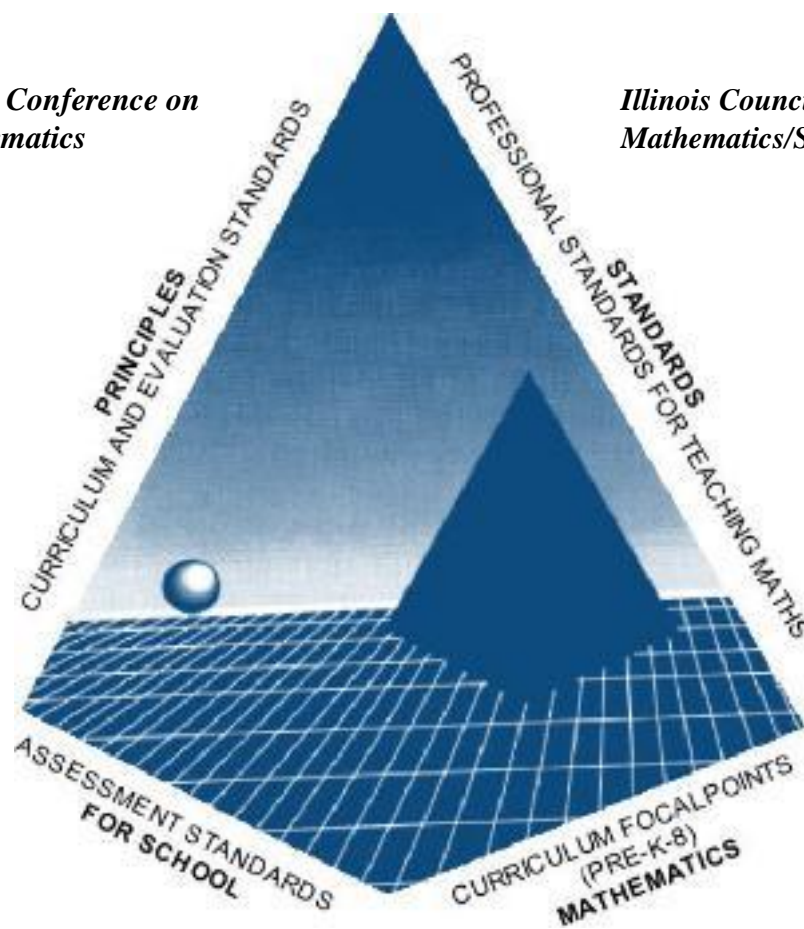


*Southern Illinois University Carbondale
is Proud to Present*

*The 35th Annual Conference on
Teaching Mathematics*

*Illinois Council of Teachers of
Mathematics/Southern Section*



**Common Core State Standards for Mathematics
Standards, Processes, and Topics**

Thursday, February 20, 2020

Conference and Program Chairpersons

Jerry P. Becker & Dr./Ms. Eunmi Joung

Southern Illinois University Carbondale / Midwest University, Wentzville, MO

Cheng-Yao Lin/Kuan Chun CHEN, Southern Illinois University Carbondale

Conference Coordinator

Rebecca Dycus

Conference and Scheduling Services

Southern Illinois University Carbondale

**JOHN A. LOGAN COLLEGE
HANCOCK CONFERENCE CENTER**

SESSION I

(9:00 AM – 10:00 AM)

1. Math & Music

Room

Grades PreK-K, K, & 1st grade

MS. SHELLY LIEFER, Kindergarten Teacher, Red Bud Elementary, Red Bud, IL

Learn some new, original, and old songs to use during math to help reinforce key skills. Bring some to share too!

2. Counting Collections: A Powerful Routine Your Students Will Love

Room

Grades K-2

ANNIE FOREST, ICTM President (and Math Coordinator), Berwyn South District 100, IL

Put an interesting collection of objects in front of learners and watch them sort and count. It's a great way to differentiate and have fun!

3. My Way is “Better” Than Yours

Room

Grades 3-6

NICHOLAS J RESTIVO, Executive Director (Retired Director of Mathematics PreK – 12), MOEMS, Mineola Union Free School District, Mineola, NY

Energize your classroom by encouraging risk-taking and observing the discourse taking place while “arguing” about a “better” way. You will be able to assess their understanding and thought processes.

4. Effective Differentiation in Mathematics

Room

Grades K-5

JEANINE SHEPPARD, ISBE Math Content Specialist, Illinois State University Center for Educational Initiatives, Freeburg, IL

Explore a variety of easy to implement differentiation strategies that will effectively engage the diverse learners in your classroom.

5. Opening up Classroom Discussions Using “Open Middle” Problems

Room

Grades 3-8

ADAM POETZEL, University of Illinois at Urbana-Champaign, Champaign, IL

The “Open Middle” problem structure can change any procedural practice exercise into an interesting problem-solving opportunity that still enhances procedural skills. This strategy can be implemented in your classroom tomorrow!

SESSION I

(9:00 AM – 10:00 AM)

6. Teaching Computer Science Discoveries in Grade Schools

Room

Grades 6-8

JODI CHILDRESS, Math teacher, Salem Community High School

So many different fields today involve the use of a computer, but so few schools teach any computer science. With code.org, you don't have to be an expert to get it started. The lessons are engaging and build problem solving skills. You can teach it as a stand alone class or pick and choose lessons to fit your schedule.

7. Math, Reading and Consequences: Firsthand Account of Gatekeeping

Room

Grades K-12

SEAN NANK, California State University San Marcos

ALBY LEE LEWIS, Retired Illinois Precision Grinder

JACKIE MURAWSKA, ICTM Past President and STEM Instructional Coach, Skokie School District 69

Actions and inactions in the mathematics classroom profoundly affects relationships. Come learn one student's experience as he navigated school and life with an undiagnosed disability.

8. The Power in Assessment for Learning

Room

Grades K-12

GREG GIERHART, West KY Educational Cooperative, Murray, KY

Ideas to approach the assessment for learning will be shown as a way to gather information about student learning and how teachers can use their everyday teaching practices to inform and adapt teaching practices to engage students in their own learning. Teachers will receive ideas to immediately take to their classroom and build their classroom toolkit for learning.

9. Solving Equations – Fundamental Insights from Many Cultures

Room

Grades 9-12

DR. CRAIG ROBERTS, Southeast Missouri State University, Cape Girardeau, MO

Solving equations is an essential part of mathematics, and people from diverse cultures have contributed fundamental insights. We will explore the solutions from several cultures.

10. Do Not Disturb My Circles!

Room

Grades 9-12

OSCAR CHAVEZ, Associate Professor, Illinois State University, Normal, IL

How Greek mathematicians explored extremely difficult problems and how secondary students can use technology to understand the very creative approaches that Archimedes and Eratosthenes used.

11. Visualizing Completing the Square

Room

Grades 9-12

EMILY RUSSETT, Numeracy Coach, Metro Nashville Public Schools, Nashville, TN

In this session we will look at ways Completing the Square can be visualized to offer multiple opportunities for students to access the conceptual understanding.

SESSION I (9:00 AM – 10:00 AM)

SESSION II (10:10 AM – 11:10 AM)

1. Building Mathematicians with a Guided Math Approach

Room

Grades K-2

JANA ZIPFEL and CHELSI PARSONS, 1st grade teacher and 2nd grade teacher, Red Bud Elementary School Red Bud, IL

Learn to design your math instruction with guided math groups. This instructional approach allows students to work and learn at their own level, all while working on a variety of math standards each day. Using technology, small group work, and independent practice, students will become confident mathematicians.

2. Students Can Understand Place Value

Room

Grades K-5

CHERYL ANN LUBINSKI, Elementary Teacher and Illinois State University, Professor (Retired),

Handouts will be provided and discussed that help teachers with teaching place-value concepts from whole numbers to decimals.

3. Formative Assessment Tasks

Room

Grades 3-12

JEANINE SHEPPARD, ISBE Math Content Specialist and ISU Center for Educational Initiatives, Freeburg, IL

Explore the implementation of a resource library developed by the ISBE Math Content Specialists that uses IAR, PARCC, and SAT released items as formative assessment tasks.

4. The Analysis of Quality of Digital Game Content in Mathematics Education

Room

Grades 3-8

JAE HWAN BYUN, Assistant Professor, Wichita State University, Wichita, KS

EUNMI JOUNG, Assistant Professor, Midwest University, Wentzville, MO

This presentation introduces an instrument to evaluate the quality of digital mathematics games and shows sample games that can be used for students to develop higher levels of mathematical thinking ability. It is recommended to bring your own devices to experience the games.

5. Solving Problems That Have Escaped the Box

Room

Grades 5-8

NICHOLAS J RESTIVO, Executive Director (Retired Director of Mathematics PreK-12), MOEMS, Mineola Union Free School District, Mineola, NY

Energize your classroom by encouraging risk-taking and observing the discourse taking place while “arguing” about a “better” way to solve and explore those “outside-the-box” problems.

6. Math Tasks with Productive Struggle

Room

Grade K-12

GREG GIERHART, West KY Educational Cooperative, Murray, KY

Productive Struggle is a process that includes the learning that requires grit and creative problem solving. Productive struggle engages students to work through an increasingly challenging problems to find ways to solve that may not follow a traditional model. The session will engage participants in math tasks that will engage them and offer ideas to

SESSION II

(10:10 AM – 11:10 AM)

7. Diving Deeper into the Desmos Dashboard

Room

Grades 6-12

ADAM POETZEL, University of Illinois Urbana Champaign, Champaign, IL

Free online Desmos Activities keep getting better and offer numerous meaningful math learning opportunities for your students. Come check out what is new and how you can grow your skills at using the Desmos Dashboard to monitor and use student data for discussions. Bring a device if you can!

8. Teaching Computer Science Principles in High Schools

Room

Grades 9-12

JODI CHILDRESS, Math Teacher, Salem Community High School, Salem, IL

So many different fields today involve the use of a computer, but so few schools teach any computer science. There are more tech jobs out there than there are qualified applicants. Help your students get ready for college and the job market by teaching computer science. With code.org, you don't have to be an expert to get it started.

9. Positive, Engaging, Mathematical Deduction and Substance... without PEMDAS. Discussing Order of Operations.

Room

Grades 9-14

KATHLEEN FICK, Professor of Mathematics, Methodist University, Fayetteville, NC

Discussion regarding the order of operations, the confusion and frustration associated with it, what I have witnessed in class, and what I have started reinforcing.

10. Invest in Financial Math to Apply Exponents and Sequences

Room

Grades 10-14

DOUG LaFOUNTAIN, Associate Professor of Mathematics, Western Illinois University, Macomb, IL

What should you invest each month at 3.04% APY to buy a \$20,000 car in 5 years? Students can solve this actuarial problem and many more!

11. Line Values of Trigonometric Functions – A Geometric Approach to Discovering Properties And Graphs!

Room

Grades 9-14

KIM MARTIN, Mathematics Instructor, Southeastern Illinois College, Harrisburg, IL

Find line values for trig functions using similar triangles, then use them to graph the functions--a visualization-rich alternative to just graphing points.

SESSION III

(11:20 AM – 12:20 PM)

1. Students Can Learn Fractions with Understanding

Room

K-5

CHERYL ANN LUBINSKI, Elementary Teacher and Illinois State University, Normal, IL Professor of Mathematics (Retired)

Handouts will be provided and discussed that help teachers with teaching fractions and operations with fractions from pictures to symbols.

2. Seeing Double-Double Number Lines as a Tool for Understanding Multiplications and Division (Including Fractions)

Room

Grades 2-5

WILLIAM McNEARY, Mathematics Instructor. Southeast Missouri State University, Cape Girardeau, MO

The double number line is generally introduced as a tool for ratio/proportions. It is easily adapted as a means of showing multiplications and division.

3. How STEM Looks in a Classroom

Room

Grades K-8

GREG GIERHART, West KY Educational Cooperative, Murray, KY

This presentation will look at many STEM activities that can be used in their classroom to engage learners. See what some simple inexpensive ideas that can be used in a classroom to allow students to collaborate, question, design, and make conclusions based on investigations. Participants will receive activities that they can take back to their classroom and use.

4. STEM Experiences for Teachers = Math Connections for Students

Room

Grades 5-10

KELLY WAMSER REMIJAN, Professional Development & Curriculum Specialist (IMSA), Math Consultant & Instructional Partner (Independent), Belleville, IL

Teachers will gain strategies for engaging in various STEM experiences and acquire examples/ideas for corresponding activities/problems/projects that integrate math concepts and connections into existing curriculum.

5. Mathematics and Magic

Room

Grades K-12

ALBERT OTTO, Professor Emeritus of Mathematics, Illinois State University, Normal, IL

Examples of magic card tricks and their extensions using ideas from mathematics. Bring a deck of playing cards.

SESSION III

6. The Difficulties in Operating with Rational Numbers

Room

Grades 5-8

EUNMI JOUNG, Assistant Professor, Midwest University, Wentzville, MO

This presentation provides important insights into the relationship between students' levels and their flexibility in the use of mental computation strategies with rational numbers.

7. Unpacking Geometry from Boxes You Make

Room

Grade 5-10

NICHOLAS J RESTIVO, Executive Director (Retired Director of Mathematics PreK-12), MOEMS, Mineola Union Free School District, Mineola, NY

Transform used greeting cards into boxes while discovering and exploring geometry concepts and definitions, making conjectures and answering probing questions about families of quadrilaterals.

8. Seven Ways to Answer Why a Negative Times a Negative is equal to a Positive

Room

Grades 6-8

CHENG-YAO LIN, Professor, Southern Illinois University Carbondale, Carbondale, IL

Why does a negative multiplied by a negative always equal a positive? This is one of the most frequently asked questions in math classes in middle and high school. This presentation will discuss seven ways to answer why a negative multiplied by a negative equals a positive.

9. Effective Differentiation in Mathematics

Room

Grades 6-12

JEANINE SHEPPARD, ISBE Math Content Specialist, Illinois State University, Center for Educational Initiatives, Freeburg, IL

Explore a variety of easy to implement differentiation strategies that will effectively engage the diverse learners in your classroom.

10. Assessment in a Math Classroom

Room

Grades 6-12

KELLY KOBERSTEIN, Mathematics Teacher, Murphysboro High School, Murphysboro, IL

A high school teacher shares her experiences with the use of different forms of formative, summative, and self-assessment in the math classroom.

11. Think LIKE a spreadsheet; think WITH a spreadsheet

Room

Grades 7-12, Teacher Education

LANIS L LENKER, Mathematics Teacher (Retired), Wesclin High School, Trenton, IL

Understanding how spreadsheets function helps me analyze data, make decisions. How I applied 'spreadsheet thinking' to the Illinois Teacher Retirement System deficits.

LUNCHEON (12:20 PM – 2:00 PM)
Conference Center

Presiding.....**Jerry P. Becker/Dr. Eunmi Joung**

Greetings from John A. Logan College.....**Dr. Barry Hancock, Dean**
For Community Education

Luncheon
12:30 a.m. – 2: 00 p.m.
Conference Center Banquet Room

LUNCHEON MENU

FRESH MEX, includes Chicken Fajitas, Seasoned Beef Fajitas
Flour Tortillas – Chips, Sour Cream, Cheese Pico De Gallo
Served with Refried Beans
Brownie
Ice Tea/ Water

Greetings from ICTM**Annie Forest, ICTM President**
Berwyn School District 100

Introduction of Speaker.....**Cheng-Yao Lin**

Luncheon Speaker**George Reese**
Director, Office for Mathematics,
MSTE, Science, and Technology
Education. University of Illinois,
Urbana-Champaign in Champaign, IL /
Past President of ICTM.

This talk is about mathematics and pedagogical lessons I have learned from other mathematic educators.

Adjournment

Continuing Professional Development Unit documentation will be available at the registration table.

LUNCHEON (12:30 AM – 2:00 PM)