

Washington, DC
NCTM April, 22-25, 2009
Tech Sessions

Thursday	Friday	Saturday
Renaissance - Ren	Convention Center - CC	Hyatt - Hyatt

No	time	Title	Type	Place	Description
19	Th 8:00- 9:00	Developing Fluency in Basic Facts: Integrating Strategy Instruction with First in Math® Online Program Lead Speaker: Lynn Columba (Lehigh U)	3-5 Research Session	Ren, Congres- sional Hall A	That happens when a child is struggling to master the basic facts? This session describes observations and interviews of third grade students who were not progressing in learning their basic facts while engaged with First in Math software. Results suggest use of software along with a variety of approaches can lead to significant improvements.
22	Th 8:00- 9:00	Fluency and Fluidity with Fractions: How Adaptive Technology Can Help Lead Speaker: David Dockterman (Harvard Grad. School of Ed)	3-12 Session	Ren, West B	Many students founder when they reach fractions. With a fragile foundation, they struggle as they progress to advanced math. Learn what it means to be "fluent" with fractions, and find out how interventions built on adaptive technology and based on cognitive research can help students develop a robust understanding and fluidity with fractions.
26	Th 8:00- 9:00	Technology Investigations for Middle School Lead Speaker: Mary C. Enderson (Middle Tennessee State U)	6-8 Session	CC, 207B	Explore the world of technology in middle school mathematics! Learn how to use the QX5 digital microscope, digital cameras, graphing calculators, videoclips, and mathematical software to investigate concepts for middle school students.
30	Th 8:00- 9:00	EXCELing with Visual Basic: An Introduction with Activities Lead Speaker: Nicole Juersivich (U of Virginia)	9-12 Session	CC, 156	This session provides an introduction on how to access and use Visual Basic features already included in Excel to create dynamic visualizations to help students explore different mathematical topics. Experience these features that transform Excel from a data analysis tool to an applet creation environment. Handout contains detailed directions.
31	Th 8:00- 9:00	Exploring Mathematics through Advanced Technology Applications	9-12 Session	CC 202B	This session will present multiple computer-based, interactive labs that can be used to help students see the connections between their everyday lives and advanced technological applications that rely on

		from Popular Culture Lead Speaker: Jason Silverman (Drexel U.)			fairly sophisticated mathematics, including digital photo editing, digital image manipulation, and mixing and editing audio.
34	Th 8:00- 9:00	Geometer's Sketchpad® for Smarties, not Dummies Lead speaker: John David Kohlrieser (Virginia Council of Teachers of Mathematics)	9-12 Session	CC, 204C	Explore The Geometer's Sketchpad in a rapid-fire, jam-packed session, including all the drop-down menus in both top and left tool bars. The session will include tricks and tips to align items vertically and horizontally, measurements in text, animation, the trace feature, morphing, and much more. Bring a seat belt.
35	Th 8:00- 9:00	Stimulating Problems to Nspire Mathematical Connections with Multiple Representations Lead Speaker: Jane M. Wilburne (Pennsylvania State U. Harrisburg)	9-12 Session	CC, 149 A/B	Using the TI-Nspire, participants will explore problems that connect algebra, geometry, and statistics. Participants will create multiple representations and discuss primary opportunities to promote classroom discourse and pose questions to help students link the important mathematical ideas. Sample activities and assessments will be shared.
36	Th 8:00- 9:00	Using Technology to Improve the Learning Experience (and Conceptual Understanding) of Undergraduate Students of Statistics Speaker: Kenneth Charles Strazzeri (U. of Virginia)	9-12 Session	CC, 209 A	The speaker's current research intends to show a variety of ways to use screen casts and Flash applets to teach introductory statistics topics, such as the normal distribution, the central limit theorem, and statistical inference. The work presented will be dissertation work that will be completed in the coming year.
41	Th 8:00- 9:00	Do Your Classes Click? Using Interactive Remotes to Increase Participation and Learning Lead Speaker: Linda Forbringer (Southern Illinois U. Edwardville)	Teacher Ed Session	Hyatt, Lafayette Park	During this interactive session, participants will use clickers in a variety of instructional formats and experience how these handheld remotes can increase students' interest, participation, and learning. Participants will receive handouts that summarize the research basis for using clickers and suggest strategies for their use.
45	Th 8:30-	Incorporating Children's Literature and Calculators	PreK-2 Gallery	Hyatt, Consti-	Literature, calculators, and mathematics are a powerful and motivational combination for the mathematics classroom. Activities

	10:00	into Grades K-2 Mathematics Lead Speaker: Deborah Crocker (Appalachian State U.)	Wksp	tution C/D/E	will incorporate children's literature. Participants will have hands-on experience with the TI-10. Activities will be included from several content strands.
65	Th 8:30- 10:00	Improving Instruction with Technology: SMART Board™ and TI-Nspire™ Computer Algebra System (CAS) Lead Speaker: Sean Bird (Covenant Christian High School)	9-12 Gallery Wksp	CC, 147A	Hear and see how using the SMART Board™ and TI-Nspire™ CAS technology rejuvenated the speaker's teaching of calculus. Experience a hands-on activity with the latest handheld learning tool, the TI-Nspire CAS. Learn about resources and professional electronic groups dedicated to make the technology more productive, enjoyable, and enlightening.
66	Th 8:30- 10:00	Geometry and Algebra: Help Students See the Connections Lead Speaker: Laurie Boswell (The Riverside School)	9-12 Gallery Wksp	CC, 152A	The wksp will model activities that help students see connections between geometry and algebra. In the process, students' conceptual understanding is deepened. Concepts explored include angle measure, congruence, and similarity. Experience with TI-84 will be helpful, but not essential. Concepts explored are found in a standard geometry course.
87	Th 9:30- 10:30	Bees, Bats, Bugs and Connections to the Elementary School Classroom Lead Speaker: Brian Douglas Sharp (Indiana U. of Pennsylvania)	3-5 Session	CC, 209A	Bees, bats, and bugs provide an interesting context in which to study mathematical concepts. This session will (1) use a TI-ranger to simulate echolocation, (2) learn why bees build hexagonal-shaped honeycombs, (3) model the family tree of bees using Fibonacci sequences, and (4) determine how far a human-sized grasshopper could jump.
98	Th 9:30- 10:30	Can Findings from a Homework Hotline Tutor Study Electrify Teaching? Lead Speaker: Amanda N. Davis (Saint Mary-of-the-Woods College)	6-12 Session	Ren, Ren West A	Fifty engineering students who receive many calls per week on a Homework Hotline answered questions posed by teacher educators, including "If you wrote a letter to teachers, what would be your top five suggestions?" this session will focus on detailed analysis of the results, tutors' suggestions, weak content areas, and implications for teaching.
95	Th	Come Wii with Mii!	Teacher	CC,	Engaging students in meaningful and fun mathematics can be

	9:30-10:30	Mathematics and Wii, Working Together Lead Speaker: Christina L. Gawlik (Kansas State U.)	Ed Session	103B	accomplished using the Nintendo Wii in a multidisciplinary unit using differentiated instruction for grades 3-12. Watch your students transform into researchers who design unique experiments, collect and analyze data, and then professionally report their findings.
104	Th 9:30-10:30	Using a Computer Algebra System (CAS) to Provide Equal Access to Algebra for All Students Lead Speaker: Larry Osthus (Consultant)	9-12 Session	Ren, Renaissance West B	Faced with a school-district mandate to have all high school students complete an algebra curriculum, a group of high school teachers decided to have their underperforming students use a CAS in their prealgebra and algebra classes. This is the story of their journey and the dramatic impact it has had on their students.
105	Th 9:30-10:30	Conjecturing and Proving in a Dynamic Geometry Environment Lead Speaker: Anna Baccaglini-Frank (U. of New Hampshire, Durham, New Hampshire; Università degli Studi di Siena)	9-12 Research Session	CC, 150 B	Dynamic geometry systems have impact on the process of producing conjectures and proofs in Euclidean geometry. This study has revealed particular forms of reasoning that seem to be induced by certain uses of tools available in Cabri. These results have implications for classroom teaching and curriculum development.
128	Th 10:30-12:00	Simulation, Sampling, Sensors, Statistics, and the Mathematical Sciences Lead Speaker: David Kapolka (President, Council of Presidential Awardees in Mathematics; Key Curriculum Press)	9-12 Gallery Wksp	CC, 101	Participate in demos and investigations using real data, both scientific and mathematical. Participants will have the opportunity to analyze the data and see connections to high school Algebra 1, Algebra 2, statistics, precalculus, and calculus. TI-Nspire, vernier probes, and Fathom will be used by all. Optional: bring a laptop with battery power.
129	Th 10:30-12:00	Every Picture Tells a Story Lead Speaker: Chris Rumsey Mackmin (Braden River High School)	9-12 Gallery Wksp	CC, 150 A	Every picture tells a story. Let that story be mathematical. Join the speaker for a panorama of activities, projects, contests, and assessments that use students' interest in the Internet, video, and digital images to discover and communicate mathematical ideas. The activities guide students to view the world with a mathematical eye.
132	10:30-12:00	Calculus Activities Using TI-Nspire™	9-12 Higher Ed	CC, 208 A/B	In this session, attendees will use TI-Nspire handheld calculators to complete activities involving concepts typically covered in Calculus 1. Activity worksheets will be provided. Comparisons among the two

		Lead Speaker: Marlena Herman (Rowan U.)	Gallery Wksp		types of TI-Nspire (one with a computer algebra system and one without) and other handhelds (TI-89, TI-83, TI-84) will be discussed.
134	Th 10:30- 12:00	Algebra, Functions, and Technology Lead Speaker: Jerald Murdock (Key Curriculum Press)	9-12 Gallery Wksp	CC, 206	Come explore how carefully sequenced, technology-enhanced activities can help deepen students' understanding of algebraic concepts. We'll use graphing calculators and probes to develop functions at a fundamentally deeper level.
139	Th 11:00- 12:00	Beyond Topics: Some Organizing Principles for a Coherent Approach to Algebra Lead Speaker: Al Cuoco (Center for Mathematics Education, EDC)	General Session	Hyatt, Independence A	Internet navigation, spreadsheet use, financial decisions, and cell phone programming all require the abilities to reason about calculations, develop algorithms, use symbols, and describe relationships. These skills are core to algebra and are often missed by specifying course content throughlists of topics. Participants will look at alternatives.
148	Th 11:00- 12:00	Optical Topography of Evoked Brain Activity During Mental Tasks Involving Whole-Number Operations Lead Speaker: Enrique Ortiz (U. of Central Florida)	Research Session	CC, 209A	Functional neuroimaging studies have begun to clarify how the human brain performs calculations. Optical Topography (helmet-type brain-scanning system) was used to study the specific neural networks dedicated to perform mental calculations. The presentation will involve videos and a discussion of findings.
158	Th 11:00- 12:00	How Smart are You? Advanced SMART Board™ for the Secondary School Mathematics Classroom Lead Speaker: William C. Tozzo (Bedford Central School District)	9-12 Session	CC, 140A	The SMART Board™ is becoming more common in today's classrooms. Participants will get a quick review of the basics of using a SMART Board™ and then be introduced to advanced functionality that is of particular use in the secondary school mathematics classroom.
162	Th 11:00- 12:00	Exploring 3-D Geometry Using Google's Sketchup Lead Speaker: Jonathan Choate	9-12 Session	CC, 202B	Three-dimensional geometry can be taught and learned in new and exciting ways using Goggle's free, 3-D design software package, SketchUp. Learn how to explore the traditional topics of solid geometry such as prisms and pyramids and the Platonic solids using

					this easy-to-use, powerful software package.
166	Th 11:00- 12:00	PowerPoint®+Geometer's Sketchpad® + Digital Camera = Math 4 All Lead Speaker: Fernando Rodriguez (Buena Park High School)	9-12 Session	CC, 144C	Participants will be engaged in algebraic ideas to make mathematical connections, including real-life applications. A handout and CD will be provided. No familiarity with Geometer's Sketchpad required.
169	Th 11:00- 12:00	Taking Limits to the Limit with Dynamic Sketches in the Calculus Classroom Lead Speaker: Beth Cory (Sam Houston State U.)	9-12 Session	CC, 102A	Participants will learn how a calculus teacher used dynamic sketches of the limit concept in his classroom to investigate students' understanding of limits, to enrich the classroom environment, to help students overcome misconceptions, and to make the formal definition of the limit of a sequence more accessible to all.
172	Th 11:00- 12:00	Making Sense of Mathematics in New Curricular and Technological Contexts: What Teachers Need to Know Lead Speaker: M. Kathleen Heid (Pennsylvania State U.)	Teacher Ed Session	Hyatt, Consti- tution B	With new curricular and technological approaches to mathematics, teachers face challenges to their own understanding of mathematics and how it is learned. What mathematics can teachers use in responding to these challenges? How can teachers develop deep understanding of how mathematics is learned in new curricular and technological contexts?
188	Th 12:30- 1:30	The Aha Moment Lead Speaker: Elizabeth Lodholz Cornell (Parkway School District)	3-5 Session	Hyatt, Indepen- dence F/G	"Oh, now I see it." "Oh, wow!" "Now I get it." Ways to use technology will be shared, old and new, (digital camera, computer, paper and pencil, mental math) that help students connect mathematics to the real world.
195	Th 12:30- 1:30	Equity: Designing Technology-Rich Curricular Activities for Democratizing Access to Advanced Mathematics Lead Speaker: Jeremy Roschelle (SRI International)	General Interest Session	CC, 202B	The speaker will present research demonstrating that technology-rich activities used with paper materials and teachers' professional development improve learning for all students. An experiment with teachers across Texas found that the intervention increased learning despite students' gender, ethnicity, language, or socioeconomic status.
199	Th 12:30-	Strategies and Technologies to Use in the Mathematics	9-12 Session	CC, 150B	Participants will gain knowledge and understanding of easy-to-use strategies and technologies to employ in working with at-risk

	1:30	Classroom with At-Risk Learners to Improve Students' Achievement Lead Speaker: Christine Kasitz (CA Math Council)			learners in the mathematics classroom, to improve achievement and retention while creating a fun, exciting mathematics learning environment.
202	Th 12:30- 1:30	Learning about Regression with Real and Virtual Spaghetti Lead Speaker: Thomas G. Edwards (Wayne State U.)	6-8 Session	CC, 156	The speakers will engage participants in a well-known, hands-on activity to study linear regression. Then we will demonstrate how the activity can be enriched using TI-NSpire calculators to create a virtual manipulative. Finally, we will show a video of students engaged in the same activity and elicit a discussion of the learning environment.
205	Th 12:30- 1:30	Helping Students Understand and Apply the Fabulous Circular Functions Lead Speaker: John Kerrigan (West Chester U.)	9-12 Session	R, Renaissance West B	Using similarity, the unit circle, and Geometer's Sketchpad, visualize the circular functions and see that they represent segments adjacent to the unit circle. Traditional functions (reciprocals, cofunctions, double or half angle, negative angle, sum and difference) will visually emerge and serve as a basis for deep understanding.
221	Th 1:00- 2:30	Fascinatin' Factors and Fractions: Sketchpad In Grades 3-6 Lead Speaker: Scott Steketee (Key Curriculum Press)	3-5 Gallery Wksp	CC, 204 A/B	Animate your elementary school classroom with activities covering symmetry, animation, factors, fractions, decimals, and more. Build some from scratch; use prepared sketches in others. Attendees will receive teacher notes, student worksheets, and sketches for six activities. Bring a laptop with battery power.
233	Th 1:00- 2:30	From Blocks to Equations: Algebraic Reasoning for All Learners Lead Speaker: Ruth Casey (Partnership Institute for Math and Science Education Reform, U. of Kentucky)	6-8 Gallery Wksp	CC, 207A	In this session, participants will use a variety of instructional tools and strategies as we investigate patterns and relationships that lead to understanding linear equations. Activities with manipulatives such as blocks, number lines, tables and charts, and graphing calculators will provide opportunities to engage all learners.
235	Th 1:00- 2:30	U.S. Shirts: A Worthwhile Algebra Task to Promote Communication and Connections Lead Speaker: Sami Briceño (Carnegie Learning, Inc.)	9-12 Gallery Wksp	CC, 147 A	Do you use worthwhile tasks in your algebra class? Engage in a rich algebra task about a custom T-shirt business that uses students' prior knowledge and experiences to develop new mathematical understandings and to promote students' ability in reasoning, communication, and making connections. Graphing calculators will be used and handouts provided.
238	Th	Enhancing AP Statistics with	9-12	CC,	When used appropriately, technology has the ability to illuminate

	1:00-2:30	Fathom and the TI-Nspire™ Lead Speaker: Paul L. Myers (Woodward Academy)	Gallery Wksp	159 A/B	important concepts in AP statistics. Using Fathom and the TI-Nspire, explore ideas from the four major AP statistics syllabus topics: data analysis, sampling and experimental design, probability and simulation, and statistical inference.
237	Th 1:00-2:30	Green Math: Algebraic Investigations of Environmental and Social Issues Lead Speaker: Ronald Armontrout (Hotchkiss School)	9-12 Gallery Wksp	CC, 102 B	Using the Internet for research and data from the WorldWatch Institute, the FBI, and the CIA, students investigate bivariate data concerning environmental and social issues. You can bring real-world problem solving to your students in Algebra 1 through calculus. Various regression techniques will be used to fit mathematical models to the data.
244	Th 2:00-3:00	Let's Go Hollywood Lead Speaker: Tony Clay (Howard County Public School System)	General Interest Session	R, Renaissance East	Bring mathematics to life for your students using Hollywood movies and popular television shows. Participants will examine how to use one- to three-minute video clips to introduce mathematical concepts, stimulate classroom discussions, and motivate students.
267	Th 2:00-3:00	"Seeing What You Know" Does Not Equal "Knowing What You See": Visual Insight with Sketchpad® Lead Speaker: Steve Rasmussen (Key Curriculum Press)	General Interest Session	CC, Ballroom A	Familiar mathematics can surprise us in unfamiliar contexts. Our brains favor the visual, yet we usually teach the symbolic. Pi, functions, and real-number operations will all appear as we visually explore high school topics from algebra to calculus.
268	Th 2:00-3:00	How to Integrate SMART Boards™ and TI-Nspire™ Creatively and Effectively: Handheld, Emulator, Desktop Software Lead Speaker: Tom Reardon (Fitch High School, Youngstown, Ohio; Youngstown State U.)	9-12 Session	CC, 140 A	Incorporate these fascinating technologies. Learn how to place your daily class notes online in color as PDFs and audio podcasts. Easily create videos of your class presentations when you are absent. Integrate Nspire documents as investigations, reviews, examples, tutorials, study cards, and more. Obtain a CD with hundreds of activities.
269	Th 2:00-3:00	Cinematographic Video: Window on Effective Practices That Stimulate and Sustain Students' Healthy Discussions Lead Speaker: Thomas E. Ricks (Louisiana State U.)	General Interest Session	R, Meeting Room 12/13/14	Cinematographic video of actual teachers' practice is a powerful medium for learning how to conduct healthy class discussions. Using multicamera video with high-quality audiorecordings of students' conversations, this session will highlight particular practices expert teachers used to generate and maintain meaningful mathematical discussions.
270	Th	Not So Complex: A Visual	9-12	CC,	Take your understanding of imaginary numbers to a new level. Using

	2:00-3:00	Tour of Imaginary Numbers Lead Speaker: Daniel Scher (KCP Technologies)	Session	149 A/B	the dynamic visualization capabilities of The Geometer's Sketchpad, we'll gain mathematical insights into imaginary number arithmetic, DeMoivre's Theorem, Euler's formula, and even how to find buried treasure!
271	Th 2:00-3:00	Teaching Statistical Inference with Dynamic Media Lead Speaker: Joe Garofalo (U. of Virginia)	9-12 Session	CC, 158 A/B	This session demonstrates examples of activities that incorporate dynamic media files to help students understand statistical inference. These multirepresentational examples use readily available software (e.g. Excel, Flash, SmartView) and are freely downloadable. Participants will be asked to provide feedback and suggest further developments.
277a	Th 2:00-3:00	Come, Connect, Communicate - Emerging Technologies Lead Speaker: Ihor Charischak - facilitator	General Interest Session	Ren, Meeting Room 2	<p>Come, Connect, Communicate Emerging Technology</p> <p>Meet with educators who share your interests to discuss how to improve teaching and learning related to the latest and greatest in technology. This networking opportunity provides a chance to network and establish relationships that can continue beyond the conference as a resource for your professional growth.</p> <p><i>Meeting Room 2 (Renaissance)</i></p>
282	Th 3:00-4:30	Rhythm and Hues: Teaching with the TI-10 Lead Speaker: Chris Ruda (Teachers Teaching with Technology (T ³))	PreK-2 Gallery Wksp	CC, 147 A	Discover how music, literature, manipulatives, and the TI-10 and SMART Board™ build conceptual understanding and make mathematics fun! Hands-on activities are designed for all young learners. Specific work samples from students, and special needs, will be addressed. Participants will leave with ready-to-use lessons.
292	Th 3:00-4:30	Math Forum, Online Workshops, Problem Solving, Technology, and You! Lead Speaker: Suzanne Alejandre (The Math Forum @ Drexel)	6-8 Gallery Wksp	CC, 204 A/B	Participants will engage in sample online professional development activities and investigate some mathematics topics common to middle school curricula. This session will explore the Math Tools library, technology problems of the week, and software tools that contribute to mathematical understanding, problem solving, reflection, and discussion.
300	Th 3:00-	Multiple Representation, Investigating, Conjecturing,	9-12 Gallery	CC, 150 A	Teachers will experience how TI-Nspire calculators can be used as a tool to make their classrooms a center for enhancing the

	4:30	Engagement, and Connecting Algebra and Geometry: The Power of the TI-Nspire™ Calculator Lead Speaker: Jerry Cummins (National Council of Supervisors of Mathematics)	Wksp		understanding of concepts through hands-on engagement in algebra and geometry. Multiple representation connecting dynamic geometry, spreadsheets, and functions will result in investigation and conjecturing.
301	Th 3:00- 4:30	Visualizing Math with Technology: Strategies to Encourage Reluctant and At-Risk Learners to Embrace Mathematics Lead Speaker: Kathleen McKinley (School District of Lancaster)	9-12 Gallery Wksp	CC, 152 A	Participants will actively engage in cooperative group activities that incorporate NCTM Process and Content Standards using TI-84 Plus graphing calculators and other manipulatives. The session will cover topics in general mathematics, algebra, logic, and probability.
311	Th 3:30- 4:30	A Software Intervention to Build Number Concepts and Automaticity: Effects of a Randomized Controlled Trial Lead Speaker: Scott K. Baker (Pacific Institutes for Research, U. of Oregon)	PreK-2 Session	Hyatt, Independence A	This session will show the results of a study conducted with 40 grade 2 classrooms, randomly assigned to experimental and comparison conditions. Students spent one hour a week using a software program that presented on-screen conceptual models paired with focused, systematic instruction, targeting number concepts and automaticity with basic facts.
323	Th 3:30- 4:30	An Artistic, Historical, and Mathematical Walk through Washington, D.C. Lead Speaker: Kendra Lockman (Key Curriculum Press Technologies)	General Interest	CC, 150 B	The Geometer's Sketchpad has been used for decades to explore geometry. Now the exploration gets richer with new photo-manipulation capabilities. See how transforming digital images provides a whole new way of seeing geometry.
329	Th 3:30- 4:30	Teaching Middle Grades Mathematics with Technology - What Should Comprise This Course? Lead Speaker: Charles Thompson (U. of Louisville)	Teachers Ed Session	CC, 156	I have taught "Teaching Middle Grades Mathematics with Technology" for more than twenty years and will share the content of my course. I will also share the results of a survey of college faculty across the US who teach a similar course. Then I will facilitate a discussion about the issues related to appropriate and needed course content.
330	Th	Grasp the Mathematics	6-8	CC,	Multiple representations—algebraic, graphical, geometric, numeric,

	3:30-4:30	through Multiple Representations Lead Speaker: Jane E. Damaske (Lakeshore Public Schools)	Session	152 B	and written forms of a problem—give students a more meaningful understanding of mathematics. By using new technologies to customize work areas and show the impact of changes in real time, teachers can supply instruction that offers conceptual learning for all ability levels.
331	Th 3:30-4:30	From Infinity Back: Creating Focus in High School Mathematics Lead Speaker: Richard Seitz (Helena High School)	9-12 Session	CC, 158 A/B	What are some of the big ideas in high school mathematics, and how can we build focus in a research-based way? The speaker will discuss ways to focus learning while still keeping exploration, problem solving, excitement, and technology in our teaching.
338	Th 3:30-4:30	Affordable Technology That Makes You a Better Math Teacher without Dominating Your Life Lead Speaker: Robert Lee Williams (Matanuska-Susitna Borough School District)	9-12 Session	CC, 151 B	The presenter once slept in his rental car to keep costs down at an NCTM Annual Meeting. He asks, "What technology gives the most bang for the buck?" Topics will include Geometers' Sketchpad, Sketch Up, and leveraging current technology, with a focus on using technology to improve the clarity of instruction and students' performance.
346	Fri 8:00-9:00	Web 2.0: A Tipping Point for Bridging the Digital Divide in Math Achievement? Lead Speaker: Ihor Charischak (CLIME)	General Interest Session	R, Renaissance West A	The emerging technologies have the potential to transform the way students learn and teachers teach math. At this session participants will be treated to some compelling vignettes of how average students in two urban middle schools were inspired to do some extraordinary mathematics using computer microworlds and collaborative Web 2.0 tools
357	Fri 8:00-9:00	Curriculum Integration Activities for Preservice Elementary School Teachers Lead Speaker: Adam Goldberg (Southern Connecticut State U.)	Teacher s Ed Session	CC, 102 A	This session will examine mathematical activities to use with preservice elementary school teachers. Learn ways of integrating language arts, science, and social studies into the classroom with the hope of reducing the mathematics anxiety that many preservice teachers feel. The speaker will also examine various forms of technology to use.
368	Fri 8:00-9:00	Procedures for the Multiplication and Division of Fractions: Why Do They Work? Lead Speaker: Margo Lynn Mankus (Mathematics	6-8	Ren, Meeting Room 5	Experience theme-based story problems that build patterns to reveal these procedures. Use pictures, words, and number patterns to help students write the rules! TI-34 MultiView and virtual manipulatives will support the investigation.

		Education Consultant/Texas Instruments)			
369	Fri 8:00- 9:00	The Geometer's Sketchpad®— Not Just for Geometry: Using Sketchpad® to Explore Algebraic and Trigonometric Functions Lead Speaker: Virginia Anne Fraser (U. of Virginia)	9-12 Session	Ren, Congres- sional Hall A	Participants will learn slider and animation capabilities of Geometer's Sketchpad to demonstrate change in parameter effects on the graphs of polynomial, exponential, and trigonometric functions, and conic sections.
370	Fri 8:00- 9:00	Show and Go with Mimio! Whiteboard Activities That Engage and Inspire Lead Speaker: Susan Socha (Fairfax County Public Schools)	9-12 Session	Hyatt, Consti- tution B	See how to harness the capabilities of an interactive whiteboard. Graphing, games, Web sites, Geometer's Sketchpad, digital photography, and assessment techniques will be demonstrated in the context of highly interactive minilessons. All activities will be made available to participants.
371	Fri 8:00- 9:00	Alien Contact: Using GPS-Enabled Handhelds to Gain Proportional Reasoning Strategies Lead Speaker: Rebecca Noelle Mitchell (Harvard Graduate School of Education)	6-8 Session	CC, 103 B	Participants will learn about, experience, and share feedback on an augmented-reality curriculum unit in which students use global-positioning-system (GPS) enabled handheld devices to walk around a "crash site," using proportional reasoning to access and interpret virtual clues and determine why aliens have landed on Earth.
378	Fri 8:00- 9:00	Exploring Calculus through Interactive Animations: Using Motion and Change to Teach Motion and Change Audrey Weeks (Calculus In Motion, Campbell Hall School (retired))	9-12 Session	CC, 146 A	Explore interactive computer animations (Sketchpad) that literally bring calculus to life as the study of motion and change. Appropriate teaching strategies will be emphasized. Topics will include limits, derivatives, integrals, related rates, volumes, and more.
380	Fri 8:00- 9:00	The MathMentor: An Online Career and Math-Mentoring Program for High-Potential, Low-Income Students Lead Speaker: Mai Sidawi (The Math Forum @ Drexel)	9-12 Session	Hyatt, Indepen- dence F/G	Explore an online mentoring program for high-potential, low-income students in which mathematicians and scientists work with students to solve mathematical problems and identify connections to career options. Learn about feedback and discourse that develop communication and problem-solving skills.
400	Fri 8:30-	Making Sense of Algebra: Activities to Engage All	6-8 Wksp	CC, 152 A	Explore algebraic concepts through data-collection activities designed to engage students and make algebraic and geometric

	10:00	Students Lead Speaker: Elizabeth Gasque (Consultant)			connections. The TI-Nspire will be used to graph data and explore multiple representations.
406	Fri 8:30- 10:00	Teaching Precalculus and Calculus Using a Dynamic, 3-D Geometry Environment Lead Speaker: Colette Denise Laborde (U. of Grenoble)	9-12 Gallery Wksp	Hyatt, Consti- tution A	Visually and graphically relate the two worlds of solid geometry and algebraic functions. 3-D, dynamic, interactive geometry offers opportunities to address and graph functions by studying the variation of lengths, surfaces, and volumes.
407	Fri 9:30 - 10:30	Splash or Splat: Modeling the High-Dive Problem from the Interactive Mathematics Program Using Sketchpad® Beth Hickman (Alabama Math, Science, and Technology Initiative)	9-12 Gallery Wksp	Ren, Grand Ballroom Central	A diver is released from a rotating Ferris wheel and lands in a tub of water that is on a cart moving along a track under the wheel. When should she be released in order to avoid a very unpleasant outcome? Participants will have an opportunity to model this problem using Sketchpad.
433	Fri 9:30 - 10:30	Using Technology to Create Humorous Lessons That Captivate Students Lead Speaker: Alice Artzt (City U. of New York—Queens College)	6-8 Session	CC, 146 C	This session will demonstrate how technology can be used to create humorous, student-centered lessons. Such characters as SpongeBob and Superman enter the classroom in surprising ways to transform traditional topics in mathematics into captivating areas of interest for students. The benefits of humor and methods of creating humor will be discussed.
437	Fri 9:30 - 10:30	The Cornrow Curve by Ron Eglash Lead Speaker: Regina F. Turner (Franklin Military Academy)	9-12 Session	CC, 145 B	This session will present an innovative, real-world software application. The cornrow curve integrates a hot topic called "fractal geometry" with lessons you already teach. Terms such as translations, iterations, rotations, x- and y-axis, and degrees are prevalent throughout this software.
439	Fri 9:30 - 10:30	Exploring Data Found in Mathematics Using Fathom™ and TI-Nspire™ Lead Speaker: William Finzer (Key Curriculum Press)	9-12 Session	Ren, Auditorium	Numbers, geometrical shapes, and functions can be considered objects in infinite data sets. Learn ways to use data analysis techniques as a regular part of mathematics lessons to improve the understanding of algebraic and geometric concepts. Fathom and TI-Nspire are the technologies of choice for such investigations.
446	Fri 9:30 - 10:30	Six Ways to Amaze: Using Dynamic Images in Your Teaching Lead Speaker: Douglas Butler (iCT Training Centre, Oundle)	9-12 Session	R, Grand Ballroom South	This session will show how to use Google-Earth/Flash-Earth, to analyze structures; Java/Flash applets on the Web, to inspire; YouTube videos, to add some surprises; movie clips, when introducing 3D topics; dynamic software, to explore the actual math; and statistical software, to have fun with real data off the Web.

466	Fri 10:30- 12:00	Where Has All the Feedback Gone? Lead Speaker: Judith Olson (U. of Hawaii)	6-8 Gallery	CC, 159 A/B	Teachers can use the TI-Navigator as a tool for formative assessment in their classrooms to provide immediate feedback that can improve classroom discussions and all students' achievement. Middle school algebra topics will be explored using TI-Navigator for instruction and formative assessment. A classroom video will be shared.
472	Fri 10:30- 12:00	Experimenting with Exponential Functions Lead Speaker: Ann Polson (Little Rock Christian Academy)	9-12 Gallery	CC, 208 A/B	Explore exponential functions with real-life applications. Participants will be actively engaged in technology-based, hands-on activities that model exponential growth and decay functions. These technology-based activities will make use of M&M's, medicine, and the spread of bacteria. Participants will leave with exciting classroom activities.
479	Fri 11:00- 12:00	Helping Your School Succeed in Mathematics Lead Speaker: Judith E. Jacobs (California State Polytechnic U., Pomona)	General Interest	Ren, West A	Schools can help all students do well in mathematics. Doing well is more than just being able to compute. Research-based strategies for improving students' achievement will be presented. Interactive technology and primary exemplars will be used to show how fostering mathematical thinking can lead to traditional measures of success.
507	Fri 11:00 - 12:00	Using PDAs, iPhones, iPods, GPSs, and More to Enhance Your Mathematics Curriculum Lead Speaker: Karen S. Norwood (Benjamin Banneker Association)	General Interest Session	Ren, Grand Ballroom South	The presenter will showcase lessons that involve the use of PDAs, iPhones, and iPods for videocasting; GPSs for geocaching; and other technologies. Participants will see how easily technology can be infused into their teaching.
508	Fri 11:00 - 12:00	The Catenary: Explore, Model, and Write! Lead Speaker: Janice L. Krouse (Illinois Mathematics and Science Academy)	9-12 Session	CC, 145 B	Communication and modeling are the focus of this integrative project in which Sketchpad, Excel, writing, and mathematics coalesce in a fascinating exploration. Consider a downloaded image. Is it a catenary? A parabola? Something else? See how students determined a model for an image, gave data-based justification, and formally composed their work.
509	Fri 11:00 - 12:00	Teaching Precalculus and Calculus 1 Using The Geometer's Sketchpad® Lead Speaker: Todd O. Moyer (Towson U.)	9-12 Session	Ren, Congres- sional Hall A	This session will present Geometer's Sketchpad sketches that will illustrate concepts from precalculus and Calculus 1. The examples will allow students to learn the concepts visually before abstraction occurs. Each sketch will be demonstrated and instructions for their creations will be shared with all participants.
510	Fri	Recursion and Iteration: A	9-12	Hyatt,	TI-84

	11:00 - 12:00	Powerful way to describe Sequential Change Lead Speaker: Robera Koss	Session	Constitution B	Not in online program
540	Fri 12:30-1:30	Engagement + Exploration = Learning, a New Equation in Digital Gaming Lead Speaker: Scot Osterweil (Massachusetts Institute of Technology)	6-8 Session	Hyatt, Lafayette Park	<i>Got Game?</i> Get the 411 on an innovative, online digital game developed to build prealgebra and critical thinking skills in a new generation of tech savvy students. Learn about the successful application of educational games and effective classroom integration through <i>Lure of the Labyrinth</i> , a free, newly released interactive math game.
546	Fri 12:30 - 1:30	The Mystery Mix: Using Fathom™ to Encourage Inferential Reasoning Lead Speaker: Dan Canada (Eastern Washington U.)	6-8 Session	Hyatt, Constitution B	Profiling how students reasoned about a jar of chips of an unknown ratio of yellow to green, the presenters will highlight students' sensitivity to variability regarding their methods of sampling, results, and conclusions about the true ratio in the jar. Participants will learn how using Fathom developed a better sense of inferential reasoning.
548	Fri 12:30 - 1:30	Making Room for Geometry in an Algebra-Driven Curriculum Lead Speaker: Timothy Craine (Central Connecticut State U.)	9-12 Session	CC, 145 B	Recent discoveries in geometry, the availability of dynamic software, and new insights into students' learning make geometry an exciting subject to teach. Yet state-mandated assessments and college placement tests emphasize algebra as the central focus of the grades 9-12 curriculum. Learn how this dilemma can be resolved.
549	Fri 12:30-1:30	Technology Quick Hits for Algebra 2 Vincent LaVergne (Shawnee Mission South High School)	9-12 Session	CC, 149 A/B	Come see how technology can help develop your students' understanding of parabolic motion, exponential decay, piecewise functions, and logistics growth. Each activity can be used as a quick, ten-minute demonstration by the teacher or expanded into a whole-class exploration.
550	Fri 12:30-1:30	Drop the Chalk and Engage All Your Students Using Technology Lead Speaker: David Johnson (Eastern Michigan U.)	9-12 Session	CC, 151 B	Discover new ways of addressing the needs of unique learners in your classroom by using technology as a teaching tool. This presentation will (1) demonstrate various programs used with an interactive whiteboard in a geometry and trigonometry classroom, (2) encourage participants to exchange ideas regarding this topic, and (3) offer grant ideas.
571	Fri 1:00-2:30	Bridges to Understanding Linear and Nonlinear Functions Lead Speaker: Gloria Routt Beswick (Partnership Institute for Mathematics and Science	6-8 Gallery Wksp	Hyatt, Independence B/C	This session will investigate linear and inverse variation through activities adapted from the CMP2 unit, <i>Thinking with Mathematical Models</i> . Bridges will be constructed and predictions made as the structures change. TI-73 calculators will be used to analyze the data, making connections between models, tables, graphs, and

		Education Reform)			equations.
573	Fri 1:00- 2:30	Understanding and Solving Systems of Equations Physically, Algebraically, and with Technology Lead Speaker: Kimberly K. Jones (The Learning Institute)	9-12 Gallery Wksp	CC, 140 B	Solve systems of linear equations in two and three variables using nine methods representing a variety of learning styles (manipulatives, graphs, algebraic, technology). Each participant will create a physical representation of the systems for better understanding of the solutions. A graphic organizer will confirm the relationships among methods.
577	Fri 1:00- 2:30	Type II Error and Power of a Test: Statistics with the TI-84 Plus™ Lead Speaker: Mike Koehler (Blue Valley North High School)	9-12 Gallery	Hyatt, Independence D/E	Simulation techniques that enhance the understanding of Type 2 error and the power of a test will be examined using the TI-84 Plus graphing calculator. Hands-on activities that model effective classroom use of technology will be presented.
590	Fri 2:00- 3:00	Digital Video as a Tool to Enhance Mathematical Understanding and Reasoning Lead Speaker: Sudha Swaminathan (Eastern Connecticut State U.)	PreK-2 Session	CC, 149 A/B	This presentation will describe an action research project that used digital video effectively to enhance children's numerical thinking and reasoning. Revisiting the edited clips of their own actions made these children immediately and explicitly aware of their abilities and served to trigger their growth.
607	Fri 2:00- 3:00	The Digital Divide: Using Emerging Web 2.0 Technologies to Teach Math Lead Speaker: Robin Rider (U. of Washington Bothell)	9-12 Session	Hyatt, Constitution B	Students today are digital "natives" and spend more time on the Internet than ever before. They come from diverse backgrounds, are enthralled with new technology, and consider themselves more tech-savvy than their teachers. This session will offer suggestions to use those qualities to enhance math by integrating Web 2.0 tools into your teaching.
610	Fri 2:00- 3:00	AP Statistics Lessons That You Cannot Live Without While Using Fathom Lead Speaker: Beth Benzing (Wallingford/Swarthmore School District)	9-12 Session	Hyatt, Cabin John Arlington	If you are looking for a more efficient way for students to understand influential points and outliers, summarize and assess knowledge of the central limit theorem for sampling distributions of proportions and means, and understand Type 1 and Type 2 errors and power, this is the session for you! Beginners, expert users of Fathom are welcome.
613	Fri 2:00- 3:00	The Mathematics of Crop Circles Lead Speaker: Philip Todd (Saltire Software)	9-12 Session	Ren, Renaissance West B	Center pivot irrigation has transformed the landscape in parts of the arid west, creating the giant, circular fields that you can see from an airplane. This session will examine the mathematics behind the patterns using technology including Google Earth, Excel, TI-NSpire, Casio Classpad, and Geometry Expressions.

621	Fri 3:00- 4:30	Online Games That Motivate All Students Lead Speaker: Patrick Vennebush (National Council of Teachers of Mathematics)	General Interest , Gallery Wksp	Ren, Meeting Room 8/9	Both kids and teachers love the math games on the Illuminations Web site. Kids love the fun, and teachers love that students are learning. Come play games during this workshop, and learn how to modify the games for use in your classroom. You'll delve into math concepts that emerge from these games, as well as uncover math that's not so obvious.
635	Fri 3:00- 4:30	Scaffolding Students' Development of Dynamic Spreadsheets as a Mathematics Learning Tool Lead Speaker: Margaret Niess (Oregon State U.)	6-8 Gallery Wksp	Ren, Grand Ballroom North	Explore how you can design algebra and prealgebra to focus on extending mathematics problems while also helping students gain skills in designing dependable and dynamic spreadsheets as a tool for learning mathematics.
636	Fri 3:00- 4:30	The Geometer's Sketchpad®: A Tool for All Kids Lead Speaker: Arthur T. Mabbott (Seattle Schools)	9-12 Gallery	CC, 207 A	Bring your laptop (with battery power) to this presentation to discover how to use The Geometer's Sketchpad to help all gain a deeper understanding of elementary algebra and Euclidean geometry. Use the power of this dynamic software to explore and discover properties from elementary algebra and even into precalculus.
661	Fri 3:30- 4:30	Movies and Culture: Promoting Equity in the Middle Grades Mathematics Classroom Lead Speaker: Denisse R. Thompson (U. of South FL)	6-8 Session	Ren, Auditorium	Classic and current movies enable teachers to bring culture into the mathematics classroom. Come explore investigations specifically designed to weave media, culture, and mathematics. Exemplars will highlight media resources from African American, Hispanic, Asian, and Native-American cultures.
664	Fri 3:30- 4:30	Dynamic Models of Equations and Operations Using Sketchpad® Lead Speaker: Andres Marti (Key Curriculum Press)	6-8 Session	Hyatt, Constitution B	Come discover the full range of middle school mathematics content explorable in Sketchpad's dynamic environment: animations to connect slopes with rates; dynamic number lines and algebars to investigate properties of operations and exponents. Bring a laptop with battery power.
675	Fri 3:30- 4:30	Analyzing Data with Excel Lead Speaker: Keith M. Dreiling (Fort Hays State U.)	9-12 Session	Hyatt, Independence F/G	Participants will learn about, experience, and share feedback on an augmented-reality curriculum unit in which students use global-positioning-system (GPS)â€ enabled handheld devices to walk around a "crash site," using proportional reasoning to access and interpret virtual clues and determine why aliens have landed on Earth.
676	Fri 3:30- 4:30	Angling in on Access for All by Solving Geometry Problems from Multiple Angles Lead	9-12 Session	Hyatt, Wilson Roosevelt	Too often we miss the opportunity to explore connections between topics in our mathematics classes. This presentation will start with the midsegment theorem and pursue numerous extensions. There is

		Speaker: Laurie E Bass (Ethical Culture Fieldston School, Bronx, New York; Prentice Hall)			something for everyone here - paper folding, coordinate geometry, transformations, iteration, and geometry software.
678	Fri 3:30- 4:30	What's Happening Internationally with Technology in Mathematics? Lead Speaker: Natalie Jakucyn (Glenbrook South High School)	9-12 Session	CC, 209 B/C	What are the latest developments in technology in mathematics education around the world? Several of the NCTM/NSF travel grant awardees will share their experiences and views about current technological issues in mathematics as presented at the 11th International Congress on Mathematics Education, July of 2008
679	Fri 3:30- 4:30	Mathematics Anxiety, Technology, and College Algebra DesLey V. Plaisance (Nicholls State U.)	Research Session	Ren, Meeting Room 12/13/14	The presenter will discuss math anxiety and report on results of a study examining math anxiety of students enrolled in a college algebra course that uses technology as a primary part of course delivery. The session will conclude with audience discussion.
699	Sat 8:00- 9:00	Web 2.0 and Math Lead Speaker: Jennie Gibson (Idaho Virtual Academy)	6-8 Session	CC, 202 B	Increase classroom communication and collaboration. Discover how information and communication technologies can be integrated into the mathematics classroom through wikis, blogs, and other Web 2.0 tools. Receive how-to information including lesson ideas, technology tips, and related Web site information.
700	Sat 8:00- 9:00	GeoGebra: A Geometric and Algebraic Open Source Tool Lead Speaker: Eric Karnowski (Education Development Center)	9-12 Session	CC, 145 B	GeoGebra is an application that combines dynamic geometry with dynamic algebraic representation, making it an excellent tool for helping students grasp difficult concepts. After a quick look at GeoGebra basics, you'll see a variety of ways in which this versatile application can be used to teach mathematical concepts with multiple representations.
703	Sat 8:00- 9:00	Regular Polygons, Turned Inside Out Lead Speaker: Paul Williams (Red Deer College)	Higher Ed Session	CC, 209 A	Use hand-held dynamic geometry to explore some radical concepts with polygons. Predict and build fractional (star) polygons and polygons with negative sides. Be prepared to examine some new ideas with some simple constructions. Hands-on session until the hand-holds run out.
704	Sat 8:00- 9:00	Learning Objects + Inquiry Questions = Enhanced Student Understanding Wade Ellis (West Valley College)	9-12 Teacher Ed Session	CC, 140 A	The presenter will use activities based on learning objects created for TI-Nspire software to demonstrate the Action/Consequence/Reflection Principle. The learning objects allow students to act on mathematical objects, observe consequences of these actions, and then reflect on the mathematical meaning of these consequences using inquiry questions.
724	Sat	Investigating Invariants: A	9-12	CC,	Revisit polygonal numbers to discover polynomial patterns by asking

	8:00-9:30	Pivotal Mathematical Habit of Mind in Algebra and Geometry Using TI-Nspire™ Jean Jernigan McGehee (U. of Central Arkansas)	Gallery Wksp	202 A	what stays the same and what changes. These questions develop an investigative habit that makes pattern equations "pop" for students. Learn to investigate algebraic patterns connected to geometry with TI-Nspire. A CD with all activities and worksheet templates will be available.
726	Sat 8:00-9:30	Podcasting 101: Creating Audio and Video Connections to Your Students Lead Speaker: David Eugene Ewing (U. of Central Missouri)	General Interest , All Gallery Wksp	CC, 206	Want to create and publish audio and video math podcasts? This hands-on demonstration will include podcasting basics and a list of do's and don'ts using inexpensive or free software. Several math podcasts will be presented, and podcast opportunities will be discussed. Laptops with battery power are welcome!
729	Sat 9:30-10:30	Magic Board: A Dynamic Interface for Designing Instructional Materials for Teaching Number and Measurement Concepts Lead Speaker: Yuan Yuan (Chung Yuan Christian U.)	PreK-2 Session	CC, 207 B	Magic Board is a virtual collection of icons and symbols teachers can use to create learning materials or to implement teacher-created activities. Participants will experience hands-on learning about using the Magic Board to introduce and reinforce primary school mathematics concepts, as well as how to navigate the tool and its available resources.
735	Sat 9:30-10:30	Using Virtual Manipulatives in Middle School Mathematics Lead Speaker: Vanessa E. Huse (Texas A&M U.—Commerce)		CC, 209 B/C	With recent innovations in technology and the increasing availability of computers in classrooms, an enhanced approach for teaching and learning mathematics using manipulatives and computers has emerged. This presentation will focus on the actual use of virtual, computer-generated manipulatives in the middle school classroom.
745	Sat 9:30-10:30	Creating a Research Portfolio That Demonstrates Understanding the World with Numbers Lead Speaker: Elizabeth Helfant (Mary Institute and Country Day School)	9-12 Session	CC, 140 A	In this activity, students work with teachers, librarians, and an instructional technologist to research a geopolitical or environmental topic. They select software tools such as VideoPoint, Stella, Fathom, Maple, and Excel to analyze data and present both the problem and potential solution. Projects are put in individual portfolios.
747	Sat 9:30-10:30	Motivating Students Using Web-Based Media and Environmental Issues Lead Speaker: Cathleen Zucco-Teveloff (Rowan U.)	9-12 Session	CC, 203 A/B	The speaker will explain how she used a variety of Web-based media sources to expose students to environmental applications in her algebra and statistics classes. She will share application exercises that she created to model proportions, percents, average rate of change, exponents, and probability distribution.
748	Sat	Math Podcasting to Go:	Higher	CC,	n overview will be presented of the design, purpose, format,

	9:30-10:30	Design, Purpose, Format, Delivery Lead Speaker: Oiyin Pauline Chow (Harrisburg Area Community College)	Ed Session	144 C	portability, and delivery of math podcasts in various courses. Topics of discussion will include challenges in the creation of audio files and accompanying lecture notes, students' access in public domain, course usage statistics, and students' success.
757	Sat 10:00-11:30	A Premier Collection of Measurement Activities for Middle School Students Lead Speaker: Gail Marie Gallitano (West Chester U.)	6-8 Gallery Wksp	CC, 206	This hands-on gallery workshop will engage participants in exciting measurement activities appropriate for middle school students. A variety of measurement attributes will be explored, such as distance, area, volume, capacity, weight, time, and angular measurement. One of the activities will use the TI-73; another, the TI-Nspire.
773	Sat 11:00-12:00	A Recipe for Learning Math: Add a Dash of Cyberchase to Your Daily Teaching! Lead Speaker: L. Carey Bolster (Bolster Education)	3-5 Session	CC, 140 A	Make Cyberchase a class act! Cyberchase materials will be tied to your state standards—clips, online resources, and hands-on activities supporting the mathematics you are teaching! Panelists will highlight ways you can use these free materials. Handouts and materials will be provided.
774	Sat 11:00-12:00	Eliminate Geometry as a Gatekeeper by Involving Students in Dynamic Investigations Lead Speaker: Janet V. Smith (Franklin McKinley School District)	3-5 Session	CC, 102 A	Geometry receives minimal elementary school time, limiting students' academic options. This session will offer investigations to help students explore number-shape relationships visually, using Cabr and Cabri Elem, which open doors for exploration in a dynamic environment with real-time feedback. Investigations will integrate classroom experiences.
781	Sat 11:00-12:00	Online Technology Applications That Can Be Used to Teach Middle School Mathematics? Lead Speaker: Gary Glen Bitter (Arizona State U.)	6-8 Session	CC, Ballroom B	The presentation will identify and demonstrate the power of online learning resources—for middle school level mathematics and science—for producing engaging and interactive learning environments.
785	Sat 11:00-12:00	Differentiated Instruction: How Web 2.0 and Other Technologies Can Help Lead Speaker: Calvin J. Armstrong (Appleby College)	9-12 Session	CC, 103 B	Differentiating instruction is a challenge. How can we adapt tech to help all learners? Through wikis and more, students can be more productive, show more interest, and take on more responsibility. To paraphrase Tomlinson, "all learners need your energy, your heart, and your mind"—and your tech savvy. Paper, electronic resources will be available.
786	Sat	Take It to the Limit	9-12	CC,	Challenge precalculus and calculus students through meaningful

	11:00-12:00	Lead Speaker: Luajean Bryan (Walker Valley High School)	Session	203 A/B	projects. Imagine yourself in a hot air balloon, or in an underground cavern, or building a parabolic solar cooking device, or in a dramatic presentation. Students of diverse populations take calculus concepts to the limit through multiple representations.
804	Sat 12:00-1:30	I Did Everything Right, But My Graph Isn't There! Lead Speaker: Mary Ann Matras (East Stroudsburg U.)	9-12 Gallery Wksp	CC, 208 A/B	Join us to explore some of the challenging aspects of teaching and learning with graphing calculators in the classroom. Find out what to do when the graphing calculator Leads your students astray.
815	Sat 12:30-1:30	Using Technology to Create an Inclusion Classroom in the Middle School Lead Speaker: Annie Fetter (The Math Forum @ Drexel)	6-8 Session	CC, 152 B	New Jersey's Include project focuses on creating classrooms in which all students, including English language learners and those with mild disabilities, use technology to improve academic achievement. The presenters will share uses of Sketchpad, applets, spreadsheets, and more in this program. Laptops with battery power are welcome.
823	Sat 12:30-1:30	Connecting Algebra and Geometry with Symbolic Geometry Technology Lead Speaker: Irina Lyublinskaya (City U. of New York—College of Staten Island)	9-12 Session	CC, 150 B	The presenter will share several problems developed for symbolic geometry technology. The problems focus on developing students' skills in recognizing and using multiple representations while they learn varied topics in geometric transformations of functions and optimization usually covered in Algebra 2 and precalculus.
824	Sat 12:30-1:30	Space: An Advanced Geometry Elective after Algebra 2 Lead Speaker: Henri Picciotto (Urban School of San Francisco)	9-12 Session	CC, 202 B	This session will discuss topics from a class the speaker has taught biennially: symmetry in depth, transformations, dimension, using Cabri 2- and 3-D software, building with Zome, and reading Abbott's Flatland.
826	Sat 12:30-1:30	From Calculators to Computers: A Practical Approach to Using Technology in the Classroom Lead Speaker: Joan M. Raines (Middle Tennessee State Univ)	Higher Ed Session	CC, Ballroom A	During this interactive session, participants will explore how to use different technologies to teach concepts, check solutions, provide practice, and review. The technologies will focus on the TI graphing calculator, PowerPoint, and a computer-based learning system.
827	Sat 12:30-1:30	GeoGebra and Fermat's Forgotten Method Lead Speaker: Maurice Joseph	9-12 Session	CC, 146 C	Fermat's method for finding relative maximums and minimums of polynomial functions becomes accessible to algebra students with GeoGebra, software that is free to all and user-friendly. See

		Burke (Montana State U.— Bozeman)			<i>GeoGebra's</i> computer algebra system and show how it complements <i>GeoGebra's</i> geometry in the study of important mathematics.
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