Friday Morning - Hotel Ballroom 8:30	ICTM Keynote Address	Doug Clements University of Denver

8:30			
Friday Sessions 8:30 - 9:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
136	Family STEM Event Tinkerlab	Plan a successful Family STEM Event. We will discuss the logistics of space, materials, staffing, family connections and cost. Next, get hands-on with: balloon cars, spinning toys, air blasters, and paper tape circuits. We will learn about sharing the engineering design process with families and ideas for increasing parent involvement.	Becky McDowell
200	Anatomy and Physiology Techniques and Activities	This workshop will highlight modeling, individual and group activities, games, and projects that appeal to a variety of learning styles and abilities.	Sylvia Tufts
201	Mission Possible: NGSS-Aligned Geoscience Storyline	Looking for a way to use anchoring phenomena to drive instruction? Wondering how storylines and coherence can lead to three-dimensional classrooms? Join us to learn how sequencing learning experiences helps students construct explanations about geoscience processes that have changed Earth's surface. Includes a summative assessment and completed storyline!	Emily Mathews
202	Breakout Edu in the Science Classroom	Breakout Edu is a program involving critical thinking, collaboration, communication and reasoning 'breaking out' a solution from a box. Modeled after escape rooms, students will have multiple tasks based on STEM standards. In this session, we will discuss the how, what and why of Breakout Edu!	Kim Darche

Friday Sessions 8:30 - 9:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
203	You can with Khan!	Thinking about flipping your classroom? Are you tired of your students copying someone else's homework? Would you like to assess areas of weaknessâ€¦without a test? If you answered yes to any of these questions, join me to find out how you can with Khan Academy.	Peggy Deichstetter
209	Using Data to Tell a Biological Story	There is an increasing need for biology students to have a strong foundation in quantitative approaches to data analysis. In this session participants will learn how to scaffold and differentiate their instruction when having students analyze and manipulate data and perform statistical analyses in order to tell a biological story.	Jennifer Pfannerstill
210	STEM Integration via Problem Based Learning	A Problem Based Learning (PBL) unit was piloted in 10th grade urban STEM classes as a basis for integrating and creating connections between disciplines. Teacher perspective of challenges, planning, and benefits of a PBL model will be shared as well as student feedback and suggestions for implementation.	Miriam Schmid
211	Integrating Chromebooks with Vernier Technology	Learn how to use Chromebooks with Vernier technology in a workshop featuring experiments from Vernier lab books. See how engaging experiments like Boyle's Law or Grip Strength Comparison teach students about data collection and analysis practices that promote science inquiry and boost test scores.	Angie Harr
212	Using the 5E's to Teach the Next Generation Science Standards	We will be presenting our 5E model unit plan. We will provide a detailed explanation of each of the 5 components of the unit plan and provide a sample unit we designed using NGSS including all assessments. We will also provide work time for attendees to begin mapping out an upcoming unit of study and answer questions.	Catherine Boland

Friday Sessions 8:30 - 9:20			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
213	HHMI Presents Human Skin Color	HHMI has produced a short film and supporting activities on the evolution of human skin color. The content connects to key concepts in biology, human biogeography, genetics, and anatomy/physiology and evolution. The focus is on the evolutionary pressures of UV radiation on DNA, folate degradation, and vitamin D synthesis.	Kathy Van Hoeck
218	Science just got real! How to bring NGSS to life in your classroom!	Phenomena? Science and Engineering Practices? Three-Dimensional learning? Cross-cutting concepts? What does it all mean, how do they work together, and how do I start to bring these ideas and the Next Generation Science Standards into my classroom? If you have any of these questions, this presentation will highlight valuable resources and tools, along with professional learning available-at little to no cost-to support you on your science journey.	Aimee Park
221	Darkling Data: Analyzing Beetle Behavior with Ethograms	Delve deeper into the Science and Engineering Practices by observing live Darkling Beetles. Learn to use ethograms (tally charts) to collect data on living organisms. Use NGSS Science and Engineering Practices, basic statistics and graphing to analyze behavioral data. Brainstorm ways to authentically collect data in the natural world.	Shannon Phillips
222	Moving towards the NGSS: Peoria High	Peoria High School has devoted significant time and money to support teachers in adjusting to the next Generation Science Standards (NGSS). Our experiences have provided a number of lessons that teachers and administrators can use as their own schools work towards implementation of the NGSS.	Joel Morton

Friday Sessions 9:30-10:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
134	The F-IO Physics Curriculum: Issuing Digital Learning Technologies to All Students on a 1-to-1 Basis in a Flipped Physics Classroom	Could the ubiquitous use of versatile, hand-held digital sensors transform physics education in the same way that graphing calculators transformed mathematics education? This three-year action research study investigates flipped physics classrooms and the use of digital learning tools both in-class and in students' everyday lives and experiences.	Christopher P. Cunnings
135	Bricks, Puzzles and the Alphabet = Understanding Chemistry, Part 1	Using simple DuploTM bricks, students see the various manners bonds can form between carbon atoms and decipher which results in greater stability for a molecule, the linear, wall or ring form. A jigsaw puzzle and the alphabet are used to illustrate enzyme specificity.	Suzanne Cunningham
136	Design, Test, and Optimize Air Blasters	Explore the Engineering Design Process as you Imagine, Plan, Make, Test, and Improve your own air blasters. Discover the parallels between the engineering design process and other content areas while digging deep into the NGSS Science and Engineering Practices.	Becky McDowell
200		This presentation highlights the presence of glaciers in the Americas and Antarctica with emphasis on Patagonian and Alaskan Glaciers. Glacier types, composition, and glacial movement advances and retreats will be described. Participants will identify glacial types as well as observe examples of moving and calving glaciers in action.	Sylvia Tufts

Friday Sessions 9:30-10:20

Room	Session Title	Session Description	Lead Presenter
201	Environmental Science Activities for Your Classroom	This session will feature an environmental potpourri. We will examine activities from programs such as GUW (Growing Up WILD), PLT, WET, and WILD. Learn how these programs can be used in both science and math plus STEM. The new PLT module Focus on Forest plus Southeastern Forests and Climate Change will be previewed.	Don Powers
202	nano@illinois Research Experiences for Teachers	The nano@illinois RET program contributes to developing a diverse STEM workforce. Past participants' summer research experiences, professional development activities in nanoscale STEM fields, and module development are highlighted. The nano@illinois RET is managed by the University of Illinois Center for Nanoscale Science and Technology, and is funded by NSF. http://nano.illinois.edu	Carrie Kouadio et al.
203	Science Notebooks: Documenting our Thinking and Data from Inquiry	Teach young scientists to document thinking like professionals! Reflecting on Dr. Anne Reichel's teachings about science notebooks, investigate using science notebooks to help students communicate thinking and ask questions that develop new understandings and inquiries. We will discuss utilizing science notebooks to collect data, assess learning, and make instructional decisions.	Joslyn Katz
209	Back to BINGO for Bio Vocab	From BINGO to Memory, to picture puzzles, students will learn about photosynthesis, cellular respiration, complementary base pairing, antiparallel strands and amino acid sequences. Application of these techniques can be used for a variety of other topics as you see fit! We will be making our own ready-to-use tools in the classroom!	Emily Drown

Friday Sessions 9:30-10:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
210	Engineering Solutions for a 3D STEM Classroom	Bringing the Engineering Design Process into your classroom ensures 3D learning is occurring by allowing students to build deeper understanding as they grapple with making sense of phenomena and find solutions to problems. Join us for this interactive, engaging, and hands-on session where the EDP is investigated using collaboration and consensus	Michele Cozza
211	Teaching the GOOGLE Generation: How to Create Authentic Assessment	Information is more accessible than ever before. We, as teachers, need to begin to reevaluate our approach to assessment. In this presentation we will explore the spectrum of assessment, and it's purpose in our classroom. We will also look at some examples of assessments, from student samples to rubric design.	Laurel Darby
212	Fun Science Activities for the Entire Class	These activities are fun, work with all students, and lets them practice being scientists. They are easily adapted to match studentsâ€™ abilities. The NGSS three-dimensional approach to instructional planning will be highlighted. While the focus is on classroom use, a little planning could create a grade-level or entire-school science day!	Natalie Keigher
213	HHMI Rock Pocket Mouse	HHMI has produced a short film and supporting materials that has quantified the selective pressure of predators on rock pocket mouse evolution and identified the genes involved in adaptation. Pocket mice show us how random changes in the genome can take many paths to the same adaptation—a colored coat that hides them from predators.	Riverside Brookfield High School
218	NGSS in Middle School with IQWST	Come engage in a sequence of investigations where middle-school students experience phenomena, construct explanations, and argue from evidence. Teach students to think like a scientist as they apply a claim, evidence, reasoning framework to make sense of investigations.	Aimee Park

Friday Sessions 9:30-10:20			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
220	Three Dimensional Learning for Early Childhood Learners	This presentation will provide an example of how to use NGGS and three dimensional learning for K-2 learners. Young children are natural at science from birth. This inquisitiveness and curiosity is so active in early childhood years that more attention needs to be focused on their innate desire for science before they lose interest in it.	Dr. Abha Singh
221	Old Materials, New DCIs: Teaching NGSS With What You Have	Feeling squirrely about the NGSS Disciplinary Core Ideas? Repurpose materials you already have to address DCIs at your grade level (K-12). Practice developing lesson ideas and guiding questions using authentic museum specimens and everyday materials. Learn about the Project Squirrel citizen science project and data collection opportunities.	Stephanie Sidaway
222	Fever 1793: An Interdisciplinary Unit	What effect do pathogens have on humans? This biology thematic unit on disease, centering around the book Fever 1793 by Laurie Halse Anderson, can be used to teach across different curricular disciplines such as ELA, Science, and Social Studies, incorporating CCSS, NGSS, and C3 standards.	Laura Riley, NBCT
401	The Making of a Case Study: San Gerardo de Dota, a Model for Sustainability	Presenters traveled to Costa Rica, recorded interviews and trails of the valley of San Gerardo de Dota to document the role of an American biology professor and wife in helping transform one family's dairy farm into a model for sustainability. How the study was written and part of the case will be presented.	Aggie Veld
402	Establishing Community Partnerships to Foster STEM Engagement	The Economic Development Council of McLean County, State Farm Insurance and District 87 and Unit 5 partnered to enhance the STEM efforts for teachers and students in the community. With the need for skilled STEM workers, McLean County is committed to this effort benefiting students, future jobs and the community.	Ashley Petrinec

Friday Sessions 9:30-10:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
403	STEM-ing Up Your Curriculum	What does a STEM based unit look like? How do we take stand-along classes and fully integrate them into a blended learning experience? In this session, we will look at designing curriculum materials that combine disciplines that allow students to explore and answer questions using OER tools and technologies.	Mike Jones
404	Using Web-Based Learning Pages to Engage Students in Inquiry	An introduction to a variety of lessons that use web-based resources to help a diverse group of students learn content while engaging in scientific practices.	Laura M. Barden-Gabbei
405	Get Your Game On!	Learn how to create a more engaging classroom environment using gamification. Discover how to apply game design mechanics to any curriculum. Explore high-tech, low-tech, and no-tech ways to transform your classroom into a game. Learn how gamification can make classroom management easier and get students more excited about learning!	Erin Spencer
Friday Sessions 10:30-11:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
134	S'More Science Success	Endless work goes into transforming into a true facilitator of knowledge. This strain can create quite an appetite. There is an exciting new way to satisfy your hunger for professional growth and your sweet tooth simultaneously! The 5 E Model of Instruction offers a template to develop skills as a facilitator of knowledge while savoring the sugary goodness of Sâ€™Mores.	Kelly Wulf

Friday Sessions 10:30-11:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
135	Bricks, Puzzles and the Alphabet = Understanding Chemistry; Part 2	This lab was developed to introduce high school students to chemical bonds and carbon metabolism in plants. Students become â€˜Lunaticsâ€™ as they use bricks, representing carbon, oxygen and hydrogen, to synthesize glucose, starch and cellulose. Using bricks is a fun way for students to grasp chemical bonds and enzyme specificity.	Suzanne Cunningham
136	Scientific and Mathematical Thinking Across the Curriculum	Everyday life doesnâ€™t always come neatly packaged as a science or math problem. How can other subject areas provide opportunities for engaging in scientific and mathematical thinking? Explore ways to provide opportunities for elementary learners to engage in science, engineering, and math, with a focus on these practices.	Liz Lehman
200	Island Ecology Upset	This presentation highlights the ecological relationship between the wolf and moose populations at Isle Royal National Park, an island ecosystem. Trends as well as habitat changes that have influenced and continue to influence both the wolf and the moose populations will be discussed.	Sylvia Tufts
201	Student Teaching edTPA in your Classroom	This session will give junior high/high school teachers, administrators and college students an overview of the performance assessment required during student teaching in Illinois called edTPA. This will include how edTPA incorporates the	Margaret Parker
202	Biological Machines: Bioengineering Activities for the Classroom	Cutting-edge EBICS research on biological machines for use in health, security, and environment will inspire interest and will be explored through a presentation, hands-on activities, and interactive ethics modules that will engage and excite your students. A variety of teaching resources will be shared with session participants. http://ebics.net	Carrie Kouadio et al.

Friday Sessions 10:30-11:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
203	Google Apps For ->Science<- Education	Attention beginning "Googlers," come learn about user friendly Google Apps for Education that you (and your students!) can use beginning 1st Period on Monday! Introduction and basic explanation of Google Classroom/Docs/Slides/Forms/Drawings will be provided. Additionally, learn how to discover and use powerful Add-ons, Apps, and Extensions.	Michael Pacton
209	Life Doesn't Happen in Chapters	Biology does not happen in chapters. The revision of AP Biology has required considerable effort by teachers to integrate concepts and to make connections between traditionally isolated topics in biology. In this session, participants will learn how to structure an	Jennifer Pfannerstill
210	Successful Use of Argumentation in the STEM Classroom	Skillful argumentation and discourse are practices of scientists and engineers that provide a pathway for success in the future workforce. During this fun - interactive session participants will determine the solution to a problem through collaboration among team members	Michele Cozza
211	Polymers: New Twists on Old Favorites	Enhance and deepen science and math concepts taught in traditionally "fun" polymer labs. Add more scientific processes to make them inquiry-based. CD of information.	Sherri Rukes
212	Fun Science Activities for the Entire Class	Discover fun STEM activities that engage all students and provide practice being scientists. These activities are easily adapted to match studentsâ€™ abilities. The NGSS three-dimensional approach to instructional planning will be highlighted. While the focus is on classroom use, a little planning could create a grade-level or entire-school science day!	Ken Indeck

Friday Sessions 10:30-11:20			
Room	**Session Title**	**Session Description**	**Lead Presenter**
213	Melanin Storyline Support Materials	This session will support the previous 2 sessions on skin color and the rock pocket mouse by presenting the additional support materials used that have been teacher-generated. This will be the third session in a sequence that illustrates the creation of an NGSS storyline.	Jason Crean
218	Networking: Building Quality Classroom Science Assessments	Throughout the state, there have been professional development offerings with both ISTA and the ROE/ISCs regarding Building Quality Classroom Science Assessments. This session is intended for participants to network and share assessments they have generated. Attendees are asked to bring their own samples to share for feedback.	Aimee Park
220	Computer Science Integration in the Elementary Grades	This exploratory study asks the question: How can elementary education teachers integrate CS into other content areas, such as math as science? By examining teacher interviews and utilizing field note observations, I hope to support research and development of curricula related to science, technology, and engineering.	Amanda Bila
221	Core Energy Science	Explore the free opportunities available to Illinois science and math teachers, June26-29 2017 at Rend lake Resort. Teachers leave with lesson plans, classroom ready lab equipment, professional development, graduate credit all provided free by IPRB after completing the 3.5 day summer educational program. Participants in this session will investigate the properties and structures of hydrocarbons. Lesson plans are aligned to NGSS and Science / Technical Literacy Standards.	Diane Woolverton

Friday Sessions 10:30-11:20

Room	Session Title	Session Description	Lead Presenter
222	Practical Strategies to Implement NGSS in Your Classroom	This session provides practical strategies, vetted resources, and a deeper understanding of NGSS which allows educators to go back to their classroom and be confident instructors. Understand connections among Science & Engineering Practices, Cross Cutting Concepts, and Disciplinary Core Ideas, and be introduced to strategies that can be implemented today!	Laura Riley, NBCT
401	Citizen Science: Taking the Pulse of the Planet	Citizen science is a way that students and adults can collect and analyze useful environmental data. This data can be analyzed in a class, but is also shared online and used to monitor environmental trends by research organizations. There is something available for classes K-12.	David L. Oldenburg
402	Science Spotlight: NGSS Lessons & Resources	Join us as we share our favorite lessons, activities, and online resources for astronomy, biology, chemistry, and more! From classroom activities to problem-based learning scenarios, we will provide a wealth of ideas you can use to target science concepts and skills outlined in the NGSS.	Tracy (Trimpe) Tomm
403	Building A Zoo	Learn how three math and science middle school teachers collaborated to create an integrated unit allowing students to be architects, engineers, zoologists, designers, builders, tinkerers, thinkers, etc. Through this unit, students learned and applied their understanding of rational number operations, ratios, and	Marla Goldberg
404	After School STEM Club: the good, the bad, the ugly	Using high school students to help bring STEM and the NGSS to kids in Kindergarten through Fourth Grade in a fun way. We will discuss our successes, failures, and positive aspects of the program as well as provide many of our free projects and ideas for you to	Abigail Bradbury

Friday Sessions 10:30-11:20

Room	Session Title	Session Description	Lead Presenter
405	Code-switching in Mathematics and Science	Science and mathematics are often grouped together for various reasons, but there are clear differences. Expectations for number usage vary and sometimes we forget about these discipline specific conventions. If we are more aware of these distinctions, we can provide more informed support for students as they traverse the curriculum.	Greta Mitchell Williams

Friday Sessions 1:00-1:50

Room	Session Title	Session Description	Lead Presenter
134	Get your students talking: How to incorporate Number Talks into your daily discourse	Number talks (math talks) are incredible experiences for both students and teachers. They require little-to-no planning and teaching, but the mathematical discussions that come out of them are fantastic. Come have fun with us as we play with numbers while deepening our number sense!	Aubrey Carpenter
135	NGSS in the Flipped Classroom	This session will review the basics of flipped classrooms. Free technology resources, interactives, and websites aligned to NGSS will be discussed. Classroom tested lesson plans incorporating the use of technology as a means to facilitate the implementation of Cross Cutting Concepts, Scientific Practices, and Disciplinary Core Ideas will be shared.	Jennifer Smith
136	Computational Strategies grades 2-5	The process of teaching computational skills involves students' knowledge of basic fact skills, place value and the meanings of the operations. Learn why it is important to teach students in grades 2-5 different computational strategies. Learn how to model and teach these strategies.	Margaret Maddalozzo

Friday Sessions 1:00-1:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
200	Anatomy and Physiology: Techniques and Activities	This workshop will highlight modeling, individual and group activities, games, and projects that appeal to a variety of learning styles and abilities. Participants will receive ready to use resources as well as gain insights that will help them create useful classroom resources tailored for their individual programs.	Sylvia Tufts
201	Strategies to Ensure Success for ALL Students	All students can learn. Learn how to motivate students and improve instruction through the use of formative assessments, differentiation, foldables, and the Mathematical Practices.	Jen Parisi
202	Using Science Olympiad to Meet Your STEM Needs	Do you want to engage your students in STEM? Discover how Illinois Science Olympiad can assist you. Learn how the Olympiad activities and events can enhance your students' knowledge and skills in science, technology, engineering and mathematics. Learn about organizing an Olympiad team and how your students can be recognized for their accomplishments.	Don Powers
203	I just failed a test... Now what?!?	Without reteaching, how do we keep students on track with current materials while relearning previous material? Sick of retakes? How can we teach our students new learning tactics to avoid failure in the first place?	Jody Trapani
209	Designing Multiple Choice Questions for Teaching AND Learning	Multiple-choice questions are useful in assessing learning in formative and summative settings and will not only prepare students for summative exams, but also diagnose misconceptions and promote high-level discussions. Participants will write AP level multiple-choice questions, as well as learn how to modify	Jennifer Pfannerstill
210	Understanding Numbers: Let's Get Real!	Foundational to success in mathematics is an understanding of the nature of numbers. We will focus on students' understanding of rational and irrational numbers and introduce participants to resources that uncover common misconceptions or partial understandings about real numbers.	Sandi Henkels

Friday Sessions 1:00-1:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
211	Corrosion: Chemistry Made Simple, Relevant and Fun	Labs, demonstrations and examples that make reactivity, oxidation/reduction and corrosion engineering exciting, practical and easy to teach and learn. STEM connections and CD of information.	Sherri C Rukes
212	Read Math, Write Now	Learn simple ways to incorporate read-alouds and literacy into your math classroom. Math booklist will be provided along with a chance to explore picture books, novels, short stories, and writing strategies to incorporate into your math classroom right away!	Tina Reckamp
213	Melanin: An exemplar NGSS storyline	This session will take teachers through a sample storyline with melanin as the driving phenomenon. Integrated into this phenomenon-driven unit are concepts like DNA, RNA, proteins, gene frequencies, evolution and others that create a cohesive, contextual, three-dimensional unit.	Jason Crean
218	Calculus Problems for the Next Generation	During the Calculus reform movement, one of the things that really bought me in was the wonderful problems that were being asked. After 25 years I think it's time for a new wave of interesting calculus questions. I have a few, hopefully participants will bring some for us to look at and discuss.	Steven Condie
220	Argue like a Scientist: A Cross-cultural Study of Developing Students Scientific Argumentation Skills in a Computer-assisted Project-based Learning Environment	The purposes of this mixed-methods study are to develop a graph-based computer-assisted project-based learning environment and to study the impact of the learning environment on the development of middle school students scientific argumentation skills and science knowledge in the U.S and Taiwan.	Dr. Pi-Sui Hsu

Friday Sessions 1:00-1:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
221	Connecting Common Core to Mathematical Concepts Using LEGO Bricks	Modeling mathematical concepts using manipulatives has been used as a powerful teaching technique to enhance students' conceptual understanding. This session will demonstrate various mathematical concepts using LEGO bricks aligned to Common Core Standards to develop students' problem-solving skills.	Eunmi Joung
222	S3 - Sharing Science SLO's	What does an SLO in Science look like? How do I implement and assess skills in Science? SLO's are one way to measure student learning and achievement. Working with my Instructional Coach, we create, develop, assess, and implement SLOâ€™s in Science. We share the process, our experiences, and student outcomes.	Jenny Goodell
401	Putting the FORM in Formative Assessment	Formative assessment is essential to student learning, but it is not always being used effectively. Practical strategies for utilizing formative assessment strategies in the math classroom will be presented, focusing on four themes: Making it Fun, Organic, Relevant, and Meaningful.	Pauline Zdonek
402	Using NGSS storylines in Biology	This past year the biology team has implemented the NGSS storyline approach to our units. We will describe sample units, provide examples of lessons, and show video clips of the unit in action.	Kirsten Mahoney
403	Getting to the Core of Problem Solving	Creating a picture of success is easy when you can visualize mathematical concepts. This session will discuss using model drawings/tape diagrams to develop conceptual knowledge and successful problem solving.	Glory Jurich-Sarna

Friday Sessions 1:00-1:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
404	Take Action Its Time To Teach	Are student behaviors stopping you from delivering your curriculum? Well, it's time to take action and itâ€™s Time to Teach. In this session you will be learning how low level behaviors impact learning, stop the delivery of curriculum and disrupt the classroom learning environment. Secondly, using our research based REFOCUS tool to curb low level behaviors by prompt attention and good timing. Time to Teach contains both theory and techniques that can help you manage a wide range of behavioral challenges. Classroom discipline has robbed you of precious time that you need to deliver your curriculum. Restore that loss of time in your classroom by using our simple, fair and mutually respectful Time to Teach, REFOCUS tool.	Clint Brown
405	Multiple Representations with Tile Patterns	Learn how to organize information from tile patterns into tables, graphs, and rules; find connections between different representations of the same pattern. You will also explore each representation in further depth and develop efficient ways to go from one representation to another.	Amy Rybaczuk
hotel 1	Flipped for Mastery for the lower achieving students	Do you have students that sometimes just do not get it? We have developed a way to keep these students involved and excited about coming to Math class using technology and Chromebooks in the classroom. We will be demonstrating how a class works and benefits we have seen using this method.	Dana Lainio
hotel 2	Data Analysis for All Students: Open Source Software	Statistics have a prominent place in our curriculum. What tools are freely available to all students? In this session, we will gather our own data and explore data analysis with desmos.com and r-fiddle.org. Bring an internet ready device if possible!	Jay Hooper

Friday Sessions 1:00-1:50

Room	Session Tittle	Session Description	Lead Presenter
hotel 3	Computer Science for All: Lessons Learned from Mathematics	The recently passed Every Student Succeeds Act identifies Computer Science as part of a "well-rounded education" that all students should have. Can CS educators learn anything useful from 30+ years of efforts to reform mathematics education? Let's not reinvent the flat tire.	Andy Isaacs

Friday Sessions 2:00- 2:50

Room	Session Tittle	Session Description	Lead Presenter
134	Assessments for PERA	It is the era of PERA, where focus shifts from student achievement to student growth. Participants will discuss similarities and differences between achievement and growth and develop strategies for designing or selecting assessments that monitor student growth.	Jennie Winters
135	Function Junction: Moving past functions as equations	Are functions just equations? We discuss the use of functions to represent relationships and decisions when using functions to model situations. We examine strategies for students to make sense of functions using formative assessments and student work to advance students to a deeper understanding.	Lisa Cash
136	Not Just X! –Equivalence, Variables, and CCMS	Equivalence is at the heart of mathematics -and the common core. Explore some approaches and activities to deepen students understanding of equivalence, and not just procedure, from their first introduction to variables and throughout their mathematical careers.	Steven Starr

Friday Sessions 2:00- 2:50

Room	Session Title	Session Description	Lead Presenter
200	STEM through A Wind Turbine	The purpose of this presentation is to demonstrate curricular examples, with online resources, for K-12 students (for schools with/without an on-site turbine) and to describe how a Wind Turbine curriculum utilizes STEM concepts for designing solutions for utilizing energy resources.	Dr. Abha Singh
201	Practical Classroom Strategies for Empowering Struggling Learners	How can teachers adapt the classroom environment to allow struggling students to experience success in math? We discuss usable classroom strategies that have helped our students to form a positive attitude towards their learning and take ownership of their progress.	Emily Kaffel
202	Buying Back Instructional Time Creatively	Too many standards not enough hours in the day? Presentation will focus on infusing additional & supporting Common Core Standards (geometry, patterns & measurement) into your math block; creating time to thoroughly delve into major clusters. Video of students engaged in this process will be shared.	Kristi Isaacson
203	Using the Japanese abacus to develop strategies for mental calculation	This presentation will introduce how to use Japanese abacus apps to teach mental math. Expand your and your children mental calculation skills with this very useful and fun abacus. Bring your iphone or ipad to explore Japanese abacus apps!	Cheng-Yao Lin
209	Make Fluency Practice Fun	During this workshop you will learn some simple and quickly implemented activities to reinforce fluency practice in your elementary classroom. Teacher participation is expected! Activities for all operations will be presented.	Denise Brown

Friday Sessions 2:00- 2:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
210	Fun Geometry That's Good for You, Too!	Come experience my favorite high school Geometry activities. Activities that address the need for more critical thinking skills and are fun for them (and me!) as well. See how to increase their learning without them noticing!	Laura Kaplan
211	Enabling Online Discourse with MathJax	MathJax is a free tool for displaying correct math notation online. We'll explore how to use MathJax together with LMS tools like online forums to give students opportunities to communicate about math with you and each other. Participants with a laptop or mobile device will be able to try it out.	Daniel Jordan
212	Ask Why, Don't Invert and Multiply	The CCSM in 6th grade emphasizes developing the meaning the fraction division through context, but says nothing about how to bridge to efficient computation methods. We will develop an efficient alternative approach that highlights both the meaning of division and important fraction concepts.	Peter Wiles
213	Building with Math	Are you looking to incorporate geometry tasks into your middle school classroom? Come try some of these ideas with us and then use them with your students.	Kevin Voepel
218	Why do we Count in a Preschool Setting?	Developing mathematical thinking in children begins with counting. The presentation offers a rationale and numerous ways for counting in a preschool setting connected to research on brain-development and best practices. Participants will share in engaging experiences to take to their settings.	Heljä Antola Crowe
220	Creating Focus, Coherence and Rigor in the Classroom	To fully engage students in the depth of mathematical learning called for in the Math Standards, educators need powerful tools and resources. Join us as we explore instructional support that brings the shifts and standards to life in your classroom while preparing students for success on the PARCC.	Kristen Clegg

Friday Sessions 2:00- 2:50

Room	Session Title	Session Description	Lead Presenter
221	Promote Learning with Instant Feedback (& Stay Sane)!	Increase student engagement and improve student understanding by incorporating fun practice activities that give student's instant feedback. Practical examples and templates will be shared. Examples include the Dot Game, Domino WS, Coloring, Match, Puzzles, Partner Activities, and Math Libs.	Darl Rassi
222	Number Talks in High School	After hearing Cathy Humphreys and Jo Boaler, we took the plunge to see if Number Talks with High School students actually works. We are going to share with you our journey and DO a few Number Talks together. You will leave ready to try a #Talk in your classroom Monday morning.	Jackie Palmquist

Friday Workshops 2:00 - 3:20

Room	Workshop Title	Workshop Description	Lead Presenter
401	Math-tivities for the Middle Grades	Increase student familiarity in the Mathematical Practices and the Common Core content standards through engaging activities and games. Leave with new ideas to use next week. Be prepared to be very hands on!	Karen Meyer
402	Origami – A Fun Way to Learn Math	In this workshop, we will do origami to learn some geometric concepts. For example, we will prove the Pythagorean theorem and trisect an angle using origami. We will also fold a triangular box and a hexaflexagon.	Ann Hanson
403	Supporting Common Core Thinking in Algebra 1	Teachers will explore instructional strategies and activities that engage Algebra I students in deep thinking that reflects the Common Core Mathematical Practices. Strategies and activities focus on perseverance, modeling with mathematics, constructing arguments, and critiquing others' reasoning.	Kelsey Clarkson

Friday Workshops 2:00 - 3:20			
Room	**Workshop Title**	**Workshop Description**	**Lead Presenter**
Hotel 1	Understanding Fractions Begins with Geometry	Word problems will be presented that help students to be success with understanding fractions from K-5. Attendees will write word problems to address Common Core State Standards for their students. Handouts will be provided.	Albert Dean Otto
Hotel 2	Launching a Lesson: Creating Access for All	In this session, we will see, share, and brainstorm examples of how to start lessons so all students can find an entry point. Learn how to pose questions and create opportunities that invite your students to participate instead of hiding in their seat.	Jill Swissa
Hotel 3	Math Through Science: Activities for Middle School	We will share a set of classroom-ready activities for connecting middle school mathematics with physical science.	George Reese
Friday Sessions 3:00 -3:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
134	Beyond Pizzas and Pies: Building Solid Number Sense with Fractions	Are you just skimming the surface of fractions when teaching them to your students? In this session, you will learn how to switch up how you've been teaching fractions in order to lay a true foundation and establish concrete number sense in regards to fraction understanding. Come, get your fill!	Aubrey Carpenter
200	Engagement Strategies for Math Instruction!	Focus on cooperative learning/engagement strategies for teaching math. 1. Student Collaboration 2. Hands on Tools 3. Engaging and Meaningful Tools 4. Real life examples of strategies 5. Less worksheets = more student growth 6. Eliminating worksheets w/o extra work!	Jennifer Dean

Friday Sessions 3:00 -3:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
201	Social Justice in the Math Classroom	This presentation will assist teachers in helping students to understand the importance of helping others in regard to the tenets of mathematics. How statistics is used on the net and in newspapers as well as understanding of data in the community.	Eileen Quinn Knight, Ph.D.
202	The Roles of Technology in the Mathematics Classroom	Given the rise of Desmos, GeoGebra, Kahoot, and other tools and software programs, how should we be using technology in our mathematics classrooms? In this session we will discuss specific themes to guide us toward creating learning activities that highlight the strengths of technology.	Craig Cullen
203	Some Interesting Problems. How They Got Interesting	I intend to offer several problems, some that I have recently created, that I think are good problems. After we work on one, we will discuss why it is a good problem and I will share thoughts and observations about the creation of the problem.	John Benson
209	Teaching Mathematics Using the Japanese Open Approach	We will discuss the meaning of the “open approach” to teaching mathematics. Then look at some examples and discuss developing detailed lesson plans and assessment of student learning. We will also discuss how the teacher can incorporate the approach in the classroom. [Many useful classroom handouts]	Jerry P. Becker
210	Active Learning Academy	Looking for some new instructional strategies for your room? Then this session is for you! Come ready to participate in strategies that you can use in your own room tomorrow. I will be showing heads up vocabulary, the amazing race, line it up, substitute it, moving bingo and more!	Shellie Kamminga
211	CCSS Statistics: Shape, Center and Spread (Gr. 6 - Alg. I)	We will provide you with great activities for teaching the CCSS Statistics Standards that focus on shape, center and spread of distributions. Designed to better prepare students for the PARCC test, our activities will show the connection between the 6th grade and Algebra I statistics standards.	Julia Brenson

Friday Sessions 3:00 -3:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
212	Five Steps to Creating a Viable Curriculum	The Common Core curriculum can be overwhelming. Finding meaningful ways to cover all the material is challenging. In this session, you will be given some practical strategies in creating learning targets, designing assessments, and providing feedback to help ensure student success.	Jeff Harding
213	Middle Grades Mathematics Formative Assessment Strategies	Expand your repertoire of formative assessment strategies so you can learn more about your students' mathematical understand while they learn more math. A range of strategies from quick, informal feedback to longer lessons will be discussed.	Rick Anderson
218	Reaching Diverse Groups of Learners in Algebra	With the CCSSM, student success in algebra has become more challenging. We will engage participants in a discussion about building a collaborative community focused on effective strategies and resources for reaching diverse groups of students, from struggling to confident learners, in algebra.	Lynn NArasimhan
220	Kids Can Code: Programming to Develop Mathematical Thinking	Logo is a programming language appropriate for young children. It was developed to help them think logically and mathematically. This presentation demonstrates a free version that runs in your web browser. Participants may wish to bring a computer or mobile device to write simple code (optional).	Dr. Markham B. Schack
221	Growth Mindset	Join us for a discussion on the importance of growth mindset & how to encourage it within our students. We will focus on last year's keynote speaker, Jo Boaler, and her book entitled "Mathematical Mindsets" while discussing tracking, assessments, homework, and grading in the classroom.	Danielle Boggs

Friday Sessions 3:00 -3:50

Room	Session Title	Session Description	Lead Presenter
222	Introducing Implicit Equations to Algebra Students	As a result of department conversations with calculus teachers, we made some lessons designed to expose students to implicit equations outside of the unit on conic sections. Come see how we integrated these lessons and utilized technology to show the students what these equations can do!	Michelle Eggerding
404	Creativity and Curiosity in Math and Science Classrooms	Curiosity and creativity are essential for our society. Unfortunately, we do things everyday that systematically squash these habits of mind. We will discuss three common teacher mistakes that stifle curiosity and creativity, and three alternative teacher actions that help develop them. Curious?	Zachary Herrmann
405	Using Computation to Define Computational Thinking	Many have attempted to define computational thinking (CT) and associated learning goals. How can we synthesize this valuable but often disparate work? Teams at UChicago and UIUC are analyzing the landscape of CT research to develop learning trajectories for CT in elementary school.	Andrew Binkowski

Friday Workshops 3:30 -4:50

Room	Workshop Title	Workshop Description	Lead Presenter
401	Counting: Easy as 1, 2, 3?	Counting principles impact number sense including the understanding of mathematical operations, place value, and using mathematical reasoning. Investigate and explore the depth of counting in the common core using the math rack, ten frames, arrow cards, the numeral track, and number path.	Tina Johnson

Friday Workshops 3:30 -4:50

Room	Workshop Title	Workshop Description	Lead Presenter
402	Hunting for Patterns	We will begin by looking at patterns of geometric figures and then use these to develop algebraic formulas and investigate some of the standards related to expressions and equations and functions. Several examples, with increasing complexity, will be covered during this session.	Tammy Voepel
403	Humanizing the Mathematics Classroom	We will experience activities that will challenge current ways of schooling and provide platforms for meaningful conversations. Participants will also walk away with examples that help create a mathematics classroom where students feel part of a community and responsible for their own learning.	Esther Song
Hotel 1	Fractions! Fractions! Learn All About 'EM!	We will dive into professional development that increases pedagogical content knowledge while supporting classroom application. Attendees will experience a research-based instructional sequence on fractions designed to improve teachers' content knowledge and practices, and student engagement.	Martha
Hotel 2	Revamp Your Review Day	Throw out those old, dull review worksheets. Our session will explain alternative protocols to shift how review of content is structured in your class. Using formative assessments incorporated with high-interest activities, you'll make review day a personalized learning experience for your students.	Kelly Rooney
Hotel 3	Conics–The Ugly Duckling of Algebra 2	Do you dread teaching conics to your Algebra 2 classes? Do you skip them entirely because they don't seem that important? Come rediscover conics in this interactive workshop that uses paperfolding, simulations, and graphing calculator technology to engage even the most reluctant of learners.	Denise Young

Friday Sessions 4:00 -4:50

Room	Session Title	Session Description	Lead Presenter
134	Thinking Mathematically in Daily Warm Ups	Engage students in the first few minutes of class with activities that push students to think mathematically about everyday situations. All activities promote the CCSS Math Practice Standards, use technology, promote student ownership, and can be applied to your classroom tomorrow!	Marissa Walczak
135	Making Grades Mean Something Using Standards	What does a 90% in a class really mean? Imagine assessing students in ways that encourage student involvement, focusing on skill mastery rather than total points, and communicating with parents. Come see one example of standards based grading in action!	Heather Komac
136	IMT Journal Reception	The editors of the Illinois Mathematics Teacher, official journal of the ICTM, invite conference attendees to discuss mathematics, teaching, and article ideas over [wine and cheese] -or- [coffee and Danish].	Christopher Shaw
200	How can teachers get students to attend to “meaning’ in Equation and Inequality tasks?	Come and join me to learn how to help students to explain and interpret equations and inequalities using mathematical symbols and their solutions based on different tasks that can promote relational understanding.	Deksiyos
201	Why Teach Precision in a Math Class?	Join for a discussion about measurement precision. We will share videos and student work as they cope with measurement error and accumulation of error. Leave with research based tasks that you can use in your classroom to help foster your students’ understanding of precision.	Jenna O'Dell

Friday Sessions 4:00 -4:50

Room	Session Title	Session Description	Lead Presenter
202	Fraction Bootcamp	It's no secret fractions are a very difficult concept for students to understand and often difficult for teachers to teach. This session will engage participants in a review of the content, intent, and progression of the ILS, and review effective instructional strategies for teaching fractions.	Kathy Felt
203	Let the Sun Shine!!	Participants will collect data for the number of hours of daylight for a world city and model the data with a trig function. Comparisons between the results related to various cities lead to interesting discoveries and student discussions! Leave with an activity proven to motivate students.	Scott Knapp
209	Average Speed: Arithmetic Mean or Harmonic Mean	Using a technique called extended problem analysis, we will look at two typical average speed problems with an eye towards understanding their underlying connections to the arithmetic mean and the harmonic mean using both analytical and geometrical points of view.	Todd D. Oberg
210	DO-IT-YOURSELF 3-D MODELS	The student's desktop will become alive with fascinating 3-D models produced by simple paper folding. This will be fun and suitable for all grades. We will count, measure, solve puzzles, and form conjectures. We include the Great Pyramid of Egypt, an anti-prism and a new one called George.	George J. Marino
211	Touching Screens or Touching Objects: Which is Better?	Concrete manipulatives have been used in classrooms for years. Now digital manipulatives are more common. When is it important to use physical manipulatives, and when do digital manipulatives offer advantages? Come and discuss the affordances and costs of touchscreens versus physical objects.	Carla Strickland

Friday Sessions 4:00 -4:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
212	Strategies for Increasing Student Agency in the Classroom	The first part of this workshop analyzes NCTM and NRC definitions of rigor and discusses their relationship to student agency. We argue that student agency plays an interconnected role with mathematical rigor. Tools for incorporating greater student agency at all age levels will be explored.	Karie Brown-Tess
213	7.RP.3 through Tables of Equivalent Ratios	Participants will learn how tables of equivalent ratios can support student learning throughout all 7th grade ratio and proportions standards. In addition, how to support students to be visible learners.	Christy Vehe
218	Re-Engaging Students to Repair Mathematical Misconceptions	Unfortunately, sometimes we teach, but our students don't learn. How do we uncover and address their misconceptions? We'll explore a structure to respond through "re-engagement" — analyzing students' work and exploring free, rich, high-quality mathematical tasks and supporting materials.	Sendhil Revuluri
220	Number Talks: Developing Computational Fluency	This session will focus on how to develop computational fluency through daily number talks. Common Core places emphasis on student strategies for solving problems, rather than automaticity. This session will give participants tools to bring back to the classroom to enhance student strategies.	Sara Cabreda
221	What's In A Name?	Participants will experience a classroom activity where student names are used to explore many topics and ideas from data analysis and statistics. Students become invested while discussing mean, median, mode, variance, histograms, box-plots, outliers and other important concepts.	Bob Mann

Friday Sessions 4:00 -4:50

Room	Session Title	Session Description	Lead Presenter
222	Desmos and GeoGebra Updates	Desmos and GeoGebra are the best (free) online math graphing tools. Each having strengths over the other, makes them two complimentary tools for teachers. We'll look at their sharing areas (teacher.desmos.com/; www.geogebra.org/materials/) to see some great (some new) ready-to-use files.	James Olsen
404	A PtA-MP-SBG Decoder Ring	NCTM's Principles to Actions discusses assessment as one of the guiding principles for school mathematics. The Mathematical Practice standards prescribe goals for student behavior, and standards-based grading is a way to assess and document student work. Let's explore: how can the three mesh?	Craig Russell
405	PARCC Math Updates	Learn the latest information the when, what and how of the PARCC math assessment from the Illinois representative to the PARCC Math Operational Working Group. You will be able to see what the current news is and what is forthcoming. Time will be provided for a question and answer period.	Heather Brown

Saturday Morning Hotel 9:00	**ICTM Keynote Address**	**Matt Larson NCTM President**

Saturday Sessions 9:00 - 9:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
134	Frank Lloyd Wright: Materials Science and Algebra	Wright's art glass of the Prairie Style will be examined for mathematical patterns. Once these patterns are identified, students will apply a set of linear functions to create their own unique designs. This hands-on activity integrates art, math, and science for algebra students, grade 7 â€“ 10.	Patrick Young
135	Argument-Driven Inquiry: Promoting Science Proficiency by Transforming Lab Activities	Learn about Argument-Driven Inquiry and how it can help students learn how to use core ideas, crosscutting concepts, and scientific practice to explain natural phenomena.	Victor Sampson
136	BreakOut A Different Kind of Lab'	Looking for a way to highlight teamwork, problem solving, critical thinking, and collaboration skills in your class? Get your students to BREAK OUT! BreakoutEDU creates engaging learning games for ALL learners. Get your students engaged in problem solving and collaboration like never before. Experience a Breakout EDU game and take back the knowledge to your districts! A limited number of discounted kits will be available.	Michael Deleon
200	ISTA Elementary Academy	Quick fixes and long term solutions to implementing NGSS: the elementary academy will show elementary teachers immediate shifts to make, while also introducing teachers to the concept of storylining.	Brian Aycock
201	Overcoming Your Fear of Engineering in the Classroom	Learn how to bring the "E" in STEM to your classroom by adding it to current units or content with what engineers actually do.	Anna Meyer

Saturday Sessions 9:00 - 9:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
202	BioPlastic: Going from Synthetic to Natural Polymers	Many of the items that we use today are becoming more earth friendly. Learn how a bioplastic is made and what plant materials are used. This inquiry NGSS designed lab activity shows students how all areas of science needs to work together and the importance of a lab notebook. CD with information and activities will be provided.	Sherri C Rukes
203	Smiling Faces	Do plants and animals eat the same food? Iodine is an indicator for starch. Students visualize the digestive process in a demonstration showcasing Digestion in Action. Seeds, saliva and small Petri dishes containing a starch-agar medium are utilized to show students how plants and animals digest food.	Suzanne Cunningham
209	STEM Information Literacy in Illinois High Schools	This presentation will discuss the results of a mixed-methods study, which included surveys, interviews, and budget analysis, investigating how STEM high school instruction addresses	Kelly Grossmann
211	Formative Assessment in the Science Classroom	Formative assessment is a valuable tool for gauging student understanding of science. During this session, a variety of classroom tested, hands on formative assessments for chemistry and biology will be discussed and demonstrated. Suggestions for implementing free online formative assessment programs, such as Socrative and Kahoot will also be discussed.	Jennifer Smith
212	Diving into NGSS	It's a tool you can use in class tomorrow: award-winning Mosa Mack Science is a new and easy-to-use NGSS supplement that pairs online animated mysteries with offline engineering challenges. This session will feature an interactive demo and discussion. Laptops recommended, not required.	Lissa Johnson

Saturday Sessions 9:00 - 9:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
213	ISTA Elementary Academy	Quick fixes and long term solutions to implementing NGSS: the elementary academy will show elementary teachers immediate shifts to make, while also introducing teachers to the concept of storylining.	Brian Aycock
218	The Sense of Science	We have all seen the vinegar or Mentos volcanoes, layering liquids, pH color changes and a cell under a microscope. But have you listened, touched, or even tasted (non-toxic only) a science project? Can a person with visual impairment really understand science and maybe even enjoy it? We say YES! Attend our session and find out what you can do to improve the understanding of science in your students.	Barbara French
220	NGSS Storylines for Elementary (Part 1)	Within this session, a NGSS unit plan for each elementary grade level will be shared. Based on their training and cadre work, elementary teachers will share their experiences and the units in development.	Aimee Park
221	Integrating Computer Programming into Collaborative Scientific Argumentation	We are a team of two researchers and a middle school teacher who planned, developed and implemented a Scratch-based science activity. This activity aimed at engaging grade 7 students in using mathematics and computational thinking practice. The purpose of this presentation will be to share our experience with the audience.	Saadeddine Shehab

Saturday Sessions 10:00 - 10:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
134	Caught in a Net? Surface Area Strategies!	Join in a discussion on student thinking about surface area. See student work on surface area tasks designed to bring out students' conceptual understanding. Leave this session with tasks that can be used in your classroom immediately.	Pamela S. Beck
135	High School Math in College: Trends and Approaches	Over 1 million college students enroll each year in math classes that do not count towards degree credit and delays their time to graduation. This talk introduces major issues and trends related to these pre-college level math classes and outlines current efforts to accelerate students through them.	Martha B. Makowski
136	Math Teacher Circles for the Middle Grades	Collaborate with colleagues to investigate rich math problems! Find ways to extend your love of learning math at a deeper level to your own students in the middle grades. Learn about a new Math Teacher Circle that recently formed in the south and southwest suburbs of Chicago.	Dave Klanderman
200	Explore: A Clue Solving Adventure	Explore: A Clue Solving Adventure is a book that can be added to any curriculum to teach students about Illinois. Students will use problem solving skills and teamwork to decipher clues. This can then lead to "virtual field trips" to places in Illinois.	Michele Stucky
201	Using NGSS for mirroring assessments	We will describe how we redesigned our ecology unit. We will discuss the process we used to unpack the performance expectations.We will explain the integration of the three dimensions into this unit. Finally, we will demonstrate how this process led to the development of our mirrored assessments.	Dawn Myelle-Watson

Saturday Sessions 10:00 - 10:50

Room	Session Title	Session Description	Lead Presenter
202	I'm a PACK RAT! What will I do with all the STUFF!	Ever wanted to know what to do with the things you find lying around in your home or at the dollar store, especially in a junk drawer or wonder how can I do this lab cheaper. Learn how to create labs, demos, and activities with such items. Take home CD of activities.	Sherri C Rukes
203	FUN = Foods help to Understand Nutrition	Who ate breakfast this morning? Which plants were eaten for breakfast? Starch is one of the major nutrients eaten every day. A simple chemistry experiment, identifying starch, leads students to better understand plant biology, the foods they eat, digestion, and balanced nutrition.	Suzanne Cunningham
209	Probability Jeopardy!	The answers are $2/\pi$, $1/e$, and $1/\tau$. Yeah, but what's the question?	Dane Camp
210	Coding in your Classes	Students have become more familiar with basic coding techniques, in part due to the Hour of Code. In this talk, we will explore ways to extend their understanding using Scratch (or Snap) free coding software to create projects for current algebra, geometry, and precalculus classes.	Martin Funk
211	Teachers challenges with Universal Design for Learning	Why the princples of Unvirsal Design for Learning(UDL)are important in teaching science?and what are internal and external factors that inhibit science teachers implementing the princples of (UDL)in their classroom?	Maitha Binjwaeer
212	Engaging Parents in the Mathematics Curriculum	Parent partnerships are essential to the success of students across the K - 8 continuum. This session will give specific examples for how we have engaged parents in both the CCSS and NGSS standards.	Dr. Steven Shadel
213	ISTA Elementary Academy (Part II)	Quick fixes and long term solutions to implementing NGSS: the elementary academy will show elementary teachers immediate shifts to make, while also introducing teachers to the concept of storylining.	Brian Aycock

Saturday Sessions 10:00 - 10:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
218	The First Week of School	So it's October and maybe you've already run out of activities to promote collaborative learning. Come join us as we learn about and participate in a variety of team building activities that can be used throughout the year!	Gary Chu
220	Elementary Storylines (Part 2)	Within this session, a NGSS unit plan for each elementary grade level will be shared. Based on their training and cadre work, elementary teachers will share their experiences and the units in development.	Aimee Park
221	Five Reasons Kids Fail Algebra and What We Can Do About It in Elementary School	Success in algebra opens doors and expands opportunities in many professions and careers. Unfortunately many students just “don’t get it.” Why is this? I believe the reason lies in early math instruction – beginning in grades K-3 - where young children fail to	Angela Andrews
222	Accurate Assessment in the Common Core Era	How can we better measure content mastery? We need to understand the purposes and practical uses of formative and summative assessments. We'll discuss what should and should not "count" as a grade, grading policies, and grade systems in light of Common Core's call for focus, coherence and rigor.	Eric Bright

Saturday Workshops 10:00 - 11:20			
Room	**Workshop Title**	**Workshop Description**	**Lead Presenter**
401	Making Connections in Trigonometry	Come see activities that have helped students make deeper connections between trig lessons and units. Topics include the unit circle, trig function graphing, inverse trig functions, solving trig equations, and polar graphing. Leave with activities and ideas to take back to your trig class!	Scott Knapp

Saturday Workshops 10:00 - 11:20			
Room	**Workshop Title**	**Workshop Description**	**Lead Presenter**
402	Laying the Foundation for Area	Explore the area with origami and dot paper activities to arrive at a formula for the area of any polygon. The conceptual knowledge of area, while including and challenging all students regardless of prior knowledge, will be examined. Problem solving beyond the basic formulas is guaranteed.	Kathleen Fick
403	Writing an Article for the IMT Journal	The editors of the Illinois Mathematics Teacher will lead a discussion on how to turn innovative teaching ideas into articles for a journal.	Daniel Jordan
Saturday Sessions 11:00 - 11:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
134	Subitizing: Beyond the Dots	Subitizing is foundational for math proficiency. Strategies enhancing subitizing structured with 5 and 10 that impacts fact fluency, understanding part/whole, and place value will be explored using finger patterns, ten frames, math racks, and a number path.	Tina Johnson
135	A Math Workshop That Works For You	Presentation will include tricks and tools to tackle the workshop concept with efficiency. Focus will be on mini lesson delivery and ways to differentiate without staying up until midnight. Examples from 4th grade Common Core Standards; with commonalities that work across grade 2-8 curriculum.	Christina Betz-Cahill

Saturday Sessions 11:00 - 11:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
136	International Trends in Math Education for Gifted Students	Report on lessons learned at the International Congress of Math Education (2016), condensed into three or four in-depth teaching scenarios addressing research and best practices for both gifted and math education, including student perspectives where possible. 12345678901234567890123456789 0	Craig Russell
200	Creating a Sustainable K-16 Partnership	Collaborating across grade-levels (K-12) and institutions--public schools-universities--with a sustainable program that facilitates deeper science investigations and learning.	Shalonda Carr
201	Teaching Scientific Controversies Using Letters to the Editor	Critical science argumentation and literacy skills can be strengthened and assessed using letters to the editor by all types of educators. Attendees can expect to practice assessing sample letters and begin developing ideas for a letter of their own.	Alex Dzurick
202	Student Misconceptions of Intermolecular Forces in Solubility	Solubility is a surprisingly nuanced concept, and, not surprisingly, is difficult for students to explain using the concept of intermolecular forces. In this session I will describe a discrepant event for solubility and my analysis of the misconceptions student have in explaining it.	Kathryn Rowberg
203		Participants will engage in an inquiry- based life science activity that is rich in NGSS Science and Engineering Practices (SEP): 2 (Models), 4 (Data), and 7 (Argumentation). After the activity, the group will address the grade level SEP progressions, middle school	Emily Reardon
209	How can "Failing" Students find Success?	Imagine you are given a class of 32 kids, all who failed of Algebra 1! Join us to discuss our journey through teaching this course. We will focus on the successes we had, the power of relationship building, and strategies to help our most struggling students.	Maggie Sharp
210	Have An Idea You Need Monetary Support? Come!	Do you have a project or would like to take more math classes to strength your mathematical content, this session is for you! NCTM Mathematics Education Trust grant or scholarship can help!	Fern Tribbey

Saturday Sessions 11:00 - 11:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
211	NGSS Unit Planning Strategies	Show teachers how to create units for the NGSS standards that focus around Phenomena. Teachers will hopefully leave the session with the beginnings of a unit they can complete and use the next school year.	Casey Hansen
212	FALs for All!	The Mathematics Assessment Resource Service has over 100 formative assessment lessons. This session will walk teachers through the Respresenting Quadratics Functions Graphically lesson from two perspectives (senior and 8th grade) and explore ways to adapt the lesson to fit the needs of students.	Marianna Jennings
213	Extensions, Elaborations and Synthesis: Novel Science as Inquiry	Participants will identify important ideas from a content unit and shape them into a novel science project with the help of professional science partners. Workshop participants will be added to a social network group and the proposed experiment completed together in the 2 months that follow the ILSTA meeting	Devon Moon
218	Thin Films: Prisms and Nanotechnology in Geometry	An overview of a module on nanotechnology. Using prisms to approximate thicknesses of thin films created by spinning paint onto a substrate. Based on research done during nano@illinois RET.	Steven Pavlakis
220	Reading to Make Science Real	Teaching students to read about science gives them skills they will need for the future. I will be sharing reading techniques (aligned with NGSS and CCSS) for the biology classroom to give students a better understanding of how science happens in real life.	Aubrey Mikos
222	Teaching Black Students Mathematics Using Black Culture	Black students are victims to curricula that do not engage them or the issues they confront in their lives or communities. We must teach Black students how to examine their world critically using mathematics.	Evan Taylor

Saturday Sessions 11:00 - 11:50

Room	Session Title	Session Description	Lead Presenter
404	Understanding Place Value from Whole Numbers to Decimals	Research-based tasks will be presented that allow K-5 students to be successful with understanding place value as outlined in Common Core State Standards. Attendees will write problems appropriate for their teaching. Handouts will be provided.	Cheryl Ann Lubinski
405	Getting at Napolean's Triangles through Transformational Geometry	The study of Napolean's Triangles is often ignored in typical high school geometry courses due to difficulties with the construction of the figures involved. But, by USING Transformational Geometry and CABRI on the TI-Nspire calculator, this difficulty is minimized. Come see the amazing results	Ray Klein

Saturday Workshops 11:30 - 12:50

Room	Session Title	Session Description	Lead Presenter
401	Developing Fraction Skills Using Models and Manipulatives	This presentation will review the progression of fraction skills in grades 3-5. Attendees will participate in specific examples to see how different models and manipulatives support conceptual understanding of fractions as well as how they support the C-R-A sequence of math instruction.	Sarah Wargaski
402	Desmos Activity Builder: Best thing since Sliced Bread?	Activity Builder is a free DIY tool used to create Desmos-based activities for classroom use. Learn how to access and use a growing library of engaging lessons shared by Desmos and other teachers. Better yet, learn how to create your own! Please bring a laptop or tablet to this session if you can.	Adam Poetzel

Saturday Workshops 11:30 - 12:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
403	What's Change Got to Do with it?	The instructional shifts of the New ILS in both mathematics & science requires teachers and students to take on different roles then in the past. Understanding change theory, planning for change, & supporting colleagues in the change process is necessary in order for change to actually take place.	Leslie Knicl

Saturday Sessions 12:00 - 12:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
134	Exploring Mathematics and Science With an Angry Bird	With a flight from the game "Angry Birds" as context, discussion will include graphs, parametric relations, statistical regression, trigonometry and realistic modeling for position, angle, initial velocity, length, height, gravitational force, and time. Mathematics and Science teachers are welcome!	John Diehl
135	Modeling Activities for Middle School through Algebra 2	This session will emphasis modeling activities that can be used to engage middle school through Algebra 2 students. Come ready to do hands-on activities that use graphing technology to get students to understand linear and quadratic relationships.	Denise Young
136	Project PENTOMENO: Hands-on Experiences with Common Core Mathematics	In this engaging, hands-on session, we explore differentiated problem solving activities implemented with 10th grade geometry students with the assistance of team of teacher candidates from Miami University. Numerous handouts and classroom-ready materials will be provided to participants.	Michael Todd Edwards
200	Comparing the NGSS and CCSS-Math Practice Standards	While CCSS-Math and NGSS standards are subject specific, the practices for the disciplines have significant overlap.Â This session will help math and science teachers to identify similarities in the practices for each discipline and look to determine ways to inform and enhance student outcomes.	General

Saturday Sessions 12:00 - 12:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
201	From Memorization to Modeling: Reconceptualizing Teaching About Cellular Division	Experience activities that use modeling to teach about cellular division, and leave with ideas for modifying curriculum materials to better meet the NGSS. Curriculum materials that use the phenomenon of planarian regeneration will be made freely available, and we will specifically discuss unit storylines, assessment boundaries, and evidence statements.	General
202	Addressing Misconceptions in Intermolecular Interactions	A previous evaluation of student responses to a discrepant event regarding intermolecular interactions lay the foundation for addressing student misconceptions of ions, polar and nonpolar compounds. After receiving new learning materials, students respond to the same discrepant event and their responses are analyzed.	General
203	Curriculum Design, RTI, and Skills...Oh My!	Develop a skills based curriculum that provides opportunity for formative assessment and timely Response to Intervention. Use NGSS and Common Core to ensure that your students can master literacy, numeracy, and science skills!	High School
209	Let's Talk! Effective Student Discourse	How do we get students to engage in mathematical conversations? Come hear about strategies that will help establish this collaborative learning environment. And please bring any strategies that you would like to share!	Jennifer Dao
210	Learning the Language of Math	The workshop will focus on the process of developing math concepts by building on students' experiences before the math terminology is introduced. Topics will include patterns, ordinal numbers, addition and subtraction, and area and perimeter.	Marie Kielty

Saturday Sessions 12:00 - 12:50			
Room	**Session Tittle**	**Session Description**	**Lead Presenter**
211	Preparing for Units in a Three Dimensional Model	NGSS has presented a three dimensional learning model that helps support student success. Whether you are a teacher or administrator come and learn how to be prepare future units. We will use video, practice, and planning in order to become masters of all three NGSS strands.	General
212	The Paradox of Twice Exceptionality (2), Gifted/Learning Disabled: Demystifying Math	The session will present dyslexia as an ability rather than disability. The paradox of this exceptionality is explored along with the implications for the teaching of mathematics. Leave with new perspectives and suggestions for instructional practices.	Rima Binder
213	Exploring the process of creating assessments for the Next Generation Science Standards	Are you finding yourself starting from scratch with your assessments after adopting NGSS? Come to this session for an action research presentation, followed by guided brainstorming to help you begin generating NGSS-based assessments for your classroom. Bring one NGSS performance expectation you would like to write an assessment for.	General
218	Intervening for Students Who Consistently Struggle in Math	In this session, we will briefly discuss some of the research behind academic persistence and productive struggle. The bulk of this session will be introducing self-regulated strategies as alternative approaches to support these struggling learners to get the most out of your math instruction.	Quentin M. Wherfel
220	Science in a 1:1 classroom	How chromebooks have enhanced the middle school science curriculum and changed the way I teach science. I will explain what worked and what didn't and all that I have learned from a year of 1:1 science teaching.	General

Saturday Sessions 12:00 - 12:50

Room	Session Title	Session Description	Lead Presenter
221	Increase Student Motivation by Gamifying Your Classroom	In this session, you will learn how to integrate a leaderboard in your classroom. You do not need a lot of tech in your classroom for this to work (1:1 or no tech, Gamifying does not discriminate!). This is a low cost way (free if you want) to motivate students who are not intrinsically motivated!	Matthew Miller
222	Math Talks in the High School Classroom	Math talks build conceptual understanding, fluency, efficiency with numbers/ operations, and positive discourse. Math talks were implemented daily in a 10th grade classroom to establish classroom norms and develop CCSS Math Practices. Observations, challenges, and resources will be shared!	Miriam Schmid
404	Engaging Students with Math Practices For Every Curriculum	There is a huge buzz about selecting the appropriate curriculum for implementing standards aligned instruction. Here, explore engaging strategies that highlight the math practices to obtain and hold students' interest and make deeper and longer lasting connections while improving achievement.	Anita Reid
405	Translating Research to the Classroom	How a summer spent researching several topics in discrete mathematics has transformed a classroom perspective and approach. Participants will take away several specific examples of activities, and will take away a broader explanation on how to apply these techniques to any course/classroom.	Alexander Fischer

Saturday Sessions 1:00 - 1:50

Room	Session Title	Session Description	Lead Presenter
134	Creating an Atmosphere of Success with Engaging Activities	Help your students reach deeper levels of understanding through activities that promote problem solving, team work, and critical thinking. This session will also include strategies to check for understanding.	James Dobrzanski

Saturday Sessions 1:00 - 1:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
135	Top 10 Easy Access Ways to Grow as a Math Teacher	Is your traditional professional development impacting math instruction and student outcomes? Research says it probably is not. Learn some tried and true PD methods and think outside of the box options to deliver PD and take control of your own professional growth.	Danielle Lee
136	Illinois Oil Production Profit	Algebraic exploration of the costs and revenue associated with drilling for oil in Illinois. Students determine oil well viability and better understand variables and vocabulary related to oil exploration and production. We will also discuss the free annual summer conference.	Bryan Hartman
200	STEM WOW	Lemont High School has developed and fostered a summer program of inclusion for both individuals with disabilities and general education students. Students collaborate on STEM activities and develop STEM skills. Students have the opportunity to incorporate skills in the area of social communication and develop positive relationships.	High School
201	Empowering and Mentoring Students in Scientific Reading, Writing, Listening, Speaking, and Thinking Skills	Transform student learning by fostering scientific habits of mind! Drawing from research on disciplinary literacy, we offer a practical approach to develop the higher-order thinking and reasoning skills required by the NGSS and CCSS. Participants will learn discipline-specific strategies designed to increase student ownership of the learning process.	General
202	Support for Modeling in Mathematics using Science	The Common Core Mathematical Practices of Modeling (MP4) and Using Appropriate Tools (MP5) provide opportunities for students to apply their mathematicalÂ skills to science problems. This session focuses on resources teachers can use to find or create data for use as models in the mathematics classroom.	General

Saturday Sessions 1:00 - 1:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
203	NGSS in Action! The Science of Nutrition--What's the Scoop?	Participants explore, via collaborative inquiry and hands-on investigations, the science of nutrition for improved health. They experience the Illinois Learning Standards for Science through a model lesson focused on developing arguments from scientific evidence. They reflect on their learning and discuss how to provide similar experiences for their students.	General
209	Standards Based Grading from the Inside Out	Let us share how we were able to transform our Algebra 2 grading system into one that reflects student growth. We will discuss practical strategies for how to write standards and assessments that measure growth and spend time discussing opportunities and challenges that arose during our transition.	Eva Lange
210	Day 1: Uniting Geometrical Constructions and Proofs	As an architect, it gives me goose bumps to see geometric constructions that are so darned elegant. As a math teacher, I get them when students develop elegant proofs. Geeky, right? Can my 2 loves be combined from Day 1? Yes! Bring a compass (or use mine) & straightedge and let's make connections!	Matthew Foster
212	WOW! Student by Student-Personalize your Mathematics Classroom	Do you have students of varying abilities in your mathematics classroom? Learn how you can individualize and create meaningful learning paths for your students using existing programs, technology, and hardware.	Kara Granger
218	Developing Number Sense in the Middle Grades	Do you struggle finding age-appropriate activities and lessons to teach number sense and the concepts of place value to your middle-level students? This session will discuss a number of warm-ups, investigations, and center activities for students to develop these concepts in middle-level students.	Nicolette Staley

Saturday Sessions 1:00 - 1:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
221	Math - Right From the start in Preschool	Learn how MATH: RIGHT FROM THE START training, materials and coaching led to the implementation of math strategies that helped preschool children increase skills, teachers gain confidence teaching math, and involved families, all through PLAY! Activity handouts and Research data provided.	Angela Giglio Andrews
222	Using Statistics to Explore Issues of Equity and Priviliege	Using statistics in an Algebra 1 class to explore issues of equity and privilege in society. We will share a unit covering basic Common Core statistic ideas, as well as current research on teaching with equity in mind.	Christine Rinkenberger
404	Using Social Media in the Math Classroom	Discover ways to incorporate tech in math class and redefine what students can produce to demonstrate knowledge. Learn strategies for students using social media such as blogs and Twitter. Finally, learn about resources math teachers are creating that you can use right away in your own classroom.	Annie Forest
405	Selecting Tasks as Described in Principles Into Actions	Tasks can be selected to promote reasoning and problem solving. Using NCTM's books on essential understanding and practice (NCTM, 2010, 2015), I will provide examples of how to develop conceptual understanding and procedural fluency involving ratios and proportional reasoning. Handouts provided.	Albert D. Otto

Saturday Workshops 1:00 - 2:20			
Room	**Workshop Title**	**Workshop Description**	**Lead Presenter**
401	Using bar models to teach word problem solving at the elementary school level	Solving complicated word problems has been deemed as a challenge for many elementary school students. The introduction of bar models could help students easily identify the numeral relationships in word problems and therefore select appropriate algorithms with a clear understanding of the problems.	Xiaobo She

Saturday Workshops 1:00 - 2:20

Room	Workshop Title	Workshop Description	Lead Presenter
402	IMTE Annual Business Meeting		
403	Engineering for Youth	How do I do Stem or engineering with no money for supplies? Where do I even begin? In this hands-on workshop you will participate in using ordinary,everyday supplies to explore concepts of engineering. Come and experience Stem/engineering first hand.	Patti Davis

Saturday Sessions 2:00 - 2:50

Room	Session Title	Session Description	Lead Presenter
201	Team Math Trivia!	Tired of having other subjects dominate the trivia scene? Want to show off your math prowess? Come on out to Team Math Trivia! Teams of 3 to 6 will compete in 4 rounds of pub-style trivia, where all questions and tunes are math-related! Prizes will be awarded, individuals and teams are welcome.	John Riddle
202	Using YouTube to Flip Your Classroom	The flipped classroom is the integration of videos watched at home to enrich higher performing applications/experiments in class. STEM initiatives, differentiation and RtI is also explored utilizing this method. We will experiment specifically how to implement as we investigate various technologies.	Dustin Berthold
203	Spend, Save and Share	This presentation will focus on ways students can take care of their financial futures by saving, sharing and spending. The participants will learn how to assist our students in determining the three S's. We will investigate mortgages,interest rates, deposits and withdrawals.	Eileen Quinn Knight, Ph.D.

Saturday Sessions 2:00 - 2:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
209	Interactions with Fractions	Join us in a discussion about the struggles that students have when adding and subtracting fractions. Problems will be introduced that bring up the major mistakes, misconceptions and strategies students use. You will leave with several activities to use in your classroom.	Lawrence Ssebaggala
210	Enrichment Activities in Geometry	Building Platonic /Archmedian solids, tie Fibonacci sequence to Golden Rectangles and other activities.	Fred Flener
212	How to integrate games into math	Games are a fun and effective way to help students learn math. Get some practical tips on how to integrate games into your math classes and look at how to maximize the opportunities for encouraging students to construct viable arguments and critique the reasoning of others. (SMP3)	Jean Capper
218	Complex Instruction Consortium: Innovation in Teacher Professional Development	The Complex Instruction Consortium was established in 2009 and has hosted over a dozen free workshops since. Hundreds of teachers have joined the network, ultimately impacting thousands of students. Come learn how the CIC can make a difference for your teaching and your school!	Zachary Herrmann
221	Student collaboration with computer programming and elementary math	We are a team of researchers and teachers working with K-5 students to understand how to integrate mathematics instruction with computing. We will share some of the math/CS lessons we developed and the research questions and tools we are exploring. Our special focus is on student collaboration.	Maya Israel
222	Using Virtual Manipulatives to Improve Student Achievement	The purpose of this action research was to investigate the effect of virtual manipulatives on the assimilation, comprehension, and retention of fractional, decimal, and percentage mathematics of middle school students.	Dr. Nikki Boyd Rana

Saturday Sessions 2:00 - 2:50			
Room	**Session Title**	**Session Description**	**Lead Presenter**
404	Pedagogy in the Teaching of Statistics in Middle School	Computer animated videos will be used to start a discussion on Pedagogical Content Knowledge that teachers use while teaching statistics in the middle school. Videos will concentrate on highlighting misconceptions and strategies used when introducing measures of center to sixth grade students.	Dhimitraq Duni
405	The Redesigned SAT: What Every Math Teacher Needs To Know	The redesigned math SAT will become common across Illinois this spring. Do you know about its major changes? Build your understanding of its content foci, problem-solving, item types, and more. We'll also consider implications for instruction across middle and high school contexts.	Sendhil Revuluri