



# schedule at-a-glance

Teachers Development Group  
2021 Leadership Seminar | Mathematics  
Professional Learning

## Wednesday, March 10

Pacific Time Zone 9:00 am –12:15 pm

<p><b>9:00 – 10:00 am</b> Pacific time</p>	<p><b>Session A</b></p> <p><i>See Learning Opportunities Through One-on-One Conversations</i></p> <p>Grades PK-5</p> <p>Vicki Jacobs Carrie Valentine</p>	<p><b>Session B</b></p> <p><i>Accelerating Student Learning</i></p> <p>Grades PK-12</p> <p>Cathy Martin</p>	<p><b>Session C</b></p> <p><i>Facilitating Emergent Multilingual Students' Mathematics Class Experience</i></p> <p>Grades 6-8</p> <p>Johannah Nikula Jill DePiper</p>	<p><b>Session D</b></p> <p><i>Let's Talk About It: Deepening Students' Mathematical Sense-making by Attending to Teachers' Listening</i></p> <p>Grades PK-12</p> <p>Allison Hintz Kersti Tyson Andrea English</p>	<p><b>Session E</b></p> <p><i>A Framework for Equitable and Inclusive Mathematics Education for Complex Learners</i></p> <p>Grades PK-5</p> <p>Corey Drake Kimberly Hufferd-Ackles</p>
<p><b>10:15 – 11:15 am</b> Pacific time</p>	<p><b>Session F</b></p> <p><i>Monitoring Student Work: Attending to and Keeping Track of Students' Thinking</i></p> <p>Grades 6-12</p> <p>Peg Smith</p>	<p><b>Session G</b></p> <p><i>Instructional Activities in Early Childhood: Supporting Language and Participation</i></p> <p>Grades PK-2</p> <p>Angela Chan Turrou Nick Johnson</p>	<p><b>Session H</b></p> <p><i>Building Lasting Skills, Engagement and Confidence in Algebra using Tactile Immersive Virtual Reality</i></p> <p>Grades 6-12</p> <p>Anarupa Ganguly</p>	<p><b>Session I</b></p> <p><i>What have we Learned? Understanding Ambitious and Equitable Mathematics Teaching through Real-Time Teaching Dilemmas</i></p> <p>Grades PK-5</p> <p>Melinda Knapp</p>	<p><b>Session J</b></p> <p><i>Instructional Moves to Foster Equitable Student Engagement</i></p> <p>Grades PK-12</p> <p>Kathy Pfaendler Carolyn Choi</p>
<p><b>11:30—12:15</b> Pacific time</p>	<p><b>Generalize to Practice Part I</b></p> <p>Wednesday, March 10 • 11:30 am—12:15 pm</p> <p>Meet with other educators in facilitated small groups to debrief the day's learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.</p>				



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<b>Thursday, March 11</b> Pacific Time Zone 3:00 pm – 6:15 pm					
<b>3:00 – 4:00 pm</b> <b>Pacific time</b>	<b>Session K</b>  <i>Rough Draft Math as an Equity Pedagogy During Online Instruction</i>  Grades 6-12  Amanda Jansen	<b>Session L</b>  <i>Analyzing Context and Models in 2021</i>  Grades 6-8  Amy Lucenta Grace Kelemanik	<b>Session M</b>  <i>Exposing Historical Inequities Around “Building Fluency”: Redefining and Creating More Equitable Practices</i>  Grades PK-12  Kristine Ho Jenn Hagman	<b>Session N</b>  <i>Using “Practical Measures” of Teachers’ Experiences to Reflect on and Improve Professional Learning</i>  Grades PK-12  Hilda Borko Kara Jackson Michael Jarry-Shore Anita Lenges Hannah Nieman Zuhail Yilmaz	<b>Session O</b>  <i>Routines for Leaders that Empower Teachers</i>  Grades PK-12  Bill Feeley Julie Fredericks
	<b>Session P</b>  <i>Math Is... Young Children’s Studies of Mathematics Through Line and Trajectory</i>  Grades PK-1  Alex Morgan Kirsten Zimbelman	<b>Session Q</b>  <i>How Might We Address Unfinished Learning in K-12 Mathematics? Exploring Some Strategies That Help Students Succeed</i>  Grades PK-12  Linda Ruiz Davenport Stacey Solomon	<b>Session R</b>  <i>What Do We Need to Know to Design More Effective Professional Learning?</i>  Grades PK-12  Heather Hill	<b>Session S</b>  <i>Noticing Student Thinking as a Resource for Equitable Mathematics Classrooms</i>  Grades PK-8  Miriam Sherin Elizabeth van Es	
<b>5:30 –6:15</b> <b>Pacific time</b>	<b>Generalize to Practice Part II</b> Meet with other educators in facilitated small groups to debrief the day’s learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.				



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## Saturday, March 13

Pacific Time Zone 9:00 am – 12:15 pm

<p>9:00 – 10:00 am Pacific time</p>	<p><b>Session U</b></p> <p><i>Creating Classrooms Where All Students are Thinking and Reasoning Mathematically</i></p> <p>Grades 6-8</p> <p>Grace Kelemanik Amy Lucenta</p>	<p><b>Session V</b></p> <p><i>What the Pandemic is Helping Us Learn about Inquiry Based Coaching</i></p> <p>Grades PK-12</p> <p>Julie Fredericks Murrel Hoover</p>	<p><b>Session W</b></p> <p><i>Inquiry-Based Mathematics Learning Before, During, and After a Pandemic: Embedding Connected Mathematics in a Digital Collaborative Environment</i></p> <p>Grades 6-8</p> <p>Elizabeth Philips Yvonne Grant Alden Edson</p>	<p><b>Session X</b></p> <p><i>Engaging in the Deep Work of Mathematics: Supporting High-Cognitive Learning in the Age of Distraction</i></p> <p>Grades PK-16</p> <p>Mike Flynn</p>	<p><b>Session Y</b></p> <p><i>Mathematical Hearts: A Culturally Responsive Mathematics Approach to Teaching Mathematics with Empathy and Justice</i></p> <p>Grades PK-8</p> <p>Julia Aguirre Maria del Rosario Zavala</p>
<p>10:15 – 11:15 am Pacific time</p>	<p><b>Session Z</b></p> <p><i>Seeing Students as Problem-Solvers In and Out of the Classroom</i></p> <p>Grades 6-12</p> <p>Mary Alice Carlson</p>	<p><b>Session AA</b></p> <p><i>What We're Learning to Ask About the Weaving of Mathematics and Equity During Classroom Talk</i></p> <p>Grades PK-5</p> <p>Susan Jo Russell Deborah Schifter</p>	<p><b>Session BB</b></p> <p><i>Connecting Math Learning to Learning About Our World: Critical Literacy in the K-8 Math Classroom</i></p> <p>Grades K-8</p> <p>Eva Thanheiser Courtney Koestler</p>	<p><b>Session CC</b></p> <p><i>Mathematics Lessons: Responding to Social Injustice</i></p> <p>Grades 3-5</p> <p>Robert Q. Berry III</p>	
<p>11:30—12:15 Pacific time</p>	<p><b>Generalize to Practice Part III</b></p> <p>Meet with other educators in facilitated small groups to debrief the day's learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.</p>				



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**Lessons Learned from an Extraordinary Year:**

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**WEDNESDAY MARCH 10**

9:00 am –12:15 pm • Pacific Time

**Session A**

Wednesday, March 10

9:00—10:00 am  
Pacific Time

***See Learning Opportunities Through One-on-One Conversations***

What can we learn from one-on-one conversations with elementary children during the pandemic? We will consider how these conversations—virtual or face-to-face—enhance children’s engagement and learning. Emphasis will be on “seeing” individual children as they make sense of mathematics and gain confidence as problem solvers. Videos of these conversations will illustrate the power of teachers’ fine tuning their instruction based on what they learn from the details of what children say and do—lessons that also apply to group instruction. We will discuss teachers’ selection of instructional tasks and follow-up questions related to number sense and problem solving.

Grades PK-5

*Vicki Jacobs, University of North Carolina at Greensboro  
Carrie Valentine, Retired Teacher, Madison Metropolitan School District*

**Session B**

Wednesday, March 10

9:00—10:00 am  
Pacific Time

***Accelerating Student Learning***

The Covid-19 pandemic has created a massive disruption in our students' learning time, particularly our Students of Color. The actions we take matter, more now than ever, for our students and have the potential to accelerate student learning and to minimize and mitigate learning loss. In this session, we will examine ways to accelerate student learning while simultaneously engaging students in grade-level content with the goal that we accelerate rather than remediate. Participants will engage in an examination of the essential learning that will set students up for future success and how to use current learning opportunities to do so.

Grades PK-12

*Cathy Martin, Associate Chief of Academics, Denver Public Schools*



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<p><b>Session C</b> Wednesday, March 10</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Facilitating Emergent Multilingual Students' Mathematics Class Experience</i></b></p> <p>How can we elevate the voices and mathematical thinking of emergent multilingual students (EMs) in the mathematics classroom? This session will explore how teacher and student use of diagrams and integrated language support strategies highlight EMs' mathematical thinking and facilitate their classroom participation. We will share what teachers and EMs had to say about lesson design features during a study involving 23 middle grades mathematics classes. Participating teachers and leaders will also be prompted to consider how EM voices are and can be supported in mathematics classes in their districts.</p> <p>Grades 6-8</p> <p><i>Johannah Nikula, Education Development Center (EDC)</i> <i>Jill DePiper, Research Scientist, Education Development Center (EDC)</i></p>
<p><b>Session D</b> Wednesday, March 10</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Let's Talk About It: Deepening Students' Mathematical Sense-making by Attending to Teachers' Listening</i></b></p> <p>Mathematics classrooms are democratic spaces where students learn how to discuss differing ideas. They are places where students deepen their learning by talking about their thinking. As students talk, educators are called upon to deepen the ways we listen. Join us to learn more about pedagogical listening. We will discuss questions such as: What kinds of listening foster sense-making in mathematics classrooms? How can we attend to, and be curious about listening? How does the way a teacher listens shape how students listen to themselves and to each other? How is listening essential for rehumanizing mathematics education?</p> <p>Grades PK-12</p> <p><i>Allison Hintz, Associate Professor, Math Education, School of Educational Studies, University of Washington Bothell</i> <i>Kersti Tyson, Director of Evaluation and Learning, LANL Foundation</i> <i>Andrea English, Senior Lecturer, University of Edinburgh</i></p>



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<p><b>Session E</b> Wednesday, March 10</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>A Framework for Equitable and Inclusive Mathematics Education for Complex Learners</i></b></p> <p>We will present a framework developed to support the equitable teaching of mathematics to complex learners in elementary grades. Too often, materials for complex learners focus on rote procedures and memorization. We focus instead on supporting complex learners in developing problem solving strategies and understanding, building on the strengths each student brings to the classroom. The framework describes key questions and mindset shifts for educators along with everyday action steps educators take in the areas of strengths-based interactions with children, design of the learning environment, using and adapting curriculum, re-framing assessments, engaging the community, and supporting teacher learning.</p> <p>Grades PK-5</p> <p><i>Corey Drake, Professor, Department of Teacher Education, Michigan State University Kimberly Hufferd-Ackles, Open Wings Learning Community</i></p>
<p><b>BREAK</b> 10:00—10:15 am • Pacific Time</p>	
<p><b>Session F</b> Wednesday, March 10</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Monitoring Student Work: Attending to and Keeping Track of Students' Thinking</i></b></p> <p>This session will focus on the practice of monitoring - one of the five practices for orchestrating productive discussions (Smith &amp; Stein, 2018). Monitoring involves listening in on what students are saying and observing what they are doing as they work on a task; asking questions to determine what students understand and to move them towards the goals of the lesson; and keeping track of the approaches that they are using. This session will focus on specific challenges teachers face when monitoring and how to address them, and on the ways in which monitoring can support equity.</p> <p>Grades K-12 ideas, Grades 6-12 content</p> <p><i>Peg Smith, University of Pittsburgh, Professor Emerita Mathematics Education Consultant and Author</i></p>



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<p><b>Session G</b> Wednesday, March 10</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Instructional Activities in Early Childhood: Supporting Language and Participation</i></b></p> <p>Instructional activities that are intentional, playful, and driven by young children’s ideas are the focus in this session. As teachers take up purposefully-designed Instructional Activities, they enhance their classroom spaces to leverage diverse linguistic resources and varied participation (e.g., gesture and representation), broadening notions of what counts as math and honoring the contributions that children bring to the classroom. This session explores early childhood classroom vignettes of Instructional Activities as we simultaneously address a range of early math content, pedagogy, children’s thinking, and in-the-moment assessment.</p> <p>Grades PK-2</p> <p><i>Angela Chan Turrou, Senior Researcher &amp; Teacher Educator, UCLA Nick Johnson, Assistant Professor, San Diego State University</i></p>
<p><b>Session H</b> Wednesday, March 10</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Building Lasting Skills, Engagement and Confidence in Algebra using Tactile Immersive Virtual Reality</i></b></p> <p>Learning science has validated that we all learn math more fluidly and fluently when we interact with and experience via perceiving, touching, moving, and visualizing concepts within meaningful real world settings. However, the vast majority of math learning tools today do not exploit this fact, and as a result, generations of historically underserved students continue to be squeezed out of STEM fields beginning in middle school through university. In our session, you will learn how to transform engagement &amp; outcomes in secondary math using pedagogically-sound tools that foster tactile, interactive and multimodal sense-making, made possible by recent advances in Immersive Virtual Reality.</p> <p>Grades 6-12</p> <p><i>Anarupa Ganguly, Prisms of Reality</i></p>



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<p><b>Session I</b> Wednesday, March 10</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>What Have We Learned? Understanding Ambitious and Equitable Mathematics Teaching through Real-Time Teaching Dilemmas</i></b></p> <p>Most would agree that developing communities in which students explain and justify their thinking, create and respond to mathematical arguments requires knowledge of discourse intensive practices that is challenging for teachers to learn—in online or face-to-face environments. Through our practice-based work we have seen the benefits and possibilities of taking on manageable pieces of instruction while also helping teachers attend to equity-oriented teacher practices and learn from real-time teaching dilemmas (Ghousseini, 2009; Zeichner, 2012). In this session we will explore the possibilities for teacher learning in practice through the exploration of particular pedagogies of practice: representations of practice (e.g., video records of lessons or records of student work); decompositions of practice (e.g., identification of specific instructional practices such as talk moves); and approximations of practice (e.g., simulations of certain aspects of practice through activities such as role play and rehearsal). We also share examples from the field, including how teachers have faced new dilemmas in teaching ambitiously through their own practice.</p> <p>Grades PK-5 <i>Melinda Knapp, Oregon State University-Cascades</i></p>
<p><b>Session J</b> Wednesday, March 10</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Instructional Moves to Foster Equitable Student Engagement</i></b></p> <p>In this session we explore two questions regarding student engagement in the learning of mathematics. How can we ensure that all students are sense-makers and active doers of math? What can teachers do to encourage and invite students to participate fully? We will explore student-centered instructional moves that engage students equitably in math practices as doers of mathematics by reviewing student work and engaging in math together. As these moves become normative for the teacher and students (i.e., habits) student engagement for all students tends to increase.</p> <p>Grades PK-12 <i>Kathy Pfaendler Carolyn Choi Mathematics Professional Development Specialists, Teachers Development Group</i></p>
<p><b>Generalize to Practice Part I</b> Wednesday, March 10 • 11:30 am—12:15 pm</p> <p>Meet with other educators in facilitated small groups to debrief the day’s learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.</p>	



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**THURSDAY, MARCH 11**

<p><b>Session K</b> Thursday, March 11</p> <p>3:00 – 4:00 pm Pacific Time</p>	<p><b><i>Rough Draft Math as an Equity Pedagogy During Online Instruction</i></b></p> <p>How have mathematics teachers integrated rough draft thinking into their online learning environments? How are these approaches helping the teachers achieve their goals for equity in mathematics teaching and learning? In this session, I will share what I have learned from middle school and high school teachers in Delaware about how they have created online learning spaces that humanize mathematics learning by welcoming students' thinking and providing opportunities to revise. I will connect these teachers' work to three out of four dimensions of equity from Rochelle Gutiérrez's work: access, identity, and power.</p> <p>Grades 6-12</p> <p><i>Amanda Jansen, Professor, University of Delaware</i></p>
<p><b>Session L</b> Thursday, March 11</p> <p>3:00 – 4:00 pm Pacific Time</p>	<p><b><i>Analyzing Context and Models in 2021</i></b></p> <p>The past year has saturated the market with mathematical models and left experts and laypeople alike to interpret complex contexts and create or make sense of mathematical models of those contexts and data related to them. Teaching our students to do the same has never been more imperative. In this middle school-focused session, we'll engage in our current iteration of an instructional routine designed to provide ALL students repeated experiences in modeling with mathematics in inclusive ways. We'll unpack the routine, articulate specific designs for interaction to engage and support students. Participants will leave ready to try Analyzing Contexts and Models in a remote or in-person setting.</p> <p>Grades 6-8</p> <p><i>Amy Lucenta, FosteringMathPractices.com   Co-Founder</i> <i>Grace Kelemanik, FosteringMathPractices.com   Co-Founder</i></p>
<p><b>Session M</b> Thursday, March 11</p> <p>3:00 – 4:00 pm Pacific Time</p>	<p><b><i>Exposing Historical Inequities around "Building Fluency": Redefining and Creating More Equitable Practices</i></b></p> <p>In this session student thinking will be the catalyst for shifting teacher practice in order to address inequities historically plaguing our education system. We will draw on Cognitively Guided Instruction and its principled ideas by highlighting how listening to students' thinking in the secondary classroom can inspire</p>



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	<p>teachers to rethink mathematics instruction. Join us in exploring fluency, what it is, how to develop it, and how it can be a tool for more equitable mathematics. Participants will develop their abilities to become better listeners, sense-makers, and strategic facilitators of using student thinking as a foundation for learning for ALL students.</p> <p>Grades PK-12</p> <p><i>Kristine Ho, PhD, Director Mathematics Programs, UCLA</i> <i>Jenn Hagman, Associate Director of Secondary Mathematics, UCLA Math Project</i></p>
<p><b>Session N</b> <i>Thursday, March 11</i></p> <p>3:00 – 4:00 pm Pacific Time</p>	<p><b><i>Using “Practical Measures” of Teachers’ Experiences to Reflect on and Improve Professional Learning</i></b></p> <p>Leaders who facilitate collaborative professional learning for mathematics teachers often have limited ways to get systematic, targeted feedback about their practice. We will introduce “practical measures” (e.g., short teacher surveys) that leaders can use to reflect on and adjust their practice. The measures are grounded in research on what supports ambitious, equitable goals for teaching. They support facilitators to attend to, for example, whose voices are valued and whose needs and interests are taken up in professional learning meetings. We will invite participants to consider how the measures can inform design and facilitation in their own contexts.</p> <p>Grades PK-12</p> <p><i>Hilda Borko, Charles E. Ducommun Professor of Education, Graduate School of Education, Stanford University</i> <i>Kara Jackson, Associate Professor of Mathematics Education, University of Washington</i> <i>Michael Jarry-Shore, Graduate Student, Stanford University</i> <i>Anita Lenges, Clinical Associate Professor of Mathematics Education, University of Washington</i> <i>Hannah Nieman, Research Scientist, University of Washington</i> <i>Zuhal Yilmaz, Visiting Assistant Professor, University of California, Riverside</i></p>
<p><b>Session O</b> <i>Thursday, March 11</i></p> <p>3:00 – 4:00 pm Pacific Time</p>	<p><b><i>Routines for Leaders that Empower Teachers</i></b></p> <p>Our leadership voice as administrators and teacher-leaders is being called. Perhaps now - more than ever - our teachers deserve regular feedback in ways that nurture equitable and inclusive mathematics teaching and learning focused on justification and generalization. As we navigate remote and/or in-person</p>



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	<p>instruction, leaders can develop routines that offer mathematically productive feedback in ways that are do-able/manageable, generative, and non-evaluative. In this session, we will explore components of mathematically productive feedback to teachers, consider different tools and structures that can be generalized to any school/grade/context, and rehearse this essential and powerful leadership routine. Specifically, we'll consider how feedback that is descriptive, purposeful, focused, and motivating empowers teachers to implement more effective and equitable teaching practices.</p> <p>Grades PK-12</p> <p><i>Bill Feeley Julie Fredericks Mathematics Professional Development Specialists, Teachers Development Group</i></p>
<p style="text-align: center;"><b>BREAK</b> 4:00—4:15 pm • Pacific Time</p>	
<p><b>Session P</b> Thursday, March 11</p> <p>4:15—5:15 pm Pacific Time</p>	<p><b><i>Math Is... Young Children's Studies of Mathematics Through Line and Trajectory</i></b></p> <p>How does the study of mathematics become relevant and deeply personal in the context of a toddler? When viewed through an adult lens, mathematics curricula can be intimidating. In reality, math forms the foundation of our world and toddlers are engaging with it whether we join them or not. This session examines a year-long investigation, researched by a class of 2-year-old children, around line, trajectory, and toddler joy. We unpack the schema the children developed and strategies the teachers used to support the children. The teachers' hesitancy and uncertainty is addressed throughout and specific research is offered that supported the teachers' growth. Further, we examine how we can begin to dismantle approaches to mathematics education that exclude and oppress children's diverse problem-solving strategies when working with toddlers through first graders.</p> <p>Grades PK-1</p> <p><i>Alex Morgan, Community Outreach Specialist, Boulder Journey School Kirsten Zimbelman, Mentor Advisor / Boulder Journey School</i></p>



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<p><b>Session Q</b> Thursday, March 11</p> <p>4:15—5:15 pm Pacific Time</p>	<p><b><i>How Might We Address Unfinished Learning in K-12 Mathematics? Exploring Some Strategies That Help Students Succeed</i></b></p> <p><i>Many students complete the school year without gaining proficiency with all the content they are learning. This is even more the case now, with the COVID19 pandemic keeping many students out of schools, and with many classrooms working remotely. Students of color, EL students, students with special needs, and students who are otherwise marginalized often face the greatest challenges successfully engaging in remote instruction. How might we address these needs? In this session, we share perspectives from “unfinished learning” that can help us with strategies for revisiting content in meaningful ways while still moving forward with grade level work.</i></p> <p><i>Grades K-12</i></p> <p><i>Linda Ruiz Davenport, Middle School Math and Science Teacher, Boston Public Schools</i> <i>Stacey Solomon, Program Director, Mathematics K-8, Boston Public Schools</i></p>
<p><b>Session R</b> Thursday, March 11</p> <p>4:15—5:15 pm Pacific Time</p>	<p><b><i>What Do We Need to Know to Design More Effective Professional Learning</i></b></p> <p><i>This session will feature a discussion between K-12 professional development practitioners (i.e., Julie Fredericks, Teachers Development Group; Claire Gogolen, Center for Education Policy Research at Harvard University; Grace Kelemanik, Fostering Math Practices) and an academic (Hill) who studies this topic. Following a summary of “what is known” about teacher professional development practices in the research literature, Hill will ask practitioners: What professional development practices – defined as methods for helping teachers learn content – lead to positive impacts on teaching and learning? What new professional development practices should we experiment with and study? Finally, what critical outcomes – beyond student test scores – would help us determine whether these professional development practices work to accelerate improvements in teaching and learning?</i></p> <p><i>Grades PK-12</i></p> <p><i>Heather Hill, Professor, Harvard University</i></p>



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<p><b>Session S</b> Thursday, March 11</p> <p>4:15—5:15 pm Pacific Time</p>	<p><b><i>Noticing Student Thinking as a Resource for Equitable Mathematics Classrooms</i></b></p> <p>When it comes to students’ learning, teacher noticing matters. Both what teachers notice about students’ mathematical ideas and how teachers make sense of those ideas has the potential to open up valuable opportunities for student learning. How and what teachers notice can also provide avenues for establishing an equitable mathematics classroom where students are positioned as capable learners and supported in developing positive mathematical identities. This session will engage participants in thinking about their own noticing and provide practical suggestions for establishing productive noticing practices in one’s classroom. This session is recommended for those teaching K-8.</p> <p>Grade PK-8</p> <p><i>Miriam Gamoran Sherin, Associate Provost for Undergraduate Education, Northwestern University</i> <i>Elizabeth A van Es, Professor, University of California, Irvine</i></p>
<p><b>Generalize to Practice Part 2</b> Thursday, March 11 • 5:30—6:15 Pacific time</p> <p>Meet with other educators in facilitated small groups to debrief the day’s learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.</p>	



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*Insights about How to Enact More Equitable & Inclusive PreK-12 Mathematics Teaching & Professional Learning*

**SATURDAY, MARCH 13**

<p><b>Session U</b> Saturday, March 13</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Creating Classrooms Where All Students are Thinking and Reasoning Mathematically</i></b></p> <p>Our students face a world full of seemingly intractable problems, and so it is critical that each and every one of them develops into a powerful math thinker. This will no doubt mean changing some of our current teaching practices as we place more emphasis on mathematical thinking, step out of the middle of classroom interactions and ensure that student struggle is productive. In this middle school-focused session, we'll engage with five essential teaching strategies that promote critical instructional shifts needed to teach all students to think and reason mathematically. We will also discuss implementing the strategies in remote settings.</p> <p>Grade 6-8</p> <p><i>Grace Kelemanik, FosteringMathPractices.com   Co-Founder</i> <i>Amy Lucenta, FosteringMathPractices.com   Co-Founder</i></p>
<p><b>Session V</b> Saturday, March 13</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>What the Pandemic is Helping Us Learn About Inquiry Based Coaching</i></b></p> <p>Many people have noticed how the pandemic has made problems in our educational system related to equity more visible. In this session, we will explore what the pandemic and the move to a virtual environment has highlighted in our work supporting teachers as they try to take on equitable and inclusive teaching practices. Specifically, what important ideas and characteristics of inquiry based coaching are more visible in this environment and what can we learn from this new perspective that will continue to strengthen our work in the future as we move back toward in-person work? Together, we will explore ways to minimize the impact of our own biases in work supporting teachers and how to shift the authority for this work to the professional learning community.</p> <p>Grades PK-12</p> <p><i>Julie Fredericks</i> <i>Murrel Hoover</i> <i>Mathematics Professional Development Specialists, Teachers Development Group</i></p>



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<p><b>Session W</b> Saturday, March 13</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Inquiry-Based Mathematics Learning Before, During, and After a Pandemic: Embedding Connected Mathematics in a Digital Collaborative Environment</i></b></p> <p>The Connected Mathematics Project (CMP) will report on efforts to provide CMP classrooms with a digital collaborative environment. In this environment, students: Investigate mathematics using a new CMP STEM Problem Format:</p> <ul style="list-style-type: none"><li>○ Document, share, and curate mathematics with digital tools</li><li>○ Access group work in real-time and publish work across groups</li><li>○ Engage in face-to-face, virtual, or hybrid with the platform and, teachers</li><li>○ Monitor artifacts of individual and group thinking in real-time or after class</li><li>○ Quickly scan and select student work for whole-class summary discussions</li><li>○ Mark-up, incorporate, and publish student work as classroom artifacts</li><li>○ Create and send “just-in-time” supports to individual or groups of students</li></ul> <p>Grades 6-8</p> <p><i>Elizabeth Philips, Yvonne Grant, Alden Edson Michigan State University, Connected Mathematics Project (CMP) Program in Mathematics Education (PRIME)</i></p>
<p><b>Session X</b> Saturday, March 13</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Engaging in the Deep Work of Mathematics: Supporting High-Cognitive Learning in the Age of Distraction</i></b></p> <p>Are your students able to engage in complicated tasks for long periods of time without distraction? Are you? The digital world makes it harder for all of us to think and work deeply and the pandemic exacerbated this challenge. We tend to scan more than read and we multi-task instead of focusing intently on one responsibility. Luckily, we can fix this problem. In this session you will learn strategies to support students' and teachers' abilities to think, work, and learn deeply. We will address the issue of status in math class and consider how we ensure all students have access to deep learning opportunities.</p> <p>Grades K-16</p> <p><i>Mike Flynn Ed.D., Director of Mathematics Leadership Programs Mount Holyoke College</i></p>



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<p><b>Session Y</b> Saturday, March 13</p> <p>9:00—10:00 am Pacific Time</p>	<p><b><i>Mathematical Hearts: A Culturally Responsive Mathematics Approach to Teaching Mathematics with Empathy and Justice</i></b></p> <p>Culturally Responsive Mathematics Teaching (CRMT) is an approach to mathematics instruction that promotes empathy and justice inside and outside the classroom. In this session we share a CRMT instructional design tool that promotes simultaneous attention to children’s multiple mathematical, community, and critical knowledge bases, instructional rigor and supports, and issues of power and participation in the classroom. Participants will leave ready to assess instruction artifacts (e.g. lessons, assessments, curriculum) with a CRMT lens. Our goal is to nurture mathematical hearts – not just minds – of all people, children and adults alike.</p> <p>Grades PK-8</p> <p><i>Julia Aguirre, Associate Professor of Mathematics Education, University of Washington Tacoma</i> <i>Maria del Rosario Zavala, Associate Professor of Elementary Education, San Francisco State University Graduate College of Education</i></p>
<p><b>BREAK</b> 10:00 – 10:15 am • Pacific Time</p>	
<p><b>Session Z</b> Saturday, March 13</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Seeing Students as Problem-Solvers In and Out of the Classroom</i></b></p> <p>When I ask teachers about their goals for students, learning to be problem-solvers often tops the list. But what if students have already learned to be problem-solvers by participating in the social lives of their families and communities? For the past two years, my colleagues and I have focused on understanding how people solve problems in their day-do-day lives, and on positioning everyday problem-solving practices as assets for middle and high school mathematics instruction. This session explores activity structures and teacher moves that advance equity by building with and strengthening the problem-solving practices youth develop in and out of school.</p> <p><i>Mary Alice Carlson, Associate Professor of Mathematics Education, Montana State University Department of Mathematical Sciences</i></p>



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<p><b>Session AA</b> Saturday, March 13</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>What We're Learning to Ask About the Weaving of Mathematics and Equity During Classroom Talk</i></b></p> <p>As they plan and implement mathematics discussions, teachers must both develop a coherent mathematical story line and give all students an opportunity to learn. The first involves eliciting students' ideas, tracking what students are figuring out, and considering how to draw attention to questions and ideas that move the class toward deeper insight. Of equal weight is the second commitment, giving each student an opportunity to engage in substantive reasoning, to voice ideas, and to freely express questions and confusion. In this interactive session, participants will view elementary classroom videos to consider the challenges and tensions of these two commitments.</p> <p>Grades PK-5</p> <p><i>Susan Jo Russell, Senior Researcher, Education Research Collaborative at TERC Deborah Schifter, Principal Research Scientist, EDC</i></p>
<p><b>Session BB</b> Saturday, March 13</p> <p>10:15—11:15 am Pacific Time</p>	<p><b><i>Connecting Math Learning to Learning about our World: Critical Literacy in the K-8 Math Classroom</i></b></p> <p>In this session we will explore critical literacy (Vasquez, 2017) approaches in K-8 mathematics teaching. In a critical literacy approach, students have opportunities to analyze and critique data, discourses, conclusions, and broader implications. We focus on one activity using a children's book (and/or related resources for older students) to examine how we can engage students in learning classical and critical mathematics (Gutstein, 2006), while at the same time supporting them in developing a critical stance towards learning. We will also discuss how a critical stance can be used in other areas of the mathematics curriculum.</p> <p>Grades PK-8</p> <p><i>Eva Thanheiser, Professor for Mathematics Education, Portland State University Courtney Koestler, Director of the OHIO Center for Equity in Mathematics and Science, Ohio University</i></p>



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**Session CC**

Saturday, March 13

10:15—11:15 am

Pacific Time

***Mathematics Lessons: Responding to Social Injustice***

This session examines a framework that uses mathematics to respond to social injustice using critical for four reasons: 1) To build an informed society; 2) To connect mathematics with students' cultural and community histories as valuable resources; 3) Empower students to confront and solve real-world mathematics as a tool to confront unjust contexts, and 4) Help students learn to use mathematics as a tool for democracy and creating a more just society.

Grades 3-5

*Robert Q. Berry III, University of Virginia School of Education and Human Development, Samuel Braley Gray Professor of Mathematics Education, Associate Dean of Diversity, Equity, and Inclusion*

**Generalize to Practice Part 3**

Saturday, March 13 • 11:30—12:15 Pacific time

Meet with other educators in facilitated small groups to debrief the day's learning, generalize to your own roles and set next steps for action. Each day, the debrief will have a slightly different focus and involve meeting in break out groups with a variety of participants in similar and different roles.