## Agenda
San Diego, CA • December 13–15

**Wednesday, December 13: Focus on K–12 Content and Instruction**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>7:00–8:00 a.m.</td>
<td>Registration, Continental Breakfast</td>
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<tr>
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<td>Ballroom 20 Lobby</td>
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<tr>
<td>8:00–9:45 a.m.</td>
<td>Keynote—Matthew R. Larson&lt;br&gt;<em>Balancing the Equation: A Guide to Meaningful Mathematics Teaching and Learning</em>&lt;br&gt;Ballroom 20</td>
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<tr>
<td>9:45–10:00 a.m.</td>
<td>Break</td>
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<tr>
<td>10:00–11:15 a.m.</td>
<td>Concurrent Keynotes&lt;br&gt;Titles &amp; locations: p. 3; Descriptions: pp. 12–13</td>
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<tr>
<td>11:15 a.m.–12:45 p.m.</td>
<td>Lunch (on your own)</td>
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<tr>
<td>12:45–2:30 p.m.</td>
<td>Breakouts&lt;br&gt;Titles &amp; locations: p. 3; Descriptions: pp. 14–16</td>
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<tr>
<td>2:30–2:45 p.m.</td>
<td>Break</td>
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<tr>
<td>2:45–4:00 p.m.</td>
<td><strong>Role-Alike Networking Meeting</strong>—Educators have an opportunity to participate in an expert-facilitated conversation with others who have similar responsibilities. Come ready to share successes and challenges, to discuss promising practices, and to find solutions to vexing issues about student learning.</td>
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<tr>
<td></td>
<td><strong>Elementary School</strong>&lt;br&gt;Facilitators: Thomasenia Lott Adams &amp; Juli K. Dixon&lt;br&gt;Ballroom 20</td>
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<td><strong>Middle School</strong>&lt;br&gt;Facilitator: Sarah Schuhl&lt;br&gt;33</td>
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<td><strong>High School</strong>&lt;br&gt;Facilitator: Mona Toncheff&lt;br&gt;32</td>
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<td><strong>Building Administrators &amp; District Leaders</strong>&lt;br&gt;Facilitator: Matthew R. Larson&lt;br&gt;31B</td>
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<td><strong>Instructional Coaches &amp; Departmental Chairs</strong>&lt;br&gt;Facilitator: Jennifer Deinhart&lt;br&gt;31C</td>
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### Thursday, December 14: Focus on K–12 Content and Assessment

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<tr>
<td>7:00–8:00 am.</td>
<td>Registration</td>
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<td>Continental Breakfast</td>
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| 8:00–9:30 a.m.| **Keynote**—Timothy D. Kanold  
*First Things First: Building a Solid Mathematics Foundation in a PLC at Work* | Ballroom 20            |
| 9:30–9:45 a.m.| Break                                                                    |                        |
| 9:45–11:00 a.m.| **Concurrent Keynotes**                                                  | Titles & locations: p. 4; Descriptions: pp. 17–18 |
| 11:00 a.m.–12:30 p.m.| Lunch (on your own)                                            |                        |
| 12:30–2:00 p.m.| **Breakouts**                                                            | Titles & locations: p. 4; Descriptions: pp. 19–21 |
| 2:00–2:15 p.m.| Break                                                                    |                        |
| 2:15–3:45 p.m.| **Panel Discussion**  
Q&A with all presenters provides practical answers to your most pressing questions. | Ballroom 20            |

### Friday, December 15: Next Steps in Your Journey

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<td><strong>Breakouts</strong></td>
<td>Titles &amp; locations: p. 5; Descriptions: pp. 22–24</td>
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<tr>
<td>9:30–9:45 a.m.</td>
<td>Break</td>
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</table>
| 9:45–11:30 a.m.| **Celebration**  
Join presenters in a joyous celebration of your work and growth! | **Keynote**—Juli K. Dixon  
*How Do You Fill the Gaps? A Case-Study Approach to Rethinking Your Response to Intervention* | Ballroom 20            |

Agenda and presenters are subject to change.
# Day 1: Sessions at a Glance

**Wednesday, December 13**

## Concurrent Keynotes: 10:00–11:15 a.m.

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<thead>
<tr>
<th>Presenter</th>
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<tr>
<td>Thomasenia Lott Adams</td>
<td>Supporting Success for Each and Every Student</td>
<td>32</td>
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<tr>
<td>Matthew R. Larson</td>
<td>Using NCTM’s PtA to Transform Instruction in Your Mathematics Classroom</td>
<td>Ballroom 20</td>
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<tr>
<td>Sarah Schuhl</td>
<td>Effective Grading Practices: Solving the Grading–Learning Dilemma</td>
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## Breakouts: 12:45–2:30 p.m.

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<td>Jennifer Deinhart</td>
<td>Using High-Level Tasks to Engage Students in Productive Mathematics Discourse</td>
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<tr>
<td>Juli K. Dixon</td>
<td>Six Essential Expectations for Effective Instruction</td>
<td>31B</td>
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<tr>
<td>Sarah Schuhl</td>
<td>Lessons That Matter: Teaching Mathematics in Middle School</td>
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### High School

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<tr>
<td>Mona Toncheff</td>
<td>Designing Lessons to Engage Each Learner Every Day</td>
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### Central Office

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<th>Presenter</th>
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<tbody>
<tr>
<td>Matthew R. Larson</td>
<td>Taking Action: Supporting Effective Mathematics Teaching Practices</td>
<td>31A</td>
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# Day 2: Sessions at a Glance

**Thursday, December 14**

## Concurrent Keynotes: 9:45–11:00 a.m.

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<tbody>
<tr>
<td>Juli K. Dixon</td>
<td>Fighting Fixed Mindsets: Five Classroom Culture Shifts</td>
<td>32</td>
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<tr>
<td>Timothy D. Kanold</td>
<td>Fighting for the C in PLC!</td>
<td>Ballroom 20</td>
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<tr>
<td>Mona Toncheff</td>
<td>Unstoppable Learning in Your PLC: Responding When Students Do Not Learn</td>
<td>33</td>
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## Breakouts: 12:30–2:00 p.m.

### Elementary School

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<tr>
<td>Jennifer Deinhart</td>
<td>Developing Procedural Fluency Through Conceptual Understanding for Grades K–5</td>
<td>31A</td>
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<td>Juli K. Dixon</td>
<td>Undermining Effectiveness: How We Start the Right Lessons the Wrong Way</td>
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<tbody>
<tr>
<td>Thomasenia Lott Adams</td>
<td>Teaching for Mathematics Proficiency</td>
<td>33A</td>
</tr>
<tr>
<td>Matthew R. Larson</td>
<td>Assessment, Homework, RTI, and MTSS</td>
<td>33B</td>
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<tbody>
<tr>
<td>Timothy D. Kanold</td>
<td>Homework and Grading in a PLC Culture</td>
<td>Ballroom 20</td>
</tr>
<tr>
<td>Mona Toncheff</td>
<td>High-Quality Assessment Processes That Engage Teachers and Students in the PLC Assessment Cycle</td>
<td>31B</td>
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</table>

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<tbody>
<tr>
<td>Sarah Schuhl</td>
<td>Effective Team Actions Using Quality Common Assessments</td>
<td>31C</td>
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</tbody>
</table>
# Day 3: Sessions at a Glance

**Friday, December 15**

### Breakouts: 8:00–9:30 a.m.

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Topic</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Thomasenia Lott Adams</td>
<td>No Shh! in Math Class: The Power of Mathematical Discourse in Grades K–8</td>
<td>33A</td>
</tr>
<tr>
<td>Jennifer Deinhart</td>
<td>Identifying Essential Standards: Prioritizing Our Mathematics Curriculum for Grades K–5</td>
<td>31A</td>
</tr>
<tr>
<td>Juli K. Dixon</td>
<td>Making Sense of Mathematics for Teaching With Your Collaborative Team: The TQE Process</td>
<td>32</td>
</tr>
<tr>
<td>Timothy D. Kanold</td>
<td>More Powerful Than Poverty: Daily Teacher Actions That Inspire Each and Every Mathematics Student to Learn</td>
<td>Ballroom 20</td>
</tr>
<tr>
<td>Matthew R. Larson</td>
<td>The Essential Elements of Highly Effective Mathematics Programs</td>
<td>33B</td>
</tr>
<tr>
<td>Sarah Schuhl</td>
<td>Diving Deeper Into Effective Grading Practices in Your PLC Culture</td>
<td>31C</td>
</tr>
<tr>
<td>Mona Toncheff</td>
<td>Leadership: The Four Keys to Successful K–12 Mathematics Programs</td>
<td>31B</td>
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</tbody>
</table>
Key Concepts

These key concepts are offered as a handy reference. Presenters refer to these concepts repeatedly in sessions. Please take a moment to become familiar.

Four Critical Questions of a PLC
Collaborative teams within schools that function as PLCs focus their work on the four critical questions:

1. What do students need to know and be able to do?
2. How will we know when they have learned it?
3. What will we do when they haven’t learned it?
4. What will we do when they already know it?


High-Leverage Team Actions
Timothy D. Kanold developed 10 high-leverage team actions (HLTAs) that act as a core set of adult functions central to highly effective instruction and student learning success. HLTAs are aligned with the four critical questions of a PLC. They are organized by team actions that take place before the unit begins, during the unit, and after the unit ends.

Before the Unit

- **HLTA 1.** Making sense of the agreed-on essential learning standards (content and practices) and pacing
- **HLTA 2.** Identifying higher-level-cognitive-demand mathematical tasks
- **HLTA 3.** Developing common assessment instruments
- **HLTA 4.** Developing scoring rubrics and proficiency expectations for the common assessment instruments
- **HLTA 5.** Planning and using common homework assignments

During the Unit

- **HLTA 6.** Using higher-level-cognitive-demand mathematical tasks effectively
- **HLTA 7.** Using in-class formative assessment processes effectively
- **HLTA 8.** Using a lesson-design process for lesson planning and collective team inquiry

After the Unit

- **HLTA 9.** Ensuring evidence-based student goal setting and action for the next unit of study
- **HLTA 10.** Ensuring evidence-based adult goal setting and action for the next unit of study

HLTAs are featured in *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work* series, edited by Timothy D. Kanold (2015).
Key Concepts

NCTM’s Mathematics Teaching Practices
NCTM established eight mathematics teaching practices that research indicates need to be consistent components of every mathematics lesson. Teachers need to:

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Use and connect mathematical representations.
4. Facilitate meaningful mathematical discourse.
5. Pose purposeful questions.
6. Build procedural fluency from conceptual understanding.
7. Support productive struggle in learning mathematics.
8. Elicit and use evidence of student thinking.

Mathematics teaching practices are featured in *Principles to Actions: Ensuring Mathematical Success for All* (2014), a guide of recommended, research-informed actions, based on NCTM’s core principles and intended for administrators, teachers, and specialists of mathematics.

Standards for Mathematical Practice
The eight Standards for Mathematical Practice (also known as the Mathematical Practices) form the backbone for building understanding in mathematics. According to the Common Core State Standards Initiative, the standards “describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.” The Mathematical Practices are a combination of standards through NCTM and the National Research Council. Students who achieve Mathematical Practices can:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

The Mathematical Practices are available at www.corestandards.org/Math/Practice for printing and download.
Matthew R. Larson
Balancing the Equation: A Guide to Meaningful Mathematics Teaching and Learning
Arguments concerning what to teach in mathematics and how to teach it are as old as the nation itself. If teachers are to improve mathematics learning for each and every student, they must stop recycling the same old debates. Instead, they should seek equilibrium in mathematics program design.

Matthew R. Larson explores implications from the past as educators create learning opportunities for students, as well as how to more effectively respond to critics of mathematics education today. Dr. Larson helps teachers work with parents and stakeholders to express what meaningful learning looks like today.
Thomasonia Lott Adams  
**Supporting Success for Each and Every Student**  
With so many moving parts to the school experience, teachers must stay focused on the how to empower students for success.

Thomasonia Lott Adams emphasizes that students must come first—over processes, procedures, and duties that can divert educators from the goal of educating every child. Dr. Adams notes, “Making children truly matter is the passport to their success. It is a logical statement, yet the commitment is far more involved.”

In this keynote, Dr. Adams shares insights from school and life experiences that have impacted the lives of students. She also reflects on her own childhood challenges at home and in school. Dr. Adams offers compelling strategies and a shared vision to empower students to succeed.

Matthew R. Larson  
**Using NCTM’s PtA to Transform Instruction in Your Mathematics Classroom**  
With all the change and challenge swirling in schools today, it is easy to become distracted. Through NCTM’s eight mathematics teaching practices, teachers can stay focused. (See sidebar.)

The session is based on NCTM’s groundbreaking book *Principles to Actions: Ensuring Mathematical Success for All* (2014), also known as PtA. Matthew R. Larson explains that instructional practice is the most controllable in-school factor that contributes to student learning.

Simply stated, effective teaching is the non-negotiable core to ensure that each and every student learns at high levels. NCTM’s mathematics teaching practices provide the ground rules for developing productive teaching practices.

<table>
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<td>3. Use and connect mathematical representations.</td>
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<td>4. Facilitate meaningful mathematical discourse.</td>
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<td>5. Pose purposeful questions.</td>
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<td>6. Build procedural fluency from conceptual understanding.</td>
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<td>7. Support productive struggle in learning mathematics.</td>
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<tr>
<td>8. Elicit and use evidence of student thinking.</td>
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Day 1: Wednesday, December 13
Concurrent Keynotes: 10:00–11:15 a.m. (cont’d)

Sarah Schuhl
Effective Grading Practices: Solving the Grading–Learning Dilemma
Grades have long been used to report learning in assessments, report cards, and other classroom activities. Despite how embedded grades are in the system, questions inevitably arise: How are grades aligned to student learning? What is the purpose of each grade? Who are the users of the information?

As instructional and assessment practices shift to meet the intent of rigorous standards, grades are too often an afterthought that muddy the accurate reporting of student learning. Sarah Schuhl explores what to consider when grading and reporting students’ learning of mathematics.

Participants can expect to:
1. Understand the challenges of traditional grading practices.
2. Explore grading practices that share accurate and useful information related to student learning.
3. Learn how to use a grading protocol to deepen team collective responses to learning.
**Elementary School**

**Thomasenia Lott Adams**

**The Problem With Problem Solving**

Since NCTM published *Problem Solving in School Mathematics* in 1980, teachers have focused on problem solving as a key instructional practice. Today, the book still provides a valuable focus and critical challenge in the classroom. Thomasenia Lott Adams explores factors teacher teams can address to increase student achievement through problem solving.

Participants can expect to:
- Examine the role of problem solving in teaching and learning mathematics.
- Engage in meaningful problem solving to reinforce principles as a learner.
- Develop a shared vision of meaningful problem solving in the classroom.

**Jennifer Deinhart**

**Using High-Level Tasks to Engage Students in Productive Mathematics Discourse**

Teachers can facilitate rich discussions with students by engaging them in cognitively demanding tasks. Students also engage in the Mathematical Practices through high-level tasks. Jennifer Deinhart helps collaborative teams select tasks, design lessons, and include questions to guide students in productive discourse.

Jennifer shows how students can make sense of problems and persevere in solving them by constructing arguments and critiquing others’ reasoning. Participants consider questioning and facilitating techniques that support productive discussion in the mathematics classroom.
Middle School
Juli K. Dixon
Six Essential Expectations for Effective Instruction
What does it look like when middle school students are engaged in rigorous standards? How is instruction planned? How is it implemented? Juli K. Dixon presents six essential expectations for effective instruction that emphasize Mathematical Practices and content to increase mastery for every learner:

1. Teaching with coherence
2. Leading with concepts
3. Staying focused
4. Emphasizing reasoning
5. Facilitating perseverance
6. Supporting practices

Participants create a shared image of classrooms where solid mathematics instruction is in place, and they generate a plan for targeted professional improvement in mathematics teaching.

Sarah Schuhl
Lessons That Matter: Teaching Mathematics in Middle School
Sarah Schuhl explores ways to engage students in using strategies that focus on the Standards for Mathematical Practice and NCTM’s mathematics teaching practices. (See descriptions for both on page 8.)

How can student knowledge deepen through discourse, multiple representations, and problem solving? How can teachers incorporate these activities in daily lessons to engage all students in learning? Sarah helps participants determine key elements of lesson design to meet the needs of all middle school mathematics students.
High School
Mona Toncheff
Designing Lessons to Engage Each Learner Every Day
How do high school teachers and teams make connections among content, mathematical habits of mind, and NCTM’s eight mathematical teaching practices? (See practices on page 8.) How do educators close the gap between the intended and the enacted curriculum?

Intentional lesson design is the key to unlocking these questions. Lessons that develop rich and meaningful mathematics must create access, build interest, motivate, and engage each and every student.

Mona Toncheff explores tools and strategies collaborative teams, school site leaders, and district leaders use to create compelling and engaging lessons. Session participants learn critical components to quality lesson design and investigate using high-level tasks during instruction.

Central Office
Matthew R. Larson
Taking Action: Supporting Effective Mathematics Teaching Practices
This session is based on NCTM’s series Taking Action: Implementing Effective Mathematics Teaching Practices (2017). Matthew R. Larson shows how leaders can make ambitious teaching a reality.

Dr. Larson relates NCTM’s eight mathematics teaching practices (see page 8) to equity-based practices that strengthen mathematics learning and cultivate positive student mathematical identities.

Dr. Larson introduces participants to “Analyzing Teaching and Learning” activities featured in Taking Action, where they consider, work out, and reflect on tasks or situations. They also examine how to support using research-informed instructional strategies in the classroom.
Day 2: Thursday, December 14
Keynote: 8:00–9:30 a.m.

Timothy D. Kanold
First Things First: Building a Solid Mathematics Foundation in a PLC at Work
Timothy D. Kanold opens the summit by describing the foundational elements of a PLC at Work culture and the ongoing school improvement journey for educators, leaders, and learners in the area of mathematics.

This foundation is built upon the four critical questions of a PLC that drive coherent, sustainable improvement in any school or district.

Dr. Kanold explains how to move from rhetoric to reality. Participants identify how to build a collaborative culture to promote continuous adult learning. They review how to respond to the needs of each student in a timely, directive, and systematic way using high-leverage team actions—a core set of adult activities central to highly effective instruction and student learning success. (See list on page 7.)

Dr. Kanold notes, “The collaborative teacher team is the engine that drives the PLC process, erases inequities in student learning experiences, and empowers teachers and leaders to make great decisions for mathematics learning every day.”

Concurrent Keynotes: 9:45–11:00 a.m.

Juli K. Dixon
Fighting Fixed Mindsets: Five Classroom Culture Shifts
The instructional choices teachers make impact not only classroom lessons, but how students feel about their ability to learn. Juli K. Dixon asks, “Do your school and classroom norms fight fixed mindsets or support them?”

Dr. Dixon helps participants make sense of five classroom culture shifts to support students while engaging in the mathematical practices. By examining school and classroom structures that might inhibit growth mindsets, teachers discuss ways to adjust them. She helps teams create a shared image of what it looks like when students are set up to succeed.

Dr. Dixon focuses on these five shifts.

1. Set the stage for students to come up with strategies.
2. Keep control of learning target by providing strategies “as if” they came from the students.
3. Expect students to do the sense making, even in the pulled small group.
4. Set the stage for students to talk to students.
5. Provide each and every student the opportunity to grow.
Timothy D. Kanold
Fighting for the C in PLC!
When teachers commit to the PLC at Work process, they must answer the questions: Are you a person open to influence and shared values? Are you able to be relationally intelligent and work interdependently with others?

Timothy D. Kanold reveals why the C in PLC is worth fighting for. Community is central to learning success.

Based on his recently released book: HEART! Fully Forming Your Professional Life as a Teacher and Leader (2017), this session focuses on how teachers honor the covenants of teams and temper self-interest. In doing so, they unleash their “unselfish gene,” but not to the point where they allow others to take advantage.

Dr. Kanold helps teachers cut through the noise of work and erase student-learning inequities caused by the teachers’ own isolated behaviors. As they push to improve their emotional intelligence, teachers begin to treat students and colleagues with grace. When professional colleagues recognize being part of a team means being in conflict at times, they learn to engage in honest conflict resolution.

Participants learn whether they are givers, takers, or matchers for their teams, learning which style is most successful. Teachers take a deep look at how helping others drives their success in the mathematics classroom.

Mona Toncheff
Unstoppable Learning in Your PLC: Responding When Students Do Not Learn
When students struggle to learn grade-level mathematics or in a course, how should teams collectively respond? Teams must work together to answer the third critical question of a PLC: What will we do when students haven’t learned?

Mona Toncheff reveals leadership and instructional processes to ensure learning for every student. Participants address ways to implement rigorous content standards while developing mathematical habits of mind. Mona emphasizes ways for teams to develop ownership in their students’ success.

Participants reflect on stumbling blocks and victories related to helping students learn. They explore collective response strategies to student learning before, during, and after a unit of instruction. Finally, they create a plan of action to build a collective response.
Elementary School
Jennifer Deinhart
Developing Procedural Fluency Through Conceptual Understanding for Grades K–5
Procedural fluency—skill in carrying out arithmetic and algebraic procedures flexibly, accurately, and efficiently—is an important component of mathematical proficiency. It also reflects the first critical question of a PLC: What do students need to know and be able to do?

Many students fail to develop fluency despite best efforts. Connecting procedures to underlying concepts is essential. This session examines elementary school content progressions for ratio and proportional relationships that build procedural fluency from conceptual understanding. Jennifer Deinhart shows how teachers and collaborative teams identify tasks and strategies that aid in this work. Participants also discover common pitfalls to avoid.

Juli K. Dixon
Undermining Effectiveness: How We Start the Right Lessons the Wrong Way
Instructional requirements are typically mandated to support student achievement; however, these same mandates are often in conflict with best practices. For instance, posting the essential question or lesson objective at the start of a mathematics lesson can be a barrier to engaging students in developing conceptual understanding of rigorous mathematics standards.

Juli K. Dixon explores alternatives to posting an essential question at the start of the lesson to focus on achieving the learning goal. She helps teachers and teams plan to incorporate these changes in the formative assessment process.

Participants can expect to:
- Examine current strategies within classroom structures and the formative assessment process.
- Explore alternatives to posting the essential question while maintaining focus on the learning goal.
- Create a shared image of classrooms where alternatives to posting the essential question are in place.
Middle School
Thomasenia Lott Adams
Teaching for Mathematics Proficiency
To reach student proficiency, mathematics instruction must reflect content and targeted purposes that fully engage learners. Thomasenia Lott Adams reviews examples of mathematical experiences that help students build proficiency.

Participants engage in activities to develop a shared vision and platform for helping students reach mathematics proficiency.

Matthew R. Larson
Assessment, Homework, RTI, and MTSS
There is a great deal of emphasis today on best practice. However, continual improvement of instruction and assessment is a better way to improve student learning. In this session, Matthew R. Larson looks at high-leverage team actions 3, 4, 5, 7, and 9, focusing on assessment and homework processes that increase student learning. (See complete list on page 8.) In addition, he identifies intervention strategies to target students who struggle to learn mathematics.

| HLTA 3 | Developing common assessment instruments |
| HLTA 4 | Developing scoring rubrics and proficiency expectations for the common assessment instruments |
| HLTA 5 | Planning and using effective common homework assignments |
| HLTA 7 | Using in-class formative assessment processes effectively |
| HLTA 9 | Ensuring evidence-based student goal setting and action for the next unit of study |
High School
Timothy D. Kanold
Homework and Grading in a PLC Culture
Timothy D. Kanold shows how teachers and collaborative teams can help students perform at high levels on homework and on assessments. This motivational and engaging session is based on the series Beyond the Common Core: A Handbook for Mathematics in a PLC at Work (2015).

Dr. Kanold examines collaborative team actions regarding homework protocols—both in product and process. He shows how to score and grade exams in ways guaranteed to improve student motivation and learning for each unit of essential content.

Using high-leverage team actions 4, 5, and 10, Dr. Kanold highlights critical research-affirmed assessment decisions that can help math results soar.

| HLTA 4. | Developing scoring rubrics and proficiency expectations for the common assessment instruments |
| HLTA 5. | Planning and using effective common homework assignments |
| HLTA 10. | Ensuring evidence-based adult goal setting and action for the next unit of study |

Mona Toncheff
High-Quality Assessment Processes That Engage Teachers and Students in the PLC Assessment Cycle
High-quality assessments provide teachers and students evidence of learning regarding content and process standards. Mona Toncheff helps participants discover processes that use focused high-quality assessments aligned to the coherence and rigor of the new standards. Participants learn key strategies to engage teachers and students in the assessment cycle.

Participants can expect to:
- Understand the work collaborative teacher teams do before, during, and after each unit to establish an assessment process.
- Explore common formative assessments and the relationship of those items to the expectations of the standards.
- Learn how to develop assessments that engage and motivate learners.

Central Office
Sarah Schuhl
Effective Team Actions Using Quality Common Assessments
Next-generation assessments reflect critical thinking skills needed to learn mathematics. How can collaborative teams guarantee that students meet learning expectations after each assessment? How do students use assessments as learning tools?

Sarah Schuhl shows how teams can build mathematics assessments to support interventions and extension. Additionally, she explores how to analyze data so teams and students benefit from results. Finally, she shares ideas to help students self-reflect and set goals by target.
Thomasenia Lott Adams  
**No Shh! in Math Class: The Power of Mathematical Discourse in Grades K–8**

Of NCTM's eight mathematics teaching practices, the fourth—Facilitate meaningful mathematical discourse—is vital. According to *Principles to Actions: Ensuring Mathematical Success for All* (2014), “Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.”

In this session, Thomasenia Lott Adams shows participants how to establish discourse as a sociomathematical norm in the classroom.

Jennifer Deinhart  
**Identifying Essential Standards: Prioritizing Our Mathematics Curriculum for Grades K–5**

In a PLC at Work, collaborative teams must identify essential standards within the mathematics curriculum. Teams must determine essential standards to implement a guaranteed and viable curriculum, while also providing systematic and targeted interventions.

Jennifer Deinhart shows how to prioritize critical standards to achieve high levels of learning. She helps participants make sense of standards by examining content, determining best practices, and deciding how to pace units.

Juli K. Dixon  
**Making Sense of Mathematics for Teaching With Your Collaborative Team: The TQE Process**

To support student mastery, teachers must engage with the mathematics they teach. This engagement is best constructed within a collaborative team before the unit begins.

In this interactive session, participants experience how selecting the correct tasks and engaging with them as teams of learners is crucial preparation. This engagement includes developing evidence of student learning through the use of tasks, questions, and evidence (the TQE process). Teachers share how to respond to students who do not meet learning goals, as well as students who do.

As part of this session, participants make sense of mathematics for teaching. They learn to unpack mathematics progressions that support responses to the four critical questions of the PLC. (See four questions on page 7.)

Juli K. Dixon uses video of authentic classrooms to highlight how and why a collaborative team must establish a shared image of rigorous mathematics instruction. This session is a must for teachers, supervisors, and administrators seeking increased K–12 mathematics achievement.

Timothy D. Kanold
More Powerful Than Poverty: Daily Teacher Actions That Inspire Each and Every Mathematics Student to Learn
Timothy D. Kanold explores essential practices of teachers who inspire student learning every day. For many students, poverty is a big hurdle. Some experts believe that until poverty is solved, student potential remains unfulfilled. Dr. Kanold believes differently—an answer rests in the hearts of teachers themselves.

Motivation and inspiration are more powerful than poverty! In this session, participants explore how neuroscience impacts student motivation and inspiration. Dr. Kanold helps educators focus on becoming:

- Teachers of positive influence and energy
- Teachers who use highly effective elements of math instruction in every lesson
- Persons of wisdom with a strong knowledge base and growth mindset

On a practical level, Dr. Kanold presents insights and ideas that mathematics teachers can apply to their current work. Teachers who establish their own spheres of engagement and interest can forever impact the lives of their students.

Matthew R. Larson
The Essential Elements of Highly Effective Mathematics Programs
To raise the proficiency of every student while closing learning differentials, program improvement must include features of highly effective mathematics programs outlined in Principles to Actions: Ensuring Mathematical Success for All (2014). This session engages participants in exploring five essential elements of successful teaching and learning from Principles to Actions:

- Access and equity
- Curriculum
- Tools and technology
- Assessment
- Professionalism

Matthew R. Larson reviews action steps that schools and districts must take to ensure these elements are in place.
Sarah Schuhl
Diving Deeper Into Effective Grading Practices in Your PLC Culture
It is difficult to accurately grade and report student learning during classroom activities or on work shown on assessments. What evidence demonstrates proficiency? How does a number or letter communicate what students have learned and not yet learned? This session focuses on ways to transform the grading and reporting of student learning.

Sarah Schuhl makes time to share ideas and address questions. Participants work collaboratively to brainstorm shifts needed in current grading practices to reflect student learning. They also create action plans to better match learning and grades.

Mona Toncheff
Leadership: The Four Keys to Successful K–12 Mathematics Programs
Teacher leaders manage daily demands that pull people in many different directions. How do educators know these directions provide supportive conditions for instructional change and improved student achievement?

In this session, Mona Toncheff investigates four keys of effective mathematics leadership. Leaders at all levels work together to examine tools and resources to improve mathematics teaching and learning, build leadership capacity, and empower students and families as equal partners.

Participants can expect to:
- Identify a vision for teaching and learning mathematics in a school or district.
- Analyze gaps between vision and current reality to inform next steps.
- Learn how to design and nurture leadership structures essential for exemplary mathematics programming in a school, district, or state.
Day 3: Friday, December 15
Keynote: 9:45–11:30 a.m.

Juli K. Dixon
How Do You Fill the Gaps? A Case-Study Approach to Rethinking Your Response to Intervention
Juli K. Dixon provides a unique perspective on how to support each and every student's learning. Dr. Dixon's viewpoint is that of a university mathematics educator and the parent of children with special needs. In following her family's journey, participants learn strategies directly relevant to mathematics teaching and learning. She also offers useful tools to help students across other disciplines, especially for those struggling in inclusive environments.