRESENTATION</b>	
<b>SALON G/H</b>	<b>Connie Schrock</b> NCSM: Framing the Future of Mathematics Education on a 50-Year Foundation of Leadership Session 2101   Strand 5 General	<b>Linda Fulmore, Connie Schrock, Shirley M. Frye, Zalman Usiskin, Steve Leinwand, Gary Bitter, Francis (Skip) Fennell, Susana Davidenko, Jo Boaler, Ralph Connelly, Tim Kanold, Cathy Seeley</b> 10 in 50 - Words of Wisdom from the Monograph Authors! Session 2201   Strand 5 General	<b>John SanGiovanni</b> Leading a Cohesive Mathematics Program Session 2301   Strand 3   PK-, 3-5, 6-8, 9-12	<b>Dan Teague</b> Supporting Mathematical Modeling in High School Session 2501   Strand 4 9-12		
			<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>	<b>SPOTLIGHT SPEAKER</b>
<b>SALON I</b>	<b>Karen Karp, Sarah Bush, Barbara Dougherty</b> The Whole School Agreement: Aligning Across and Within Grades to Build Student Success Session 2102   Strand 4 General	<b>Graham Fletcher</b> Teaching Beyond the Task: Using Yesterday's Lesson to Prepare for Today Session 2202   Strand 3 PK-2, 3-5	<b>Deborah Schifter</b> Looking for Structure: Early Algebra with a Focus on the Operations Session 2302   Strand 4 3-5, 6-8	<b>Robert Q. Berry, III</b> #blackmenteachmath: Unpacking the networks and practices of Black Men who teach mathematics Session 2502   Strand 1 General		
	<b>145A</b>	<b>Amanda Jansen, Michael Reitemeyer</b> What Is Rough Draft Thinking and How Can It Be Integrated into Mathematics Classrooms? Session 2111   Strand 5 General	<b>Laurie Boswell, Sophie Murphy</b> Using Learning Intentions and Success Criteria to Improve Teacher Clarity Session 2211   Strand 4 General	<b>Jaliyla Fraser</b> Leading the Charge: Using Manipulatives and Graphic Organizers in the Secondary Mathematics Classroom Session 2311   Strand 3 6-8, 9-12	<b>Abby Gordon</b> Keeping Girls Engaged in Mathematics in Middle School and Beyond Session 2511   Strand 1 3-5, 6-8	<b>CAUCUS</b>
<b>145B</b>		<b>Linda Smith, Jacqueline Hennings</b> I Do, We Do, You Do Needs a Redo Session 2112   Strand 4 General	<b>Danielle Seabold, Diane Owen-Rogers</b> Focusing the Work of Coaching: Promising Practices That Leverage What Matters Most in Mathematics Teaching and Learning Session 2212   Strand 2 General	<b>Caroline Ebby, Beth Hulbert, Nicole Fletcher</b> Formative Assessment Tools and Routines for Developing Number Sense and Additive Reasoning in Grades K-2 Session 2312   Strand 4 PK-2	<b>Dana Cartier</b> Evaluating Instructional Materials to Develop Content Understanding Session 2512   Strand 4 General	<b>CAUCUS</b>
	<b>146A</b>	<b>Cathy Humphreys</b> Cultivating Students' Mathematical Agency Session 2113   Strand 4 6-8, 9-12, General	<b>Margaret Smith</b> Taking Action: Implementing the Effective Mathematics Teaching Practices Session 2213   Strand 3 General	<b>PRESIDENTS EXCHANGE-NCTM</b>	<b>Annie Fetter, Joe Schwartz</b> Sense-Making: Is It a Focus in Your Classrooms and Your Schools? Session 2513   Strand 1 General	<b>CAUCUS</b>
		<b>Matt Larson</b> Building Effective High School Math Programs for Each and Every Student Session 2313   1Strand 5 6-8, 9-12, College, General	<b>Shawn Towle</b> NCSM Regional Caucus: Eastern Region 1 Session 2613			
<b>5:30 PM–7:00 PM RECEPTION</b> ( <i>Ticket Required</i> ) Ballroom Pre-Function Space, Level 3, Sponsored by McGraw Hill Education						

## TUESDAY SUMMARY

		10:00 AM–10:45 AM	12:30 PM–2:00 PM		2:15 PM–3:00 PM	
<b>Hall A</b>		<p><i>Hot Topic:</i> <b>Robert Kaplinsky</b> What's the deal with honors and acceleration? Session 2203   Strand 5   General</p>		<p><b>Connie Schrock, Michelle Rinehart, Peter Balyta, Levi Patrick</b> The M in STEM 13th Annual Presentation of the Iris Carl Travel Grants Session 2403   General  Sponsored by Texas Instruments (ticket required)</p>		<p><b>John SanGiovanni</b> <i>Hot Topic:</i> Leadership Tools for Creating, Supporting, and Advancing a Mathematics Program Session 2503   Strand 5   General</p>
	<b>146B</b>	<p><b>8:15 AM–9:15 AM</b></p> <p><b>Michael Garcia, Donald DeLand</b> Designing the Mathematics Classroom of Tomorrow Session 2114   Strand 5 General</p>	<p><b>10:00 AM–11:00 AM</b></p> <p><b>Cheryl Tobey, Emily Fagan</b> Getting to the Root of the Problem: Supporting Teachers in Eliciting and Addressing Student Misconceptions Session 2214   Strand 4 3–5</p>	<p><b>11:15 AM–12:15 PM</b></p> <p><i>Kay Gilliland Equity Lecture:</i> <b>Eden Badertscher</b> Empowering Teachers to Disrupt Racial Inequities: The Fundamental Praxis of Becoming a Change Agent Session 2314   Strand 1 General</p>	<p><b>2:15 PM–3:15 PM</b></p> <p><b>Linda Fulmore</b> Social Justice Resources for Mathematics Leaders Session 2514   Strand 4 General</p>	<b>CAUCUS</b>
<b>146C</b>	<p><b>Francis (Skip) Fennell, Beth Kobett, Jon Wray</b> Mathematics Coaches: Informing Planning and Instruction by Focusing on Everyday, In-the-Moment Formative Assessment Session 2115   Strand 2 PK–2, 3–5, 6–8, 9–12</p>	<p><b>Hilary Kreisberg</b> Using Research to Inform Practice: Deepening Teacher Understanding of Standards for Mathematical Practice 7 &amp; 8 Session 2215   Strand 4 General</p>	<p><b>Beth Kobett</b> Transformative Mathematics Professional Learning: How Appreciative Inquiry(AI) and Strength-Based Methods Promote Positive Teacher Change Session 2315   Strand 2 General</p>		<b>CAUCUS</b>	
<b>147A</b>	<p><b>Dana Franz, Jessica Ivy</b> Rural Education: Considering the Unique Needs of Rural Mathematics Classrooms Session 2116   Strand 1 College</p>	<p><b>Tara Flynn, Petra Le Duc, Cathy Bruce</b> Spatial Reasoning in the Early Years: A Powerful Means of Supporting Children's Mathematical Development Session 2216   Strand 4 PK–2</p>	<p><b>Becca Lewis, Kendra Lomax</b> Using Instructional Routines to Support Both Student Learning and Teacher Learning Session 2316   Strand 4 PK–2, 3–5</p>	<p><b>Michael Greenlee, Denise Thornton</b> #PD2C: Connect and Capitalize on Social Media as a Professional Learning Tool Session 2516   Strand 4 General</p>	<b>CAUCUS</b>	
<b>147B</b>	<p><b>Richard Seitz</b> New Grant Opportunities for Mathematics Leaders from the Mathematics Education Trust (MET) Session 2117   Strand 4 General</p>	<p><b>Robyn Silbey</b> Social Studying: Adding Discourse, Engagement and Accountability to Instruction Session 2217   Strand 2 3–5</p>	<p><b>Ann Dominick</b> What Effect Do Number Talks Have on Student Achievement and Attitudes Toward Mathematics? Session 2317   Strand 3 3–5, College</p>	<p><b>Sorsha Mulroe, Claudia Eckstrom, Dennis McDonald</b> Coaching with an Eye on Teaching: Essential Coaching Practices that Lead to Effective Teaching Practices Session 2517   Strand 2 PK–2, 3–5</p>		
<b>149AB</b>	<b>SPONSOR SHOWCASE</b>	<b>SPONSOR SHOWCASE</b>	<b>SPONSOR SHOWCASE</b>	<b>SPONSOR SHOWCASE</b>		
	<p><b>Cathy Seeley</b> The Answer Still Matters ... Eventually Session 2121   Strand 3 General</p>	<p><b>Jill Gough, Jennifer Wilson</b> Promoting Productive Struggle in the Mathematics Classroom Session 2221   Strand 4 6–8, 9–12</p>	<p><b>Mary Drayer</b> Increase Teacher Efficacy with Daily Professional Development Session 2321   Strand 4 PK–2, 3–5</p>	<p><b>Posie Wood, Colette Chambers, William McCallum</b> LZ Illustrative Mathematics Curriculum (Grades 6–8) Session 2521   Strand 5 6–8</p>		
<b>150A</b>		<p><b>Kendra Lomax, Becca Lewis</b> Learning from Children's Mathematical Thinking: An Approach to Formative Assessment Session 2222   Strand 5 PK–2, 3–5</p>	<p><b>Cynthia Coburn, Lizzy Hull Barnes, Megan Franke</b> Research-Practice Partnerships to Support Continuity in Mathematics Curricula: The Story of San Francisco Unified School District and the COHERE Study Session 2322   Strand 3 PK–2</p>	<p><b>Molly Rawding, Linda Menkis</b> Launch the Learning: Lessons to Promote Teacher Collaboration and Student Engagement Session 2522   Strand 3 PK–2, 3–5</p>	<b>CAUCUS</b>	
					<p><b>Kathlan Latimer</b> NCSM Regional Caucus: Western Region 2 Session 2622</p>	

**5:30 PM–7:00 PM RECEPTION** (Ticket Required) Ballroom Pre-Function Space, Level 3, Sponsored by McGraw Hill Education



## TUESDAY SUMMARY

		7:00 AM–8:00 AM	8:15 AM–9:00 AM		9:15 AM–10:00 AM
<b>Hall A</b>	<b>TUESDAY BREAKFAST</b>			<b>Nicole Rigelman, Maggie McGatha</b> <i>Hot Topic:</i> Leading with Lesson Study to Inspire Change in Mathematics Instruction and Improve Student Learning	Dedicated Time to Visit Sponsors and Exhibitors Hall A
	<b>Jennifer Bay-Williams</b> Session 2003   Strand 5   General Sponsored by Pearson (ticket required)			Session 2103   Strand 2   General	
		<b>8:15 AM–9:15 AM</b>	<b>10:00 AM–11:00 AM</b>	<b>11:15 AM–12:15 PM</b>	<b>2:15 PM–3:15 PM</b>
<b>150B</b>	<b>Diane Owen-Rogers</b> Go Figure: Leveraging Intentionality to Gain Access and Promote Equity Through a Focus on Fluency Session 2123   Strand 3 PK–2, 3–5	<b>Linda Davenport, Connie Henry, Peter Thorlachen</b> Building School Capacity for More Equitable Teaching Practices through Mathematics Teacher Leadership Session 2223   Strand 1 General	<b>Nicole Garcia, Heather Beasley, Melissa Kemmerle, Karen Reinhardt</b> Orienting Students to the Thinking of Others: What Do First-Year Teachers Do and How Can We Support All Teachers' Practice? Session 2323   Strand 2 General	<b>Rhonda Bondie, Kara Imm</b> Designing for the Edges: Bringing Equity to All Through Practical Routines Session 2523   Strand 5 PK–2, 3–5, 6–8, 9–12	<b>CAUCUS</b> <b>Paul D. Gray, Jr.</b> NCSM Regional Caucus: Southern Region 2 Session 2623
	<b>Victoria Bill, Laurie Speranzo</b> Coaching Through Feedback: Examining Evidence to Move Practice Forward Session 2124   Strand 2 General	<b>Doug Sovde</b> Rigor and Character: How an Understanding of the Social-Emotional Dimensions of Learning Mathematics Can Accelerate Learning Session 2224   Strand 1 PK–2, 3–5, 6–8, 9–12	<b>Spencer Jamieson, Jennifer Suh, Kathleen Matson</b> Mathematical Modeling: Creating Students, Teachers, and Schools for the Future Session 2324   Strand 3 3–5	<b>Jennifer Suh, Sara Birkhead, Terrie Galanti, Patti Freeman, Keira Godwin, Linda Gillen</b> "Futuring" Professional Development Through Video Coaching: Exploring Tools to Take On Ambitious Mathematics Instruction Session 2524   Strand 5 6–8	<b>CAUCUS</b> <b>Jason Gauthier</b> NCSM Regional Caucus: Central Region 1 Session 2624
<b>151A</b>	<b>Karla Bandemer, Delise Andrews, Susie Katt</b> Collaborative Planning: A Strategy to Narrow Learning Gaps! Session 2125   Strand 1 PK–2, 3–5	<b>Juliana Utley, John Weaver, Stacy Reeder</b> Exploring Tasks That Build Procedural Fluency from Conceptual Understanding Session 2225   Strand 4 6–8, 9–12	<b>Denise Brady, Jason Gauthier, Dana Gosen</b> Assessment and Equity: Uniting Two Critical Issues to Help Children Learn Mathematics Session 2325   Strand 1 PK–2, 3–5	<b>Claire Gogolen, Samantha R. Booth, Heather Hill</b> MQI Coaching: Supporting Coaches in Supporting Teachers Session 2525   Strand 2 General	<b>CAUCUS</b> <b>Sharon Rendon</b> NCSM Regional Caucus: Central Region 2 Session 2625
	<b>Nadine Bezuk, Jennifer Bay-Williams, Douglas Clements, W. Gary Martin</b> It Takes a [Mathematics Education] Village to Prepare a Mathematics Teacher Session 2126   Strand 5 General	<b>Jennifer Allard, David Van Vleet</b> Fostering Student Engagement Through Differentiation Using a Secondary Workshop Model Session 2226   Strand 3 6–8, 9–12	<b>Timothy Boerst, Kara Suzuka</b> Preparing to Facilitate Professional Development: Designing Materials That Support Facilitation and Facilitator Learning Session 2326   Strand 4 PK–2, 3–5	<b>Stephen Sebelski, Rolanda Baldwin</b> Creating Professional Learning Experiences to Build Teacher Content Knowledge Session 2526   Strand 4 6–8	<b>CAUCUS</b> <b>Sandie Gilliam</b> NCSM Regional Caucus: Western Region 1 Session 2626
<b>151B</b>	<b>Grace Kelemanik, Amy Lucenta</b> Learn How to Develop Teacher Content Knowledge and Practice Through Instructional Routines Session 2127   Strand 2 General	<b>Karin Lange, Julie Jacobi</b> Integrating Mathematics and Science: Preparing for the Future Session 2227   Strand 5 PK–2, 3–5, 6–8, 9–12	<b>Mikila Fetzer, Liberty Van Natten, Sara Goytia, Suzie Craig, Dona Meinders, Rebecca Perry</b> Learning from Student Voice in Mathematics Classrooms: When Research Becomes Practice Session 2327   Strand 2 General	<b>Kyle Pearce, Dick Stanley, Phil Daro</b> Digging Deep into Ratios and Proportional Relationships in the Middle Grades Session 2527   Strand 4 6–8	
	<b>Kara Suzuka, Timothy Boerst</b> Developing Teachers' Mathematical Knowledge for Teaching by Integrating Four Core Elements Within Practice-Based Professional Development Session 2131   Strand 4 PK–2, 3–5	<b>Yvonne Mendolia, Brenda Green</b> Feedback: How Does Targeted, Tangible, and Timely Feedback Improve the Dialogue Between Mathematics Coaches and Teachers to Make Learning Visible for Diverse Learners? Session 2231   Strand 2 6–8, 9–12	<b>Olof Steinhorsdottir, Laura Kent</b> Multiplication and Division of Fractions: Multiple Groups or Partial Groups? Session 2331   Strand 4 3–5, 6–8	<b>Loria Allen, Denise Porch</b> Help Me Out, Coach! Collaboration for Student Success Session 2531   Strand 2 PK–2	
<b>143A</b>					

**5:30 PM–7:00 PM RECEPTION** (Ticket Required) Ballroom Pre-Function Space, Level 3, Sponsored by McGraw Hill Education



## TUESDAY SUMMARY

		10:00 AM–10:45 AM	12:30 PM–2:00 PM	2:15 PM–3:00 PM
Hall A		<p><b>Hot Topic:</b> <b>Robert Kaplinsky</b> What's the deal with honors and acceleration? Session 2203   Strand 5   General</p>	<p><b>Connie Schrock, Michelle Rinehart, Peter Balyta, Levi Patrick</b> The M in STEM 13th Annual Presentation of the Iris Carl Travel Grants Session 2403   General Sponsored by Texas Instruments (ticket required)</p>	<p><b>John SanGiovanni</b> <b>Hot Topic:</b> Leadership Tools for Creating, Supporting, and Advancing a Mathematics Program Session 2503   Strand 5   General</p>
		8:15 AM–9:15 AM	10:00 AM–11:00 AM	11:15 AM–12:15 PM
143B		<p><b>Craig Schneider, Vanessa Cerrahoglu, Sadie Estrella</b> Mathematical Language Routines: Equity and Access for All Session 2132   Strand 1 General</p>	<p><b>Betty Gasque, Judy Hicks</b> Incremental and Monumental Changes—Helping Our Teachers Strengthen Their Teaching Strategies Session 2232   Strand 4 6–8, 9–12, College</p>	<p><b>Christina Allison, Astrid Fossum, Elizabeth Horan Thompson</b> Do's and Don'ts: Catching Kids Up on Grade-Level Mathematics Session 2332   143B   Strand 1   General</p>
				2:15 PM–3:15 PM
				<b>MEETING</b>
				<p><b>Sandie Gilliam, Deborah Crocker, Marc Garneau, Jason Gauthier, Paul D. Gray, Jr., Kathleen Latimer, Sharon Rendon, Shawn Towle, Sue Vohrer</b> NCSM Regional Directors and Regional Team Leaders Meeting Session 2532   Strand 0 General</p>
143C		<p><b>Kim McCuiston, Keri Mckenzie, Julie Bacak, Cathy Johnson</b> Lesson Study: Individualized and Hands-On Professional Development for Teachers Inside Their Classrooms and Through Their Professional Learning Teams Session 2133   Strand 3 6–8, 9–12</p>	<p><b>Bryan Meyer, Abi Leaf, Brian Lawler,</b> A Commitment to Equity: One District's Systemic Approach to Change in Mathematics Education Session 2233   Strand 1 9–12, General</p>	<p><b>Bonnie Brush, Jessica Douglas, Danielle Shea</b> The X and Y Axis of Mathematics Vertical Teams Session 2333   Strand 3 PK–2, 3–5, 6–8, 9–12</p>
				<p><b>Rosa Serratore</b> From Research to Theory to Doable: Making It Work for Teachers and Administrators Session 2533   Strand 3 General</p>
144A		<p><b>Kathy Prummer, Kimberly Bunch, Anna Hertzberg, Peggy Loutzenhiser, Leigh Wilson</b> The Coach from Within: A Journey from Teacher to Coach Session 2134   Strand 2 General</p>	<p><b>Margaret Pligge</b> Coaching Partnerships to Promote Mathematics Identity Session 2234   Strand 2 General</p>	<p><b>Thomas Stricklin, Sharon Rendon</b> Developing Effective and Inspiring Coaches of Mathematics Session 2334   Strand 2 General</p>
				<b>PRESIDENTS EXCHANGE—AMATYC</b>
				<p><b>James Ham</b> Making an IMPACT in the First Two Years of College Session 2534   Strand 5 College, General</p>
144B		<p><b>Anne Nesbitt, Ashley Moran</b> Model with Mathematics: If You Build It, The Math Will Come! Session 2135   Strand 3 PK–2, 3–5, 6–8</p>	<p><b>Jacqueline Burns</b> Barriers and Breakthroughs: Four Years of Living Abroad, Teaching Mathematics and Implementing the Common Core to Arabic-Speaking Students Session 2235   Strand 3 6–8, General</p>	<p><b>Leigh Martin</b> A Framework for Examining Coaching Practices Session 2335   Strand 2 6–8, College, General</p>
				<p><b>Susan Empson, Vicki Jacobs, Joan Case, Dinah Brown</b> Supporting the Development of Teachers' Expertise in Noticing Children's Mathematical Thinking Session 2535   Strand 5 3–5</p>
144C		<p><b>Nicole Cirino, Meghan Shaughnessy, Karen Reinhardt</b> Learning to Listen: Supporting Early Childhood Teachers to Elicit and Interpret the Thinking of Young Children Session 2136   Strand 2 PK–2</p>	<p><b>Leslie Johnson, Laura Potter, Maria Everett</b> Keeping Pace ... Collaborative Planning for Effective Instruction Session 2236   Strand 3 6–8, 9–12</p>	<p><b>Jean Capper, Rachel Muren</b> What's in it for Me? Differentiating Professional Development for Adult Learners Session 2336   Strand 4 PK–2, 3–5</p>
				<p><b>Kristin Gray, Jody Guarino, Vanessa Cerrahoglu</b> Coaching for Depth: Ways of Thinking That Lead to Ways of Doing Session 2536   Strand 2 3–5, 6–8</p>
<b>5:30 PM–7:00 PM RECEPTION</b> (Ticket Required) Ballroom Pre-Function Space, Level 3, Sponsored by McGraw Hill Education				



## TUESDAY SESSIONS BY STRAND

### STRAND 1: EQUITY IN PRACTICE

SESSION	LOCATION	TIME
2116	147A	8:15-9:15
2125	151B	8:15-9:15
2132	143B	8:15-9:15
2223	150B	10:00-11:00
2224	151A	10:00-11:00
2233	143C	10:00-11:00
2314	146B	11:15-12:15
2325	151B	11:15-12:15
2332	143B	11:15-12:15
2502	SALON I	2:15-3:15
2511	145A	2:15-3:15
2513	146A	2:15-3:15

### STRAND 2: CULTIVATING A MATHEMATICS COACHING PRACTICE

SESSION	LOCATION	TIME
2103	HALL A	8:15-9:00
2115	146C	8:15-9:15
2124	151A	8:15-9:15
2127	152B	8:15-9:15
2134	144A	8:15-9:15
2136	144C	8:15-9:15
2212	145B	10:00-11:00
2217	147B	10:00-11:00
2231	143A	10:00-11:00
2234	144A	10:00-11:00
2315	146C	11:15-12:15
2323	150B	11:15-12:15
2327	152B	11:15-12:15
2334	144A	11:15-12:15
2335	144B	11:15-12:15
2517	147B	2:15-3:15
2525	151B	2:15-3:15
2531	143A	2:15-3:15
2536	144C	2:15-3:15

### STRAND 3: EVIDENCE AND EXPERIENCES FROM THE FIELD

SESSION	LOCATION	TIME
2121	149AB	8:15-9:15
2123	150B	8:15-9:15
2133	143C	8:15-9:15
2135	144B	8:15-9:15
2202	SALON I	10:00-11:00
2213	146A	10:00-11:00
2226	152A	10:00-11:00
2235	144B	10:00-11:00
2236	144C	10:00-11:00
2301	SALON G/H	11:15-12:15
2311	145A	11:15-12:15
2317	147B	11:15-12:15
2322	150A	11:15-12:15
2324	151A	11:15-12:15
2333	143C	11:15-12:15
2522	150A	2:15-3:15
2533	143C	2:15-3:15

### STRAND 4: DEVELOPING MATHEMATICAL KNOWLEDGE FOR TEACHING

SESSION	LOCATION	TIME
2102	SALON I	8:15-9:15
2112	145B	8:15-9:15
2113	146A	8:15-9:15
2117	147B	8:15-9:15
2131	143A	8:15-9:15
2211	145A	10:00-11:00
2214	146B	10:00-11:00
2215	146C	10:00-11:00
2216	147A	10:00-11:00
2221	149AB	10:00-11:00
2225	151B	10:00-11:00
2232	143B	10:00-11:00
2302	SALON I	11:15-12:15
2312	145B	11:15-12:15
2316	147A	11:15-12:15
2321	149B	11:15-12:15
2326	152A	11:15-12:15
2331	143A	11:15-12:15
2336	144C	11:15-12:15
2501	SALON G/H	2:15-3:15
2512	145B	2:15-3:15
2514	146B	2:15-3:15
2516	147A	2:15-3:15
2526	152A	2:15-3:15
2527	152B	2:15-3:15

### STRAND 5: LEADING MATHEMATICS INTO THE FUTURE

SESSION	LOCATION	TIME
2003	HALL A	7:00-8:00
2101	SALON G/H	8:15-9:15
2111	145A	8:15-9:15
2114	146B	8:15-9:15
2126	152A	8:15-9:15
2203	HALL A	10:00-10:45
2201	SALON G/H	10:00-11:00
2222	150A	10:00-11:00
2227	152B	10:00-11:00
2313	146A	11:15-12:15
2503	HALL A	11:15-12:15
2403	HALL A	12:30-2:00
2521	149AB	2:15-3:15
2523	150B	2:15-3:15
2524	151A	2:15-3:15
2534	144A	2:15-3:15
2535	144B	2:15-3:15



## TUESDAY SESSIONS



### HOW TO READ THIS SPEAKER PROGRAM:

#### TITLE OF PRESENTATION

Session Number | Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience

Description of presentation.

**Speaker Name**, Position, Affiliation

## TUESDAY BREAKFAST



Session 2003 | 7:00 am–8:00 am | Hall A | Strand 5 | General

### **WHO'S ON FIRST AND WHY IS IN LEFT FIELD...BUT ABBOTT & COSTELLO ARE MISSING AN OUTFIELDER!**

In our efforts to develop procedural fluency (and conceptual understanding), there are key questions we can (and must) ask students. Join me to see how Abbott & Costello's team of players can help us be better at developing strong questioning in our classrooms, and find out the name of the missing outfielder (AKA, something that might also be missing from our questioning).



**Jennifer Bay-Williams**, University of Louisville, Louisville, Kentucky

*Sponsored by*





## TUESDAY SESSIONS

8:15 AM–9:00 AM

### *Hot Topic:*

#### **LEADING WITH LESSON STUDY TO INSPIRE CHANGE IN MATHEMATICS INSTRUCTION AND IMPROVE STUDENT LEARNING**

Session 2103 | 8:15 AM–9:00 AM | Hall A | Strand 2 | General

In this interactive session, we will examine connections between high leverage coaching practices and the use of lesson study as a vehicle to support teachers' learning, influence instructional practice, and deepen student learning.

**Nicole Rigelman**, Portland State University, Portland, Oregon

**Maggie McGatha**, University of Louisville, Louisville, Kentucky

8:15 AM–9:15 AM

### MAJOR PRESENTATION

#### **NCSM: FRAMING THE FUTURE OF MATHEMATICS EDUCATION ON A 50-YEAR FOUNDATION OF LEADERSHIP**

Session 2101 | 8:15 AM–9:15 AM | Salon G/H | Strand 5 | General

NCSM has grown and built a thriving organization on the strong foundation created by the founders 50 years ago. In what ways have we exceeded their expectations? Where do we still have room to build? During the summer of 2017, the current NCSM Board renovated the mission and vision of the organization to reflect a vision for our future. Join me for a conversation that highlights and honors our past and opens a window to our future. Come share some of the biggest issues you see for us as we frame the future of NCSM.



**Connie Schrock**, NCSM President, Emporia, Kansas

**President**, Jason Gauthier, NCSM C1 Regional Director, Dorr, Michigan

Connie Schrock is the 2017–19 president of NCSM and previously served as an NCSM Central 2 regional director plus NCSM 1st and 2nd vice-presidents. She was part of the author team for both NCSM's Great Tasks for Mathematics Grades 6–12 and Grades K–5. Dr. Schrock is Professor of Mathematics at Emporia State University where she has received multiple award recognitions including Xi Phi Outstanding Faculty Member Award and the Liberal Arts and Science Outstanding Teaching and Service Awards. She teaches a variety of undergraduate and graduate classes; including the middle and secondary mathematics methods course where she supervises mathematics student teachers and works with classroom teachers. Connie has previously served as president of the Kansas Association of Teachers of Mathematics and the National Historian for Kappa Mu Epsilon, a mathematics honor society.

### SPOTLIGHT SPEAKER

#### **THE WHOLE SCHOOL AGREEMENT: ALIGNING ACROSS AND WITHIN GRADES TO BUILD STUDENT SUCCESS**

Session 2102 | 8:15 AM–9:15 AM | Salon I | Strand 4 | General

Are you using consistent mathematical language across grade levels? Is one teacher calling the commutative property the “flip flop” property? The Whole School Agreement is a process to align all models, language, and notation across and within grades so that students see the regularity and familiarity in a cohesive approach to teaching mathematics. Join us in making this happen in your school—by the way—we don't allow Rules that Expire!

**Karen Karp**, Johns Hopkins University, Baltimore, Maryland

**Sarah Bush**, University of Central Florida, Orlando, Florida

**Barbara Dougherty**, University of Hawaii, Honolulu, Hawaii

**President**, Shawn Towle, NCSM E1 Regional Director, Falmouth, Maine

#### **WHAT IS ROUGH DRAFT THINKING AND HOW CAN IT BE INTEGRATED INTO MATHEMATICS CLASSROOMS?**

Session 2111 | 8:15 AM–9:15 AM | 145A | Strand 5 | General

Rough draft thinking is communicating to learn by sharing unfinished thinking and revising emerging ideas. We've collaboratively developed teaching strategies to use rough draft thinking to shift classroom cultures away from performance to promote agency among students, place student ideas at the center of instruction, position each student as competent, and support the development of conceptual understanding. Come experience rough draft thinking about mathematics and ideas about integrating rough drafts into mathematics classrooms.

**Amanda Jansen**, University of Delaware, Newark, Delaware

**Michael Reitemeyer**, Appoquinimink School District, Odessa, Delaware

#### **I DO, WE DO, YOU DO NEEDS A REDO**

Session 2112 | 8:15 AM–9:15 AM | 145B | Strand 4 | General

“Support productive struggle in learning mathematics” is one of the eight Mathematics Teaching Practices in NCTM's *Principles to Action* (2014). Also, in a recent survey, nearly one-third of students in an elite national mathematics contest shared “work at it until I figure it out” as their way to attack mathematical challenges. Learn what our district did to show that we listened!

**Linda Smith**, Rockdale County Public Schools, Conyers, Georgia

**Jacqueline Hennings**, Rockdale County Public Schools, Conyers, Georgia





## TUESDAY SESSIONS



### **CULTIVATING STUDENTS' MATHEMATICAL AGENCY**

Session 2113 | 8:15 AM–9:15 AM | 146A | Strand 4 | 6–8, 9–12, General  
Mathematical knowledge for teaching involves how teachers understand students' mathematical thinking, knowledge, and learning. Yet, how students learn mathematics is fundamentally connected to how they experience learning in the classroom. This presentation considers how agency supports student learning and how teachers can support student agency. Participants will actively engage with these questions: What is agency? How would we know it if we saw it? And how can teachers learn to cultivate agency in their students?

**Cathy Humphreys**, Self Employed, Mountain View, California

### **DESIGNING THE MATHEMATICS CLASSROOM OF TOMORROW**

Session 2114 | 8:15 AM–9:15 AM | 146B | Strand 5 | General  
Cutting-edge technology meets cutting-edge research! This session explores how automated analysis, informed by the latest research on mathematics learning trajectories, can identify student thinking using work that students produce digitally. Student work can be shared anonymously with the class, sparking a classroom conversation in which all student voices are heard. Meanwhile, teachers have immediate access to analyzed student data that helps them orchestrate the conversation and pivot instruction.

**Michael Garcia**, Pearson, Austin, Texas

**Donald DeLand**, Pearson, Albuquerque, New Mexico

### **MATHEMATICS COACHES: INFORMING PLANNING AND INSTRUCTION BY FOCUSING ON EVERYDAY, IN-THE-MOMENT FORMATIVE ASSESSMENT**

Session 2115 | 8:15 AM–9:15 AM | 146C | Strand 2 | PK–2, 3–5, 6–8, 9–12  
This presentation will engage all participants, particularly mathematics coaches, in considering how everyday use of The Formative 5, in-the-moment classroom-based assessment techniques (observations, interviews, Show Me, hinge questions, exit tasks) directly influence teacher planning and instruction. Participants will view video depicting classroom use of The Formative 5 and discuss coaching practices emphasizing the importance of connections between planning, instruction, and assessment as well as considerations related to providing feedback to the formative assessment techniques presented.

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

**Beth Kobett**, Stevenson University, Stevenson, Maryland

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

### **RURAL EDUCATION: CONSIDERING THE UNIQUE NEEDS OF RURAL MATHEMATICS CLASSROOMS**

Session 2116 | 8:15 AM–9:15 AM | 147A | Strand 1 | College  
This interactive session will discuss rurality and rural education within the context of mathematics. We will share our efforts across rural counties to address the unique needs of mathematics education in rural classrooms. Specifically, we will discuss themes that emerged from listening sessions with district leaders: multiple endorsements in smaller schools and consideration of rural workforces. We will discuss how we have fostered relationships of mutual understanding and trust with district leaders and other stakeholders.

**Dana Franz**, Mississippi State University, Mississippi State, Mississippi

**Jessica Ivy**, Mississippi State University, Mississippi State, Mississippi

### **NEW GRANT OPPORTUNITIES FOR MATHEMATICS LEADERS FROM THE MATHEMATICS EDUCATION TRUST (MET)**

Session 2117 | 8:15 AM–9:15 AM | 147B | Strand 4 | General  
Learn about new grant opportunities from the Dolciani Holloran Foundation, NCSM, and TODOS. Receive specific guidelines and tips on these and other grants and scholarships to enhance chances of becoming an awardee. MET supports teachers, schools, and students with funds for materials, lesson development, conference attendance, courses, professional development, technology, and action research.

**Richard Seitz**, Seitz Innovations, Helena, Montana

### **SPONSOR SHOWCASE**

#### **THE ANSWER STILL MATTERS ... EVENTUALLY**

Session 2121 | 8:15 AM–9:15 AM | 149AB | Strand 3 | General  
Effective teachers engage students in productive struggle as a way to develop mathematical thinking and learn new content. We sometimes say, "It's not the answer that matters, it's the process." But the answer does matter, even as we focus on the struggle. How can we slow down the race to answers and use the journey as a vehicle for learning?

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

#### **GO FIGURE: LEVERAGING INTENTIONALITY TO GAIN ACCESS AND PROMOTE EQUITY THROUGH A FOCUS ON FLUENCY**

Session 2123 | 8:15 AM–9:15 AM | 150B | Strand 3 | PK–2, 3–5  
How do we best cultivate students' fluency (accuracy, efficiency, and flexibility)? In this session, we will discuss the successful implementation of the Instructional Learning Cycle that provides teachers and coaches with a structure to study the impact of their instruction to increase students' fact fluency. You will explore ready-to-use fluency benchmark tools for assessment, instruction, and coaching that were designed to increase access and ensure success in foundational mathematics for ALL students.

**Diane Owen-Rogers**, Kalamazoo Regional Educational Service Area, Portage, Michigan





## TUESDAY SESSIONS

### COACHING THROUGH FEEDBACK: EXAMINING EVIDENCE TO MOVE PRACTICE FORWARD

Session 2124 | 8:15 AM–9:15 AM | 151A | Strand 2 | General

Evidence-based feedback holds the greatest potential for moving practice forward. Evidence-based feedback enables the teacher and coach to compare the current state of practice with the desired state of practice, making it possible for a teacher to set instructional goals. Navigating these conversations, however is not always easy. In this session, we will analyze two coach-teacher conversations and name features of feedback, as well as effective coach moves used to support teacher learning.

**Victoria Bill**, Institute for Learning, Pittsburgh, Pennsylvania

**Laurie Speranzo**, Institute for Learning, Pittsburgh, Pennsylvania

### COLLABORATIVE PLANNING: A STRATEGY TO NARROW LEARNING GAPS!

Session 2125 | 8:15 AM–9:15 AM | 151B | Strand 1 | PK–2, 3–5

Are you looking for ways to support teachers in narrowing learning gaps and decreasing the variability of student learning experiences between mathematics classrooms? We will explore the research-informed strategy of collaborative planning. Participants will analyze videos, identify common barriers, and make plans to move teams toward more equitable access to high-quality mathematics instruction for each and every student.

**Karla Bandemer**, Lincoln Public Schools, Lincoln, Nebraska

**Delise Andrews**, Lincoln Public Schools, Lincoln, Nebraska

**Susie Katt**, Lincoln Public Schools, Lincoln, Nebraska

### IT TAKES A [MATHEMATICS EDUCATION] VILLAGE TO PREPARE A MATHEMATICS TEACHER

Session 2126 | 8:15 AM–9:15 AM | 152A | Strand 5 | General

The Association of Mathematics Teacher Educators (AMTE) Standards for Preparing Teachers of Mathematics [SPTM] (2017) provide a clear and comprehensive national vision for the preparation of well-prepared beginning teachers of mathematics in grades PK–12. In short, it requires the engagement of university and school leaders. In this session we will engage in discussions about the characteristics of well-prepared beginning teachers of mathematics and how to partner to achieve such a vision.

**Nadine Bezuk**, San Diego State University, San Diego, California

**Jennifer Bay-Williams**, University of Louisville, Louisville, Kentucky

**Douglas Clements**, University of Denver, Denver, Colorado

**W. Gary Martin**, Auburn University, Auburn, Alabama

### LEARN HOW TO DEVELOP TEACHER CONTENT KNOWLEDGE AND PRACTICE THROUGH INSTRUCTIONAL ROUTINES

Session 2127 | 8:15 AM–9:15 AM | 152B | Strand 2 | General

Instructional routines are indispensable coaching tools. Their repeatable nature makes them the perfect vehicle for developing teacher practice. Their predictable design invites collaborative learning and a focus on the complexities of teaching rather than lesson logistics. Learn how to coach through routines so that teacher, coach, and colleagues can immediately begin working on the crux of a lesson—the mathematics, how students make sense of it, and how the teacher supports that sense making.

**Grace Kelemanik**, Fostering Math Practices, Natick, Massachusetts

**Amly Lucenta**, Fostering Math Practices, Natick, Massachusetts

### DEVELOPING TEACHERS' MATHEMATICAL KNOWLEDGE FOR TEACHING BY INTEGRATING FOUR CORE ELEMENTS WITHIN PRACTICE-BASED PROFESSIONAL DEVELOPMENT

Session 2131 | 8:15 AM–9:15 AM | 143A | Strand 4 | PK–2, 3–5

This presentation reports on a five-year study exploring an approach to teacher professional learning designed to foster usable mathematical knowledge for teaching (MKT). Driving the design was the hypothesis that professional development integrating elements of mathematics teaching practice—one of which is mathematics content—would foster learning given its replication of how knowledge is used in teaching. Significant gains in MKT and teacher confidence levels were found. Design principles and examples will be discussed.

**Kara Suzuka**, University of Hawaii, Honolulu, Hawaii

**Timothy Boerst**, University of Michigan, Ann Arbor, Michigan

### MATHEMATICAL LANGUAGE ROUTINES: EQUITY AND ACCESS FOR ALL

Session 2132 | 8:15 AM–9:15 AM | 143B | Strand 1 | General

Join us to simultaneously engage with middle school content, practices, and mathematical language development using structured routines that are flexible and adaptable to varied classroom environments! You'll learn and practice mathematical language routines that support sense making and foster equity and access for all students. These routines create an authentic need to communicate, as students develop facility with English and disciplinary language, while providing the appropriate support to engage in rich conversations with their peers.

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

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

**Sadie Estrella**, State of Hawaii-Department of Education, Wailuku, Hawaii



## TUESDAY SESSIONS



### LESSON STUDY: INDIVIDUALIZED AND HANDS-ON PROFESSIONAL DEVELOPMENT FOR TEACHERS INSIDE THEIR CLASSROOMS AND THROUGH THEIR PROFESSIONAL LEARNING TEAMS

Session 2133 | 8:15 AM–9:15 AM | 143C | Strand 3 | 6–8, 9–12

Teachers and coaches will share how they have supported each other in making the shifts of CCSSM and the eight Mathematics Teaching Practices from NCTM's *Principles to Actions* by meeting the individual needs of teachers through Lesson Study. We will share our successes, struggles, and strategies for overcoming common obstacles to doing Lesson Study and how we plan to continue the journey. We will also share our materials and lessons, then answer any questions you may have.

**Kim McCuiston**, Brunswick County Schools, Bolivia, North Carolina

**Keri McKenzie**, Brunswick County Schools, Bolivia, North Carolina

**Julie Bacak**, Brunswick County Schools, Bolivia, North Carolina

**Cathy Johnson**, Brunswick County Schools, Bolivia, North Carolina

### THE COACH FROM WITHIN: A JOURNEY FROM TEACHER TO COACH

Session 2134 | 8:15 AM–9:15 AM | 144A | Strand 2 | General

Effective mathematics coaching requires deep content and pedagogical understanding. It also requires compassion, empathy, a deep understanding of what it means to “be in the trenches,” meeting teachers where they are, and stepping up with them to the next level. Five coaches from four rural school districts in two states share their seven-year journey from classroom teacher to teacher leader to mathematics instructional coach through intense research-based professional development in content, practices, and leadership.

**Kathy Prummer**, Lake Pend Oreille School District, Ponderay, Idaho

**Kimberly Bunch**, Quincy School District, Quincy, Washington

**Anna Hertzberg**, West Bonner County School District, Priest River, Idaho

**Peggy Loutzenhiser**, West Bonner County School District, Priest River, Idaho

**Leigh Wilson**, Potlatch School District, Potlatch, Idaho

### MODEL WITH MATHEMATICS: IF YOU BUILD IT, THE MATH WILL COME!

Session 2135 | 8:15 AM–9:15 AM | 144B | Strand 3 | PK–2, 3–5, 6–8

Several years ago a teacher responded to the wishes of a few students who wanted to give up their lunch/recess period to spend time researching and building something of their own choice. This interest has now expanded to include over 75 students of diverse learning styles and academic abilities. Come hear how the application of key mathematics concepts, embedded in the creative process of construction, provided an authentic opportunity for the CCSS practice of modeling.

**Anne Nesbitt**, Westport Public Schools, Westport, Connecticut

**Ashley Moran**, Westport Public Schools, Westport, Connecticut

### LEARNING TO LISTEN: SUPPORTING EARLY CHILDHOOD TEACHERS TO ELICIT AND INTERPRET THE THINKING OF YOUNG CHILDREN

Session 2136 | 8:15 AM–9:15 AM | 144C | Strand 2 | PK–2

Learning about the thinking of children is essential to the enterprise of teaching, but it is often particularly challenging to carry out with our youngest learners. We will share a set of practice-based activities which can be used to enhance the eliciting and interpreting skills of early childhood teachers. Participants will engage in the activities with a focus on how to use them with teachers. These activities will specifically address the needs of English Learners.

**Nicole Cirino**, TeachingWorks, University of Michigan, Ann Arbor, Michigan

**Meghan Shaughnessy**, University of Michigan, Ann Arbor, Michigan

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

**9:15 AM–10:00 AM**

### DEDICATED TIME TO VISIT SPONSORS AND EXHIBITORS

Hall A

**10:00 AM–10:45 AM**

### *Hot Topic:*

#### WHAT'S THE DEAL WITH HONORS AND ACCELERATION?

Session 2203 | 10:00 AM–10:45 AM | Hall A | Strand 5 | General

What's the difference between honors and regular mathematics classes anyway? Do we accelerate students because that's what's best for them or because of pressure from parents, teachers, and administrators? Let's talk about it.

**Robert Kaplinsky**, Downey Unified School District, Downey, California







# TUESDAY SESSIONS

## 10:00 AM–11:00 AM

### MAJOR PRESENTATION

#### 10 IN 50 - WORDS OF WISDOM FROM THE MONOGRAPH AUTHORS!

Session 2201 | 10:00 AM–11:00 AM | Salon G/H | Strand 5 | General  
Learn from this outstanding group of mathematics education leaders, teachers, authors, and researchers. Don't miss this once in a lifetime opportunity to hear from some of the giants of our generation. See what has motivated them to a lifetime of achievement. Hear their perspectives and words of encouragement and wisdom for the next 50 years.

(Pictured left to right)

- Linda Fulmore**, Positions Papers Editor, Cave Creek, Arizona
- Connie Schrock**, NCSM President, Emporia, Kansas
- Shirley M. Frye**, Retired, Cave Creek, Arizona
- Zalman Usiskin**, University of Chicago, Chicago Illinois
- Steve Leinwand**, American Institute for Research, Washington, D.C.
- Gary Bitter**, Arizona State University, Scottsdale, Arizona
- Francis (Skip) Fennell**, McDaniel College, Westminster, Maryland
- Susana Davidenko**, State University of New York at Cortland, Campbell, California
- Jo Boaler**, Stanford University, Stanford, California
- Ralph Connelly**, Brock University, St. Catherines, Ontario, Canada
- Tim Kanold**, The Center for Mathematics Teaching and Learning, Chicago, Illinois
- Cathy Seeley**, University of Texas at Austin, Retired, Austin, Texas
- President**, Connie Schrock, NCSM President, Emporia, Kansas







## SPOTLIGHT SPEAKER

### TEACHING BEYOND THE TASK: USING YESTERDAY'S LESSON TO PREPARE FOR TODAY

Session 2202 | 10:00 AM–11:00 AM | Salon I | Strand 3 | PK–2, 3–5

There are many great tasks making their way into our elementary classrooms but how do we decide which ones to use and why? In this session, we'll share strategies for selecting and assessing tasks in a unit and uncover how this knowledge informs our next lesson. We'll specifically look at this work through the eyes of an elementary class in Georgia from the beginning to end and the purposeful moves made along the way.

**Graham Fletcher**, Griffin-Spalding Schools, Griffin, Georgia  
**President**, Sue Vohrer, NCSM E2 Regional Director, Cocksyville, Maryland

### USING LEARNING INTENTIONS AND SUCCESS CRITERIA TO IMPROVE TEACHER CLARITY

Session 2211 | 10:00 AM–11:00 AM | 145A | Strand 4 | General

Teacher clarity has a 0.75 effect size on student learning (Hattie, 2015) and it begins with clearly communicating learning intentions and success criteria. Classroom video and examples bring clarity to writing and using learning intentions and success criteria. Learn how a small change in your practice can have a huge impact on student learning.

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

**Sophie Murphy**, University of Melbourne, Melbourne, Victoria, Australia

### FOCUSING THE WORK OF COACHING: PROMISING PRACTICES THAT LEVERAGE WHAT MATTERS MOST IN MATHEMATICS TEACHING AND LEARNING

Session 2212 | 10:00 AM–11:00 AM | 145B | Strand 2 | General

Are you working too hard as a coach for too few results? Impactful coaching does not happen by chance, it happens by design. Learn how our team built a detailed coaching framework designed to empower coaches to identify and leverage the instructional strategies that matter most for teaching and learning, especially for diverse populations. Explore our framework, protocols, and tools, critique them alongside your own process, and identify potential enhancements to your current coaching practice.

**Danielle Seabold**, Kalamazoo Regional Educational Service Agency, Portage, Michigan

**Diane Owen-Rogers**, Kalamazoo Regional Educational Service Area, Portage, Michigan

### TAKING ACTION: IMPLEMENTING THE EFFECTIVE MATHEMATICS TEACHING PRACTICES

Session 2213 | 10:00 AM–11:00 AM | 146A | Strand 3 | General

The session engages participants in activities that support *Principles to Actions: Eight Effective Mathematics Teaching Practices*. The activities will include analyzing and discussing artifacts including mathematical tasks, student work, and episodes of classroom teaching. Activities are drawn from the NCTM Taking Action series.

**Margaret Smith**, University of Pittsburgh, Pittsburgh, Pennsylvania

### GETTING TO THE ROOT OF THE PROBLEM: SUPPORTING TEACHERS IN ELICITING AND ADDRESSING STUDENT MISCONCEPTIONS

Session 2214 | 10:00 AM–11:00 AM | 146B | Strand 4 | 3–5

To help struggling learners, teachers need a deep and flexible understanding of the mathematics they teach as well as diagnostic approaches for identifying students' strengths and difficulties. Experience professional development activities that help grades 3–5 teachers build their own knowledge of mathematics concepts, diagnostic approaches, and effective instructional strategies. Try formative assessment probes, examine student work, and discuss videos of mathematics interviews. Leave with ideas to apply in your district.

**Cheryl Tobey**, Maine Department of Education, Augusta, Maine

**Emily Fagan**, Education Development Center, Waltham, Massachusetts

### USING RESEARCH TO INFORM PRACTICE: DEEPENING TEACHER UNDERSTANDING OF STANDARDS FOR MATHEMATICAL PRACTICE 7 & 8

Session 2215 | 10:00 AM–11:00 AM | 146C | Strand 4 | General

Despite the fact that the CCSSM were released almost eight years ago, teachers across the nation are still unclear about Standards for Mathematical Practice (SMP) 7 & 8. We surveyed teachers to find out what they know about structure and repeated reasoning and what professional development they've received. In this session, we will use the results of our study to help you provide coherent and precise professional development for your teachers.

**Hilary Kreisberg**, Lesley University, Cambridge, Massachusetts





## TUESDAY SESSIONS

### **SPATIAL REASONING IN THE EARLY YEARS: A POWERFUL MEANS OF SUPPORTING CHILDREN'S MATHEMATICAL DEVELOPMENT**

Session 2216 | 10:00 AM–11:00 AM | 147A | Strand 4 | PK–2

A researcher and a district mathematics leader share findings from a multi-year, classroom-based research study on young children's mathematics and spatial reasoning. Since 2011, teams of educators have engaged in lesson study with the research team to investigate children's thinking through a spatial lens, and to design tasks to provide rich learning experiences involving spatial reasoning across the mathematics curriculum. The session will include opportunities for participants to experience spatial tasks designed through the process.

**Tara Flynn**, Trent University, Peterborough, Ontario, Canada

**Petra Le Duc**, Ontario Ministry of Education, Toronto, Ontario, Canada

**Cathy Bruce**, Trent University, Peterborough, Ontario, Canada

### **SOCIAL STUDYING: ADDING DISCOURSE, ENGAGEMENT, AND ACCOUNTABILITY TO INSTRUCTION**

Session 2217 | 10:00 AM–11:00 AM | 147B | Strand 2 | 3–5

Coaches, have you ever observed a lesson with the teacher calling on one student at a time while the class becomes increasingly disengaged? Today, you'll explore how to transform traditional, teacher-directed lessons into student-centered, discourse-rich experiences. Social studying, a research-based paradigm that focuses on student discourse and shared experiences, holds all students accountable to their greatest potential. Learn how you can be the change agent for much improved mathematics instruction.

**Robyn Silbey**, Robyn Silbey Professional Development, Gaithersburg, Maryland

### **LEARNING FROM CHILDREN'S MATHEMATICAL THINKING: AN APPROACH TO FORMATIVE ASSESSMENT**

Session 2222 | 10:00 AM–11:00 AM | 150A | Strand 5 | PK–2, 3–5

Teaching in response to children's mathematical thinking is at the heart of high-quality mathematics instruction. In this session, we will share a formative assessment approach that allows K–5 teachers to gather detailed information about their students' mathematical ideas using Cognitively Guided Instruction frameworks. This interview-style assessment utilizes counting, addition, multiplication, division, fair sharing, and relational thinking tasks that can be used by teachers and entire schools to make instructional decisions based on students' current understandings.

**Kendra Lomax**, University of Washington, Seattle, Washington

**Becca Lewis**, University of Washington, Seattle, Washington

### **BUILDING SCHOOL CAPACITY FOR MORE EQUITABLE TEACHING PRACTICES THROUGH MATHEMATICS TEACHER LEADERSHIP**

Session 2223 | 10:00 AM–11:00 AM | 150B | Strand 1 | General

In this session we discuss our collaboration with K–12 mathematics teacher leaders on promoting equitable mathematics teaching practices in schools. We describe our work with teacher leaders on research-based strategies for addressing issues of equity and agency in mathematics classrooms. We identify how teacher leaders share what they're learning with colleagues in their schools. There will be opportunities to explore how similar strategies can be leveraged to support equitable mathematics teaching practices in other contexts.

**Linda Davenport**, Boston Public Schools, Boston, Massachusetts

**Connie Henry**, Boston Public Schools, Boston, Massachusetts

**Peter Thorlichen**, Boston Public Schools, Boston, Massachusetts

#### **SPONSOR SHOWCASE**

### **PROMOTING PRODUCTIVE STRUGGLE IN THE MATHEMATICS CLASSROOM**

Session 2221 | 10:00 AM–11:00 AM | 149AB | Strand 4 | 6–8, 9–12

NCTM's *Principles to Actions* states that effective mathematics teaching consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle when grappling with mathematical ideas and relationships. How might we slow down our instruction to intentionally design opportunities for all learners to notice and question? This session will focus on strategies for using TI technology to promote productive struggle. We will share lessons and strategies for conceptual development of fractions, ratios and equations.

**Jill Gough**, Trinity School, Atlanta, Georgia

**Jennifer Wilson**, Northwest Rankin High School, Flowood, North Carolina

### **RIGOR AND CHARACTER: HOW AN UNDERSTANDING OF THE SOCIAL-EMOTIONAL DIMENSIONS OF LEARNING MATHEMATICS CAN ACCELERATE LEARNING**

Session 2224 | 10:00 AM–11:00 AM | 151A | Strand 1 | PK–2, 3–5, 6–8, 9–12

Are you working to equitably increase students' success with rigorous mathematics in your instructional program? In this session, participants will learn practical leadership techniques to help teachers and their students succeed in solving and discussing solutions to various problems in ways that build deep understanding. Come learn about real experiences in real schools that leverage social and emotional learning to increase student achievement.

**Doug Sovde**, The Charles A. Dana Center at the University of Texas at Austin, Austin, Texas



## TUESDAY SESSIONS



### EXPLORING TASKS THAT BUILD PROCEDURAL FLUENCY FROM CONCEPTUAL UNDERSTANDING

Session 2225 | 10:00 AM–11:00 AM | 151B | Strand 4 | 6–8, 9–12

Teachers recognize the need for students to develop both procedural fluency and conceptual understanding but are often unsure of how to do so. To foster productive change in mathematics classrooms, teachers need to understand how to connect mathematical procedures with their underlying concepts. In this session, participants will explore a variety of tasks that would allow their students to develop procedural fluency grounded in conceptual understanding.

**Juliana Utley**, Oklahoma State University, Stillwater, Oklahoma

**John Weaver**, Oklahoma State University, Stillwater, Oklahoma

**Stacy Reeder**, University of Oklahoma, Norman, Oklahoma

### FOSTERING STUDENT ENGAGEMENT THROUGH DIFFERENTIATION USING A SECONDARY WORKSHOP MODEL

Session 2226 | 10:00 AM–11:00 AM | 152A | Strand 3 | 6–8, 9–12

To become mathematically literate citizens in a changing world, all students must be active participants in a mathematics community. In this presentation we will share the outcomes of the adaption and implementation of the elementary Math Workshop structure for secondary schools in a large suburban district, including professional development opportunities for teachers and coaches, and strategies to build capacity within and across schools.

**Jennifer Allard**, Fairfax County Public Schools, Fairfax, Virginia

**David Van Vleet**, Fairfax County Public Schools, Fairfax, Virginia

### INTEGRATING MATHEMATICS AND SCIENCE: PREPARING FOR THE FUTURE

Session 2227 | 10:00 AM–11:00 AM | 152B | Strand 5 | PK–2, 3–5, 6–8, 9–12

Education leaders today must prepare students for careers that don't yet exist. Considering STEM career trajectories, the integration and application of knowledge across subjects is critical. As leaders ask teachers to approach mathematics instruction from a transdisciplinary mindset, they must be aware of existing research, success strategies, and pitfalls to avoid. A set of experiences integrating mathematics and science at different grade levels will be shared, with discussion and reflection centered on leading for change.

**Karin Lange**, Center for Science and Math Education, Loyola University Chicago, Chicago, Illinois

**Julie Jacobi**, Center for Science and Math Education, Loyola University Chicago, Chicago, Illinois

### FEEDBACK: HOW DOES TARGETED, TANGIBLE, AND TIMELY FEEDBACK IMPROVE THE DIALOGUE BETWEEN MATHEMATICS COACHES AND TEACHERS TO MAKE LEARNING VISIBLE FOR DIVERSE LEARNERS?

Session 2231 | 10:00 AM–11:00 AM | 143A | Strand 2 | 6–8, 9–12

Instructional coaches spend a great deal of time observing classrooms and translating those observations into student growth can be challenging. The session will provide an overview of high-impact strategies utilized by mathematics coaches and teachers that systematically address student achievement. Participants will practice incorporating the strategies learned in this session with the goal to provide targeted feedback in order to grow mathematics teachers from novice to proficient to master.

**Yvonne Mendolia**, The College Board, Sunrise, Florida

**Brenda Green**, The College Board, Los Angeles, California

### INCREMENTAL AND MONUMENTAL CHANGES—HELPING OUR TEACHERS STRENGTHEN THEIR TEACHING STRATEGIES

Session 2232 | 10:00 AM–11:00 AM | 143B | Strand 4 | 6–8, 9–12, College

How can the Mathematics Teaching Practices described in *Principles to Action* (NCTM, 2014) provide a framework for strengthening teaching strategies while developing mathematical knowledge for teaching? We'll discuss research-based strategies that support these teaching practices as we experience rich modeling tasks that can make students' thinking more visible, facilitate rich discussion, and provide avenues for differentiation.

**Betty Gasque**, Charleston, South Carolina

**Judy Hicks**, Arvada, Colorado

### A COMMITMENT TO EQUITY: ONE DISTRICT'S SYSTEMIC APPROACH TO CHANGE IN MATHEMATICS EDUCATION

Session 2233 | 10:00 AM–11:00 AM | 143C | Strand 1 | 9–12, General

The systemic inequities in mathematics education require systemic actions and solutions. In this session, we outline the process our district is engaging in to outline a vision for our mathematics program, to enact change to structures and belief systems that are not in alignment with that vision, and to organize our schools for continuous improvement. Details of current successes, struggles, and next steps will be shared.

**Bryan Meyer**, Escondido Union High School District, Escondido, California

**Abi Leaf**, Escondido Union High School District, Escondido, California

**Brian Lawler**, Kennesaw State University, Kennesaw, Georgia





## TUESDAY SESSIONS

### COACHING PARTNERSHIPS TO PROMOTE MATHEMATICS IDENTITY

Session 2234 | 10:00 AM–11:00 AM | 144A | Strand 2 | General

The concept of mathematics identity is essential in framing the knowledge, skills, habits, attitudes, beliefs, and relationships needed to develop successful mathematics learners. How can coaches empower teachers to shape students' mathematical identities? We will share resources we have used to promote reflective dialogue aimed at improving student engagement and learning.

**Margaret Pligge**, University of Illinois at Chicago, Chicago, Illinois

### BARRIERS AND BREAKTHROUGHS: FOUR YEARS OF LIVING ABROAD, TEACHING MATHEMATICS AND IMPLEMENTING THE COMMON CORE TO ARABIC-SPEAKING STUDENTS

Session 2235 | 10:00 AM–11:00 AM | 144B | Strand 3 | 6–8, General

The principles and foundations of mathematics are the same everywhere around the world ... or are they really? Join me as I share my four-year journey of teaching middle grades mathematics to Arabic-speaking learners in the Middle East. You might be surprised at how culture impacts which concepts of mathematics are, and are not necessarily universal. Take a glimpse at the curriculum and student work samples, and even experience a dual-language lesson simulation.

**Jacqueline Burns**, Abu Dhabi Education Council, Abu Dhabi, Abu Dhabi, UAE

### KEEPING PACE ... COLLABORATIVE PLANNING FOR EFFECTIVE INSTRUCTION

Session 2236 | 10:00 AM–11:00 AM | 144C | Strand 3 | 6–8, 9–12

Are your teachers working collaboratively to plan units in order to teach your curriculum? Participants will explore proven techniques for working as a team to plan for effective instruction. Discover how one school system worked with building administrators, department chairs, and teacher teams to introduce the use of high leverage team actions in tandem with a timeline. Both successes and struggles will be shared.

**Leslie Johnson**, Baltimore County Public Schools, Towson, Maryland

**Laura Potter**, Baltimore County Public Schools, Towson, Maryland

**Maria Everett**, Baltimore County Public Schools, Towson, Maryland

## 11:15 AM–12:15 PM

### MAJOR PRESENTATION

#### LEADING A COHESIVE MATHEMATICS PROGRAM

Session 2301 | 11:15 AM–12:15 PM | Salon G/H | Strand 3 | PK–, 3–5, 6–8, 9–12

How would you describe the mathematics program you lead? What components define it? What is the glue that holds it together? How does it provide access to opportunity? This session supports teachers, coaches, and administrators who lead a mathematics program. It tells the story of one district's approach to building an exemplary mathematics program through access and equity, high-quality first instruction, and differentiated support. It offers ideas about how a program defines purpose, establishes productive beliefs, identifies barriers, and sets expectations. Programmatic tools and resources will be shared.



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

**President**, Bill Barnes, NCSM 2nd Vice President and Volunteer Coordinator

John SanGiovanni is a mathematics supervisor in Howard County, Maryland.

There he leads mathematics curriculum development, digital learning, assessment, and professional development for 41 elementary schools and more than 1,500 teachers. John is an adjunct professor and coordinator of the Elementary Mathematics Instructional Leader graduate program at McDaniel College. He is an author and national mathematics curriculum and professional learning consultant. John is a frequent speaker at national conferences and institutes. He is active in state and national professional organizations and currently serves on the Board of Directors for the National Council of Teachers of Mathematics.





## TUESDAY SESSIONS



### SPOTLIGHT SPEAKER

#### LOOKING FOR STRUCTURE: EARLY ALGEBRA WITH A FOCUS ON THE OPERATIONS

Session 2302 | 11:15 AM–12:15 PM | Salon I | Strand 4 | 3–5, 6–8

Although K–6 mathematics focuses on calculation, the meaning of the operations may fall into the background. Indeed, many common errors stem from confusion about which structures apply to which operation. This session will present classroom examples to illustrate how early algebra can provide a context for highlighting the operations as distinct objects. The examples emphasize the role of representations in the study of structure and teachers' actions that draw students' attention to those structures.

**Deborah Schifter**, Education Development Center, Waltham, Massachusetts

**President**, Natalie Crist, NCSM Web Editor, Baltimore Maryland

#### LEADING THE CHARGE: USING MANIPULATIVES AND GRAPHIC ORGANIZERS IN THE SECONDARY MATHEMATICS CLASSROOM

Session 2311 | 11:15 AM–12:15 PM | 145A | Strand 3 | 6–8, 9–12

This workshop experience will highlight the journey of one school district's efforts to strategically infuse collaborative learning applications using manipulatives and tailored graphic organizers at the secondary mathematics level. District and teacher leaders will share how they implemented the consistent use of physical manipulatives, tracked data to assess the effectiveness, and used graphic organizers to assist with the transfer of knowledge from concrete to abstract.

**Jaliyla Fraser**, East Orange School District, East Orange, New Jersey

#### FORMATIVE ASSESSMENT TOOLS AND ROUTINES FOR DEVELOPING NUMBER SENSE AND ADDITIVE REASONING IN GRADES K–2

Session 2312 | 11:15 AM–12:15 PM | 145B | Strand 4 | PK–2

Formative assessment has proven to be one of the most powerful educational interventions for improving student learning but can be challenging to implement effectively. We will share newly developed formative assessment items and research-based frameworks for analyzing student thinking in grades K–2 in number, addition, and subtraction. We will demonstrate how these tools can enhance teachers' interpretation and response to student thinking to meet the diverse needs of learners on an ongoing basis.

**Caroline Ebby**, CPRE, University of Pennsylvania, Philadelphia, Pennsylvania

**Beth Hulbert**, OGAPMath, LLC, Moretown, Vermont

**Nicole Fletcher**, CPRE, University of Pennsylvania, Philadelphia

### PRESIDENTS EXCHANGE–NCTM

#### BUILDING EFFECTIVE HIGH SCHOOL MATHEMATICS PROGRAMS FOR EACH AND EVERY STUDENT

Session 2313 | 11:15 AM–12:15 PM | 146A | Strand 5 | 6–8, 9–12, College, General

Traditionally high school math programs have been effective in supporting college readiness for some students while simultaneously alienating and limiting future opportunities for others. We can and must change how we prepare each and every student for participation in our democratic society and post-secondary education. This session will preview the NCTM report on High School Mathematics scheduled for release at the 2018 NCTM Annual Meeting in Washington D.C.

**Matt Larson**, National Council of Teachers of Mathematics, Lincoln, Nebraska





## TUESDAY SESSIONS

### *Kay Gilliland Equity Lecture:*

#### **EMPOWERING TEACHERS TO DISRUPT RACIAL INEQUITIES: THE FUNDAMENTAL PRAXIS OF BECOMING A CHANGE AGENT**

Session 2314 | 11:15 AM–12:15 PM | 146B | Strand 1 | General

As we consider how to best serve students of color in school mathematics—students who have been overwhelmingly under-served by that system—it will take a resolute commitment to praxis and to growing teachers. As a learning system, school mathematics has done poorly at providing equitable learning opportunities. In practice, “solutions” have been rather technical or have been top-down with only minimal support to the teacher to carry out the solution. As a system, we need to reconceive of mathematics teaching as a continuous learning enterprise and of teachers as change agents in that enterprise, not just implementers of policy and/or solutions.

I will share a developmental process of empowering teachers to disrupt systemic racial inequities that we use in our work. The process begins with self-study-in-context and builds to enacting an informed, reflective, systematic action plan. This process—Acknowledge, See, Speak & Act—was developed collaboratively by the Designing for Equity by Thinking in and about Mathematics (DEbT-M) networked community. The partnership’s name echoes Gloria Ladson-Billings’ argument, and our community stance, that we owe children of color an education debt. Grounding principles of the

DEbT-M community—whose primary goal it is to reduce systemic opportunity gaps experienced by children of color in mathematics classrooms—will also be shared.

**Eden Badertscher**, Education Development Center, Inc., Waltham, Massachusetts



Eden Badertscher is a senior project manager at the Education Development Center (EDC), an international education and health nonprofit based outside Boston. Badertscher has spent her career working to close opportunity gaps in mathematics education and ensure that it promotes the proficiency of all students. She has extensive expertise in teacher education, mathematics curriculum and professional development, alignment with standards, and advancing effective mathematics instruction in urban school districts.

As Principal Investigator of *Designing for Equity by Thinking In and About Mathematics*, Badertscher leads a team working to close opportunity gaps for marginalized mathematics students in grades 6–12 by forming strong communities of mathematical practice that engage teachers, school and district leaders, and mathematicians. The program looks at school as a system, examining its issues of institutional racism, and engaging teachers to help disrupt that status quo. Badertscher is also leading a team to develop a diagnostic tool to help identify where opportunity gaps exist.

Recently her team received a Fellowship from 100Kin10 in recognition of the importance and promise of this work.

Prior to EDC, Badertscher worked to advance education reform in the Pittsburgh Public Schools and Prince George County Public Schools where she helped support teachers, enhance instruction, and address district needs related to special education, culturally relevant teaching, and English language learners. She has taught at both the undergraduate and graduate levels. She holds a BA from Princeton University and an MEd and PhD from the University of Maryland.



## TUESDAY SESSIONS



### TRANSFORMATIVE MATHEMATICS PROFESSIONAL LEARNING: HOW APPRECIATIVE INQUIRY(AI) AND STRENGTH-BASED METHODS PROMOTE POSITIVE TEACHER CHANGE

Session 2315 | 11:15 AM–12:15 PM | 146C | Strand 2 | General

How does the way in which we coach and lead impact change in classrooms and schools? Participants will engage in and learn how to use a professional learning structure that applies a combination of mathematics pedagogy and content, teachers' mathematics teaching successes, and a perfectly positioned inquiry question to motivate teachers to design impactful instruction and make transformative changes that stick.

**Beth Kobett**, Stevenson University, Stevenson, Maryland

### USING INSTRUCTIONAL ROUTINES TO SUPPORT BOTH STUDENT LEARNING AND TEACHER LEARNING

Session 2316 | 11:15 AM–12:15 PM | 147A | Strand 4 | PK–2, 3–5

Instructional routines are becoming increasingly popular in classrooms as a tool for supporting students to develop conceptual understanding and engage in mathematical practices. However, they can also provide rich opportunities for teacher learning. In this session, we will introduce instructional routines from elementary classrooms (quick images, choral counting, etc.) and consider how they can be used to intentionally provide opportunities for teachers to develop mathematical knowledge for teaching as well as work on instructional practice.

**Becca Lewis**, University of Washington, Seattle, Washington

**Kendra Lomax**, University of Washington, Seattle, Washington

### WHAT EFFECT DO NUMBER TALKS HAVE ON STUDENT ACHIEVEMENT AND ATTITUDES TOWARD MATHEMATICS?

Session 2317 | 11:15 AM–12:15 PM | 147B | Strand 3 | 3–5, College

There is anecdotal evidence regarding the positive effects of using number talks in classrooms but little empirical evidence measuring their impact on student achievement. In this session, I will share results of a pilot research study designed to measure the effect on students when an experienced Number Talk facilitator conducts Number Talks three times a week in 3rd- to 5th-grade classrooms. This information should be useful for supervisors, administrators, coaches, and teachers.

**Ann Dominick**, University of Alabama at Birmingham, Birmingham, Alabama

### SPONSOR SHOWCASE

#### INCREASE TEACHER EFFICACY WITH DAILY PROFESSIONAL DEVELOPMENT

Session 2321 | 11:15 AM–12:15 PM | 149AB | Strand 4 | PK–2, 3–5

Focus on increasing student achievement in mathematics by providing daily professional development for teachers. Sound impossible? Not with Laurie's Notes! We will explore a new program that includes point-of-use professional development for teachers, so they can be as effective as possible in the classroom. You will leave with a variety of tasks, explorations, and ideas based on current research to share with the teachers in your school or use for model lessons.

**Mary Drayer**, Big Ideas Learning, Erie, Pennsylvania

#### RESEARCH-PRACTICE PARTNERSHIPS TO SUPPORT CONTINUITY IN MATHEMATICS CURRICULA: THE STORY OF SAN FRANCISCO UNIFIED SCHOOL DISTRICT AND THE COHERE STUDY

Session 2322 | 11:15 AM–12:15 PM | 150A | Strand 3 | PK–2

How can practitioners and researchers create partnerships that improve mathematics teaching and learning at scale? In this interactive session, researchers and SFUSD mathematics leaders will describe SFUSD's unique approach to bridging PK and elementary mathematics, researchers' approach to analyzing SFUSD's efforts, and ways that researchers and district leaders foster mutual learning, problem solving, and curriculum improvement over time. Participants will consider data, research-practitioner partnerships, and bridging the early childhood and elementary divide in mathematics.

**Cynthia Coburn**, Northwestern University, Evanston, Illinois

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

**Megan Franke**, UCLA, Los Angeles, California

#### ORIENTING STUDENTS TO THE THINKING OF OTHERS: WHAT DO FIRST-YEAR TEACHERS DO AND HOW CAN WE SUPPORT ALL TEACHERS' PRACTICE?

Session 2323 | 11:15 AM–12:15 PM | 150B | Strand 2 | General

Classroom discussions can support student learning of complex mathematics, but leading discussions is challenging for teachers. We will focus on the often overlooked but crucial work of orienting students to the thinking of others during discussions through (a) examining records of first-year teachers' practice and (b) considering ways to support classroom teachers to more productively orient students to the thinking of others.

**Nicole Garcia**, University of Michigan, Ann Arbor, Michigan

**Heather Beasley**, TeachingWorks, University of Michigan, Ann Arbor, Michigan

**Melissa Kemmerle**, University of Michigan, Ann Arbor, Michigan

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







## TUESDAY SESSIONS

### **MATHEMATICAL MODELING: CREATING STUDENTS, TEACHERS, AND SCHOOLS FOR THE FUTURE**

Session 2324 | 11:15 AM–12:15 PM | 151A | Strand 3 | 3–5

Building a student-centered classroom is difficult. How do we cover our curriculum but still make the learning authentic? In this presentation, we will share how mathematical modeling, at the elementary level, is changing the way teachers, schools, and students are learning and teaching mathematics in a real-world application. We will share how we design and implement professional development that introduces elementary teachers to the mathematical modeling process and how it is much more than mathematical tasks.

**Spencer Jamieson**, Fairfax County Public Schools, Fairfax, Virginia

**Jennifer Suh**, George Mason University, Fairfax, Virginia

**Kathleen Matson**, George Mason University, Fairfax, Virginia

### **ASSESSMENT AND EQUITY: UNITING TWO CRITICAL ISSUES TO HELP CHILDREN LEARN MATHEMATICS**

Session 2325 | 11:15 AM–12:15 PM | 151B | Strand 1 | PK–2, 3–5

Too often our assessment practices primarily help us notice where potential inequities exist within our school systems instead of helping us address these inequities. Explore how elementary teachers and coaches are working together to use interview-based assessments, shared instructional practices, and common mathematical tools to close holes in students' learning so that they have increased access to mathematics.

**Denise Brady**, Shiawassee Regional Educational Service District, Corunna, Michigan

**Jason Gauthier**, Allegan Area Educational Service Agency, Dorr, Michigan

**Dana Gosen**, Oakland Schools, Waterford, Michigan

### **PREPARING TO FACILITATE PROFESSIONAL DEVELOPMENT: DESIGNING MATERIALS THAT SUPPORT FACILITATION AND FACILITATOR LEARNING**

Session 2326 | 11:15 AM–12:15 PM | 152A | Strand 4 | PK–2, 3–5

This presentation reports on a five-year study of professional development materials designed to support participants in developing mathematical knowledge for teaching while also supporting facilitators' development of knowledge and skills needed for facilitation. The materials support the learning of participants and facilitators by embedding selected multimedia records from professional development sessions involving elementary school teachers and an expert facilitator. The focus of this session is on the design elements and resources that support skillful facilitation.

**Timothy Boerst**, University of Michigan, Ann Arbor, Michigan

**Kara Suzuka**, University of Hawaii, Honolulu, Hawaii

### **LEARNING FROM STUDENT VOICE IN MATHEMATICS CLASSROOMS: WHEN RESEARCH BECOMES PRACTICE**

Session 2327 | 11:15 AM–12:15 PM | 152B | Strand 2 | General

The session describes learning from a pilot study of 10 mathematics classrooms in a large, urban school district. The study involved iterative cycles of inquiry and data collection, including observations, student and observer surveys, and student work samples graded against NWREL's Scoring Guide. We share learning and invite discussion about the value of classroom observations and triangulated data collection to support leader development and define teacher professional development needs around students communicating mathematical reasoning.

**Mikila Fetzer**, Sacramento City Unified School District, Sacramento, California

**Liberty Van Natten**, Sacramento City Unified School District, Sacramento, California

**Sara Goytia**, Sacramento City Unified School District, Sacramento, California

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

**Dona Meinders**, WestEd, Sacramento, California

**Rebecca Perry**, WestEd, San Francisco, California

### **MULTIPLICATION AND DIVISION OF FRACTIONS: MULTIPLE GROUPS OR PARTIAL GROUPS?**

Session 2331 | 11:15 AM–12:15 PM | 143A | Strand 4 | 3–5, 6–8

The research on Cognitively Guided Instruction (CGI) demonstrates that teachers' knowledge of both problem structures and students' strategies is an essential part of strong mathematics instruction. With CGI in mind, we will examine fraction multiplication and division tasks that promote student understanding of operations and fractions. We will examine how students' intuitive strategies for multiplication and division of fractions differ depending on the problem type and number choices, and will discuss implications for instruction.

**Olof Steinthorsdottir**, University of Northern Iowa, Cedar Falls, Iowa

**Laura Kent**, University of Arkansas, Fayetteville, Arkansas







## TUESDAY SESSIONS

### DOS AND DON'TS: CATCHING KIDS UP ON GRADE-LEVEL MATHEMATICS

Session 2332 | 11:15 AM–12:15 PM | 143B | Strand 1 | General

In this interactive session, we will share concrete strategies and recommendations for targeted mathematics support and intervention. Participants will explore examples of how to address students' unfinished learning to provide access to grade level content and generate solutions to common challenges schools face when supporting students with gaps. Be ready to roll up your sleeves for this exciting and productive session that will prepare you to achieve equity for all students within your role.

**Christina Allison**, Achievement Network, Boston, Massachusetts

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

**Elizabeth Horan Thompson**, Achievement Network, Boston, Massachusetts

### THE X AND Y AXIS OF MATHEMATICS VERTICAL TEAMS

Session 2333 | 11:15 AM–12:15 PM | 143C | Strand 3 | PK–2, 3–5, 6–8, 9–12

How is your district ensuring that every student is receiving high-quality mathematics instruction? Come learn how Gwinnett County Public Schools' Mathematics Program Office partnered with a cluster of K–12 schools to redevelop what it means to collaborate vertically. Join us as we model how this professional learning community created structured time for teachers to collaborate, implement formative assessments, and analyze student work resulting in increased student achievement.

**Bonnie Brush**, Gwinnett County Public Schools, Suwanee, Georgia

**Jessica Douglas**, Gwinnett County Public Schools, Suwanee, Georgia

**Danielle Shea**, Gwinnett County Public Schools, Suwanee, Georgia

### DEVELOPING EFFECTIVE AND INSPIRING COACHES OF MATHEMATICS

Session 2334 | 11:15 AM–12:15 PM | 144A | Strand 2 | General

This session will provide mathematics leaders with the vision, the work, and the tools to develop effective coaches of mathematics. Through exploring a student-centered understanding of mathematical proficiency and by clarifying the role of the instructional coach, participants will learn effective coaching methods that empower mathematics teachers and maximize student learning by developing teachers' instructional behaviors, guiding beliefs, and ways of being.

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

**Sharon Rendon**, NCSM C2 Regional Director, CPM Educational Program, Summerset, South Dakota

### A FRAMEWORK FOR EXAMINING COACHING PRACTICES

Session 2335 | 11:15 AM–12:15 PM | 144B | Strand 2 | 6–8, College, General

How do coaches make in-the-moment decisions about which coaching practices will be most successful? In this session, we will examine a framework for classifying coaching practices, engage in using the framework, and discuss data from a one-year study of two middle school mathematics coaches. Various implications for connecting the framework to current practices will be considered.

**Leigh Martin**, Clemson University, Clemson, South Carolina

### WHAT'S IN IT FOR ME? DIFFERENTIATING PROFESSIONAL DEVELOPMENT FOR ADULT LEARNERS

Session 2336 | 11:15 AM–12:15 PM | 144C | Strand 4 | PK–2, 3–5

Best practices in education require teachers to differentiate instruction in their classrooms. However professional development tends to be a one size fits all approach. Come experience a professional development model based on a workshop approach that allows for differentiation for teacher learners. See how to provide options for various levels of adult learners in a format that not only helps them professionally, but provides a strategy that can be used in their own classrooms.

**Jean Capper**, UChicago STEM Education, Chicago, Illinois

**Rachel Muren**, UChicago STEM Education, Chicago, Illinois



# TUESDAY SESSIONS



## TUESDAY LUNCHEON

### THE M IN STEM

Session 2403 | 12:30 PM – 2:00 PM | Hall A | General

#### Panelists:



**Connie Schrock**



**Michelle Rinehart**  
[TX Region 18 ESC]



**Levi Patrick**  
[OK DoE]

The world has become nearly obsessed with the word “STEM” and all of its variations. In almost every real-world problem – from building energy-efficient homes to designing a football stadium in Texas – the person solving the problem has to recognize and deal with the interconnectedness of science, technology, engineering and mathematics in order to find the best solution. This interdependence in STEM appeals to our curiosity and can deepen our appreciation of mathematics. As mathematics educators, we have a sense that mathematics cannot be separated from the sciences. So how do we best address STEM so that students gain a better understanding of and appreciation for mathematics? Our panel will examine the M in STEM from various angles to help get us thinking about how to address STEM in our own schools.



#### Moderator:

**Peter Balyta**  
[Texas Instruments]

*Sponsored by*



### 13th 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](http://mathedleadership.org). Applications are being accepted through December 1, 2018, for the 2019 Award.

### Iris Carl Recipients



**Anne K. Wallace**  
Math Coach, Interventionist,  
and Teacher  
Hampstead Middle School  
Hampstead, New Hampshire



**Cathy Chaput**  
Program Coordinator  
Wellington Catholic DSB  
Guelph Province, Ontario, Canada



**Jet Vichweg Warr**  
Secondary Mathematics Specialist  
Iron County School District  
Cedar City, UT



## TUESDAY SESSIONS



2:15 PM–3:00 PM

### *Hot Topic:*

#### **LEADERSHIP TOOLS FOR CREATING, SUPPORTING, AND ADVANCING A MATHEMATICS PROGRAM**

Session 2503 | 2:15 PM–3:00 PM | Hall A | Strand 5 | General

This interactive session features strategies and tools developed for supporting coaches' and administrators' leadership of a coherent mathematics program. Professional learning and programmatic design resources will be shared.

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

2:15 PM–3:15 PM

### MAJOR PRESENTATION

#### **SUPPORTING MATHEMATICAL MODELING IN HIGH SCHOOL**

Session 2501 | 2:15 PM–3:15 PM | Salon G/H | Strand 4 | 9–12

Mathematical modeling in high school offers unique challenges to both teachers and administrators, while still affording unique opportunities for student engagement and the development of student mathematical identity and agency. The issues and opportunities inherent in the open-ended nature of modeling tasks with its focus on group-work and some of the difficulties in assessment and teacher preparation will be described and discussed.



**Dan Teague**, North Carolina School of Science and Mathematics, Durham, North Carolina

**President**, Steve Viktora, NCSM Nominations Chair, Wilmette, Illinois

Daniel J. Teague, teague@ncssm.edu, is an Instructor of Mathematics at the North Carolina School of Science and Mathematics (NCSSM). He has completed a PhD in Mathematics Education at North Carolina State University under the direction of Lee Stiff. Dan has been at NCSSM since 1982. Dan has been a member of the Mathematical Sciences Academic Advisory Committee at the College Board and served a four-year term on the AP Statistics Test Development Committee during the early years of the course. He has served on the Board of Governors of the Mathematical Association of America as Governor-at-Large for High School Teachers and as 2nd Vice President. He is currently a Director-at-Large on the NCTM Board of Directors. Dan's special interest is in Mathematical Modeling and served as the lead author of the high school section of the GAIMME Report. In 2017, he was presented with the Doug Faures Lifetime Achievement Award by the Consortium on Mathematics and Its Applications.

### SPOTLIGHT SPEAKER

#### **#blackmenteachmath: Unpacking the networks and practices of Black Men who teach mathematics**

Session 2502 | 2:15 PM–3:15 PM | Salon I | Strand 1 | General

Black men account for less than 2% of the entire teaching workforce with very few as teachers of mathematics. In education, Black men are disproportionately represented in non-traditional settings, and are more likely to be situated on the margins for academics and in mathematics roles. This work focuses on Black men as teachers of mathematics by taking an ethnographic approach for (1) unpacking social and professional networks and (2) understanding characteristics and pathways relate to attitudes, beliefs, and pedagogical practices. Additionally, this work examines ways Black men who teach mathematics move beyond the margins.

**Robert Q. Berry, III**, NCTM, Charlottesville, Virginia

**President**, Kristopher J. Childs, NCSM Newsletter Editor, Lubbock, Texas

#### **KEEPING GIRLS ENGAGED IN MATHEMATICS IN MIDDLE SCHOOL AND BEYOND**

Session 2511 | 2:15 PM–3:15 PM | 145A | Strand 1 | 3–5, 6–8

This session draws on current research on why girls often seem to lose interest in mathematics by middle school. The presenter engaged in a yearlong action research project that focused on girls in 4th and 5th grades, seeking to understand precisely when and why their interest in mathematics fades, and what schools and teachers might be doing to contribute to this. The research suggests several approaches schools can take to making mathematics education more equitable.

**Abby Gordon**, Bank Street College of Education, New York, New York

#### **EVALUATING INSTRUCTIONAL MATERIALS TO DEVELOP CONTENT UNDERSTANDING**

Session 2512 | 2:15 PM–3:15 PM | 145B | Strand 4 | General

This session will introduce the EdReports.org Quality Instructional Materials Tool and reviews. Participants will learn to navigate free, online reviews that provide information on the alignment and usability of yearlong materials. Participants will also explore individual indicators and the unique lens that they provide when thinking about materials, lessons, and coaching. Participants will discuss how to use the reports and the tool to further develop content understanding.

**Dana Cartier**, EdReports.org, Durham, North Carolina







## TUESDAY SESSIONS

### SENSE-MAKING: IS IT A FOCUS IN YOUR CLASSROOMS AND YOUR SCHOOLS?

Session 2513 | 2:15 PM–3:15 PM | 146A | Strand 1 | General

Are your students making sense of the mathematics they explore? Do they feel that mathematics is an inherently sensible endeavor? We'll look at ways in which students don't make sense of mathematics, consider why, and discuss strategies for making it a larger part of the expectations in your classrooms and schools.

**Annie Fetter**, Math Educator, Rutledge, Pennsylvania

**Joe Schwartz**, Consultant, New Brunswick, New Jersey

### SOCIAL JUSTICE RESOURCES FOR MATHEMATICS LEADERS

Session 2514 | 2:15 PM–3:15 PM | 146B | Strand 4 | General

Infusion of social justice is an important component of any mathematics program. In this interactive session participants will receive resources and brainstorm ideas that address deficit language, lesson design, and the work with families and the communities.

**Linda Fulmore**, Independent Consultant, Cave Creek, Arizona

### #PD2C: CONNECT AND CAPITALIZE ON SOCIAL MEDIA AS A PROFESSIONAL LEARNING TOOL

Session 2516 | 2:15 PM–3:15 PM | 147A | Strand 4 | General

Do you wonder how to harness the power of mobile learning and social media to facilitate professional learning? The Charles A. Dana Center at the University of Texas at Austin invites you to the first of a two-part series connecting research and best practices in this realm. Come and explore how to capitalize on these unique learning platforms and to encourage professionals to make immediate changes in their practice.

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

**Denise Thornton**, Charles A. Dana Center, The University of Texas, Austin, Texas

### COACHING WITH AN EYE ON TEACHING: ESSENTIAL COACHING PRACTICES THAT LEAD TO EFFECTIVE TEACHING PRACTICES

Session 2517 | 2:15 PM–3:15 PM | 147B | Strand 2 | PK–2, 3–5

NCTM's *Principles to Action* identifies eight effective mathematics teaching practices that allow for mathematical success for all students. But what are the "coaching practices" that help teachers develop those teaching practices? Participants will look at how to develop and implement a vision for mathematical learning, how to develop teachers' content and pedagogical knowledge, and how to use active listening and questioning techniques—all with the aim of helping teachers be their own instructional change agents.

**Sorsha Mulroe**, Howard County Public Schools, Columbia, Maryland

**Claudia Eckstrom**, Bollman Bridge Elementary, Jessup, Maryland

**Dennis McDonald**, Howard County Public Schools, Ellicott City, Maryland

### SPONSOR SHOWCASE

#### LZ ILLUSTRATIVE MATHEMATICS NEW MATH CURRICULUM (GRADES 6–8)

Session 2521 | 2:15 PM–3:15 PM | 149AB | Strand 5 | 6–8

Come experience the new LearnZillion Illustrative Mathematics 6–8 Mathematics Curriculum! LearnZillion has further enhanced the high-quality Illustrative Mathematics 6–8 curriculum to include: teacher-friendly, classroom ready lessons plans that are both in digital and in print; digital assessments and reporting; seamless integration with LMSs; and customization tools to shape the curriculum to reflect your district priorities. Come join this hands-on session to learn more!

**Posie Wood**, LearnZillion, Washington, D.C.

**Colette Chambers**, LearnZillion, Washington, D.C.

**Bill McCallum**, Illustrative Mathematics, Tucson, Arizona

#### LAUNCH THE LEARNING: LESSONS TO PROMOTE TEACHER COLLABORATION AND STUDENT ENGAGEMENT

Session 2522 | 2:15 PM–3:15 PM | 150A | Strand 3 | PK–2, 3–5

Engage in tasks that "launch the learning" for mathematics and learn how these lessons have provided more opportunities for coaching and teacher collaboration. As a district, we have integrated lessons with low-floor, high-ceiling tasks to "launch" units which created more opportunities for collaboration and reflection among teachers and coaches. Participants will leave with innovative ideas of how to implement similar structures to increase teacher content knowledge and collaboration which positively impacts student engagement.

**Molly Rawding**, Lexington Public Schools, Lexington, Massachusetts

**Linda Menkis**, Lexington Public Schools, Lexington, Massachusetts

#### DESIGNING FOR THE EDGES: BRINGING EQUITY TO ALL THROUGH PRACTICAL ROUTINES

Session 2523 | 2:15 PM–3:15 PM | 150B | Strand 5 | PK–2, 3–5, 6–8, 9–12

We offer a powerful paradigm for teachers, designed to deconstruct static categorizations of students such as "high/middle/low" and "fast/slow." Using our framework Designing for the Edges, we illustrate how to identify and smooth the edges of one's classroom community and redesign group learning and thinking routines for students who may be socially or mathematically unengaged, unsupported, not welcomed or challenged. In doing so, we examine motivation, risk, status, competence, and belonging.

**Rhonda Bondie**, Harvard University Graduate School of Education, Cambridge, Massachusetts

**Kara Imm**, Math in the City, New York, New York





## TUESDAY SESSIONS



### **“FUTURING” PROFESSIONAL DEVELOPMENT THROUGH VIDEO COACHING: EXPLORING TOOLS TO TAKE ON AMBITIOUS MATHEMATICS INSTRUCTION**

Session 2524 | 2:15 PM–3:15 PM | 151A | Strand 5 | 6–8

This session will share how video peer coaching and lesson exchanges engaged a community’s teachers to take on ambitious mathematics instruction. Ambitious teaching in mathematics refers to reform teaching practices that develop “mathematics proficiency” in diverse learners through rigorous mathematics while helping students view themselves as competent problem solvers and mathematicians. We will highlight the tools and strategies that helped teachers develop their own professional vision of what ambitious teaching entailed through video coaching.

**Jennifer Suh**, George Mason University, Fairfax, Virginia

**Sara Birkhead**, George Mason University, Fairfax, Virginia

**Terrie Galanti**, George Mason University, Fairfax, Virginia

**Patti Freeman**, Fairfax County Public School, Fairfax, Virginia

**Keira Godwin**, Fairfax County Public School, Fairfax, Virginia

**Linda Gillen**, Fairfax County Public School, Fairfax, Virginia

### **MQI COACHING: SUPPORTING COACHES IN SUPPORTING TEACHERS**

Session 2525 | 2:15 PM–3:15 PM | 151B | Strand 2 | General

This session tells the story of how an instrument designed for research, the Mathematical Quality of Instruction rubric (MQI), has become a valuable tool for use by teachers and coaches in the improvement of instruction. The session will be interactive, allowing participants a chance to practice components of a coaching conversation. The Harvard team will also share research findings from a randomized trial of the intervention.

**Claire Gogolen**, Harvard University, Cambridge, Massachusetts

**Samantha R. Booth**, Harvard University, Cambridge, Massachusetts

**Heather Hill**, Harvard University School of Education, Cambridge, Massachusetts

### **CREATING PROFESSIONAL LEARNING EXPERIENCES TO BUILD TEACHER CONTENT KNOWLEDGE**

Session 2526 | 2:15 PM–3:15 PM | 152A | Strand 4 | 6–8

Content knowledge is an important aspect of teacher effectiveness, but is often taken for granted. However, building teacher content knowledge takes focus and planning. In this session, we’ll look at research about the role of content knowledge in teacher practice, explore a template for planning professional learning experiences that build content knowledge, and see some examples of well-executed learning experiences. Participants will then design a session that prepares teachers for a unit of instruction.

**Stephen Sebelski**, UnboundEd, Brooklyn, New York

**Rolanda Boldwin**, UnboundEd, Brooklyn, New York

### **DIGGING DEEP INTO RATIOS AND PROPORTIONAL RELATIONSHIPS IN THE MIDDLE GRADES**

Session 2527 | 2:15 PM–3:15 PM | 152B | Strand 4 | 6–8

Ratios and proportionality have a complex history and connect with many concepts in the curriculum, not always in a consistent fashion. Facilitators and participants will explore the fundamental ideas of ratios and proportional relationships to understand their development, contexts, and roles in the middle-school curriculum based on the learning from a symposium of teachers, mathematicians, and mathematics educators held in April 2017.

**Kyle Pearce**, Greater Essex County District School Board, Windsor, Ontario, Canada

**Dick Stanley**, University of California, Berkeley (retired), California

**Phil Daro**, SERP and Pearson, Berkeley, California

### **HELP ME OUT, COACH! COLLABORATION FOR STUDENT SUCCESS**

Session 2531 | 2:15 PM–3:15 PM | 143A | Strand 2 | PK–2

Participants will look inside K–2 classrooms to see the impact that side-by-side coaching and collaboration has on the development of number sense and mathematical reasoning. Mathematics talks, selection of mathematical tasks, lesson debriefs, analyzing student work to plan next steps, and collaboration will be highlighted through video clips and student work samples.

**Loria Allen**, Alabama Math, Science, and Technology Initiative, University of Alabama, Huntsville, Alabama

**Denise Porch**, Arab City Schools, Arab, Alabama

## MEETING

### **NCSM REGIONAL DIRECTORS AND REGIONAL TEAM LEADERS MEETING**

Session 2532 | 2:15 PM–3:15 PM | 143B | General

This meeting of the appointed NCSM Regional Team Leaders and NCSM Regional Directors will focus on preparing for the Caucus meetings, developing collective knowledge about the potential roles and influence of Team Leaders, and planning for regional initiatives with individual Regional Directors.

**Sandie Gilliam**, NCSM W1 Regional Director, Colorado Springs, Colorado

**Deborah Crocker**, NCSM S1 Regional Director, Boone, North Carolina

**Marc Garneau**, NCSM Canada Regional Director, Surrey, British Columbia, Canada

**Jason Gauthier**, NCSM C1 Regional Director, Dorr, Michigan

**Paul Gray, Jr.**, NCSM S2 Regional Director, Dallas, Texas

**Kathlan Latimer**, NCSM W2 Regional Director, Suisun City, California

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

**Shawn Towle**, NCSM E1 Regional Director, Falmouth, Maine

**Sue Vohrer**, NCSM E2 Regional Director, Cockeysville, Maryland





## TUESDAY SESSIONS

### FROM RESEARCH TO THEORY TO DOABLE: MAKING IT WORK FOR TEACHERS AND ADMINISTRATORS

Session 2533 | 2:15 PM–3:15 PM | 143C | Strand 3 | General

From facilitating a learning walk to a lesson study to professional readings, how can research be put into practice to affect instruction for ALL students? Elements from Principles of Learning and Lesson Study have been used with teacher leaders and administrators to support the implementation and understanding of the standards for mathematical practice. This session will share tools to help anchor teacher collaboration and assist leaders' program analysis of best practices and level of effective implementation.

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

### PRESIDENTS EXCHANGE—AMATYC

### MAKING AN IMPACT IN THE FIRST TWO YEARS OF COLLEGE

Session 2534 | 2:15 PM–3:15 PM | 144A | Strand 5 | College, General

AMATYC recently published IMPACT, a sequel to two previously published standards-related documents. This new document promises to assist faculty and other stake holders to help students become proficient in mathematics, take ownership of their own learning, and increase student engagement and success. Current trends in mathematics education in the first two years of college that motivated AMATYC IMPACT and examples of informative vignettes from the new publication will be shared.

**James Ham**, Delta College, University Center, Michigan

### SUPPORTING THE DEVELOPMENT OF TEACHERS' EXPERTISE IN NOTICING CHILDREN'S MATHEMATICAL THINKING

Session 2535 | 2:15 PM–3:15 PM | 144B | Strand 5 | 3–5

Learn about the instructional practice of noticing children's mathematical thinking—attending to details in children's strategies, interpreting children's understandings reflected in those details, and making decisions about how to respond based on those understandings. Participants will explore the practice of noticing and strategic selection and use of video and written work to support the development of teachers' noticing expertise. Examples will be drawn from a research and professional development project focused on children's fraction thinking.

**Susan Empson**, University of Missouri, Columbia, Missouri

**Vicki Jacobs**, University of North Carolina at Greensboro, Greensboro, North Carolina

**Joan Case**, Private Consultant-PD Facilitator and Coach, Hesperia, California

**Dinah Brown**, Del Mar Union School District, San Diego, California

### COACHING FOR DEPTH: WAYS OF THINKING THAT LEAD TO WAYS OF DOING

Session 2536 | 2:15 PM–3:15 PM | 144C | Strand 2 | 3–5, 6–8

As coaches, we offer teachers ideas to improve teaching and learning in their classrooms. These ideas take the form of mathematical tools, representations, or activities that elicit student thinking and engage students in productive discourse. However, are we coaching in ways that develop teachers' mathematical knowledge? Come explore a coaching model that dives into the complex ways of thinking that lead to ways of doing mathematics through the use of activities from Illustrative Mathematics curriculum.

**Kristin Gray**, Illustrative Mathematics, Lewes, Delaware

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

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

**Rolanda Baldwin**, UnboundEd, Brooklyn, New York



# TUESDAY SESSIONS



## CAUCUSES, TUESDAY 3:30 PM–4:15 PM

The caucus provides opportunities for you to connect, network and celebrate regional success with fellow leaders. Your NCSM Regional Director and state/provincial leaders will share information on NCSM initiatives, national/provincial issues, and future events. There will be door prizes ... we look forward to seeing you at the caucus.



### **NCSM REGIONAL CAUCUS: INTERNATIONAL**

Session 2611 | 145A

**Linda Gojak**, Mathematics Consultant,  
Willowick, Ohio



### **NCSM REGIONAL CAUCUS: WESTERN REGION 2**

Session 2622 | 150A

**Kathlan Latimer**, NCSM W2 Regional  
Director, Suisun City, California



### **NCSM REGIONAL CAUCUS: CANADA**

Session 2612 | 145B

**Marc Garneau**, NCSM Canada Regional  
Director, Surrey, British Columbia, Canada



### **NCSM REGIONAL CAUCUS: SOUTHERN REGION 2**

Session 2623 | 150B

**Paul D. Gray, Jr.**, NCSM S2 Regional  
Director, Dallas, Texas



### **NCSM REGIONAL CAUCUS: EASTERN REGION 1**

Session 2613 | 146A

**Shawn Towle**, NCSM E1 Regional Director,  
Falmouth, Maine



### **NCSM REGIONAL CAUCUS: CENTRAL REGION 1**

Session 2624 | 151A

**Jason Gauthier**, NCSM C1 Regional  
Director, Dorr, Michigan



### **NCSM REGIONAL CAUCUS: EASTERN REGION 2**

Session 2614 | 146B

**Sue Vohrer**, NCSM E2 Regional Director,  
Cockeysville, Maryland



### **NCSM REGIONAL CAUCUS: CENTRAL REGION 2**

Session 2625 | 151B

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



### **NCSM REGIONAL CAUCUS: SOUTHERN 1**

Session 2615 | 146C

**Deborah Crocker**, NCSM S1 Regional  
Director, Boone, North Carolina



### **NCSM REGIONAL CAUCUS: WESTERN REGION 1**

Session 2626 | 152A

**Sandie Gilliam**, NCSM W1 Regional  
Director, Colorado Springs, Colorado



### **NCSM PAST PRESIDENT CAUCUS**

Session 2616 | 147A

**John W. Staley**, NCSM Past President,  
Towson, Maryland





# TUESDAY SESSIONS

**4:30 PM–5:15 PM**

## **NCSM ANNUAL BUSINESS MEETING AND STATE OF THE ORGANIZATION REPORT**

Session 2711 | 4:30 PM–5:15 PM | 145A | General

NCSM President Connie Schrock will present the State of the Organization, including our Annual Membership and Financial Reports. Connie will describe the progress on the 2017–2018 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.

**Connie Schrock**, NCSM President, Emporia, Kansas

**Linda Griffith**, NCSM Treasurer, Conway, Arkansas

### NOTES

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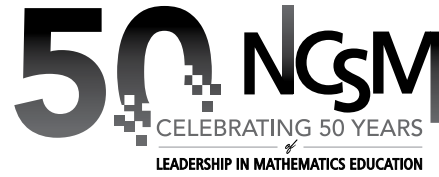
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## TUESDAY RECEPTION

### RECEPTION



5:30 pm–7:00 pm  
Ballroom Pre-Function Space, Level 3  
Walter E. Washington Convention Center

*Sponsored by*



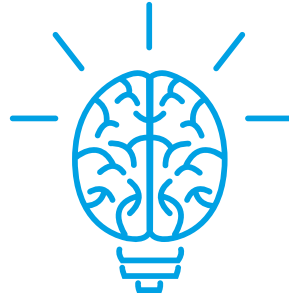




WEDNESDAY PROGRAM

**50** NCSM  
CELEBRATING 50 YEARS  
of  
LEADERSHIP IN MATHEMATICS EDUCATION

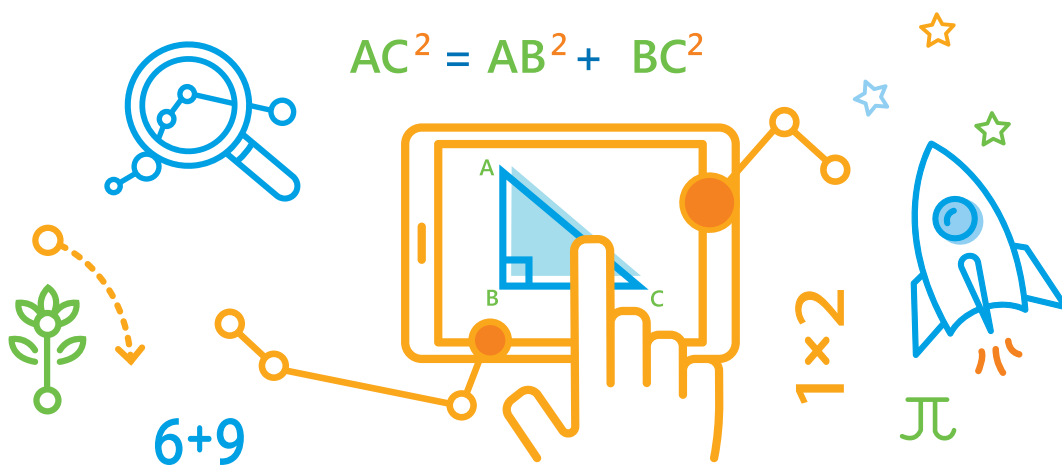
# Explore<sup>el</sup>learning<sup>®</sup>



## Seriously fun

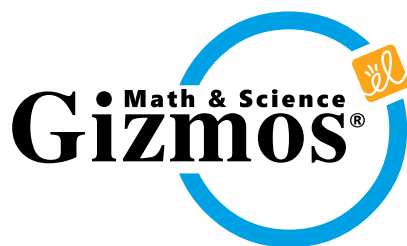
We think everyone can “do” math and science. Concepts like photosynthesis and fractions should challenge and amaze kids - not stump them.

We make **Gizmos**, math and science online simulations that excite curiosity and invite interaction, and **Reflex**, the most effective system for mastering basic math facts.



[www.explorelearning.com](http://www.explorelearning.com)

[www.reflexmath.com](http://www.reflexmath.com)





*Washington Memorial and National World War II Memorial*



PROGRAM SUMMARY INFORMATION

**WEDNESDAY, APRIL 25**

*See page 5 for Conference Strand descriptions.*

## WEDNESDAY SUMMARY

7:30 AM–8:30 AM		12:30 PM–2:00 PM		3:30 PM–4:30 PM	
<b>Hall A</b>	<b>WEDNESDAY BREAKFAST</b>	<b>HALL A</b>	<b>WEDNESDAY LUNCHEON</b>	<b>146BC</b>	<b>SPOTLIGHT PRESENTATION</b>
	<p><b>Paul Cholmsky</b> Solving the Fractions Problem</p> <p>Session 3003   Strand 4   General</p> <p>Sponsored by ExploreLearning (ticket required)</p>		<p><b>Tim Hudson, Catherine Fosnot</b> Imaging A Future Without Math</p> <p>Session 3403   Strand 5   General</p> <p>Partially Sponsored by DreamBox (ticket required)</p>		<p><b>Carole Greenes</b> NCSM: A Musical Tribute</p> <p>Session 3615   General</p>
<b>8:45 AM–9:45 AM</b>		<b>10:00 AM–11:00 AM</b>		<b>11:15 AM–12:15 PM</b>	
<b>MAJOR PRESENTATION</b>		<b>MAJOR PRESENTATION</b>		<b>MAJOR PRESENTATION</b>	
<b>SALON G/H</b>	<p><b>Mike Flynn</b> Understanding the Resistant Teacher: Changing Our Narrative to Foster Stronger Relationships</p> <p>Session 3101   Strand 2 General</p>	<p><b>Nora Ramirez</b> Acknowledgment, Action, Accountability: Addressing Deficit Thinking and Deficit Language</p> <p>Session 3201   Strand 1 General</p>	<p><b>Paul Gorski</b> An Introduction to Equity Literacy for Mathematics Educators</p> <p>Session 3301   Strand 1 General</p>	<p><b>Eugenia Cheng</b> Gender vs. Character in Mathematics and Beyond</p> <p>Session 3501   Strand 5 General</p>	
	<b>SPOTLIGHT SPEAKER</b>		<b>SPOTLIGHT SPEAKER</b>		<b>SPOTLIGHT SPEAKER</b>
<b>SALON I</b>	<p><b>Juli Dixon, Lisa Brooks</b> Small Group, Big Gains: Coaching for Effective Pulled Small Group Instruction</p> <p>Session 3102   Strand 2 PK–2, 3–5</p>	<p><b>Steve Leinwand</b> Practical Strategies for Making the Case for Mathematics Coaches and Mathematics Coaching</p> <p>Session 3202   Strand 2 General</p>	<p><b>Timothy Kanold</b> Yours Mine and Ours: Knowing Your Voice of Wisdom!</p> <p>Session 3302   Strand 5 General</p>	<p><b>Cathy Seeley</b> Leadership as a Subversive Activity</p> <p>Session 3502   Strand 5 General</p>	
	<b>145A</b>	<p><b>Nicora Placa</b> Mathematics Coaching: A Beginning Playbook</p> <p>Session 3111   Strand 2 3–5, 6–8</p>	<p><b>Gloria Weinberg, Nikki LaLonde</b> Gaining Insight Into Student Thinking Through Formative Assessment and Rich Tasks</p> <p>Session 3211   Strand 4 6–8</p>	<p><b>Tamar Posner</b> Snapshots of the Future: Vital Mathematics for a Changing World</p> <p>Session 3311   Strand 5 6–8, 9–12, General</p>	<p><b>Vickie Bohidar, Deanna Moreau, Skip Tyler, Cathy Blair</b> Rally Your Region: The Power in Collaborating with Neighboring Divisions</p> <p>Session 3511   Strand 3 PK–2, 3–5, 6–8, 9–12</p>
<b>145B</b>		<p><b>Jamila Riser, James Hiebert, Valerie Maxwell, Jan Parsons</b> Leveraging Students' Opportunities to Learn</p> <p>Session 3112   Strand 4 General</p>	<p><b>Amanda Merritt, Jason Adair, Kenna Barger</b> Conversations That Shift Instruction</p> <p>Session 3212   Strand 2 3–5, 6–8, 9–12</p>		<p><b>Kathryn Ernie, Erick Hofacker</b> Modeling the 5 Practices for Equitable Classroom Discourse: Experience to Action</p> <p>Session 3512   Strand 4 6–8, 9–12, College</p>
	<b>146A</b>	<p><b>Jill Gough, Jennifer Wilson</b> Leading Mathematics Learning and Teaching in a Digital Age, a.k.a. Embolden Your Inner Mathematician</p> <p>Session 3113   Strand 4 3–5, 6–8</p>	<p><b>Patrick Vennebush</b> Sparking Student Interest with Problems from Their World</p> <p>Session 3213   Strand 4 6–8, 9–12</p>	<p><b>Sarah Schuhl, Mona Toncheff</b> Coaching Teams and Teachers: The Power of Instructional Feedback</p> <p>Session 3313   Strand 2 6–8, 9–12</p>	<p><b>Susan O'Connell</b> Leading the Learning: Transforming the Teaching of Mathematics Through Book Study</p> <p>Session 3513   Strand 2 PK–2, 3–5</p>





## WEDNESDAY SUMMARY

7:30 AM–8:30 AM		12:30 PM–2:00 PM		3:30 PM–4:30 PM	
<b>Hall A</b>	<b>WEDNESDAY BREAKFAST</b>	<b>HALL A</b>	<b>WEDNESDAY LUNCHEON</b>	<b>146BC</b>	<b>SPOTLIGHT PRESENTATION</b>
	<p><b>Paul Cholmsky</b> Solving the Fractions Problem</p> <p>Session 3003   Strand 4   General</p> <p>Sponsored by ExploreLearning (ticket required)</p>		<p><b>Tim Hudson, Catherine Fosnot</b> Imaging A Future Without Math</p> <p>Session 3403   Strand 5   General</p> <p>Partially Sponsored by DreamBox (ticket required)</p>		<p><b>Carole Greenes</b> NCSM: A Musical Tribute</p> <p>Session 3615   General</p>
<b>8:45 AM–9:45 AM</b>		<b>10:00 AM–11:00 AM</b>		<b>11:15 AM–12:15 PM</b>	
<b>146B</b>	<p><b>Eden Badertscher, Sarah Sword</b> Mathematics and Equity: Tackling the Hard Conversations</p> <p>Session 3114   Strand 1 6–8, 9–12, College</p>	<p><b>Tim Hudson</b> How to De-Track Mathematics Courses: Practical Ways to Support Monumental Change in Curriculum, Culture, and Achievement</p> <p>Session 3214   Strand 1 General</p>	<p><b>Anne Nesbitt</b> Challenging Advanced Learners to <i>Thinking, Fast and Slow</i></p> <p>Session 3314   Strand 2 General</p>		
	<b>146C</b>		<p><b>Natalie Crist, Rorrie Fortier</b> Partnering with Building Leaders to Improve Mathematics Instruction: Increasing Understanding of High-Quality Instruction</p> <p>Session 3115   Strand 3 PK–2, 3–5</p>	<p><b>Catherine Fosnot</b> Dynamic vs. Static Assessment: A Growth-Mindset Perspective</p> <p>Session 3215   Strand 5 General</p>	
<b>147A</b>		<p><b>Neeraj Satyal, Suaronne Angeletti</b> Administrators Love Mathematics, Too—Partnering Effectively with Administrators to Ensure a Quality School Mathematics Program</p> <p>Session 3116   Strand 3 General</p>	<p><b>Elizabeth Peyser, Sherri Martinie, Connie Schrock, Melissa Fast</b> Re-Thinking Acceleration Practices</p> <p>Session 3216   Strand 1 General</p>	<b>PRESIDENTS EXCHANGE–ASA</b>	
<b>147B</b>		<p><b>Stephanie Martin, Cynthia Callard, Cynthia Carson, Genie Foster, Jennifer Kruger</b> Exploring the Evolution of Engaging Teachers in “Fishbowl” Demonstration Lessons in an Online Space: Transitioning Face-to-Face to an Online Experience</p> <p>Session 3117   Strand 5 General</p>	<p><b>Jane Felling</b> Developing Buddy Teachers Plus Buddy Classrooms to Build Mathematical Communities</p> <p>Session 3217   Strand 3 PK–2, 3–5</p>	<p><b>Christine Franklin</b> Statistics and the School Level K–12: The Statistical Education of Teachers</p> <p>Session 3316   Strand 4 General</p>	<p><b>Tim Truitt</b> Examining the Modeling Process, Model with Mathematics, and Application to Enhance Mathematical Knowledge for Teaching</p> <p>Session 3516   Strand 4 General</p>
<b>149AB</b>		<p><b>Janet Pittock</b> Effective and Practical Strategies to Implement Universal Mathematics Intervention in the Core Classroom</p> <p>Session 3121   Strand 5 PK–2, 3–5, 6–8</p>	<p><b>June Mark, Johannah Nikula, Deborah Spencer</b> Developing Teacher Knowledge About Standards for Mathematical Practice That Are Challenging to Understand</p> <p>Session 3317   Strand 4 6–8, 9–12</p>	<p><b>Peg Hartwig</b> Empowering Students and Teachers Through Cross-Curricular Communication and Alignment</p> <p>Session 3517   Strand 3 6–8, 9–12</p>	
<b>150A</b>		<b>SPONSOR SHOWCASE</b>		<b>SPONSOR SHOWCASE</b>	
<b>149AB</b>		<p><b>Kurt Whited, Deb McGinley</b> Escape Room Adventure!</p> <p>Session 3221   Strand 4 General</p>	<p><b>McGraw-Hill Education School Group</b> The Future of Elementary Mathematics Education</p> <p>Session 3321   Strand 5 PK–2, 3–5</p>	<p><b>Linda Gojak</b> Focus Instruction Using Rich Tasks to Teach, Engage, and Develop Mathematical Thinking</p> <p>Session 3521   Strand 3 PK–2, 3–5</p>	
<b>150A</b>		<p><b>Lizzy Hull Barnes, Angela Torres</b> Four Years Strong in San Francisco: Holding an Equity-Based Detracking Policy Over Time</p> <p>Session 3122   Strand 1 General</p>	<p><b>David Dockterman</b> The Adaptive Mathematics Teacher: Responding to Learner Variability</p> <p>Session 3222   Strand 1 General</p>	<p><b>Linda Levi, Linda Jaslow</b> Developing Computational Fluency: A Cognitively Guided Instruction Perspective</p> <p>Session 3522   Strand PK–2, 3–5</p>	<p><b>Jenny Novak, Jamila Riser, Tara Faircloth</b> Principles for Principals: Developing Administrator Understanding of Mathematics Teaching Practices</p> <p>Session 3622   Strand 3 General</p>

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7:30 AM–8:30 AM		12:30 PM–2:00 PM		3:30 PM–4:30 PM	
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<b>8:45 AM–9:45 AM</b>		<b>10:00 AM–11:00 AM</b>		<b>11:15 AM–12:15 PM</b>	
<b>150B</b>		<b>151A</b>		<b>151B</b>	
<p><b>Theodore Chao</b> Critical Issues in Working with Asian American Students</p> <p>Session 3123   Strand 1 General</p>		<p><b>Sara Hunter</b> Leader “shift”: Change Leadership for K–12 Mathematics</p> <p>Session 3223   Strand 5 General</p>		<p><b>Jason Zimba</b> Tracking and Equity in Mathematics Education</p> <p>Session 3323   Strand 1 General</p>	
<p><b>Bill Barnes, Mona Toncheff</b> Activating the Vision for Mathematics Assessments: How Do We Ensure Equity When Gathering and Using Evidence of Student Learning?</p> <p>Session 3523   Strand 1 6–8, 9–12</p>		<p><b>Jennie Beltramini, Brian Dean</b> Creating a Common Vision of CCR Standards-Aligned Instruction Using the Instructional Practice Guide (IPG): Coaching Tool</p> <p>Session 3623   Strand 5 PK–2, 3–5, 6–8, 9–12</p>			
<p><b>Linda Gojak</b> Supporting Teachers in Making Mathematics Learning Visible for All Students</p> <p>Session 3224   Strand 3 General</p>		<p><b>Renee Charette</b> Engaging Parents in Mathematical Shifts: Collaboration Between Coaches, Teachers, and Parents Using Social Media, Technology, and Community Outreach</p> <p>Session 3324   Strand 3 General</p>		<p><b>Darshan Jain, Tina Nocella</b> Developing an Effective Standards Based Grading (SBG) Model to Support Learning of Mathematics</p> <p>Session 3524   Strand 6–8, 9–12</p>	
<p><b>Stephanie Vega, Heather Crawford-Ferre</b> Is It Too Much Too Soon? Developing Young Children’s Communication and Representation Around Big Mathematical Ideas</p> <p>Session 3624   Strand 4 PK–2</p>		<p><b>Sallie Kaan, Ashley Nestor</b> Don’t Be Fooled by the Bells and Whistles! Approaching Program Adoption with a Critical Eye—Epilogue</p> <p>Session 3125   Strand 3 PK–2, 3–5, 6–8, 9–12</p>		<p><b>Valerie L. Mills, Wanda Audric, Marjorie Petit, Marilyn Strutchens, Edward A. Silver, Megan Burton</b> Accentuating Formative Assessment: An Essential Component for System-wide Equitable Student Outcomes</p> <p>Session 3225   Strand 1 PK–2, 3–5, 6–8, 9–12, College, General</p>	
<p><b>Annie Sussman, Deborah Schifter</b> Mathematical Practices in the Classroom: What Students Do and What Teachers Do to Make It Happen</p> <p>Session 3325   Strand 4 PK–2, 3–5</p>		<p><b>Rachel Lambert</b> Beyond “Good Teaching Is Good Teaching”—Integrating Neurodiversity into Standards-Based Mathematics Pedagogy for Students with Disabilities</p> <p>Session 3525   Strand 1 General</p>			
<p><b>Tom Reardon</b> The Power of Integrating Mathematically Rich Activities So That Each Student Has His/Her Own Problem and Solution—Easily Assessed!</p> <p>Session 3126   Strand 3 College, 9–12</p>		<p><b>Pamela Paek</b> Applying Systems Thinking to Practice: How to Successfully Build and Connect Efforts Across a District</p> <p>Session 3226   Strand 5 General</p>		<p><b>Kristopher Childs</b> Teaching Mathematics for Social Justice Develops Student Problem Solvers and Not Just Rule Followers</p> <p>Session 3326   Strand 5 PK–2, 3–5, 6–8</p>	
<p><b>Denis Sheeran</b> Embracing the Temporary for Permanent Impact</p> <p>Session 3526   Strand 5 General</p>		<p><b>Eric Milou</b> The Status Quo in High School Mathematics Is Unacceptable</p> <p>Session 3626   Strand 5 9–2</p>			
<p><b>Amy Seylar, Angela Waltrup</b> Leading Mathematics Professionalism in a Digital Age</p> <p>Session 3127   Strand 5 PK–2, 3–5, 6–8</p>		<p><b>Stephanie Fisher, Dana Cartier</b> Using Instructional Materials Reviews in Mathematics Coaching</p> <p>Session 3227   Strand 2 PK–2, 3–5, 6–8, 9–12</p>		<p><b>Damitra Newsome, Anne Metzbower, Robin White</b> Equity vs. Equality in the Articulation Process</p> <p>Session 3327   Strand 1 6–8, 9–12</p>	
<p><b>Kristin Umland, Paul Conley</b> How High-Quality Curriculum Supports Mathematical Knowledge for Teaching</p> <p>Session 3527   Strand 4 6–8</p>		<p><b>Rebeca Itzkowich, Donna Johnson</b> We Can’t Do It Without You! The Role of Administrators in Promoting and Supporting Changes in Mathematics Instruction</p> <p>Session 3627   Strand 2 PK–2</p>			
<p><b>Judy Storeygard, Denise Treacy</b> Doing the Math with Paraeducators</p> <p>Session 3131   Strand 1 PK–2, 3–5</p>		<p><b>Kit Norris, Sarah Schuhl</b> Who Is Doing the Work?</p> <p>Session 3231   Strand 2 3–5</p>		<p><b>Jody Guarino, Vanessa Cerrahoglu</b> Meaningful Discussions as a Tool to Develop Deep Mathematical Understandings</p> <p>Session 3331   Strand 4 PK–2, 3–5</p>	
<p><b>Janet Tomlinson, Stephanie Doran</b> Building Reasoning Through Arrays from Kindergarten to High School</p> <p>Session 3531   Strand 4 General</p>		<p><b>Ashlee LeGear, Erick Hofacker</b> Algebraic Thinking Through Visual Representations</p> <p>Session 3631   Strand 4 3–5, 6–8, 9–12, College</p>			
<b>143A</b>		<b>143B</b>		<b>143C</b>	

## WEDNESDAY SUMMARY

Hall A		HALL A			146BC	
7:30 AM–8:30 AM		12:30 PM–2:00 PM			3:30 PM–4:30 PM	
WEDNESDAY BREAKFAST		WEDNESDAY LUNCHEON			SPOTLIGHT PRESENTATION	
Hall A	<p><b>Paul Cholmsky</b> Solving the Fractions Problem</p> <p>Session 3003   Strand 4   General</p> <p>Sponsored by ExploreLearning (ticket required)</p>	<p><b>Tim Hudson, Catherine Fosnot</b> Imaging A Future Without Math</p> <p>Session 3403   Strand 5   General</p> <p>Partially Sponsored by DreamBox (ticket required)</p>			<p><b>Carole Greenes</b> NCSM: A Musical Tribute</p> <p>Session 3615   General</p>	
8:45 AM–9:45 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	
143B	<p><b>Andrea Lang, Rachael Degnan</b> Dynamic Partners Take on Discourse, a Task, Technology, and a Meaningful Lesson Plan to Orchestrate Student Thinking and Assessment</p> <p>Session 3132   Strand 4 General</p>	<p><b>Rachel Muren, Kathryn Flores, Denise Porter, Ellen Dairyko</b> Summer Math Camp: Using a Growth Mindset Framework to Inspire Students to Embrace Rigorous Mathematics Content</p> <p>Session 3232   Strand 3 3–5, 6–8</p>	<p><b>Terrie Galanti, Jennifer Suh, Sara Birkhead, Rachelle Farmer, Padmanabhan Seshaiyer</b> From Fair Share to Non-Unit Fractions: Using Vertical Articulation to Unpack Learning Trajectories During a Coach-Facilitated Lesson Study</p> <p>Session 3332   Strand 3 PK–2, 3–5, 6–8</p>	<p><b>Luis Lima, Stephen Sebelksi</b> Supporting Students with Unfinished Learning in Middle School: The Case for Coherent Content in Context</p> <p>Session 3532   Strand 3 6–8, General</p>	<p><b>Raj Shah</b> What We Can Learn (and Use) from Video Game Designers to Make Mathematics Irresistible</p> <p>Session 3632   Strand 4 6–8</p>	
143C	<p><b>Chryste Berda, Katie Basham, Wendy Kubasko</b> Purposeful Pairings: Using Effective Coaching to Inspire Any Palate</p> <p>Session 3133   Strand 2 General</p>	<p><b>Michelle Douglas-Meyer, Melissa Hedges</b> Research-Based Learning Trajectories: What Are They and How Can I Use Them?</p> <p>Session 3233   Strand 4 PK–2</p>	<p><b>Michele Burgess, Corinne Murawski, Michael Fierle, Gabriela Rose</b> Integrating Children’s Literature and STEM Activities for Grades PK–5.</p> <p>Session 3333   Strand 3 PK–2, 3–5</p>	<p><b>Mary Mitchell, Sue Chapman</b> Eyes on Learning: Focused Mathematics Coaching with the Instructional Practices Inventory</p> <p>Session 3533   Strand 2   General</p>	<p><b>Matthew I. Beyranevand, Hilary Kreisberg</b> Helping Teachers Feel Supported by Shifting the Culture and Mathematical Mindset of Parents</p> <p>Session 3633   Strand 3 PK–2, 3–5, 6–8, 9–12</p>	
144A	<p><b>Mona Toncheff, Bill Barnes</b> NCSM: Administrator Kick-off</p> <p>Session 3134   Strand 0 General</p>	<p><b>Marc Garneau, Natalie Crist</b> Leveraging Technology to Enhance Professional Learning: The NCSM Professional Learning App and the Digital Tools for Formative Assessment Module</p> <p>Session 3234   Strand 5 General</p>	<p><b>Peter Coe, Tiayana Marks</b> Addressing the Needs of Students with Unfinished Learning</p> <p>Session 3334   Strand 1 General</p>		<p><b>Kelly Kent-Johnson, Lisa Coffman</b> No More Quick Fix Professional Development: Developing Mathematical Expertise</p> <p>Session 3634   Strand 3 PK–2, 3–5, General</p>	
144B	<p><b>Shelbi Cole, Kevin Liner</b> Fixing Broken Systems: Tips, Tools, and Techniques for Ensuring That Students Have a Coherent Mathematics Experience</p> <p>Session 3135   Strand 3 PK–2, 3–5, 6–8, 9–12</p>	<p><b>William McGowan, Jere Confrey, Michael Belcher, Meetal Shah</b> Using Learning Trajectory Results to Improve Teacher Noticing and Classroom Discourse</p> <p>Session 3235   Strand 4 6–8</p>	<p><b>Nita Walker, Barbara Post</b> Using Formative Assessment for Student Engagement and Proficiency</p> <p>Session 3335   Strand 4 3–5</p>	<p><b>Anne Joyoprayitno, Kathi Cook</b> Intensification as a Tool for Equity: Ensuring Underprepared Students Achieve Their Algebra I Credit in a Single Year</p> <p>Session 3535   Strand 1 9–12</p>	<p><b>Jody Guarino, Chepina Rumsey</b> Promoting Argumentation in Primary Classrooms Through Tasks and Talk</p> <p>Session 3635   Strand 4 PK–2</p>	
144C	<p><b>Sean Nank, Michael Mulvey</b> Effective Coaching Without Leaving the Classroom: A Model for Intensive Daily Interactions with Veteran and Beginning Teachers</p> <p>Session 3136   Strand 2 General</p>	<p><b>Corinne Murawski, Michele Burgess, Michael Fierle</b> Pairing Content-Focused Coaching with Professional Development: More than Twice the Learning?</p> <p>Session 3236   Strand 2 PK–2, 3–5</p>	<p><b>Barb Everhart</b> The Coach, the Novice, and the Expert</p> <p>Session 3336   Strand 2 General</p>	<p><b>Eric Frandsen, Jonathan Dolle, Casey Doose, Rebecca Perry</b> Seeing the System: Continuous Improvement Coaching to Improve Principals’ Feedback to Teachers</p> <p>Session 3536   Strand 5 General</p>	<p><b>Michael Gould, Lisa Bush</b> Sense Making the Gateway to Access, Equity, and Empowerment</p> <p>Session 3636   Strand 1 6–8, 9–12</p>	



## WEDNESDAY SESSIONS BY STRAND

### STRAND 1: EQUITY IN PRACTICE

SESSION	LOCATION	TIME
3114	146B	8:45–9:45
3122	150A	8:45–9:45
3123	150B	8:45–9:45
3131	143A	8:45–9:45
3201	SALON G/H	10:00–11:00
3214	146B	10:00–11:00
3216	147A	10:00–11:00
3222	150A	10:00–11:00
3225	151B	10:00–11:00
3301	SALON G/H	11:15–12:15
3323	150B	11:15–12:15
3327	152B	11:15–12:15
3334	144A	11:15–12:15
3523	150B	2:15–3:15
3525	151B	2:15–3:15
3535	144B	2:15–3:15
3636	144C	3:30–4:30

### STRAND 2: CULTIVATING A MATHEMATICS COACHING PRACTICE

SESSION	LOCATION	TIME
3101	SALON G/H	8:45–9:45
3102	SALON I	8:45–9:45
3111	145A	8:45–9:45
3133	143C	8:45–9:45
3136	144C	8:45–9:45
3202	SALON I	10:00–11:00
3212	145B	10:00–11:00
3227	152B	10:00–11:00
3231	143A	10:00–11:00
3236	144C	10:00–11:00
3313	146A	11:15–12:15
3314	146B	11:15–12:15
3336	144C	11:15–12:15
3513	146A	2:15–3:15
3533	143C	2:15–3:15
3627	152B	3:30–4:30

### STRAND 3: EVIDENCE AND EXPERIENCES FROM THE FIELD

SESSION	LOCATION	TIME
3115	146	8:45–9:45
3116	147A	8:45–9:45
3125	151B	8:45–9:45
3126	152A	8:45–9:45
3135	144B	8:45–9:45
3217	147B	10:00–11:00
3224	151A	10:00–11:00
3232	143B	10:00–11:00
3324	151A	11:15–12:15
3332	143B	11:15–12:15
3333	143C	11:15–12:15
3511	145A	2:15–3:15
3517	147B	2:15–3:15
3521	149AB	2:15–3:15
3532	143B	2:15–3:15
3622	150A	3:30–4:30
3634	144A	3:30–4:30

### STRAND 4: DEVELOPING MATHEMATICAL KNOWLEDGE FOR TEACHING

SESSION	LOCATION	TIME
3003	HALL A	7:30–8:30
3112	145B	8:45–9:45
3113	146A	8:45–9:45
3132	143B	8:45–9:45
3211	145A	10:00–11:00
3213	146A	10:00–11:00
3221	149AB	10:00–11:00
3233	143C	10:00–11:00
3235	144B	10:00–11:00
3312	145B	11:15–12:15
3316	147A	11:15–12:15
3317	147B	11:15–12:15
3325	151B	11:15–12:15
3331	143A	11:15–12:15
3335	144B	11:15–12:15
3512	145B	2:15–3:15
3516	147A	2:15–3:15
3527	152B	2:15–3:15
3531	143A	2:15–3:15
3624	151A	3:30–4:30
3631	143A	3:30–4:30
3632	143B	3:30–4:30
3635	144B	3:30–4:30

### STRAND 5: LEADING MATHEMATICS INTO THE FUTURE

SESSION	LOCATION	TIME
3117	147B	8:45–9:45
3121	149AB	8:45–9:45
3127	152B	8:45–9:45
3215	146C	10:00–11:00
3223	150B	10:00–11:00
3226	152A	10:00–11:00
3234	144A	10:00–11:00
3302	SALON I	11:15–12:15
3311	145A	11:15–12:15
3321	149AB	11:15–12:15
3326	152A	11:15–12:15
3403	HALL A	12:30–2:00
3501	SALON G/H	2:15–3:15
3502	SALON I	2:15–3:15
3526	152A	2:15–3:15
3536	144C	2:15–3:15
3623	150B	3:30–4:30
3626	152A	3:30–4:30
3633	143C	3:30–4:30





# WEDNESDAY SESSIONS



## HOW TO READ THIS SPEAKER PROGRAM:

### TITLE OF PRESENTATION

Session Number | Time of Presentation | Room Location | Strand Number | Grade Level/Target Audience

Description of presentation.

**Speaker Name**, Position, Affiliation

## WEDNESDAY BREAKFAST



### SOLVING THE FRACTIONS PROBLEM

Session 3003 | 7:30 AM–8:30 AM | Hall A | Strand 4 | General

“Difficulty with fractions (including decimals and percent) is pervasive and is a major obstacle to further progress in mathematics, including algebra” (National Mathematics Advisory Panel, 2008). Addressing this problem in a comprehensive way requires new approaches to both K–6 instruction on fractions and decimals, as well as later interventions to improve struggling students’ readiness for higher mathematics. The role of technology also deserves fresh examination. This presentation will focus on recent research in fractions pedagogy and promising new methods for developing robust rational number mastery.



**Paul Cholmsky**, Vice President, ExploreLearning, Charlottesville, Virginia

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# WEDNESDAY SESSIONS

8:45 AM–9:45 AM

## MAJOR PRESENTATION

### UNDERSTANDING THE RESISTANT TEACHER: CHANGING OUR NARRATIVE TO FOSTER STRONGER RELATIONSHIPS

Session 3101 | 8:45 AM–9:45 AM | Salon G/H | Strand 2 | General

Can you recall a time when you worked with a group of teachers and one or more seemed resistant to the ideas you were sharing? Encountering teachers that are resistant to change is a common challenge for many teacher leaders and it is easy to slip into an “us vs. them” frame of mind when working with them. However, when we take time to identify and understand the root of the resistance, we are in a better position to move teachers forward and support their needs. In this session, we will explore the categories of resistance, the complexities of the change process, and specific strategies to support all adult learners.



**Mike Flynn**, Mount Holyoke College, South Hadley, Massachusetts

**President**, Marc Garneau, NCSM Canada Regional Director, Surrey, British Columbia, Canada

Mike Flynn is the director of Mathematics Leadership Programs at Mount Holyoke College, where he runs the Master of Arts in Mathematics Teaching program and leads a wide variety of professional learning opportunities for teachers, teacher-leaders, coaches, administrators, and staff-developers. This work connects him with educators from around the world who are interested in the learning and teaching of mathematics. Mike is also the author of *Beyond Answers: Exploring Mathematical Practices with Young Children*.

Mike’s latest work centers on creating more interactive and engaging online learning for educators. He designed the dynamic hybrid learning model that blends on-campus and online students for live, interactive learning in mathematics. He and his colleagues also created the Virtual Professional Learning Networks in Mathematics Education connecting teachers, mathematics coaches, and administrators to study current and engaging topics in mathematics education. These free networks provide amazing opportunities for educators and educational leaders to discuss problems of practice, share resources, and support one another.

Prior to this work Mike taught second grade at the William E. Norris Elementary School in Southamptton, Massachusetts for 14 years. He is the 2008 Massachusetts Teacher of the Year and was a 2010 recipient of the Presidential Award for Excellence in Mathematics Teaching. Follow him on Twitter @MikeFlynn55.

## SPOTLIGHT SPEAKER

### SMALL GROUP, BIG GAINS: COACHING FOR EFFECTIVE PULLED SMALL GROUP INSTRUCTION

Session 3102 | 8:45 AM–9:45 AM | Salon I | Strand 2 | PK–2, 3–5

Small group instruction in mathematics often mirrors that of reading. These strategies may work during reading instruction, but they often are not as helpful for students struggling with mathematics. Time spent in the pulled small group becomes an equity issue! Make sense of strategies to facilitate teachers to use pulled small groups effectively in mathematics. Create a shared image of targeted teacher and student behaviors through authentic videos of pulled small group instruction in mathematics.

**Juli Dixon**, University of Central Florida, Orlando, Florida

**Lisa Brooks**, University of Central Florida, Orlando, Florida

**President**, Nanci Smith, Affiliate Group Chair, Peoria, Arizona

### MATHEMATICS COACHING: A BEGINNING PLAYBOOK

Session 3111 | 8:45 AM–9:45 AM | 145A | Strand 2 | 3–5, 6–8

You’ve been selected to be a mathematics coach. Now what? Come learn about successful coaching practices that you can implement as you begin your work as a coach. We will share strategies from our work coaching novice coaches in urban schools. We will discuss specific ways we helped coaches develop skills in the following areas: building relationships, developing professional learning communities, conducting learning walks, and giving feedback.

**Nicora Placa**, Hunter College, New York, New York

### LEVERAGING STUDENTS’ OPPORTUNITIES TO LEARN

Session 3112 | 8:45 AM–9:45 AM | 145B | Strand 4 | General

Our team will share insights and data about an innovative video-based, content-focused, professional development program explicitly linked to empirical research on teaching for conceptual understanding (Hiebert & Grouws, 2007). We utilize a video-assessment protocol to sharpen teachers’ ability to analyze mathematical learning goals and to notice and leverage students’ opportunities to learn. This stance towards video analysis has been strongly linked to correlations between teachers’ content knowledge, instructional practices, and student achievement (Kersting, 2010, 2012).

**Jamila Riser**, Delaware Mathematics Coalition, Dover, Delaware

**James Hiebert**, University of Delaware, Newark, Delaware

**Valerie Maxwell**, Delaware Mathematics Coalition, Dover, Delaware

**Jan Parsons**, Delaware Mathematics Coalition, Dover, Delaware



## WEDNESDAY SESSIONS



### LEADING MATHEMATICS LEARNING AND TEACHING IN A DIGITAL AGE, A.K.A. EMBOLDEN YOUR INNER MATHEMATICIAN

Session 3113 | 8:45 AM–9:45 AM | 146A | Strand 4 | 3–5, 6–8

There must be a mindset shift away from the idea that strong mathematics learners are those who memorize and calculate well. To build confidence as well as a more visual approach to mathematics learning and teaching, we design and implement ongoing, job-embedded professional learning around teaching practices and current research. Experience visual, hands-on mathematics that connects to the SMP and NCTM's Teaching Practices. Come embolden your inner mathematician.

**Jill Gough**, Trinity School, Atlanta, Georgia

**Jennifer Wilson**, Northwest Rankin High School, Flowood, North Carolina

### MATHEMATICS AND EQUITY: TACKLING THE HARD CONVERSATIONS

Session 3114 | 8:45 AM–9:45 AM | 146B | Strand 1 | 6–8, 9–12, College

We operate from the perspective that we all want to both improve equitable practices in, and deepen our understanding of, mathematics to better serve students and teachers. But, pursuing this in reality often means having complex conversations about equity, about mathematics, and about the intersection of the two. We will draw on work across multiple projects to illustrate what it means to create opportunities to surface these essential conversations—within the session and beyond.

**Eden Badertscher**, Education Development Center, Inc., Waltham, Massachusetts

**Sarah Sword**, Education Development Center, Inc., Waltham, Massachusetts

### PARTNERING WITH BUILDING LEADERS TO IMPROVE MATHEMATICS INSTRUCTION: INCREASING UNDERSTANDING OF HIGH-QUALITY INSTRUCTION

Session 3115 | 8:45 AM–9:45 AM | 146 | Strand 3 | PK–2, 3–5

In many elementary schools, instructional leaders lack the necessary understanding of components of high-quality mathematics and the knowledge about how to improve classroom instruction in mathematics. Learn how we, as curriculum administrators, partner with building leaders to increase their content/pedagogical knowledge through the use of walkthrough tools, engaging in professional learning, and providing coaching opportunities. *Principles to Actions*: Eight High-Leverage Practices will be emphasized as part of this improvement process.

**Natalie Crist**, Baltimore County Public Schools, Towson, Maryland

**Horrie Fortier**, Baltimore County Public Schools, Towson, Maryland

### ADMINISTRATORS LOVE MATHEMATICS, TOO—PARTNERING EFFECTIVELY WITH ADMINISTRATORS TO ENSURE A QUALITY SCHOOL MATHEMATICS PROGRAM

Session 3116 | 8:45 AM–9:45 AM | 147A | Strand 3 | General

Too often, mathematics coaches and school administrators provide conflicting messages. This leads to teachers being less effective than they could be. In this session, a former mathematics coach turned assistant principal shares a case study with his department head around how to partner with their mathematics coaches effectively to move student achievement and teacher morale simultaneously. Also, the facilitator will share the similarities, differences, and successes in the coach/admin partnership.

**Neeraj Satyal**, Alliance Leadership Middle Academy, Los Angeles, California

**Suaronne Angeletti**, Alliance Leadership Middle Academy, Los Angeles, California

### EXPLORING THE EVOLUTION OF ENGAGING TEACHERS IN “FISHBOWL” DEMONSTRATION LESSONS IN AN ONLINE SPACE: TRANSITIONING FACE-TO-FACE TO AN ONLINE EXPERIENCE

Session 3117 | 8:45 AM–9:45 AM | 147B | Strand 5 | General

How can we leverage technology to provide opportunities for more teachers to access high-quality professional learning? In particular, how can we re-imagine “fishbowl” demonstration lessons in an online space? We will share our story of adjustments, compromises, and decisions made to maintain the purpose of a demonstration lesson to impact teacher practice. Participants will consider the what, why, and how of transitioning a demonstration lesson using a “fishbowl” structure, to an online format.

**Stephanie Martin**, University of Rochester, Rochester, New York

**Cynthia Callard**, University of Rochester, Rochester, New York

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

**Genie Foster**, University of Rochester, Rochester, New York

**Jennifer Kruger**, University of Rochester, Rochester, New York

#### SPONSOR SHOWCASE

### EFFECTIVE AND PRACTICAL STRATEGIES TO IMPLEMENT UNIVERSAL MATHEMATICS INTERVENTION IN THE CORE CLASSROOM

Session 3121 | 8:45 AM–9:45 AM | 149AB | Strand 5 | PK–2, 3–5, 6–8

Engage with effective and practical strategies to implement universal mathematics intervention in the classroom to address diverse needs and make instruction accessible. This session will focus on the use of flexible resources and adaptive software to deliver precise, differentiated mathematics instruction, empowering teachers to address gaps in their classroom that cause barriers to on-level learning.

**Janet Pittock**, McGraw-Hill Education, Columbus, Ohio





## WEDNESDAY SESSIONS

### FOUR YEARS STRONG IN SAN FRANCISCO: HOLDING AN EQUITY-BASED DETRACKING POLICY OVER TIME

Session 3122 | 8:45 AM–9:45 AM | 150A | Strand 1 | General

Detracking is a strong stance built upon the belief that all students learn deeply in heterogeneous classes. What does it mean to hold these values within a policy while responding to the changing political pressures? In our fourth year of having a de-tracked system, San Francisco continues to learn from our data alongside strategic research partnerships. Join us in this conversation as we share lessons learned and the questions we still have.

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

**Angela Torres**, San Francisco Unified School District, San Francisco, California

### CRITICAL ISSUES IN WORKING WITH ASIAN AMERICAN STUDENTS

Session 3123 | 8:45 AM–9:45 AM | 150B | Strand 1 | General

Asian American students are positioned as a “model minority” because of generally high mathematics scores. But these achievement scores for a general category of “Asian” students can mask real struggles with mathematics. This panel, composed of Critical Mathematics Educators who self-identify as Asian American, explores issues in working with, supporting, and empowering Asian American students. The panelists aim to make visible issues pertaining to Asian American students throughout all facets of mathematics education.

**Theodore Chao**, Ohio State University, Columbus, Ohio

### DON'T BE FOOLED BY THE BELLS AND WHISTLES! APPROACHING PROGRAM ADOPTION WITH A CRITICAL EYE—EPILOGUE

Session 3125 | 8:45 AM–9:45 AM | 151B | Strand 3 | PK–2, 3–5, 6–8, 9–12

Have you suffered through a mathematics adoption made by a rushed team whose choice was based on “thumbing through” materials and the bells and whistles showcased by the salesperson? Discover the systematic research-based approach a district used to prepare teachers to analyze curricular resources with a critical eye. Participants will leave with the research, strategies, and tools needed to ensure a thoughtful adoption of CCSSM materials. Includes epilogue from 2017 NCSM presentation.

**Sallie Kaan**, Fox Chapel Area School District, Pittsburgh, Pennsylvania

**Ashley Nestor**, Fox Chapel Area School District, Pittsburgh, Pennsylvania

### THE POWER OF INTEGRATING MATHEMATICALLY RICH ACTIVITIES SO THAT EACH STUDENT HAS HIS/HER OWN PROBLEM AND SOLUTION—EASILY ASSESSED!

Session 3126 | 8:45 AM–9:45 AM | 152A | Strand 3 | 9–12, College

Supply your teachers with several interesting “summary” application problems that integrate many different mathematical ideas into their solutions. Provide each student his/her own individual problem, which allows students to collaborate but not blatantly copy solutions. Supply your teachers with the complete solutions to each individualized problem, including answers to every intermediate calculation, making assessment quick, easy, thorough. We will use The Great Applied Problem—all materials with 60 individual problems and solutions are supplied.

**Tom Reardon**, Youngstown State University, Youngstown, Ohio

### LEADING MATHEMATICS PROFESSIONALISM IN A DIGITAL AGE

Session 3127 | 8:45 AM–9:45 AM | 152B | Strand 5 | PK–2, 3–5, 6–8

The on-demand nature of anytime, anywhere professional learning truly allows mathematics leaders to customize and personalize professional learning in this digital era. Participants will investigate one district’s vetted digital resources and tools for growing mathematics knowledge, analyzing and responding to students’ mathematical ideas, fostering positive attitudes toward continued professional learning in mathematics, and building professional networks to support and sustain continuous growth and learning.

**Amy Seylar**, Washington County Public Schools, Hagerstown, Maryland

**Angela Waltrup**, Frederick County, Maryland Public Schools, Frederick, Maryland

### DOING THE MATH WITH PARAEDUCATORS

Session 3131 | 8:45 AM–9:45 AM | 143A | Strand 1 | PK–2, 3–5

The goal of this session is to share initial findings, video, and interview excerpts from our project. We will describe the issues related to the support that paras and their cooperating teachers need to allow paras to teach mathematics to a range of students, especially those who may need the most help, e.g., those with disabilities and English Language Learners. Participants will engage in discussions about their own challenges and implications for their districts.

**Judy Storeygard**, TERC, Cambridge, Massachusetts

**Denise Treacy**, TERC, Cambridge, Massachusetts





## WEDNESDAY SESSIONS



### **DYNAMIC PARTNERS TAKE ON DISCOURSE, A TASK, TECHNOLOGY, AND A MEANINGFUL LESSON PLAN TO ORCHESTRATE STUDENT THINKING AND ASSESSMENT**

Session 3132 | 8:45 AM–9:45 AM | 143B | Strand 4 | General

This session is based on the book *5 Practices for Orchestrating Productive Mathematical Discourse*. Join us as we share how we transformed our planning to our assessment of student knowledge through anticipating, monitoring, selecting, sequencing, and connecting. Resources will be shared that promote high-quality mathematical modeling and assessment within the discussions. Participants will see video, engage in the 5 practices and see how it can change their classroom for all learners!

**Andrea Lang**, Howard County Public School System, Ellicott City, Maryland

**Rachael Degnan**, Howard County Public Schools, Ellicott City, Maryland

### **PURPOSEFUL PAIRINGS: USING EFFECTIVE COACHING TO INSPIRE ANY PALATE**

Session 3133 | 8:45 AM–9:45 AM | 143C | Strand 2 | General

Change, though noble, requires taking risks, collaboration, follow-through and time. It is the role of a coach to critically diagnose a teacher's need and purposefully pair this with the most effective coaching moves. In this session, participants will propel their coaching practice forward by engaging in elaborate rehearsal along a coaching continuum using research-informed techniques.

**Chryste Berda**, Maricopa County Education Service Agency (MCESA), Phoenix, Arizona

**Katie Basham**, Laveen Elementary School District, Laveen, Arizona

**Wendy Kubasko**, Shippensburg University, Mechanicsburg, Pennsylvania

### **NCSM: ADMINISTRATOR KICK-OFF**

Session 3134 | 8:45 AM–9:45 AM | 144A | 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 resource for site-level leaders from the new professional learning series from NCSM, “Site-Based Mathematics Leadership Development.” The first module supports site-based administrators with strengthening classroom instruction by improving the quality of instructional conversations that occur before, during, and after the lesson. See you all there!

**Mona Toncheff**, NCSM Marketing and E-news Editor, Phoenix, Arizona

**Bill Barnes**, NSCM 2nd Vice President and Volunteer Coordinator, Ellicott City, Maryland

### **FIXING BROKEN SYSTEMS: TIPS, TOOLS, AND TECHNIQUES FOR ENSURING THAT STUDENTS HAVE A COHERENT MATHEMATICS EXPERIENCE**

Session 3135 | 8:45 AM–9:45 AM | 144B | Strand 3 | PK–2, 3–5, 6–8, 9–12

As adoption of college- and career-ready standards approaches its eighth birthday, there is evidence that districts' assessments, instructional materials, and instruction are still not aligned to the same mathematical goals. In this session, you will dive into tools designed to provide evidence that all aspects of your district's system are working together to provide a coherent mathematics experience for students.

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

**Kevin Liner**, Capitol Region Education Council (CREC), Hartford, Connecticut

### **EFFECTIVE COACHING WITHOUT LEAVING THE CLASSROOM: A MODEL FOR INTENSIVE DAILY INTERACTIONS WITH VETERAN AND BEGINNING TEACHERS**

Session 3136 | 8:45 AM–9:45 AM | 144C | Strand 2 | General

In this session, we will detail an intensive mentoring program where a veteran teacher of 21 years and a new teacher were given the same schedule to facilitate ongoing coaching throughout the school year. We will address the essential elements of the coaching relationship, the value of informal conversations, and the power of daily mentoring as we reflect on how this model could work in your school.

**Sean Nank**, American College of Education, Indianapolis, Indiana

**Michael Mulvey**, Oceanside Unified School District, Oceanside, California





# WEDNESDAY SESSIONS

10:00 AM–11:00 AM

## MAJOR PRESENTATION

### ACKNOWLEDGMENT, ACTION, ACCOUNTABILITY: ADDRESSING DEFICIT THINKING AND DEFICIT LANGUAGE

Session 3201 | 10:00 AM–11:00 AM | Salon G/H | Strand 1 | General  
Targeting social justice starts with the acknowledgment and the actions of leaders. Engage in in-depth discussions on deficit views while examining common phrases and descriptions used in mathematics teaching and learning. Mathematics leaders will experience tools and strategies that can be employed to foster critical conversations, reflections, and positive actions.



**Nora Ramirez**, Nora Ramirez Consulting, Tempe, Arizona

**President**, Nanci Smith, NCSM Affiliate Group Chair, Peoria, Arizona

Nora G. Ramirez is a nationally known mathematics educator who has spent over 30 years collaborating with teachers. She worked at Arizona State University and Maricopa Community Colleges as a professional developer, mathematics specialist, and principal investigator of several federally funded projects. Nora taught middle school and high school mathematics primarily in Texas. She is a founding member and past-president of TODOS: Mathematics for ALL, a past member of the National Council of Teachers of Mathematics (NCTM) Board of Directors, a Past President of the Arizona Association of Teachers of Mathematics (AATM), and an advisory board member for several mathematics education and ELL related projects. She is an author and co-editor of *Beyond Good Teaching: Advancing Mathematics Education for ELLs* published by NCTM and has been a contributing author for several books related to mathematics education. Currently, she is active in NCTM, NCSM, AATM, and AML, and now serves as Executive Director of TODOS, and works as a mathematics education consultant in rural, urban, and suburban school districts.



## SPOTLIGHT SPEAKER

### PRACTICAL STRATEGIES FOR MAKING THE CASE FOR MATHEMATICS COACHES AND MATHEMATICS COACHING

Session 3202 | 10:00 AM–11:00 AM | Salon I | Strand 2 | General  
We have enough evidence that bringing the vision of the Common Core and high-quality mathematics teaching to scale requires effective coaching and trained coaches. But just because we know that coaching is a critical support for teachers doesn't mean that others get it. This presentation will examine the role, the rationale, the research, and the structures that help us make the case for coaches and coaching.

**Steve Leinwand**, American Institutes for Research, Washington, D.C.

**President**, John W. Staley, NCSM Past President, Towson, Maryland

### GAINING INSIGHT INTO STUDENT THINKING THROUGH FORMATIVE ASSESSMENT AND RICH TASKS

Session 3211 | 10:00 AM–11:00 AM | 145A | Strand 4 | 6–8

To increase student learning, we must understand how students are thinking and processing the mathematics. As we teach, we assess, and as we assess, we teach. Formative assessment and instruction are interwoven together in complimentary ways to increase student learning. Mathematics leaders and coaches will learn how to support teachers toward incorporating formative assessment naturally into their planning and delivery of instruction.

**Gloria Weinberg**, Math Solutions, Sausalito, California

**Nikki LaLonde**, Math Solutions, Sausalito, California

### CONVERSATIONS THAT SHIFT INSTRUCTION

Session 3212 | 10:00 AM–11:00 AM | 145B | Strand 2 | 3–5, 6–8, 9–12

The Southern Regional Education Board (SREB) has created an observation tool that represents the shifts in instruction that lead toward a balanced approach to mathematics and incorporates key components of *Principles to Actions* and state practice/process standards. Come explore how this tool can be used for critical coaching conversations, teacher self-reflection, peer observations, and a guide for helping administrators see what good mathematics instruction looks like.

**Amanda Merritt**, Southern Regional Education Board, Atlanta, Georgia

**Jason Adair**, Southern Regional Education Board, Atlanta, Georgia

**Kenna Barger**, Southern Regional Education Board, Atlanta, Georgia



## WEDNESDAY SESSIONS



### SPARKING STUDENT INTEREST WITH PROBLEMS FROM THEIR WORLD

Session 3213 | 10:00 AM–11:00 AM | 146A | Strand 4 | 6–8, 9–12

Modeling is the process of using mathematics to represent, analyze, and provide insight about real-world phenomena, and modeling problems provide opportunities for students to apply mathematical tools to problems that matter to students. But what is modeling, and how can teachers find time for it? Using a research foundation about why modeling is important, we'll consider several modeling activities that simultaneously promote conceptual understanding and procedural fluency.

**Patrick Vennebush**, Discovery Education, Silver Spring, Maryland

### HOW TO DE-TRACK MATHEMATICS COURSES: PRACTICAL WAYS TO SUPPORT MONUMENTAL CHANGE IN CURRICULUM, CULTURE, AND ACHIEVEMENT

Session 3214 | 10:00 AM–11:00 AM | 146B | Strand 1 | General

Even though research indicates tracking in mathematics is both ineffective and inequitable, there are many challenges and barriers to de-tracking. Learn strategies and tactics for de-tracking mathematics courses and programs at any level by hearing how one district eliminated tracking in Algebra 1. See how a district-wide team of teachers analyzed test scores and curriculum to justify the change, collaboratively created a rigorous new curriculum, and implemented innovative assessment practices that improved culture and equity.

**Tim Hudson**, SVP of Learning, DreamBox Learning, Bellevue, Washington

### DYNAMIC VS. STATIC ASSESSMENT: A GROWTH-MINDSET PERSPECTIVE

Session 3215 | 10:00 AM–11:00 AM | 146C | Strand 5 | General

Most formative assessments are designed from the perspective of deficit-models. Data-driven approaches resulting from them are then about “fixing the gaps.” In contrast, this session makes use of developmental “landscapes of learning.” By actively analyzing open items with multiple entry points and children’s work on them, participants will gain ideas on teaching implications to support the progressive development of learners’ developing strategies and big ideas.

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

### RE-THINKING ACCELERATION PRACTICES

Session 3216 | 10:00 AM–11:00 AM | 147A | Strand 1 | General

“What do we do now?” If you have or have not looked at your district data, now is the time to re-think your acceleration practices. Learn how a large urban district, and a whole state, changed the paradigm from the “traditional” acceleration practices of skipping toward one of coherence. Participants will receive the white paper, communication tools, and the “blueprint” developed by the Kansas State Department of Education, to begin the dialogue to re-shape these practices in their own districts.

**Elizabeth Peyser**, Curriculum Associates and Kansas State Dept. of Education, Wichita, Kansas

**Sherri Martinie**, Kansas State University, Manhattan, Kansas

**Connie Schrock**, Emporia State University, Emporia, Kansas

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

### DEVELOPING BUDDY TEACHERS PLUS BUDDY CLASSROOMS TO BUILD MATHEMATICAL COMMUNITIES

Session 3217 | 10:00 AM–11:00 AM | 147B | Strand 3 | PK–2, 3–5

In this workshop mathematics coaches will learn the best mathematics games to encourage teachers from primary and upper elementary levels to combine their classrooms for once-a-week mathematics game practice. Participants will see student samples and reflections from both levels that demonstrate the benefits of cross-graded instruction for mathematics plus social and leadership development. Participants will receive differentiated games that focus on operational fluency and lesson activities for follow-up back in their schools.

**Jane Felling**, Box Cars and One-Eyed Jacks, Edmonton, Alberta, Canada

### SPONSOR SHOWCASE

#### ESCAPE ROOM ADVENTURE!

Session 3221 | 10:00 AM–11:00 AM | 149AB | Strand 4 | General

This is not your normal workshop session environment. Put your problem-solving and teamwork skills to the test to unlock the clues and solve the mystery to escape! Strategies and cooperation are critical to success in this challenge. Experience problem-solving and mathematical modeling activities that can be used in the classroom in this lively and challenging Escape Room context!

**Kurt Whited**, National Math Specialist, Pearson, Chandler, Arizona

**Deb McGinley**, National Math Specialist, Pearson, Chandler, Arizona







## WEDNESDAY SESSIONS

### THE ADAPTIVE MATHEMATICS TEACHER: RESPONDING TO LEARNER VARIABILITY

Session 3222 | 10:00 AM–11:00 AM | 150A | Strand 1 | General

Adaptive learning promises to respond dynamically to the needs of individual learners. Mathematics teachers already do this, responding to heads on the desk or flailing arms. But they can do more. Technology can augment human adaptivity to better serve both the cognitive and emotional needs of individuals and groups of students. This session unpacks the variables that impact student learning, providing examples of how a technology-teacher partnership can make both teachers and machines smarter.

**David Dockterman**, Harvard/Faculty; Houghton Mifflin Harcourt/Chief Architect, Learning Sciences, Boston, Massachusetts

### LEADER “SHIFT”: CHANGE LEADERSHIP FOR K–12 MATHEMATICS

Session 3223 | 10:00 AM–11:00 AM | 150B | Strand 5 | General

Shifting the culture of K–12 mathematics education is a daunting task for any leader. This session will equip leaders and teams to strategically approach culture change. Through a series of design thinking exercises, participants will clarify the urgency for change, explore processes to navigate transitions, articulate next steps and develop a vision for success. Experience a leader “shift” for mathematics education!

**Sara Hunter**, Avon Community School Corporation, Avon, Indiana

### SUPPORTING TEACHERS IN MAKING MATHEMATICS LEARNING VISIBLE FOR ALL STUDENTS

Session 3224 | 10:00 AM–11:00 AM | 151A | Strand 3 | General

How can John Hattie’s work on Visible Learning inform mathematics instruction? How do instructional strategies with high effect size align with effective teaching practices from *Principles to Actions*? How can we support teachers using these important works together to improve classroom instruction to achieve student success? Let’s consider these questions by examining teacher clarity and the levels of understanding to plan and execute mathematics instruction that supports success for all students.

**Linda Gojak**, Mathematics Consultant, Willowick, Ohio



### ACCENTUATING FORMATIVE ASSESSMENT: AN ESSENTIAL COMPONENT FOR SYSTEM-WIDE EQUITABLE STUDENT OUTCOMES

Session 3225 | 10:00 AM–11:00 AM | 151B | Strand 1 | PK–2, 3–5, 6–8, 9–12, College, General

Session participants will explore and then consider ways to leverage the essential role of formative assessment that is embedded, but not always visible, within powerful equity-based instructional frameworks such as, culturally responsive pedagogy, mathematical tasks framework, classroom discourse, learning progressions, and others to improve student achievement system-wide. Session content is based on NCSM/AMTE Joint Task Force on Formative Assessment projects and findings and offers models for professional learning programs with sample tasks, vignettes, and videos.

**Valerie L. Mills**, Oakland Schools, Waterford, Michigan

**Wanda Audric**, Executive Director–Mathematics Programs, Stone Mountain, Georgia

**Marjorie Petit**, Marge Petit Consulting, Moretown, Vermont

**Marilyn Strutchens**, Auburn University, Auburn, Alabama

**Edward A. Silver**, University of Michigan, Ann Arbor, Michigan

**Megan Burton**, Auburn University, Auburn, Alabama

### APPLYING SYSTEMS THINKING TO PRACTICE: HOW TO SUCCESSFULLY BUILD AND CONNECT EFFORTS ACROSS A DISTRICT

Session 3226 | 10:00 AM–11:00 AM | 152A | Strand 5 | General

Participants will explore an open-source interactive software tool designed for mathematics district administrators to inform decision-making processes and discussions across a district. Participants will use the tool to investigate the roles of key players and their complex dynamics that impact mathematics interventions and implementation of different practices. Participants will leave with insights on ways to reconsider improvements/changes in their own districts by better understanding the interactions needed to successfully scale or refine practices. Laptops recommended.

**Pamela Paek**, Pamela Paek, West Lake Hills, Texas

### USING INSTRUCTIONAL MATERIALS REVIEWS IN MATHEMATICS COACHING

Session 3227 | 10:00 AM–11:00 AM | 152B | Strand 2 | PK–2, 3–5, 6–8, 9–12

This session will introduce mathematics coaches to the EdReports.org Quality Instructional Materials Tool and reviews. Participants will learn to navigate free, online reviews that provide information on the alignment and usability of yearlong materials. Participants will also explore individual indicators and the unique lens that they provide when thinking about materials, lessons, and coaching.

**Stephanie Fisher**, EdReports.org, Durham, North Carolina

**Dana Cartier**, EdReports.org, Durham, North Carolina



## WEDNESDAY SESSIONS



### WHO IS DOING THE WORK?

Session 3231 | 10:00 AM–11:00 AM | 143A | Strand 2 | 3–5

This workshop focuses on strategies that coaches can share with teachers to transfer the work of learning onto students. Strategies such as asking meaningful questions, listening to and deepening students' conversations, and monitoring student work will be shared. We will explore the meaning of effective effort and how teachers can use its characteristics to help students establish learning goals. Join us as we focus on active student engagement using tasks from grades 3–5.

**Kit Norris**, Consultant, Hudson, Massachusetts

**Sarah Schuhl**, Solution Tree, Gresham, Oregon

### SUMMER MATH CAMP: USING A GROWTH MINDSET FRAMEWORK TO INSPIRE STUDENTS TO EMBRACE RIGOROUS MATHEMATICS CONTENT

Session 3232 | 10:00 AM–11:00 AM | 143B | Strand 3 | 3–5, 6–8

Students who attend the UChicago STEM Education Summer Math Camp work to develop a growth mindset through open-ended, creative, rigorous mathematics lessons. During this session we will highlight our summer camp philosophy, the logistics involved in staging the two-week camp, and data that supports the benefits and successes of our model. Participants will explore lessons, view video of camp sessions, and read reflections from students, teachers, and parents about their camp experiences.

**Rachel Muren**, UChicago STEM Education, Chicago, Illinois

**Kathryn Flores**, UChicago STEM Education, Chicago, Illinois

**Denise Porter**, UChicago STEM Education, Chicago, Illinois

**Ellen Dairyko**, UChicago STEM Education, Chicago, Illinois

### RESEARCH-BASED LEARNING TRAJECTORIES: WHAT ARE THEY AND HOW CAN I USE THEM?

Session 3233 | 10:00 AM–11:00 AM | 143C | Strand 4 | PK–2

A student has gaps in their learning, what do you do? We will investigate a research-based learning trajectory and discuss how to use it to target instruction to move a student forward. In this session, we will focus on the learning trajectory for comparing, connections to the CCSS, and instructional assessment implications.

**Michelle Douglas-Meyer**, UW-Milwaukee, Milwaukee, Wisconsin

**Melissa Hedges**, UW-Milwaukee, Milwaukee, Wisconsin

### LEVERAGING TECHNOLOGY TO ENHANCE PROFESSIONAL LEARNING: THE NCSM PROFESSIONAL LEARNING APP AND THE DIGITAL TOOLS FOR FORMATIVE ASSESSMENT MODULE

Session 3234 | 10:00 AM–11:00 AM | 144A | Strand 5 | General

The NCSM Professional Learning app moves professional learning experiences flexibly and powerfully into today's digital landscape. It allows leaders to analyze readiness, collaboratively learn, share, and make action plans. Come explore the Formative Assessment Using Technology module, designed to support the decision making and implementation processes of digital formative assessment tools.

**Marc Garneau**, NCSM Canada Regional Director, Surrey, British Columbia, Canada

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

### USING LEARNING TRAJECTORY RESULTS TO IMPROVE TEACHER NOTICING AND CLASSROOM DISCOURSE

Session 3235 | 10:00 AM–11:00 AM | 144B | Strand 4 | 6–8

Learning trajectories have the potential to improve instruction through meaningfully scaffolded classroom discussions that value the contributions of all students. The biggest challenge is developing teacher capacity for understanding mathematics content through the lens of learning trajectories. We demonstrate how a learning map based on 62 learning trajectories for middle school mathematics was used in diverse middle schools to address this challenge and improve learning gains.

**William McGowan**, North Carolina State University, Raleigh, North Carolina

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

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

**Meetal Shah**, North Carolina State University, Raleigh, North Carolina

### PAIRING CONTENT-FOCUSED COACHING WITH PROFESSIONAL DEVELOPMENT: MORE THAN TWICE THE LEARNING?

Session 3236 | 10:00 AM–11:00 AM | 144C | Strand 2 | PK–2, 3–5

Is your professional development (PD) program effective in changing teachers' knowledge and skills? Yes? But what about their classroom practices? Not so much? To address this issue, we paired content-focused coaching with a research-based PD model designed for implementing a state-funded Mathematics and Science Partnership (MSP) grant. Want to find out more about it? We will share methods and activities from our PD and our coaching cycles, as well as data and results!

**Corinne Murawski**, Allegheny Intermediate Unit, Homestead, Pennsylvania

**Michele Burgess**, Allegheny Intermediate Unit, Homestead, Pennsylvania

**Michael Fierle**, Math & Science Collaborative, Pittsburgh, Pennsylvania





# WEDNESDAY SESSIONS

11:15 AM–12:15 PM

## MAJOR PRESENTATION

### AN INTRODUCTION TO EQUITY LITERACY FOR MATHEMATICS EDUCATORS

Session 3301 | 11:15 AM–12:15 PM | Salon G/H | Strand 1 | General  
Despite the popular notion that mathematics classrooms are culture-free and safe from the sorts of biases and inequities that crop up in other subject areas, a closer look reveals a variety of equity concerns to which mathematics educators should attend. In this workshop, based on the equity literacy framework (strengthening educators' literacy related to equity), we will explore those concerns, including matters of curriculum, pedagogy, student engagement, and classroom climate.



**Paul Gorski**, George Mason University, Fairfax, Virginia

**President**, Kimberly Morrow-Leong, NCSM 1st Vice President and Program Chair, Fairfax, Virginia

Paul Gorski is the founder of the Equity Literacy Institute ([equityliteracy.org](http://equityliteracy.org)) and EdChange ([edchange.org](http://edchange.org)). For the past 20 years he has worked with educators at all levels to strengthen their understandings of educational equity and justice. He has written, co-written, or co-edited 10 books and more than 60 articles related to racism, poverty, and other equity concerns in schools. His books include *Reaching and Teaching Students in Poverty: Strategies for Erasing the Opportunity Gap* and *Case Studies on Diversity and Social Justice Education* (with Seema Pothini).

## SPOTLIGHT SPEAKER

### YOURS MINE AND OURS: KNOWING YOUR VOICE OF WISDOM!

Session 3302 | 11:15 AM–12:15 PM | Salon I | Strand 5 | General  
What is in your mathematics wisdom bucket? When you speak, why should we listen? When you teach, why should we follow? In this engaging and inspiring session we explore the academic nature of our mathematics profession, the heartprint essentials for creating magnified impact in the next decade, and the professional role served by gaining wisdom necessary to erase existing and future inequities to student learning. Whose children are these? They are Yours, Mine, and Ours!

**Timothy Kanold**, Loyola University, Chicago, Illinois

**President**, Pat Baltzley, Professional Learning Co-Director, Gardiner, Montana

### SNAPSHOTS OF THE FUTURE: VITAL MATHEMATICS FOR A CHANGING WORLD

Session 3311 | 11:15 AM–12:15 PM | 145A | Strand 5 | 6–8, 9–12, General  
Research demonstrates that students learn most effectively when learning takes place in authentic real-world contexts (Bransford, Brown, & Cocking, 1999). This interactive presentation provides a futuristic vision, design principles, and real-life snapshots of coherently designed global mathematics investigations that engage students and accelerate learning. The session will address differentiation for diverse learners and effective use of technology, from mathematics simulations to content creation tools to platforms for personalized and collaborative knowledge building.

**Tamar Posner**, MathAction, Oakland, California

### COACHING TEAMS AND TEACHERS: THE POWER OF INSTRUCTIONAL FEEDBACK

Session 3313 | 11:15 AM–12:15 PM | 146A | Strand 2 | 6–8, 9–12  
How can coaches work simultaneously with both collaborative teams and individual teachers to strengthen instructional practices? What feedback most impacts practice? We will examine coaching strategies to make student thinking visible, promote critical thinking, and build a student-centered classroom. Explore the use of instructional rounds to build collective instructional capacity. Reflect on best practices to engage each and every teacher to learn from one another, facilitate team growth, and ensure equity for every learner.

**Sarah Schuhl**, Math Coach and Author, Gresham, Oregon

**Mona Toncheff**, AMP Project Manager, Phoenix, Arizona

### CHALLENGING ADVANCED LEARNERS TO THINKING, FAST AND SLOW

Session 3314 | 11:15 AM–12:15 PM | 146B | Strand 2 | General  
The decision to meet the needs of students who learn mathematics more quickly is often to challenge them by providing advanced material from the next grade level. This practice becomes problematic in the following year when students experience much of their classwork as review. Another approach is to enrich horizontally instead of vertically, and the work of economist Daniel Kahneman (*Thinking, Fast and Slow*, 2011) offers a helpful framework for coaches to share with teachers.

**Anne Nesbitt**, Westport Public Schools, Westport, Connecticut



# WEDNESDAY SESSIONS



## PRESIDENTS EXCHANGE—ASA

### STATISTICS AND THE SCHOOL LEVEL K-12: THE STATISTICAL EDUCATION OF TEACHERS

Session 3316 | 11:15 AM–12:15 PM | 147A | Strand 4 | General

This presentation will provide an overview of the American Statistical Association's efforts to support K–12 statistics education including a brief history of statistics at K–12 in the U.S. and internationally, the knowledge and preparation needed by the future and current K–12 teachers who will be teaching statistics standards, the mathematical practices through a statistical lens, and the desired assessment of statistics at K–12 on the high stakes national tests will be explored.

**Christine Franklin**, American Statistical Association, Alexandria, Virginia

### DEVELOPING TEACHER KNOWLEDGE ABOUT STANDARDS FOR MATHEMATICAL PRACTICE THAT ARE CHALLENGING TO UNDERSTAND

Session 3317 | 11:15 AM–12:15 PM | 147B | Strand 4 | 6–8, 9–12

Learn about the nuances of specific Standards for Mathematical Practice (SMP) that are most challenging for teachers to understand and implement with students. Experience and discuss professional development (PD) activities that can support development of this knowledge for teachers. We will share grades 5–10 PD resources from several NSF-funded research and development projects that include freely available videos, mathematics tasks, and student dialogues that target these critical SMP for teachers and students.

**June Mark**, Education Development Center, Waltham, Massachusetts

**Johannah Nikula**, Education Development Center, Waltham, Massachusetts

**Deborah Spencer**, Education Development Center, Waltham, Massachusetts

## SPONSOR SHOWCASE

### THE FUTURE OF ELEMENTARY MATHEMATICS EDUCATION

Session 3321 | 11:15 AM–12:15 PM | 149AB | Strand 5 | PK–2, 3–5

We want to hear from you! Leading Mathematics into the Future: Inspiring Monumental Change is the theme of this year's conference. The landscape of mathematical instruction is continually evolving. As the national leaders of mathematics in education, what does the future of mathematics look like for your district and the nation? Come discuss with your peers about what leading mathematics into the future looks like—the challenges, successes, myths, and realities.

**McGraw-Hill Education School Group**, McGraw-Hill Education, Columbus, Ohio

### TRACKING AND EQUITY IN MATHEMATICS EDUCATION

Session 3323 | 11:15 AM–12:15 PM | 150B | Strand 1 | General

Who needs to take Algebra II, and why? And if algebra isn't for everyone, who decides who it's for? How much "differentiation" can there be in classrooms before you no longer have standards anymore? In this talk, we'll consider several ways in which district leaders who prize equity can approach tracking and individualization in school mathematics.

**Jason Zimba**, Student Achievement Partners, New York, New York

### ENGAGING PARENTS IN MATHEMATICAL SHIFTS: COLLABORATION BETWEEN COACHES, TEACHERS, AND PARENTS USING SOCIAL MEDIA, TECHNOLOGY, AND COMMUNITY OUTREACH

Session 3324 | 11:15 AM–12:15 PM | 151A | Strand 3 | General

In this session, participants will explore the importance of including parents in mathematical shifts. Coaches and teachers have been collaborating and making pedagogical shifts in teaching practices, but to best support students' understanding, parents also need to be aware of these changes. Social media, technology, and community events can be used to further spread the message to all stakeholders in our students' education, having a positive effect on everyone who is involved.

**Renee Charette**, Maine Math and Science Alliance, Augusta, Maine

### MATHEMATICAL PRACTICES IN THE CLASSROOM: WHAT STUDENTS DO AND WHAT TEACHERS DO TO MAKE IT HAPPEN

Session 3325 | 11:15 AM–12:15 PM | 151B | Strand 4 | PK–2, 3–5

Using video footage, we will examine how the Standards for Mathematical Practice (SMP) are enacted. We will look closely at the students' reasoning and how they engage with the mathematics. Then we will analyze teacher moves that support student SMP enactment. Participants will come away with a deeper understanding of what the SMP look like, and how to support their students in making sense, persevering, and constructing arguments.

**Annie Sussman**, TERC, Cambridge, Massachusetts

**Deborah Schifter**, Education Development Center, Waltham, Massachusetts

### TEACHING MATHEMATICS FOR SOCIAL JUSTICE DEVELOPS STUDENT PROBLEM SOLVERS AND NOT JUST RULE FOLLOWERS

Session 3326 | 11:15 AM–12:15 PM | 152A | Strand | PK–2, 3–5, 6–8

Gone are the days of teachers telling students, "You won't always have a calculator with you." Thus, the need to reinvent the classrooms that are not solely focused on developing "rule followers," but focused on developing problem solvers. Problem solvers with the ability to not only solve computations and create the next technological innovation. But, problem solvers who have the ability to make purposeful social impact in their communities and beyond using mathematics as a springboard.

**Kristopher Childs**, Texas Tech University, Lubbock, Texas





## WEDNESDAY SESSIONS

### EQUITY VS. EQUALITY IN THE ARTICULATION PROCESS

Session 3327 | 11:15 AM–12:15 PM | 152B | Strand 1 | 6–8, 9–12  
Each year teachers discuss and make decisions surrounding student placement, often determining a student’s trajectory for the rest of their mathematics career. These decisions could result in an inequity of mathematical opportunities for students. This session will assist mathematics content leaders in reflecting on and engaging with tools to aide school staff in meaningful and data-driven decisions surrounding articulation practices. Presenters will share processes to address systemic challenges such as access, tracking, and deficit thinking.

**Damitra Newsome**, Howard County Public School System, Ellicott City, Maryland

**Anne Metzbower**, Howard County Public School System, Ellicott City, Maryland

**Robin White**, Howard County Public School System, Ellicott City, Maryland

### MEANINGFUL DISCUSSIONS AS A TOOL TO DEVELOP DEEP MATHEMATICAL UNDERSTANDINGS

Session 3331 | 11:15 AM–12:15 PM | 143A | Strand 4 | PK–2, 3–5  
Do you work with teachers that engage students in mathematical discussions? Want to ensure students make progress toward learning goals? This session will use student work and explore ways to select and sequence student strategies and pose purposeful questions to develop key mathematical ideas. Leave with knowledge and resources you can implement in your work tomorrow!

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

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

### FROM FAIR SHARE TO NON-UNIT FRACTIONS: USING VERTICAL ARTICULATION TO UNPACK LEARNING TRAJECTORIES DURING A COACH-FACILITATED LESSON STUDY

Session 3332 | 11:15 AM–12:15 PM | 143B | Strand 3 | PK–2, 3–5, 6–8  
This session will describe professional development routines used during a content-focused institute and lesson study to develop teachers’ and coaches’ understandings of rational number learning trajectories. Discussions will center on one coach’s use of anticipated learning progressions to orchestrate analysis of multiple representations of student work across grade levels. The integration of school-based coaching and a rich task specifically adapted for research lessons in both kindergarten and fourth grade deepened teacher understandings of learning trajectories.

**Terrie Galanti**, George Mason University, Fairfax, Virginia

**Jennifer Suh**, George Mason University, Fairfax, Virginia

**Sara Birkhead**, George Mason University, Fairfax, Virginia

**Rachelle Farmer**, Fairfax County Public Schools, Fort Belvoir, Virginia

**Padmanabhan Seshaiyer**, George Mason University, Fairfax, Virginia

### INTEGRATING CHILDREN’S LITERATURE AND STEM ACTIVITIES FOR GRADES PK–5

Session 3333 | 11:15 AM–12:15 PM | 143C | Strand 3 | PK–2, 3–5  
Are your elementary teachers more comfortable with teaching reading than teaching mathematics? If so, come learn how we have begun to use children’s literature to launch into STEM activities which are aligned to the CCSSM as well as the Next Generation Science Standards. Come see what we have already developed and begin the process of creating your own.

**Michele Burgess**, Allegheny Intermediate Unit, Homestead, Pennsylvania

**Corinne Murawski**, Allegheny Intermediate Unit, Homestead, Pennsylvania

**Michael Fierle**, Math & Science Collaborative, Pittsburgh, Pennsylvania

**Gabriela Rose**, Allegheny Intermediate Unit, Homestead, Pennsylvania





## WEDNESDAY SESSIONS



### ADDRESSING THE NEEDS OF STUDENTS WITH UNFINISHED LEARNING

Session 3334 | 11:15 AM–12:15 PM | 144A | Strand 1 | General

When students arrive in our classrooms with unfinished learning, it presents a significant challenge for educators. In this session, participants will learn about “coherent content in context”—a set of design principles that attends to gaps in prior learning while focusing on important grade level content. Participants will reflect on design principles and explore a set of free, openly-licensed curricular materials designed to support all students.

**Peter Coe**, UnboundEd, Brooklyn, New York

**Tiayana Marks**, UnboundEd, Brooklyn, New York

### USING FORMATIVE ASSESSMENT FOR STUDENT ENGAGEMENT AND PROFICIENCY

Session 3335 | 11:15 AM–12:15 PM | 144B | Strand 4 | 3–5

Educators intuitively use formative assessment in their daily instruction without formally recognizing it. How can we be sure that assessments are relevant, immediate, and impactful? Mathematics leaders can guide teachers in using a wide variety of formative assessments to engage students in self-reflection and dig deeper into the mathematics. Participants will engage in several rich, meaningful, high-quality tasks, drawn from a variety of resources, focusing on comparing and contrasting geometric shapes.

**Nita Walker**, Cal State Fullerton, Fullerton, California

**Barbara Post**, Retired, Orange, California

### THE COACH, THE NOVICE, AND THE EXPERT

Session 3336 | 11:15 AM–12:15 PM | 144C | Strand 2 | General

NCTM *Principles to Action* advocates for teachers to understand what students know and need to learn and then challenge and support them to learn it well. Coaches apply this principle to teachers. In this session, participants will explore the different philosophies of coaching and determine ways to promote the expert and train the novice.

**Barb Everhart**, ISD 197: West St. Paul-Mendota Heights-Eagan, Mendota Heights, Minnesota



## WEDNESDAY LUNCHEON

### IMAGING A FUTURE WITHOUT MATH

Session 3403 | 12:30 PM–2:00 PM | Hall A | Strand 5 | General

Imagine asking each high school graduate “What is math?” right when you hand them a diploma. Would they have coherent, accurate definitions of “math?” Would they say it’s beautiful? Unnecessary? Inspiring? Thankfully finished forever? How would students in K–5, 6–8, or 9–1 answer? It’s safe to say their collective responses would likely disappoint mathematics educators. Even though most schools and districts have an overarching Mission statement, few have a compelling, actionable Mathematics Mission that drives curriculum and inspires learners. To lead mathematics into the future, mathematics leaders need to powerfully articulate what their math program is “in business” to accomplish.



**Tim Hudson**,  
SVP of Learning,  
DreamBox,  
Bellevue,  
Washington



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





# WEDNESDAY SESSIONS

2:15 PM–3:15 PM

## MAJOR PRESENTATION

### GENDER VS. CHARACTER IN MATHEMATICS AND BEYOND

Session 3501 | 2:15 PM–3:15 PM | Salon G/H | Strand 5 | General  
I will share my experience of being a female mathematician, and teaching mathematics at all levels from elementary school to grad school. The question of why women are under-represented in mathematics is complex and there are no simple answers, only many many contributing factors. I will focus on character traits, and argue that if we focus on this rather than gender we can have a more productive and less divisive conversation. To this end, I will introduce gender-neutral character adjectives “ingressive” and “congressive” to replace masculine and feminine. I will share my experience of teaching congressive abstract mathematics to art students, in a congressive way. I will discuss the benefits of this terminology and way of thinking for everyone, not just women, in mathematics and beyond.



**Eugenia Cheng**, School of the Art Institute of Chicago, Chicago, Illinois  
**President**, Kimberly Morrow-Leong, 1st Vice President and Program Chair, Fairfax, Virginia

Eugenia Cheng is a mathematician and concert pianist. She is Scientist

In Residence at the School of the Art Institute of Chicago and won tenure at the University of Sheffield, UK. She has previously taught at the universities of Cambridge, Chicago, and Nice and holds a PhD in pure mathematics from the University of Cambridge. Alongside her research in Category Theory and undergraduate teaching, her aim is to rid the world of “math phobia.” Eugenia was an early pioneer of mathematics on YouTube and her videos have been viewed over 10 million times to date. She has also assisted with mathematics in elementary, middle and high schools for 20 years. Her first popular mathematics book “*How to Bake Pi*” was featured on the Late Show with Stephen Colbert, and “*Beyond Infinity*” was shortlisted for the Royal Society Science Book Prize 2017. She also writes the Everyday Math column for the Wall Street Journal, and recently completed her first mathematical art commission, for Hotel EMC2 in Chicago. She is the founder of the Liederstube, an intimate oasis for art song based in Chicago. Her next book, “*The Art of Logic in an Illogical World*” is due out in 2018.

## SPOTLIGHT SPEAKER

### LEADERSHIP AS A SUBVERSIVE ACTIVITY

Session 3502 | 2:15 PM–3:15 PM | Salon I | Strand 5 | General  
Whether supporting teachers, subtly shifting the system, or shaking things up, leaders function on many levels and from many roles. By understanding the change process and taking an occasional—strategic—risk, every leader can help teachers and foster lasting change that makes a true difference for teachers and, especially, for every one of their students.

**Cathy Seeley**, Speaker, Author, Consultant, Austin, Texas  
**President**, Sharon Rendon, NCSM C2 Regional Director, Summerset, South Dakota

### RALLY YOUR REGION: THE POWER IN COLLABORATING WITH NEIGHBORING DIVISIONS

Session 3511 | 2:15 PM–3:15 PM | 145A | Strand 3 | PK–2, 3–5, 6–8, 9–12  
Regional collaboration is a powerful form of professional development and a way to lessen the workload when divisions have common goals and projects. Hear how several divisions in the metro Richmond area worked together to unpack standards and develop a repository of resources and activities. Explore ways to embark on regional collaboration in your area and learn what the benefits are for you and your team of mathematics coaches or teachers.

**Vickie Bohidar**, Henrico County Public Schools, Henrico, Virginia

**Deanna Moreau**, Chesterfield County Public Schools, Midlothian, Virginia

**Skip Tyler**, Henrico County Public Schools, Richmond, Virginia

**Cathy Blair**, Powhatan County Public Schools, Powhatan, Virginia

### MODELING THE 5 PRACTICES FOR EQUITABLE CLASSROOM DISCOURSE: EXPERIENCE TO ACTION

Session 3512 | 2:15 PM–3:15 PM | 145B | Strand 4 | 6–8, 9–12, College  
We will engage teams in an experience that models Stein and Smith’s 5 Practices for Orchestrating Productive Mathematics Discussion. Teams will first play the role as students engaged in a task. Once they have seen it modeled, teams will participate in trying to model the 5 practices by role playing with a rich mathematics task with provided student work.

**Kathryn Ernie**, University of Wisconsin–River Falls, River Falls, Wisconsin

**Erick Hofacker**, University of Wisconsin–River Falls, River Falls, Wisconsin



## WEDNESDAY SESSIONS



### LEADING THE LEARNING: TRANSFORMING THE TEACHING OF MATHEMATICS THROUGH BOOK STUDY

Session 3513 | 2:15 PM–3:15 PM | 146A | Strand 2 | PK–2, 3–5

Our teaching of mathematics is enhanced when we have opportunities to gain insights from research, discuss our instructional approaches, test new ideas, and reflect on our practice. How can a mathematics coach lead this learning? Join us to explore the power of professional book study. Discover practical tips and helpful resources for leading highly-effective book study including key questions to ask, ideas for engaging all participants, suggested literature, and tips for gathering feedback.

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

### EXAMINING THE MODELING PROCESS, MODEL WITH MATHEMATICS, AND APPLICATION TO ENHANCE MATHEMATICAL KNOWLEDGE FOR TEACHING

Session 3516 | 2:15 PM–3:15 PM | 147A | Strand 4 | General

What are the similarities and differences between the Modeling Process, Model with Mathematics, and Application? How are these three ideas presented in instructional materials for teachers and students, and how do the instructional materials support teachers and students when engaging with them? The answers to these questions will be explored through the Quality Instructional Materials Review Tools, evidence guides, and K–12 reports from EdReports.org in order to enhance participants' mathematical knowledge for teaching.

**Tim Truitt**, EdReports.org, Durham, North Carolina

### EMPOWERING STUDENTS AND TEACHERS THROUGH CROSS-CURRICULAR COMMUNICATION AND ALIGNMENT

Session 3517 | 2:15 PM–3:15 PM | 147B | Strand 3 | 6–8, 9–12

Improve conceptual understanding and modeling behaviors by developing cross-curricular mathematics-science communication and alignment. Identify common ironies among common mathematics and science learning trajectories and discuss effective options for improvement. Explore ways to implement and assess true STEM projects where scientific applications are supported with algebraic foundations. Help students attain higher levels of synthesis among mathematics, science, and technology by incorporating 21st century publishing.

**Peg Hartwig**, Discovery Education, Silver Spring, Maryland

### SPONSOR SHOWCASE

### FOCUS INSTRUCTION USING RICH TASKS TO TEACH, ENGAGE, AND DEVELOP MATHEMATICAL THINKING

Session 3521 | 2:15 PM–3:15 PM | 149AB | Strand 3 | PK–2, 3–5

How can we help teachers to engage students from the very beginning of a lesson? Let's look at some examples of rich tasks and how to implement them so that students are learning important mathematics and becoming better problem solvers. What does this look like in the classroom? How can a mathematics program support this work?

**Linda Gojak**, Mathematics Consultant, Willowick, Ohio

### DEVELOPING COMPUTATIONAL FLUENCY: A COGNITIVELY GUIDED INSTRUCTION PERSPECTIVE

Session 3522 | 2:15 PM–3:15 PM | 150A | Strand 1 | PK–2, 3–5

It's time to stop thinking of concepts and skills as separate domains. In this talk, we describe how elementary school students in Cognitively Guided Instruction classrooms develop computational fluency by learning computation skills in conjunction with developing an understanding of how operations work. Integrating skills and concepts enhances students' learning of grade level standards while also providing a foundation for success in later mathematics.

**Linda Levi**, Teachers Development Group, Madison, Wisconsin

**Linda Jaslow**, Northwest Arkansas Education Services Cooperative, Farmington, Arkansas

### ACTIVATING THE VISION FOR MATHEMATICS ASSESSMENTS: HOW DO WE ENSURE EQUITY WHEN GATHERING AND USING EVIDENCE OF STUDENT LEARNING?

Session 3523 | 2:15 PM–3:15 PM | 150B | Strand 1 | 6–8, 9–12

Highly effective mathematics programs have a clear purpose for how to use assessments as a feedback and action process for both students and teachers. What mathematical leadership actions are necessary to close the gap between the intended vision of high-quality assessment practices and the implemented practices from teacher-to-teacher or student-to-student? This session will explore capacity building strategies to effectively monitor and support a strong vision for assessment as a process for both students and teachers.

**Bill Barnes**, NCSM 2nd Vice President and Volunteer Coordinator

**Mona Toncheff**, NCSM Marketing and eNews Editor, Phoenix, Arizona





## WEDNESDAY SESSIONS

### DEVELOPING AN EFFECTIVE STANDARDS BASED GRADING (SBG) MODEL TO SUPPORT LEARNING OF MATHEMATICS

Session 3524 | 2:15 PM–3:15 PM | 151A | Strand | 6–8, 9–12

What does a “B” or 87.6% convey? How can feedback be provided more effectively to support students’ continued persistence in learning and adoption of a growth mindset in learning mathematics? This session shares our district’s journey in developing a proficiency-based feedback and assessment system to support students’ and teachers’ work in helping all students develop as self-reliant and reflective learners. Can standards based-grading and reporting support learning in mathematics classes? Come explore with us.

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

**Tina Nocella**, Adlai E. Stevenson High School, Lincolnshire, Illinois

### BEYOND “GOOD TEACHING IS GOOD TEACHING”—INTEGRATING NEURODIVERSITY INTO STANDARDS-BASED MATHEMATICS PEDAGOGY FOR STUDENTS WITH DISABILITIES

Session 3525 | 2:15 PM–3:15 PM | 151B | Strand 1 | General

Mathematics education is moving beyond deficit-based assumptions about students with disabilities, yet many still assume that “good teaching is good teaching”—simply including students with disabilities in standards-based mathematics is enough. Using neurodiversity, a theory developed by self-advocates with autism, we will explore strengths and challenges of students with disabilities learning standards-based mathematics. The presentation will include research on the perspectives of students with dyslexia and autism on learning mathematics, and includes activities for teachers.

**Rachel Lambert**, Chapman University, Orange, California

### EMBRACING THE TEMPORARY FOR PERMANENT IMPACT

Session 3526 | 2:15 PM–3:15 PM | 152A | Strand 5 | General

Educators constantly discuss how to engage their students, yet students constantly discuss what engages them. Fads and crazes like bottle flipping, fidget spinners, slime, and dabbing all captivate our students; yet schools immediately see them as a disciplinary issue and ban them from the classroom. School leaders can change this. School leaders can model how to take what is relevant to students right now and turn it into a teaching tool while kids still care.

**Denis Sheeran**, Weehawken Township Public Schools, Weehawken, New Jersey

### HOW HIGH-QUALITY CURRICULUM SUPPORTS MATHEMATICAL KNOWLEDGE FOR TEACHING

Session 3527 | 2:15 PM–3:15 PM | 152B | Strand 4 | 6–8

Teaching is a full-time job, and writing curriculum requires specialized knowledge—only in the U.S. do we expect teachers to also write curriculum. We will discuss the difference between mathematical knowledge for teaching (MKT) and mathematical knowledge for curriculum writing. We will show how expertly written curriculum materials can support teachers’ development of MKT and fill gaps in teachers’ MKT, and illustrate with examples from the Illustrative Mathematics open education resource middle school mathematics curriculum.

**Kristin Umland**, Illustrative Mathematics, Oro Valley, Arizona

**Paul Conley**, Open Up Resources, Menlo Park, California

### BUILDING REASONING THROUGH ARRAYS FROM KINDERGARTEN TO HIGH SCHOOL

Session 3531 | 2:15 PM–3:15 PM | 143A | Strand 4 | General

Can you and your teachers recognize and build from students’ earliest experiences with arrays? Where are students coming from? Where are they going? We will explore a range of tasks utilizing arrays at different conceptual levels; from 10 frames to polynomial multiplication and beyond. Explore the vertical pathway students experience through their school career.

**Janet Tomlinson**, Carnegie Learning, Pittsburgh, Pennsylvania

**Stephanie Doran**, Discovery School, Jacksonville Beach, Florida

### SUPPORTING STUDENTS WITH UNFINISHED LEARNING IN MIDDLE SCHOOL: THE CASE FOR COHERENT CONTENT IN CONTEXT

Session 3532 | 2:15 PM–3:15 PM | 143B | Strand 3 | 6–8, General

Participants will explore the lessons learned from the implementation of a grade 7 open educational resource curriculum designed with Coherent Content in Context principles. Participants review curriculum samples along with implementation outcomes and insights from early pilot studies while considering implications for instruction.

**Luis Lima**, UnboundEd, Brooklyn, New York

**Stephen Sebelski**, UnboundEd, Brooklyn, New York

### EYES ON LEARNING: FOCUSED MATHEMATICS COACHING WITH THE INSTRUCTIONAL PRACTICES INVENTORY

Session 3533 | 2:15 PM–3:15 PM | 143C | Strand 2 | General

Implementation of research-based instructional practice requires teachers to develop “new eyes” for looking at how students engage with mathematical ideas. This session introduces the Instructional Practices Inventory—a free resource—and shows how this tool can focus coaching partnerships.

**Mary Mitchell**, Math Solutions, Sausalito, California

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





## WEDNESDAY SESSIONS



### INTENSIFICATION AS A TOOL FOR EQUITY: ENSURING UNDERPREPARED STUDENTS ACHIEVE THEIR ALGEBRA I CREDIT IN A SINGLE YEAR

Session 3535 | 2:15 PM–3:15 PM | 144B | Strand 1 | 9–12

Current practices to serve students who enter Algebra I underprepared are rarely successful, putting these students at risk of falling farther behind their peers and impacting their life choices. These students need a different approach that addresses learning gaps while keeping them “on track” to complete mathematics requirements “on time.” Come learn about a comprehensive approach to help these students succeed, incorporating strategies informed by literacy, social psychology, and special education research.

**Anne Joyoprayitno**, Charles A. Dana Center, The University of Texas, Austin, Texas

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

### SEEING THE SYSTEM: CONTINUOUS IMPROVEMENT COACHING TO IMPROVE PRINCIPALS’ FEEDBACK TO TEACHERS

Session 3536 | 2:15 PM–3:15 PM | 144C | Strand 5 | General

This presentation focuses on an effort to improve the capacity of district mathematics specialists to engage in continuous improvement and the capacity of principals to provide frequent, high-quality teacher feedback. We share learning and invite discussion about coaching activities provided for district educators, tools and processes used to better understand principals’ feedback processes, and testing cycles that have resulted in educators’ increased understanding of the need for principals’ scheduling of teacher observations and feedback.

**Eric Frandsen**, Oceanside Unified School District, Oceanside, California

**Jonathan Dolle**, WestEd, San Francisco, California

**Casey Doose**, Oceanside Unified School District, Oceanside, California

**Rebecca Perry**, WestEd, San Francisco, California

3:30 PM–4:30 PM

#### SPOTLIGHT PRESENTATION

### NCSM: A MUSICAL TRIBUTE

Session 3615 | 3:30 PM–4:30 PM | 146BC | General

#### Featuring the NCSM Choir

Celebrate 50 years of service to the mathematics education community. Honor our leaders, recognize our achievements, and join us in song!

**Carole Greenes**, Arizona State University, Tempe, Arizona

**President**, Connie Schrock, NCSM President, Emporia, Kansas

### PRINCIPLES FOR PRINCIPALS: DEVELOPING ADMINISTRATOR UNDERSTANDING OF MATHEMATICS TEACHING PRACTICES

Session 3622 | 3:30 PM–4:30 PM | 150A | Strand 3 | General

Administrators are critical stakeholders to support effective mathematics instruction. As mathematics leaders, we must engage administrators in experiences to support their understanding of the teaching practices (*Principles to Actions*, 2014) in order to support the formal observation process and critical feedback provided to teachers. Participants will explore and gain access to professional learning resources to support administrator understanding of the teaching practices and connections to teacher evaluation frameworks.

**Jenny Novak**, Delaware Department of Education, Dover, Delaware

**Jamila Riser**, Delaware Mathematics Coalition, Dover, Delaware

**Tara Faircloth**, Caesar Rodney School District, Camden, Delaware

### CREATING A COMMON VISION OF CCR STANDARDS-ALIGNED INSTRUCTION USING THE INSTRUCTIONAL PRACTICE GUIDE (IPG): COACHING TOOL

Session 3623 | 3:30 PM–4:30 PM | 150B | Strand | PK–2, 3–5, 6–8, 9–12

Participants will dive into the Instructional Practice Guide: Coaching Tool to learn how a mathematics leader can develop a common vision of aligned mathematics instruction that leads to all students’ success with college- and career-ready standards. Participants will gain a working knowledge of the IPG, practice giving feedback for growth through the use of classroom video, and learn how educators across the nation have used the IPG to lead instructional improvement in their mathematics programs.

**Jennie Beltrami**, Student Achievement Partners, New York, New York

**Brian Dean**, Instruction Partners, Nashville, Tennessee





## WEDNESDAY SESSIONS

### IS IT TOO MUCH TOO SOON? DEVELOPING YOUNG CHILDREN'S COMMUNICATION AND REPRESENTATION AROUND BIG MATHEMATICAL IDEAS

Session 3624 | 3:30 PM–4:30 PM | 151A | Strand 4 | PK–2

Heightened focus on academic content in early childhood is highly contested among stakeholders. Despite limited longitudinal evidence on positive and negative outcomes, mathematics education leaders support schools' and teachers' implementation of higher academic expectations. How can educators create meaningful opportunities for young children to explore mathematical ideas? What communication strategies do young learners use when problem solving? We will examine classroom video and student work to explore teaching moves that advance children's communication and representation.

**Stephanie Vega**, University of Nevada, Reno, Reno, Nevada

**Heather Crawford-Ferre**, State of Nevada, Department of Education, Carson City, Nevada

### THE STATUS QUO IN HIGH SCHOOL MATHEMATICS IS UNACCEPTABLE

Session 3626 | 3:30 PM–4:30 PM | 152A | Strand 5 | 9–2

For far too long high school mathematics has not worked for far too many students. Far too many students are unsuccessful in mathematics courses and our courses do not build the mathematical skills needed for many jobs and for informed citizenship for non-STEM majors. This session will examine the research, discuss alternate pathways and courses for high school mathematics, and engage all in a conversation of such.

**Eric Milou**, Rowan University, Glassboro, New Jersey

### WE CAN'T DO IT WITHOUT YOU! THE ROLE OF ADMINISTRATORS IN PROMOTING AND SUPPORTING CHANGES IN MATHEMATICS INSTRUCTION

Session 3627 | 3:30 PM–4:30 PM | 152B | Strand 2 | PK–2

Principals are instrumental in promoting and sustaining shifts in mathematics instruction at their school. In this session we will explore how our leadership academies help principals develop strategies for providing effective leadership, master tools for creating high performance professional learning communities at their school, and understand the relationship between, content, coaching, and collaboration that effectively change practice.

**Rebeca Itzkowich**, Early Math Collaborative, Chicago, Illinois

**Donna Johnson**, Erikson Institute, Chicago, Illinois

### ALGEBRAIC THINKING THROUGH VISUAL REPRESENTATIONS

Session 3631 | 3:30 PM–4:30 PM | 143A | Strand 4 | 3–5, 6–8, 9–12, College

We will explore how we use manipulatives and models to assist our students in developing their algebraic thinking. We will focus on areas such as writing expressions, creating equations, and solving equations (including systems) through a conceptual and visual manner before focusing on algorithms and symbolic manipulation. Algebraic ideas will be explored starting in the elementary level and progress through the middle and high school levels.

**Ashlee LeGear**, University of Wisconsin–River Falls, River Falls, Wisconsin

**Erick Hofacker**, University of Wisconsin–River Falls, River Falls, Wisconsin

### WHAT WE CAN LEARN (AND USE) FROM VIDEO GAME DESIGNERS TO MAKE MATHEMATICS IRRESISTIBLE

Session 3632 | 3:30 PM–4:30 PM | 143B | Strand 4 | 6–8

Video game designers have discovered exactly how to encourage productive struggle. Learn five key design principles that you can use immediately to make mathematics irresistible. Participate in interactive activities where you will see exactly how to apply these principles to promote growth mindset, spark curiosity, and create a culture of perseverance.

**Raj Shah**, Math Plus Academy, Powell, Ohio

### HELPING TEACHERS FEEL SUPPORTED BY SHIFTING THE CULTURE AND MATHEMATICAL MINDSET OF PARENTS

Session 3633 | 3:30 PM–4:30 PM | 143C | Strand 5 | PK–2, 3–5, 6–8, 9–12

For years we've focused on deepening teacher content knowledge in mathematics and many educators across the nation have gradually shifted their pedagogy to promote more conceptual understanding. Parents, however, need more resources. Participants will learn how to address parental misconceptions of mathematics. As a result of this session, participants will be able to educate parents about how mathematics is taught in the elementary classroom and feel confident defending the rationale for the instructional paradigm shift.

**Matthew I. Beyranevand**, Chelmsford Public Schools, Chelmsford, Massachusetts

**Hilary Kreisberg**, Lesley University, Cambridge, Massachusetts



## WEDNESDAY SESSIONS



### **NO MORE QUICK FIX PROFESSIONAL DEVELOPMENT: DEVELOPING MATHEMATICAL EXPERTISE**

Session 3634 | 3:30 PM–4:30 PM | 144A | Strand 3 | PK–2, 3–5, General

In this session we will share our experiences using two different division-wide professional development models (Lesson Study and Elementary Math Technicians) to engage teachers in best practices for teaching mathematics. Through these models, we engaged teachers in high-level mathematics while exploring pedagogical practices that raise students' achievement. Participants will consider the challenges and successes of providing more meaningful learning opportunities for teachers in order to maximize student achievement.

**Kelly Kent-Johnson**, Newport News Public Schools, Newport News, Virginia

**Lisa Coffman**, Newport News Public Schools, Newport News, Virginia



### **PROMOTING ARGUMENTATION IN PRIMARY CLASSROOMS THROUGH TASKS AND TALK**

Session 3635 | 3:30 PM–4:30 PM | 144B | Strand 4 | PK–2

Do you work with educators who support primary students to engage in mathematical argumentation? Develop mathematics knowledge for teaching through the examination of tasks that promote argumentation. Unpack elements of tasks that lead to argumentation and modify existing tasks to elicit argumentation. Explore language necessary for students to be successful and structures to develop precise language. Leave with tools to implement tomorrow!

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

**Chepina Rumsey**, Kansas State University, Manhattan, Kansas



### **SENSE MAKING THE GATEWAY TO ACCESS, EQUITY, AND EMPOWERMENT**

Session 3636 | 3:30 PM–4:30 PM | 144C | Strand 1 | 6–8, 9–12

The participants will make sense of important mathematics, while defining access and equity for their own practice. The reflective discussions will empower the group to see how they can keep sense-making at the front of their staff.

**Michael Gould**, Math Solutions, Sausalito, California

**Lisa Bush**, Math Solutions, Sausalito, California









ABOUT NCSM

**50** NCSM  
CELEBRATING 50 YEARS  
LEADERSHIP IN MATHEMATICS EDUCATION

# REQUEST FOR SPEAKER PROPOSALS

## Making Waves

WITH EFFECTIVE MATHEMATICS LEADERSHIP



**51st NCSM Annual Conference**  
APRIL 1 - 3, 2019 SAN DIEGO, CA

### OVERVIEW

The six strands for the 2019 NCSM Annual Conference - Coaching, Equity and Social Justice, Leadership, Engagement, Experiences, and Development - continue the conversations from previous Annual Conferences. These remain important areas of interest and our continued focus on these topics allows our members to learn deeply about the issues and to use this knowledge to move to the next level in their journey through mathematics.

### VISIONARY COACHING PRACTICES

Presentations in this strand will address the latest research and reports on successful coaching practices that support the mathematical learning of teachers and their students.

### EMPOWERING EQUITY AND SOCIAL JUSTICE LEADERSHIP

Presentations in this strand will focus on equitable practices to support building-, district-, region- and state/province-level leaders that build all students' mathematical knowledge.

### ENGAGING LEADERSHIP COMMUNITIES

Presentations in this strand will focus on how communities of reflective practitioners, both school-based and district- or state/province-level, leverage the power of collaboration to improve mathematics education.

### INNOVATIVE ENGAGEMENT

Presentations in this strand will share how to engage leaders in professional learning experiences using face-to-face, blended, and fully online models.

### EXEMPLARY EXPERIENCES FROM THE FIELD

Presentations in this strand will consider the impact of assessments grounded in evidence of student thinking, action research projects, lesson study, studio teaching, coaching acts that show results, or innovative school-level programs that make a difference in students' mathematical learning.

### DEVELOPING MATHEMATICAL KNOWLEDGE FOR TEACHING

Presentations in this strand share recent research findings and explore the implications for assessment, curriculum planning, and task design.

*Bill Barnes*  
2nd Vice President and 2019 Program Chair

**SPEAKER PROPOSALS:**  
Deadline for speaker proposals: **June 4, 2018**  
Proposals must be submitted online at:  
[mathedleadership.org](http://mathedleadership.org)



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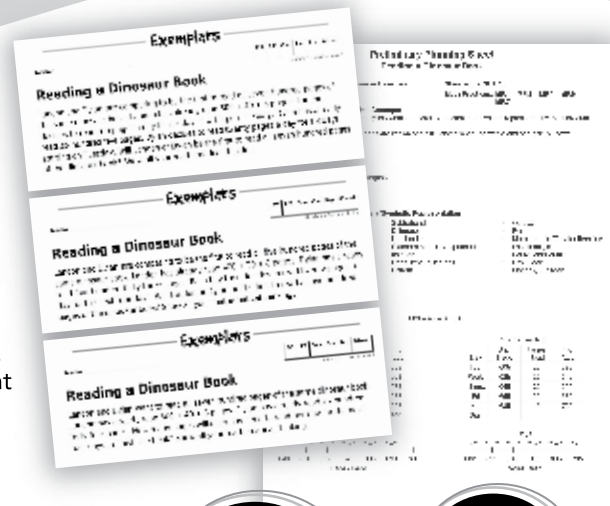


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- **Student anchor papers** and **scoring rationales** that demonstrate what it looks like to meet (and not meet) the standard.



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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.



## FIFTY YEARS OF NCSM PRESIDENTS

We honor the legacy of former Presidents and value their contribution, support, and leadership.

2015-2017 John Staley	1991-1993 Henry Kepner
2013-2015 Valerie L. Mills	1989-1991 Larry Bradsby
2011-2013 Suzanne Mitchell	1987-1989 Iris M. Carl
2009-2011 Diane J. Briars	1985-1987 David R. Johnson
2007-2009 Timothy D. Kanold	1983-1985 Sally Sloan
2005-2007 Linda M. Gojak	1981-1983 Shirley Frye
2003-2005 Kay Gilliland	1979-1981 Thomas Rowan
2001-2003 Carole Greenes	1977-1979 Dorothy Strong
1999-2001 Jerry Cummins	1975-1977 Alexander Tobin
1997-1999 Bonnie Walker	1973-1975 Arthur Frier
1995-1997 Steven Leinwand	1971-1973 Ross Taylor
1993-1995 L. Carey Bolster	1969-1971 Louis Scholl





## 2017–2018 NCSM BOARD MEMBERS

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President – Connie Schrock, Emporia, KS  
Past President – John W. Staley, Towson, MD  
1st Vice President – Kimberly Morrow-Leong, Fairfax, VA  
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Central Region 2 – Sharon Rendon, Summerset, SD  
Eastern Region 1 – Shawn Towle, Portland, ME  
Eastern Region 2 – Sue Vohrer, Cockeysville, MD  
Southern Region 1 – Deborah Crocker, Boone, NC  
Southern Region 2 – Paul D. Gray, Jr., Dallas TX  
Western Region 1 – Sandie Gilliam, Colorado Springs, CO  
Western Region 2 – Kathlan Latimer, Suisun City, CA

### APPOINTED

Affiliate Group Chair – Nanci Smith, Peoria, AZ  
Awards Chair – Irma Cruz-White, Marianna, FL  
2018 Annual Conference Coordinator – Sara Delano Moore,  
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eNEWS Editor/Communications Chair – Mona Toncheff,  
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Historian – Kathleen Rieke, Zionville, IN  
Journal Editor – Angela Barlow, Murfreesboro, TN  
Associate Journal Editor – Carolyn Briles, Leesberg, VA  
Professional Learning Co-Director – Patricia Baltzley,  
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Professional Learning Co-Director – Jackie Palmquist,  
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Newsletter Editor – Kristopher Childs, Lubbock, TX  
Newsletter Associate Editor – Karen Hyers, Oakdale, MN  
Nominations Chair – Steve Viktora, Wilmette, IL  
Position Papers Editor – Linda Fulmore, Cave Creek, AZ  
Secretary – Sara Frisbie, Topeka, KS  
Sponsor Liaison – Jim Matthews, Loudonville, NY  
Sponsor Liaison – Jenny Tsankova, Bristol, RI  
Treasurer – Linda Griffith, Quitman, AR  
Web Editor – Natalie Crist, Baltimore, MD

### 2017–2018 NCSM PROFESSIONAL SERVICES

Journal Technical Editor – Bonnie Katz  
NCSM Office – Dorothy Shadrick, Stacie Emarine, Susan  
Nolte, Sonja Hix-Cortina, BJ Kasten, Allie Colgan  
Newsletter Technical Editor – Deborah Anker, BesType  
Technology Liaison – Charlene Chausis  
Web Management – Gino Bossetto, Stellar IT Solutions

## 2018–2019 NCSM BOARD MEMBERS

### EXECUTIVE OFFICERS

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Central Region 2 – Sharon Rendon, Summerset, SD  
Eastern Region 1 – Shawn Towle, Portland, ME  
Eastern Region 2 – Sue Vohrer, Cockeysville, MD  
Southern Region 1 – Bernard Frost, Spartanburg, SC  
Southern Region 2 – Paul D. Gray, Jr., Dallas TX  
Western Region 1 – Denise Trakos, Colorado Springs, CO  
Western Region 2 – Kathlan Latimer, Suisun City, CA

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Affiliate Group Chair – Nanci Smith, Peoria, AZ  
Awards Chair – Irma Cruz-White, Marianna, FL  
2019 Annual Conference Coordinator – Sara Delano Moore,  
Kent, OH  
Marketing and eNEWS Editor – Pat Baltzley, Gardiner, MT  
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NCTM Representative – Donna Karsten, Halifax, NS, Canada  
Newsletter Editor – Sandie Gilliam, Colorado Springs, CO  
Newsletter Associate Editor – Karen Hyers, Oakdale, MN  
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Sponsor Liaison – Jeannie Toshima, South Pasadena, CA  
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Membership and Volunteer Coordinator – Jessica McIntyre,  
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Web Editor – Natalie Crist, Baltimore, MD  
2019 Local Arrangements Chair – TBD

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Susan Nolte, Sonja Hix-Cortino, BJ Kasten, Allie Colgan  
Newsletter Technical Editor – Deborah Anker, BesType  
Technology Liaison – Charlene Chausis  
Web Management – Gino Bossetto, Stellar IT Solutions





## NCSM MEMBER SERVICES

To join NCSM, renew your NCSM membership, and to register for the NCSM Annual Conference, Regional Events and Leadership Academy, contact:

NCSM Office  
PO Box 3406  
Englewood, CO 80155  
Phone: (303) 317-6595 / Fax: (303) 200-7099  
Email: [office@mathedleadership.org](mailto:office@mathedleadership.org)



## REQUEST FOR NOMINATIONS

The following positions are open for the 2019 Board:

- Second Vice President
- Regional Director, Central 1 (Illinois, Indiana, Kentucky, Michigan, Ohio)
- Regional Director, Eastern 1 (Connecticut, Maine, Massachusetts, Military AE: APO/FPO, New Hampshire, New York, Rhode Island, Vermont)
- Regional Director, Southern 2 (Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, Texas)

Visit [www.mathedleadership.org](http://www.mathedleadership.org) for details about the positions, the nomination procedure, and the nomination form. The deadline for nominations for the *NCSM* Board positions is Tuesday, May 15, 2018.



# 2017–2018 NCSM PROJECT COMMITTEES



## **COACHES CORNER COMMITTEE**

Donna Karsten, Co-Chair, Halifax, NS, Canada  
Nanci Smith, Co-Chair, Peoria, AZ  
Denise Brady, Corunna, MI  
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Deborah Crocker, Boone, NC  
Irma Cruz-White, Marianna, FL  
Linda Fulmore, Cave Creek, AZ  
Sandie Gilliam, Colorado Springs, CO  
Paul D. Gray, Jr., Dallas, TX  
Karen Hyers, Oakdale, MN  
Kathlan Latimer, Suisan City, CA  
Kimberly Morrow-Leong, Fairfax, VA  
John W. Staley, Towson, MD

## **2018 NCSM LEADERSHIP LEARNING INITIATIVE**

Pat Baltzley, Chair, Gardiner, MT  
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Carolyn Briles, Leesburg, VA  
Kathy Rieke, Zionsville, IN  
Connie Schrock, Emporia, KS  
Shawn Towle, Portland, ME  
Steve Viktora, Winnetka, IL  
Sue Vohrer, Cockeysville, MD

## **LEADERSHIP ACADEMY – SPEAKERS**

### **Bangor, ME Summer 2017**

Patricia Baltzley, Co-Director, Gardiner, MT  
Jackie Palmquist, Co-Director, Aurora, IL  
Connie Schrock, Emporia, KS  
Shawn Towle, Portland, ME

### **Fall Seminar – Speakers**

#### **Chicago, IL Winter 2017**

Patricia Baltzley, Co-Director, Gardiner, MT  
Jackie Palmquist, Co-Director, Aurora, IL  
Linda Fulmore, Cave Creek, AZ  
Nora Ramirez, Tempe, AZ  
Connie Schrock, Emporia, KS

## **NCTM REGIONAL CONFERENCE & EXHIBITION**

### **BOOTH VOLUNTEERS**

#### **Orlando, October 18-20**

Linda Fulmore, Cave Creek, AZ  
Donna Karsten, Halifax, NS, Canada  
Jim Matthews, Loudonville, NY  
Sara Delano Moore, Kent, OH  
Sharon Rendon, Summerset, SD  
Connie Schrock, Emporia, KS  
Jenny Tsankona, Bristol, RI

#### **Las Vegas, NV November 15–17**

Sandie Gilliam

#### **Chicago, IL November 30–December 2**

Jason Gauthier, Dorr, MI  
Connie Schrock, Emporia, KS  
Steven Shadel, Skokie, IL





## 2017–2018 NCSM GOVERNANCE COMMITTEES

### **EXECUTIVE COMMITTEE**

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Sandie Gilliam, Colorado Springs, CO  
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Cathy Boutin, West Warwick, RI  
Ronni David, Dobbs Ferry, NY  
Deann Kertzman, Spearfish, SD  
Patty Sandoz, La Grande, OR  
Pam Stidham, Kingsport, TN

#### **Kay Gilliland Equity Lecture Award Committee**

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Karin Lange, Chicago, IL  
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Sherene Bellinfantie, Humble, TX  
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#### **Awards Subcommittee**

Denise Brady, Corunna, MI  
Ralph D. Connelly, St. Catherines, ON, Canada  
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Irma Cruz-White, Marianna, FL

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Donna Karsten, Halifax, NS, Canada  
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### **50<sup>th</sup> YEAR CELEBRATION COMMITTEE**

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Linda Fulmore, Cave Creek, AZ





## 2017–2018 NCSM GOVERNANCE COMMITTEES CONT...



### **NCSM JMEL REVIEWERS**

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Jennifer Bay-Williams, University of Louisville, Louisville, KY  
Corey Bennett, Idaho State University, Pocatello, ID  
Anita Bright, Portland State University, Portland, OR  
Jeanine Brownell, Erikson Institute, Chicago, IL  
Melissa Boston, Duquesne University, Pittsburgh, PA  
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Cynthia Callard, University of Rochester, Rochester, NY  
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Skip Fennell, McDaniel College, Westminster, MD  
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Leigh Martin, Clemson University, Clemson, SC  
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Nicole Rigelman, Portland State University, Portland, OR  
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Miriam Sherin, Northwestern University, Evanston, IL  
Mike Steele, University of Wisconsin – Madison, Madison, WI  
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Linda Venenciano, University of Hawaii, Manoa, HI  
Abe Wallin, University of Idaho, Coeur d'Alene, ID  
Bethann Wiley, Winona State University, Winona, MN  
J. Christopher Willingham, James Madison University,  
Harrisonburg, VA  
Joyce Xu, Radford University, Radford, VA





## NCSM GRANTS, AWARDS, AND CERTIFICATES

### **SUPPORT THE NCSM IRIS CARL TRAVEL GRANT FUND**

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 fund is supported by generous donations from individuals. To support the fund, you may 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](http://www.mathedleadership.org).

The deadline for applications for the 2019 Iris Carl Grant is December 1, 2018.

### **ROSS TAYLOR/GLENN GILBERT NATIONAL LEADERSHIP AWARD**

Nominations are open for the 2019 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](http://mathedleadership.org). The deadline for nominations for the 2019 Award is November 1, 2018.

### **KAY GILLILAND EQUITY LECTURE SERIES AWARD**

Nominations are open for the 2019 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](http://mathedleadership.org). The deadline for nominations for the 2019 Award is October 1, 2018.

### **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](mailto:office@mathedleadership.org). More information about the Student Recognition Awards is available at [www.mathedleadership.org](http://www.mathedleadership.org).



# 2017 ROSS TAYLOR/GLENN GILBERT NATIONAL LEADERSHIP AWARD

Each year, the Ross Taylor/Glenn Gilbert National Leadership Award is presented in memory of two dedicated mathematics educators, Bennett “Ross” Taylor and Glenn Gilbert. Ross was a part of the heart and soul of NCSM for the past four decades, a “Leader of Leaders” in mathematics education, and a driving force behind the birth of NCSM. Glenn, a long time member of NCSM, was a mathematics teacher and leader from Boulder, Colorado who served as NCSM Treasurer for five years, from 1976 until his untimely death in 1981.

The Glenn Gilbert Award was first established in 1982 to honor its namesake and to provide a vehicle to annually recognize a person who exhibited the same kind of unique and dedicated contribution 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. It is fitting that this award should now bear the name of two mathematics educational giants, Ross Taylor and Glenn Gilbert.



**Tim Kanold**

Timothy D. Kanold, PhD, is an award-winning educator, author, and consultant and national thought leader in mathematics. He is former director of mathematics and science and served as superintendent of Adlai E. Stevenson High School District 125, a model professional learning community (PLC) district in

Lincolnshire, Illinois.

Dr. Kanold is committed to equity and excellence for students, faculty, and school administrators. He conducts highly motivational professional development leadership seminars worldwide with a focus on turning school vision into realized action that creates greater equity for students through the effective delivery of the PLC process by faculty and administrators.

He is a past president of the National Council of Supervisors of Mathematics (NCSM) and coauthor of several best-selling mathematics textbooks over several decades. Dr. Kanold has authored or coauthored thirteen books on K–12 mathematics and school leadership since 2011, including the bestselling book HEART! He also has served on writing commissions for the National Council of Teachers of Mathematics (NCTM) and has authored numerous articles and chapters on school leadership and development for education publications since 2006.

Dr. Kanold received the 2017 Ross Taylor/Glenn Gilbert Mathematics Education Leadership Award from the National Council of Supervisors of Mathematics, the international 2010 Damen Award for outstanding contributions to the leadership field of education from Loyola University Chicago, 1986 Presidential Awards for Excellence in Mathematics and Science Teaching, and 1994 Outstanding Administrator Award from the Illinois State Board of Education. He serves as an adjunct faculty member for the graduate school at Loyola University Chicago.

Dr. Kanold earned a bachelor’s degree in education and a master’s degree in mathematics from Illinois State University. He also completed a master’s degree in educational administration at the University of Illinois and received a doctorate in educational leadership and counseling psychology from Loyola University Chicago.

To learn more about Timothy D. Kanold’s work, visit his blog, Turning Vision Into Action ([www.turningvisionintoaction.today](http://www.turningvisionintoaction.today)) and follow him @tkanold on Twitter.

## Previous Ross Taylor/Glenn Gilbert Awardees

2016	Philip Uri Treisman	1998	Robert B. Davis
2015	Steve Leinwand	1997	Franklin Demana and Bert Waits
2014	Phil Daro		
2013	Kay Gilliland	1996	Marilyn Burns
2012	Carol Edwards	1995	James D. Gates
2011	Carole Greenes	1994	Zalman P. Usiskin
2010	Mark Driscoll	1993	Dale Seymour
2009	Solomon Garfunkel	1992	Iris M. Carl
2008	James M. Rubillo	1991	Dorothy S. Strong
2007	Glenda T. Lappan	1990	Stanley J. Bezuska
2006	L. Carey Bolster	1989	David R. Johnson
2005	Charleen Mitchell DeRidder	1988	Tom Rowan
2004	Irvin E. Vance	1987	Al Shulte
2003	Mary Laycock	1986	Shirley Frye
2002	Miriam A. Leiva	1985	Ross Taylor
2001	Margaret (Peg) Kenney	1984	Alexander Tobin
2000	Francis (Skip) Fennell	1983	John Del Grand
1999	F. Joe Crosswhite		



## NCSM AFFILIATES

- Central 1: Michigan Council of Teachers of Mathematics (MCTM)  
Michigan Mathematics Consultants and Coordinators (M2C2)  
Illinois Council of Teachers of Mathematics (ICTM)
- Central 2: Minnesota Council of Teachers of Mathematics (MCTM)  
Missouri Council of Supervisors of Mathematics (MoCSM)  
North Dakota Council of Teachers of Mathematics (NDCTM)
- Eastern 1: Association of Teachers of Mathematics in Maine (ATOMIM)  
Association of Teachers of Mathematics in New England (ATMNE)  
Boston Area Mathematics Specialists (BAMS)  
New Hampshire Teachers of Mathematics (NHTM)  
New York State Association of Mathematics Supervisors (NYSAMS)  
Rhode Island Mathematics Teachers Association (RIMTA)  
Vermont Math Leadership Council (VMLC)
- 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)  
Pennsylvania Council of Leaders of Mathematics (PCLM)
- Southern 1: Florida Association of Mathematics Supervisors (FAMS)  
Georgia Council of Supervisors of Mathematics (GCSM)  
North Carolina Council of Teachers of Mathematics (NCCTM)  
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)
- Western 2: California Mathematics Council (CMC)  
Nevada Mathematics Educational Leadership Council (NMELC)  
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)  
Ontario Math Coordinators Association (OMCA)
- 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, April 23 from 7:00 am–8:00 am.
- See NCSM acknowledge our affiliates at the Tuesday, April 24 Luncheon.
- Attend the Business Meeting on Tuesday, April 24 at 4:30–5:15 pm. The newest affiliates will be receiving their charter.

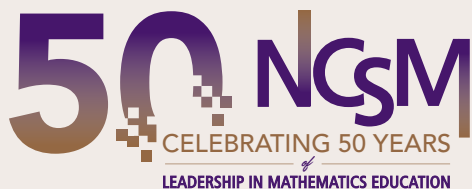
This list reflects affiliates as of January 31, 2018. If your mathematics organization is interested in organizing an affiliate in your area, contact the 2017-2019 NCSM Affiliate Coordinator, Nanci Smith, [nsmith@mathedleadership.org](mailto:nsmith@mathedleadership.org). You can also find helpful information and application forms in the *Affiliates* section of the NCSM Website at [www.mathedleadership.org](http://www.mathedleadership.org).





SAVE THE DATE

[www.mathedleadership.org](http://www.mathedleadership.org)



## BUILDING MATHEMATICS LEADERSHIP: COACHING

*Join us in Colorful Colorado!*

# 2018 NCSM SUMMER LEADERSHIP ACADEMY

*Englewood, Colorado*

**JULY 30 – AUGUST 1, 2018**

*Ready to make a real difference in the teaching and learning of mathematics? Do you realize that coaching is recognized as one of the most powerful ways to impact teacher growth and student learning?*

If your district/school has a coaching program or is thinking about starting a coaching program; join NCSM and their coaching leaders for the NCSM Summer Leadership Academy in Englewood, Colorado – July 30 to August 1, 2018.

Explore the themes and imperatives necessary for an effective Coaching program and to be an effective coach. You will receive tools and guidance in assessing where you are in your coaching journey and in the development of professional growth plans for you and/or your teams.



### *Topics to be addressed will include:*

- The Themes: Vision, Leadership, Equity
- The Imperatives for Sustainable Mathematics Coaching
- The Imperatives for Curriculum Content
- The Imperatives for Teaching and Learning
- The Imperatives for a Culture of Growth and Improvement

Participants will be among the first to receive a copy of NCSM's new coaching book, *NCSM: Themes and Imperatives for Coaching*

**More information will be available soon. We are excited to be hosting this coaching theme for our Summer Leadership Academy. We hope you are, too, and that we will see you in Colorado at the end of July!**





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](mailto: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.

*Angela T. Barlow, Editor*



## IMPORTANT FUTURE NCSM DATES

### IMPORTANT FUTURE NCSM DATES FUTURE NCSM ANNUAL CONFERENCES

**51st NCSM Annual Conference**  
April 1-3, 2019, San Diego, CA

**52nd NCSM Annual Conference**  
March 30–April 1, 2020, Chicago, IL

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### FUTURE NCSM FALL LEADERSHIP SEMINARS

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## NCSM NEWSLETTER

The *NCSM Newsletter* promotes networking and collaboration among NCSM members and other stakeholders in the education community and welcomes submissions from members. The purpose of the *NCSM Newsletter* 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 Newsletter* is published as an electronic 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 2018 *NCSM Newsletter*—July 5, 2018

Winter 2018–2019 *NCSM Newsletter*—September 5, 2018

Spring 2019 *NCSM Newsletter*—December 5, 2018

Summer 2019 *NCSM Newsletter*—March 5, 2019

Please visit [mathedleadership.org](http://mathedleadership.org) for more information and submission procedures

## NCSM eNEWS

The NCSM eNews is published monthly. It provides the NCSM community with current happenings for both the NCSM organization and mathematics education.

## NCSM WEBINARS

Visit [www.mathedleadership.org/events/webinars.html](http://www.mathedleadership.org/events/webinars.html) 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: [www.mathedleadership.org/events/conferences/index.html](http://www.mathedleadership.org/events/conferences/index.html). You may want to refer to this section to support your leadership work.

## NCSM COMMON CORE STATE STANDARDS

We have implementation materials and resources for implementation of the *Common Core State Standards* at: [www.mathedleadership.org/ccss/index.html](http://www.mathedleadership.org/ccss/index.html).

- NCSM Illustrating the Standards for Mathematical Practice
- *NCSM Great Tasks for Mathematics*
- NCSM Common Core Presentations and Webinars
- Assessment Consortia
- Mathematics Common Core Coalition
- *Mathematics Assessment Project (MAP/Shell Centre)*
- Inside Mathematics
- CCSS Curriculum Materials Analysis Tools

## GET CONNECTED THROUGH NCTM'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 [www.mathedleadership.org/networks/index.html](http://www.mathedleadership.org/networks/index.html)





# 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.html](http://www.mathedleadership.org/resources/position.html). 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)
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- *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)
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- *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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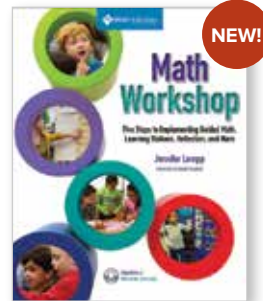
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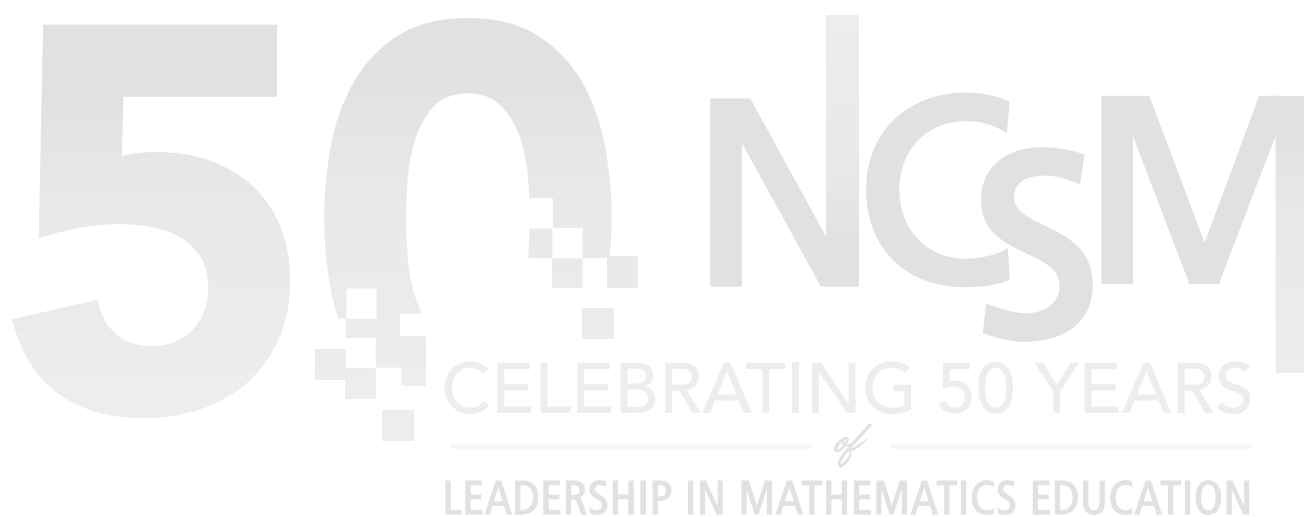
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<b>VENDOR</b>	<b>BOOTH #</b>
AMPLIFY	304
BIG IDEAS LEARNING	501
CASIO	517
CORWIN	203
DIDAX	401
DREAMBOX	515
EAI	409
ETA HAND2MIND	303
FIRST IN MATH - SUNTEX INTERNATIONAL	205
FOREFRONT MATH	103
GET MORE MATH	106
GREAT MINDS	402
HOUGHTON MIFFLIN HARCOURT	519
IMAGINE LEARNING	306
IXL LEARNING	105
LAKESHORE LEARNING	202
LEARNZILLION	204
MATH OLYMPIADS	404
MCGRAW HILL EDUCATION	406
MIND RESEARCH	507
MOUNTAIN MATH	407
MOVING WITH MATH/MATH TEACHERS PRESS	408
MQI CENTER FOR EDUCATIONAL POLICY AND RESEARCH	305
NCSM	509
ORIGO EDUCATION	405
PEARSON	505
SOLUTION TREE	301
STENHOUSE PUBLISHING	206
TEXAS INSTRUMENTS	521
THE MATH LEARNING CENTER	101
US MATH RECOVERY COUNCIL	104





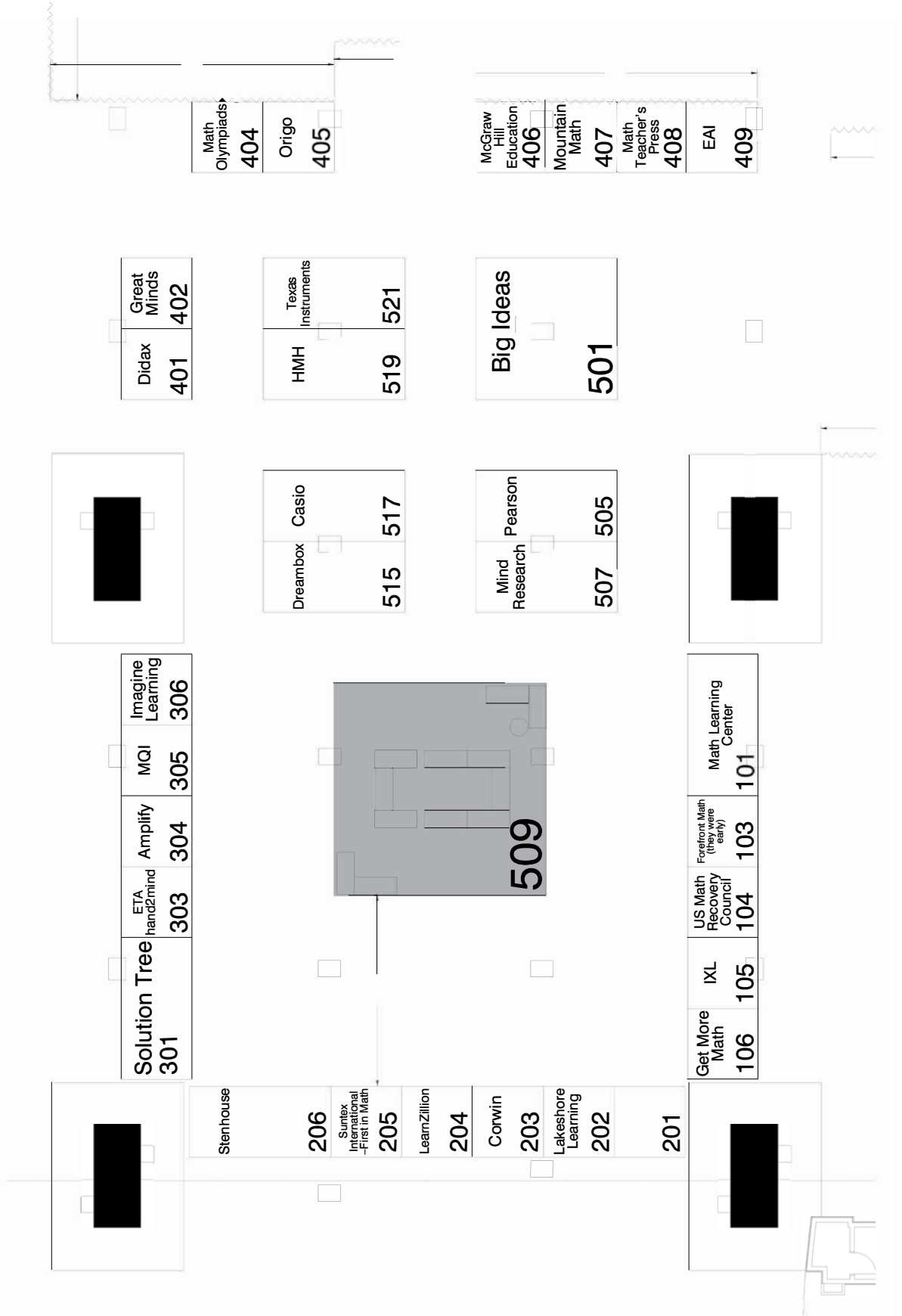
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## NATL COUNCIL OF SUPERVISORS OF MATHEMATICS

APRIL 23 - 25, 2018

WALTER E WASHINGTON CONVENTION CENTER - HALL A - WASHINGTON, D.C.





## SPONSOR SHOWCASE SESSIONS

All Sponsor Showcase sessions will be held in 149AB.

### *Tentative Showcase Schedule*

#### **MONDAY**

- 9:30 am–10:30 am **ETA hand2mind**, Session 1221: Improve Fluency with Math Talks and Number Strings – Brittany Goerig
- 11:15 am–12:15 pm **Texas Instruments**, Session 1321: Coding: An Application of STEM in the Mathematics Classroom – Michelle Rinehart and Andi Parr
- 12:30 pm–1:30 pm **McGraw-Hill**, Session 1421: Promoting a Mathematics Positive Culture – Raj Shah
- 1:45 pm–2:45 pm **Casio**, Session 1521: Unifying the Mathematics Experience – And Your Technology – Mike Reiner
- 3:00 pm–4:00 pm **Houghton-Mifflin**, Session 1621: Six Essential Expectations for Effective Mathematics Instruction – Juli Dixon
- 4:15 pm–5:15 pm **Big Ideas Learning**, Session 1721: Connecting Big Ideas for Young Mathematicians: When Rigor and Relevance Meet Collaboration – Lauren Stott

#### **TUESDAY**

- 8:15 am–9:15 am **McGraw-Hill**, Session 2121: The Answer Still Matters... Eventually – Cathy Seeley
- 10:00 am–11:00 am **Texas Instruments**, Session 2221: Promoting Productive Struggle in the Mathematics Classroom – Jill Gough and Jennifer Wilson
- 11:15 am–12:15 pm **Big Ideas Learning**, Session 2321: Increase Teacher Efficacy with Daily Professional Development – Mary Drayer
- 2:15 pm–3:15 pm **LearnZillion**, Session 2521: LZ Illustrative Mathematics New Math Curriculum (Grades 6-8) – Posie Wood, Colette Chambers, and Bill McCullum

#### **WEDNESDAY**

- 8:45 am–9:45 am **McGraw-Hill**, Session 3121: Effective and Practical Strategies to Implement Universal Mathematics Intervention in the Core Classroom – Janet Pittock
- 10:00 am–11:00 am **Pearson**, Session 3221: Escape Room Adventure – Kurt Whited and Deb McGinley
- 11:15 am–12:15 pm **McGraw-Hill**, Session 3321: The Future of Elementary Mathematics Education McGraw Hill Education School Group
- 2:15 pm–3:15 pm **McGraw-Hill**, Session 3521: Focus Instruction Using Rich Tasks to Teach, Engage, and Develop Mathematical Teaching – Linda Gojak



# INDEX OF SPEAKERS



Mary Abele-Austin	21	Kimberly Bunch	55	Brianna Donaldson	30	Marta Garcia	43
Jason Adair	84	Michele Burgess	87, 90	Casey Doose	95	Michael Garcia	53
Rebecca Afghani	39	Jacqueline Burns	60	Stephanie Doran	94	Nicole Garcia	24, 63
Jennifer Allard	59	Sarah Burns	34	Barbara Dougherty	52	Sol Garfunkel	24
Loria Allen	69	Gail Burrill	28	Jessica Douglas	65	Marc Garneau	27, 69, 71, 87
Christina Allison	65	Megan Burton	86	Michelle Douglas-Meyer	87	Betty Gasque	59
Nancy Anderson	23	Lisa Bush	96	Mary Drayer	63	Miriam Gates	38
Robin Anderson	36	Sarah Bush	52	Emma Druitt	32	Kim Gattis	42
Delise Andrews	32, 54	Sarah Caban	25	Melissa Eastwood	29	Jason Gauthier	19, 64
Suaronne Angeletti	81	Patrick Callahan	32	Caroline Ebby	61	Jason Gauthier	69, 71
Fran Arbaugh	39	Cynthia Callard	81	Claudia Eckstrom	68	Linda Gillen	69
Vicky Armstrong	41	Antonia Cameron	27, 38	Ellen Edmonds	38	Sandie Gilliam	17, 40, 69, 71
Alka Arora	42	Judith Campbell	40	Alden Edson	38	Eric Glatz	30
Alice Artzt	30	Patricia Campbell	20	Jennifer Eli	41	Keira Godwin	69
Wanda Audric	86	Melissa Canham	25	Aimee Ellington	39	Brittany Goerig	20
Christine Avila	42	Jean Capper	65	Susan Empson	20, 70	Claire Gogolen	69
Julie Bacak	55	Catherine Carroll	39	Bobbi Jo Erb	28	Linda Gojak	28, 71, 86, 93
Eden Badertscher	38, 62, 81	Cynthia Carson	81	David Erickson	19	E. Paul Goldenberg	25
Courtney Baker	21	Dana Cartier	67, 86	Kathryn Ernie	34, 92	Abby Gordon	67
Rolanda Baldwin	69	Joan Case	20, 70	Sadie Estrella	54	Paul Gorski	88
Deborah Ball	24	Vanessa Cerrahoglu	54, 70, 90	Maria Everett	37, 60	Dana Gosen	64
Pat Baltzley	26	Colette Chambers	68	Barb Everhart	91	Jill Gough	58, 81
Karla Bandemer	54	Theodore Chao	82	Emily Fagan	57	Michael Gould	37, 96
Sara Baranauskas	42	Sue Chapman	94	Tara Faircloth	95	Sara Goytia	64
Kenna Barger	84	Renee Charette	89	Rachelle Farmer	90	Yvonne Grant	38
Bill Barnes	37, 83, 93	Eugenia Cheng	92	Melissa Fast	85	Kristin Gray	70
Katie Basham	83	Kristopher Childs	40, 89	Shelah Feldstein	36	Paul D. Gray, Jr.	40, 69, 71
Tammy Baumann	24	Paul Cholmsky	79	Jane Felling	85	Brenda Green	59
Jennifer Bay-Williams	24, 51, 54	Nicole Cirino	55	Tierra Fender	26	Carole Greenes	28, 95
Heather Beasley	63	Douglas Clements	35, 54	Francis (Skip) Fennell	39, 53, 56	Michael Greenlee	68
Michael Belcher	23, 87	Cynthia Coburn	63	Annie Fetter	68	Marni Greenstein	22
Jennie Beltramini	95	Lisa Coburn	20	Mikila Fetzter	32, 64	Linda Griffith	72
Cory Bennett	42	Peter Coe	91	Michael Fierle	87, 90	Jody Guarino	70, 90, 97
Chryste Berda	83	Lisa Coffman	97	Stephanie Fisher	86	Duane Habecker	41
Robert Q. Berry, III	85	Shelbi Cole	28, 83	Graham Fletcher	57	Susie Håkansson	42
Barbara Beske	30	Lynn Columba	36	Nicole Fletcher	61	James Ham	70
Matthew Beyranevand	96	Jere Confrey	23, 87	Kathryn Flores	87	Nancy Harriman	25
Nadine Bezuk	54	Paul Conley	94	Mike Flynn	26, 80	Pamela Harris	25
Victoria Bill	54	Ralph Connelly	56	Tara Flynn	58	Peg Hartwig	93
Sara Birkhead	69, 90	Kathi Cook	95	Rorrie Fortier	81	Stefanie Hassan	38
Gary Bitter	56	Suzie Craig	64	Catherine Fosnot	37, 85, 91	Deborah Hatt	25
Cathy Blair	92	Heather Crawford-Ferre	96	Alyssa Foss	26	Kimberly Hayden	21, 36
Glen Blume	32	Natalie Crist	81, 87	Astrid Fossum	30, 65	Melissa Hedges	87
Jo Boaler	36, 56	Deborah Crocker	40, 69, 71	Cherie Foster	35	M. Kathleen Heid	32
Jessica Bobo	25	Irma Cruz-White	40	David Foster	36	Scott Hendrickson	32
Timothy Boerst	54, 64	Frances Curcio	30	Genie Foster	81	Jacqueline Hennings	52
Vickie Bohidar	92	Ellen Dairyko	34, 87	Allyson Fox	29	Connie Henry	58
Rhonda Bondie	68	Phil Daro	69	Eric Frandsen	95	Anna Hertzberg	55
Samantha R. Booth	69	Linda Davenport	58	Megan Franke	27, 63	Judy Hicks	59
Laurie Boswell	57	Susana Davidenko	56	Christine Franklin	89	James Hiebert	80
Denise Brady	19, 64	Mary Davis	21	Dana Franz	53	Heather Hill	69
Diane Briars	19, 28, 32, 39	Brian Dean	95	Jaliyla Fraser	61	Polly Hill	37
Lisa Brooks	80	Rachael Degnan	83	Patti Freeman	69	Sterling Hilton	32
Alisa Brown	26, 33	Donald DeLand	53	Sara Frisbie	19	Erick Hofacker	34, 92, 96
Dinah Brown	20, 70	Janet Delmar	25	Shirley Frye	56	Marjan Hong	37
Lisa Brown	20	Cecilio Dimas	21	Linda Fulmore	40, 56, 68	Elizabeth Horan Thompson	65
Cathy Bruce	58	Juli Dixon	37, 80	Karen Fuson	19	Tim Hudson	85, 91
Bonnie Brush	65	David Dockterman	86	Terrie Galanti	69, 90	Kellian Hughes	28
Pamela Buffington	20	Jonathan Dolle	95	Mardi Gale	21	Beth Hulbert	61
		Ann Dominick	63			Lizzy Hull Barnes	63, 82



# INDEX OF SPEAKERS

Cathy Humphreys	53	Travis Lemon	34	Veronica Najjar	38	Farshid Safi	41
Sara Hunter	86	Jennifer Lempp	36	Sean Nank	83	Katie Salguero	40
Karen Hyers	40	Debbie Leslie	34	Anne Nesbitt	55, 88	John SanGiovanni	60, 67
Kara Imm	25, 68	Linda Levi	93	Ashley Nestor	82	Julie Sarama	35
Andy Isaacs	34	Becca Lewis	58, 63	Christine Newell	40	Neeraj Satyal	81
Rebeca Itzkowich	96	Rebecca Lewis	29	Brian Newsom	20, 41	Deborah Schifter	61, 89
Jessica Ivy	53	Luis Lima	94	Damitra Newsome	90	Craig Schneider	54
Julie Jacobi	59	Kevin Liner	83	Johannah Nikula	89	Cynthia Schneider	37
Judith Jacobs	18, 22	RunningHorse Livingston	28	Tina Nocella	94	Kim Schoenau	22
Vicki Jacobs	20, 70	Kendra Lomax	58, 63	Pedro Noguera	18	McGraw-Hill Education	
Darshan Jain	94	Peggy Loutzenhiser	55	Edward Nolan	33	School Group	89
Spencer Jamieson	64	Amy Lucenta	21, 54	Kit Norris	87	Connie Schrock	
Amanda Jansen	52	Kathleen Lyons	30	Jenny Novak	95	17, 37, 52, 56, 66, 72, 85	
Linda Jaslow	93	Una MacDowell	38	Susan O'Connell	93	Sarah Schuhl	87, 88
Cathy Johnson	55	Jon Manon	36	Diane Owen-Rogers	40, 53, 57	Joe Schwartz	68
Donna Johnson	96	Doana Marcellus	23	Pamela Paek	86	Danielle Seabold	20, 40, 57
Leslie Johnson	60	June Mark	89	Jackie Palmquist	26	Nanette Seago	39
Will Johnston	42	Mara Markinson	30	Nataliya Paquette	29	Stephen Sebelski	69, 94
Shelly Jones	26	Tiayana Marks	91	Ruth Parker	33	Cathy Seeley	53, 92
Anne Joyoprayitno	95	Leigh Martin	65	Andi Parr	24	Richard Seitz	19, 53
Sallie Kaan	82	Stephanie Martin	81	Sherry Parrish	31	Rosa Serratore	70
Timothy Kanold	28, 88	W. Gary Martin	54	Jan Parsons	80	Padmanabhan Seshaiyer	90
Patsy Kanter	33	Glenda Martinez	25	Kyle Pearce	69	John Sessoms	29
Robert Kaplinsky	19, 39, 55	Sherri Martinie	85	Rebecca Perry	64, 95	Amy Seylar	82
Karen Karp	52	Kathleen Matson	64	Marjorie Petit	86	Meetal Shah	23, 87
Donna Karsten	19	Carol Matsumoto	17	Elizabeth Peysner	85	Raj Shah	28, 96
Susie Katt	54	Valerie Maxwell	80	Randolph Philipp	31	Meghan Shaughnessy	24, 55
Grace Kelemanik	21, 54	Amy Mayfield	33	Elizabeth Phillips	38	Danielle Shea	65
Lindsay Kelley	29	William McCallum	24, 68	Janet Pittock	29, 81	Denis Sheeran	94
Melissa Kemmerle	63	Kim McCuiston	55	Nicora Placa	80	Aubree Short	22
Monica Kendall	34	Dennis McDonald	68	Margaret Pligge	60	Robyn Silbey	58
Laura Kent	64	Maggie McGatha	24, 39, 52	Denise Porph	69	Edward A. Silver	86
Kelly Kent-Johnson	97	Deb McGinley	85	Denise Porter	37, 87	Jeanne Simpson	27
Henry Kepner	28	William McGowan	23, 87	Tamar Posner	88	Sunil Singh	28
Arjan Khalsa	36	Jessica McIntyre	17	Barbara Post	91	Linda Smith	21, 52
Kristin Klingensmith	25	Keri McKenzie	55	Laura Potter	60	Margaret Smith	57
Melinda Knapp	21	Susan McMillen	34	Kathy Prummer	55	Nanci Smith	17, 19
Angela Knotts	40	Renee McShane	38	Chi Quach	40	Kathleen Snook	24
Jennifer Knudsen	21	Dona Meinders	64	Nora Ramirez	30, 84	Tracy Sola	35
Beth Kobett	32, 53, 63	Yvonne Mendolia	59	Lori Ramsey	34	Donna Sorila	29
Hilary Kreisberg	57, 96	Linda Menkis	68	Molly Rawding	34, 68	Doug Sovde	58
Shelley Kriegler	29	Amanda Merritt	42, 84	Max Ray-Riek	19	Deborah Spencer	25, 89
Jennifer Kruger	81	Anne Metzbower	90	Tom Reardon	82	Laurie Speranzo	25, 54
Wendy Kubasko	83	Bryan Meyer	59	Kristen Reed	25	John W. Staley	23, 28, 37, 71
Barbara Kuehl	34	Valerie L. Mills	28, 39, 86	Stacy Reeder	22, 59	Cate Stallmeyer-Gerard	37
Sonja Kuokkanen	29	Eric Milou	96	Mike Reiners	33	Dick Stanley	69
Nikki LaLonde	84	Mary Mitchell	94	Karen Reinhardt	21, 55, 63	Genni Steele	37
Rachel Lambert	94	Suzanne Mitchell	28, 32	Michael Reitemeyer	52	Olof Steinthorsdottir	64
Andrea Lang	83	Robin Moore	42	Sharon Rendon	65, 69, 71	Harriette Stevens	21
Karin Lange	59	Sara Moore	37	Nicole Rigelman	39, 52	Judy Storeygard	82
Shannon Larsen	20, 41	Ashley Moran	55	Michelle Rinehart	24, 31	Lauren Stott	41
Matt Larson	61	Deanna Moreau	92	Jamila Riser	80, 95	Thomas Stricklin	85
Kathlan Latimer	40, 69, 71	Kimberly Morrow-Leong		Georgina Rivera	26	Marilyn Strutchens	86
Connie Laughlin	38	17, 37, 40		Lisa Rogers	33	Jennifer Suh	64, 69, 90
Brian Lawler	59	Sorsha Mulroe	68	Kim Romain	42	Alan Sultan	30
Petra Le Duc	58	Michael Mulvey	83	Gabriela Rose	90	Annie Sussman	89
Abi Leaf	59	Jen Munson	42	Fran Roy	37	Kara Suzuka	54, 64
Nicholas Lee-Romagnolo	30	Corinne Murawski	87, 90	Chepina Rumsey	97	Sarah Sword	81
Ashlee LeGear	96	Rachel Muren	65, 87	Susan Jo Russell	24	Noam Szoke	26
Steve Leinwand	28, 33, 56, 84	Sophie Murphy	31, 57	James Ryan	26	Mary Jo Tavormina	43



## INDEX OF SPEAKERS



Dan Teague	67	Kristin Umland	94	Stephen Weimar	19	Posie Wood	68
Leslie Texas	42	Zalman Usiskin	40, 56	Gloria Weinberg	84	Andrea Word	27
Peter Thorlichen	58	Juliana Utley	22, 59	Jeff Weld, PhD	17	Jon Wray	53
Denise Thornton	21, 68	Liberty Van Natten	64	Lucy West	27	Steve Wyborney	26
Ryan Timmons	41	David Van Vleet	59	Robin White	90	Julie Yearsley	25
Cheryl Tobey	41, 57	Stephanie Vega	96	Kurt Whited	85	Jessica Young	25
Janet Tomlinson	94	Patrick Vennebush	85	Joanne Whitley	37	Tracy Zager	23
Mona Toncheff	37, 83, 88, 93	Steven Viktora	32	Alison Whittington	37	Rose Mary Zbick	32
Angela Torres	33, 82	Sue Vohrer	69, 71	Deb Wickman	41	Jason Zimba	89
Shawn Towle	69, 71	Melissa Waggoner	29	Theresa Wills	34	Annette Zook	29
Denise Treacy	82	Nita Walker	91	Dianne Wilson	41		
Emma Trevino	20, 26, 33	Angela Waltrup	82	James Wilson	32		
Tim Truitt	93	Carolyn Watkins	25	Jennifer Wilson	58, 81		
Kaneka Turner	43	John Weaver	59	Leigh Wilson	55		
Skip Tyler	92	Kyoko Weber-Sickler	39	Patricia Wilson	32		

## INDEX OF PRESIDERS



Pat Baltzley	35, 88	Donna Karsten	39
Bill Barnes	60	Kathlan Latimer	31
Kristopher J. Childs	67	Kimberly Morrow-Leong	88, 92
Natalie Crist	61	Sharon Rendon	92
Debbie Crocker	18	Connie Schrock	56
Sara Delano Moore	31	Nanci Smith	19, 80, 84
Linda Fulmore	27, 40	John W. Staley	84
Marc Garneau	23, 80	Mona Toncheff	27
Jason Gauthier	52	Shawn Towle	52
Sandie Gilliam	36	Steve Viktora	67
Paul Gray	23	Sue Vohrer	57





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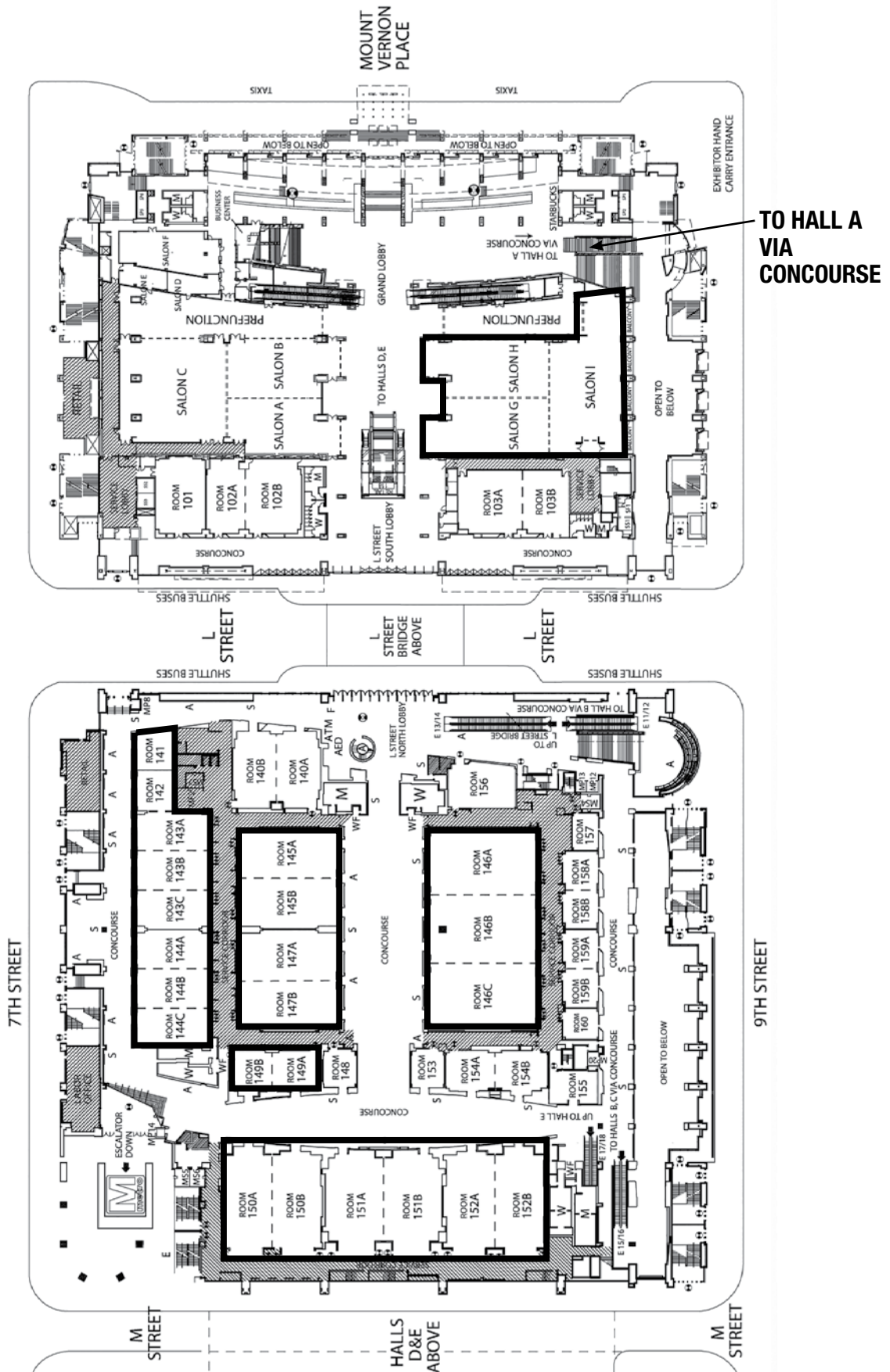
# 2018 CONFERENCE PLANNER

**Note:** All Sessions – *Walter E Washington Convention Center*

DATE & TIME	EVENT	LOCATION
<b>Monday, April 23</b>		
6:45 am–5:00 pm	<b>Advance &amp; On-Site Registration</b>	<b>Concourse, Level C</b>
7:15 am–7:45 am	<b>First-Timers Session – Special Gifts</b>	<b>145A</b>
8:00 am–9:15 am	<b>Opening Session &amp; Keynote – Pedro Noguera</b>	<b>Hall A</b>
9:00 am–5:30 pm	<b>Sponsor/Exhibitor Displays</b>	<b>Hall A</b>
9:00 am–5:00 pm	<b>NCSM Bookstore, Membership Booth, &amp; Coaches Center</b>	<b>Hall A</b>
9:30 am – 10:30 am		
10:30 am–11:15 am	<b>Special Focus on Sponsor/Exhibitor Displays</b>	<b>Hall A</b>
11:15 am–12:00 pm	<b>Hot Topics</b>	<b>Hall A</b>
11:15 pm–12:15 pm		
12:15 pm–1:30 pm	<b>Boxed Lunch – Sponsored by: ORIGO Education</b>	
12:30 pm–1:15 pm	<b>Hot Topics</b>	<b>Hall A</b>
12:30 pm–1:30 pm		
1:45 pm–2:30 pm	<b>Hot Topics</b>	<b>Hall A</b>
1:45 pm–2:45 pm		
3:00 pm–4:00 pm		
4:15 pm–5:15 pm		
4:15 pm–5:15 pm	<b>State Team Leaders Meeting</b>	<b>143B</b>
5:30 pm–7:00 pm	<b>Reception – Sponsored by: Big Ideas Learning (Pre-Purchased Ticket Required) Buses will begin departing the Convention Center at 5:30 pm.</b>	<i>Offsite:</i> <b>National Geographic Museum</b>
<b>Tuesday, April 24</b>		
6:45 am–5:00 pm	<b>Advance &amp; On-Site Registration</b>	<b>Concourse, Level C</b>
7:00 am–8:00 am	<b>Breakfast – Sponsored by: Pearson (Ticket Required)</b>	<b>Hall A</b>
8:15 am–9:00 am	<b>Hot Topics</b>	<b>Hall A</b>
8:30 am–4:00 pm	<b>Sponsor/Exhibitor Displays</b>	<b>Hall A</b>
8:30 am–4:00 pm	<b>NCSM Bookstore, Membership Booth, &amp; Coaches Center</b>	<b>Hall A</b>
8:15 am–9:15 am		
9:15 am –10:00 am	<b>Special Focus on Sponsor/Exhibitor Displays</b>	<b>Hall A</b>
10:00 am–10:45 am	<b>Hot Topics</b>	<b>Hall A</b>
11:15 am–12:15 pm		
12:15 pm–2:00 pm	<b>Luncheon – Sponsored by: Texas Instruments (Ticket Required)</b>	<b>Hall A</b>
2:15 pm–3:00 pm	<b>Hot Topics</b>	<b>Hall A</b>
2:15 pm–3:15 pm		
3:30 pm–4:15 pm	<b>Caucus Meetings</b>	<b>100's Rooms, Street Level</b>
4:30 pm–5:15 pm	<b>NCSM Business Meeting &amp; State of the Organization Report</b>	<b>146A</b>
5:30 pm–7:00 pm	<b>Reception – Sponsored by: McGraw Hill Education (Ticket Required)</b>	<b>Ballroom Pre-Function, Level 3</b>
<b>Wednesday, April 25</b>		
7:30 am–10:30 am	<b>Advance &amp; On-Site Registration</b>	<b>Concourse, Level C</b>
7:30 am–8:30 am	<b>Breakfast – Sponsored by: ExploreLearning (Ticket Required)</b>	<b>Hall A</b>
8:45 am–9:45 am		
10:00 am–11:00 am		
11:15 am–12:15 pm		
12:30 pm–2:00 pm	<b>Luncheon – Partially Sponsored by: DreamBox (Ticket Required)</b>	<b>Hall A</b>
2:15 pm–3:15 pm		
3:30 pm–4:30 pm		
3:30 pm–4:30 pm	<b>Musical</b>	<b>146BC, Street Level</b>



# WALTER E. WASHINGTON, CONVENTION CENTER FLOOR PLANS



NOTES

Lined area for notes, consisting of multiple horizontal lines for writing.





PAST



PRESENT

FROM



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ALL IN

ClassPad

# COME TO THE NCSM SPONSOR SHOWCASE TO SEE THE FUTURE

**Space is limited**

It's on a first-come,  
first-serve basis, so  
mark your calendar now!

**APRIL 23, 2018**

1:45 pm

Room 149A/B

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