

**August 5 - 7, 2019
Columbus Academy
4300 Cherry Bottom Road
Gahanna, OH 43230**

Welcome!



Welcome to Columbus Academy! We are so excited you are here to join us for our inaugural mathematics education summer conference. The 6 - 12 math department at Columbus Academy has been hard at work to plan an exciting three days of sharing, reflection, collaboration, and design. We hope your time at Columbus Academy is welcoming, rejuvenating, and impactful.

We are honored to have Robert Q Berry III and Fawn Nguyen with us to present their keynote sessions. These sessions will encourage us to think about access, equity, and teaching through student thinking and problem-solving.

Special thanks go to our head of school, Melissa Soderberg, who has helped make this conference possible financially. Melissa was a pivotal part in brainstorming the idea to have the school serve as a steward to others in the mathematics education community.

Lastly, thank you to the individual session presenters from all over the U.S. who have developed thoughtful presentations to share their expertise. Presenters come from 10 different states across the country.

Have fun, connect, do math, and hone your craft!

Chris Bolognese, PK - 12 Mathematics Department Chair
bolognesecc@columbusacademy.org

The Conference

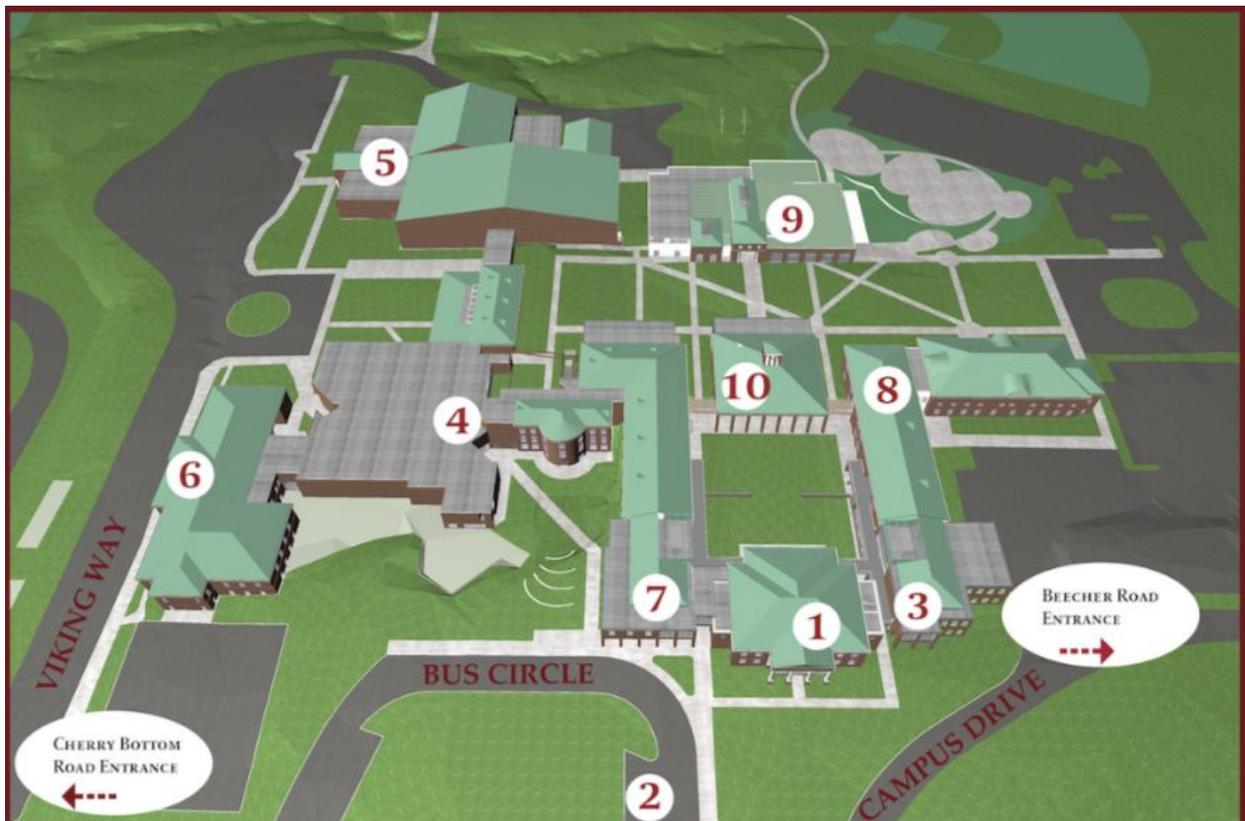
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Campus Map

The address for the school is:

Columbus Academy
4300 Cherry Bottom Road
Gahanna, OH 43230

To park on campus, follow signs to “Upper School” and park in the Upper School lot (adjacent to Building 8 in the diagram below).



Building 8: Upper School Building [Lunch and 2nd floor for sessions]

Building 9: Dining Hall Fireside [Check In, Breakfast & Keynote presentations]

Building 1: Upper School Library [Larger sessions & Makerspace]

WIFI for the school can be accessed by:

Network: CA Guest
Password: Vikings1

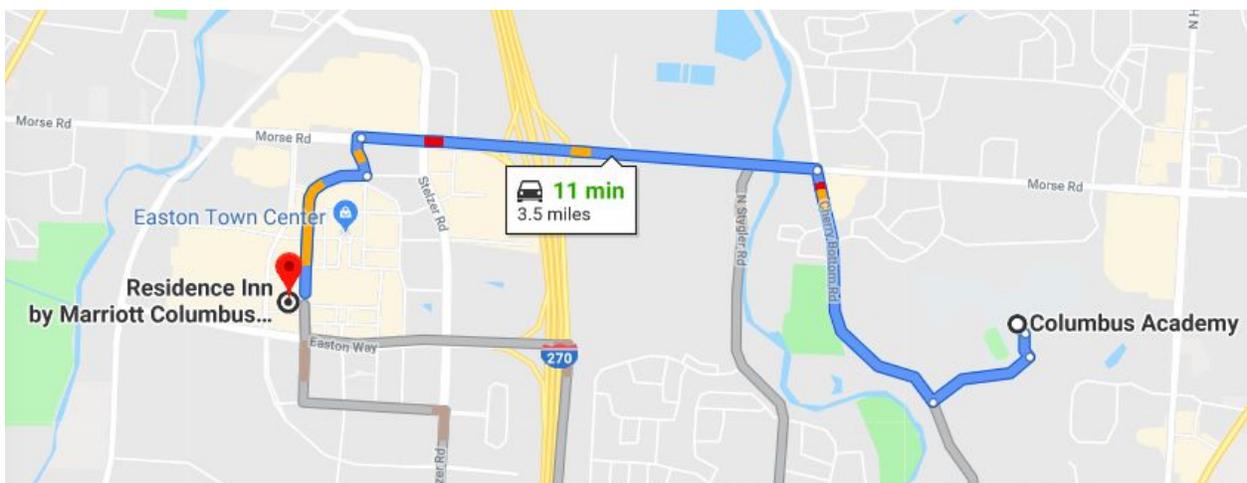
Hotel Information

Columbus Academy has reserved a group rate at the following hotel for the nights of Sunday August 4 through Wednesday August 7. This hotel is only about 10 minutes away from campus and is located by a lot of shops and restaurants. [Please click here](#) to book with a reduced rate.

Residence Inn Marriott at Easton
3999 Easton Loop W
Columbus, OH 43219

A shuttle will be provided from the hotel to campus and from campus back to the hotel each day.

Participants are free to stay elsewhere but would need to arrange for their own transportation to and from campus.



Food

Breakfast and lunch will be provided for each of the three days of the conference on campus. A social event the evening of Tuesday, August 6th will occur to provide food and drinks.

There are many restaurants nearby campus for those interested in going out for dinner. [Click here](#) to check out local restaurants.

Keynote Speakers

Robert Q. Berry III

Monday, August 5, 8:45 - 9:45 am

Dining Hall - Fireside



Robert Q. Berry III is president of the National Council of Teachers of Mathematics (NCTM), a 50,000-member international mathematics education organization. Berry is a Professor in the Curry School of Education at the University of Virginia, with an appointment in Curriculum Instruction and Special Education. Berry teaches mathematics methods courses in the teacher education program at the University of Virginia.

Fawn Nguyen

Wednesday, August 7, 8:45 - 9:45 am

Dining Hall - Fireside

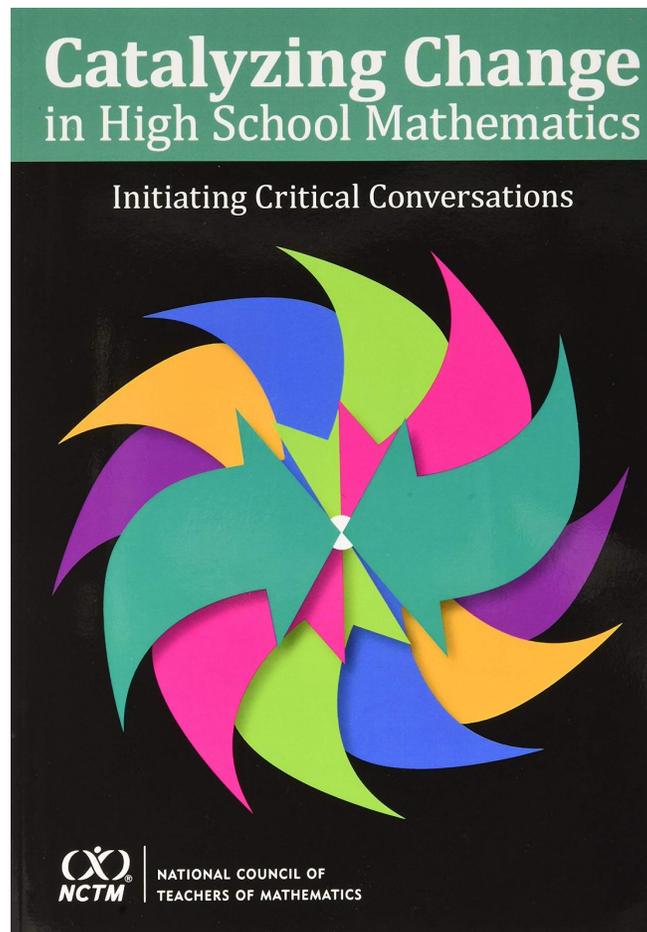


Fawn Nguyen is a middle school math teacher at Mesa Union Junior High in southern California. She's been a classroom teacher since 1990. She was the 2014 Ventura County Teacher of the Year. In 2009, she was awarded the Math Teacher Hero from Raytheon. In 2005, she was awarded the Sarah D. Barder Fellowship from the Johns Hopkins Center for Talented Youth. Fawn blogs about her lessons and classroom teaching at fawnnguyen.com. Fawn authors three websites for teachers: visualpatterns.org, between2numbers.com, and mathtalks.net. She is also one of the editors for mathblogging.org.

Catalyzing Change Book Study

All participants will receive a copy of the NCTM's *Catalyzing Change in High School Mathematics: Initiating Critical Conversations*. During the conference we will split up twice into smaller groups to discuss the book and analyze some case studies.

More information about groups and reading content will be given at the conference.



Social Media

Please share out your experience at the conference via social media. Please follow the Twitter account [@MECatCA](https://twitter.com/MECatCA) and tweet with the hashtag [#mathconvergence2019](https://twitter.com/mathconvergence2019).

Monday, August 5 Schedule

Breakfast & Check In	8:00 - 8:30	Dining Hall			
Keynote	8:45 - 9:45	01. Berry <i>Keynote</i> Access & Equity All Dining Hall			
Keynote Reflection	9:45 - 10:30	Dining Hall			
Session 1 [90 minutes]	10:45 - 12:15	02. Phelps Ess. Concepts A2, PC, Calc Room 214	03. Paul Why Do Math? 6 - 8, Geometry Room 211	04. Browne Why Do Math? 6 - 8, A1, Geo Room 213	
Lunch	12:15 - 1:00	Main hallway 2nd floor of Upper School			
Session 2 [Mini Course]	1:00 - 2:00	05. Castle Ess. Concepts 6 - 8 Room 214	06. Sauer Practices 9 - 12 Room 211	07. Chou Ess. Concepts A2, PC Room 215	08. Corey Why Do Math? 6 - 8, Geo Room 213
Session 3 [45 minutes]	2:15 - 3:00	09. Bailey Access & Equity 6 - 8 Room 214	10. Gorsuch/Street Practices 9 - 12 Room 211	11. Foley Access & Equity Modeling Room 213	
Break	3:00 - 3:15				
Catalyzing Change Book Study	3:15 - 4:00	Group A Room 214	Group B Room 211	Group C Room 215	

8:45 – 9:45 [Keynote Session]

Session 01 – Dining Hall Fireside

Robert Berry (rberry@nctm.org)

Catalyzing Change: Putting the Recommendations into Actions

Theme: Access & Equity [All]

This session centers on the key recommendations from the *Catalyzing Change in High School Mathematics: Initiating Critical Conversations*. Specifically, participants will review two cases: (a) Escondido Union High School District (EUHSD) in California focused on a how district took a systemic approach towards equitable teaching, common pathway, and changes in curriculum; (b) San Francisco Unified School District's (SFUSD), work to detrack mathematics by creating heterogeneous mathematics classes. The goal of this session is to initiate conversations grounded in the cases that must take place to bring about and give support to necessary changes in high school mathematics.

10:45 – 12:15 [90 minute sessions]

Session 02 – Room 214

Steve Phelps (sphelps31415@gmail.com)

Four Ways GeoGebra Can Enhance Your Calculus Instruction

Theme: Essential Concepts [Algebra 2, Precalc, Calc]

Participants will learn how to use GeoGebra to enhance instruction and student understanding of calculus content, in particular, derivatives, integrals, and solids of revolution.

Session 03 – Room 211

Adrienne Paul (apaul@gcds.net)

The Magic of Manipulatives

Theme: Why Do Math? [Grades 6 – 8, Geometry]

Participants will engage in play with various concrete and virtual math manipulatives intended to deepen conceptual understanding.

Session 04 - Room 213

Claire Browne and Michael Browne (mikebrowne77@earthlink.net)

**Bridging General Math to Algebra, Geometry, and Algebra 2
Making Higher Math Relatable**

Theme: Why Do Math? [Grades 6 - 8, Algebra 1, Geometry]

Beginning in pre-algebra, it is important to learn the concepts of area, slope, functions, and rate of change. For success in the higher mathematics of trigonometry and calculus, it is critical to visualize the relationships between them. This interactive session is to develop practices that provide students with that intuition.

1:00 - 2:00 [Mini course sessions]

Session 05 - Room 214

Katie Castle (castlek@columbusacademy.org)

Middle School Math Explorations

Theme: Essential Concepts [Grades 6-8]

Exploring with manipulatives and working through applicable challenges help students to develop conceptual understanding of major topics. Come take part in hands-on explorations and projects, and design your own for use in your classroom! Leave the sessions with specific activities designed to enhance students' ability to retain information and explain the "why" behind mathematical processes.

Session 06 - Room 211

Johnothon Sauer (harkness430@gmail.com)

The Harkness Method: Discussion-Based Learning for Maximum Engagement

Theme: Research-Based Practices [High School]

In this course, we will begin to create the syllabus, grading policy, and discussion exercises needed to successfully teach your math class through a student-centered, discussion-based method of instruction known as the Harkness Method. During our three days together, you will begin to create your own materials, the goal being to leave with the skills necessary to continue the creation of your course at home.

Session 07 - Room 215

Rachel Chou (rchou@menloschool.org)

A Novel Approach to the Study of Linear Transformations of Functions

Theme: Essential Concepts [Algebra 2, Precalculus]

Do you teach transformations of functions? Are you interested in looking at transformations through a different lens, and in such a way that can help your students apply their knowledge of linear transformations of functions in different contexts such as to the derivatives of linear transformations of functions, or to polar or parametric functions? In this session we will consider a novel approach to studying transformations of functions. Teachers will leave with problem sets and lesson plans to share.

Session 08 - Room 213

Sean Corey (coreys@columbusacademy.org)

Using Coding to Teach MS and HS Mathematics

Theme: Why Do Math? [Grades 6 - 8, Geometry]

Participants will collaboratively create their own integrated computer science learning activity centered around teaching foundational concepts of scale factor, intro to angles, polygons, Pythagorean Theorem and more using code.orgs app lab and turtle to create student centered engaging apps while learning math standards.

2:15 - 3:00 [45 minute sessions]

Session 09 - Room 214

Jodie Bailey (jbailey@moonglade.com)

What I Wish Middle School Knew About the Work We Do in Elementary School Mathematics

Theme: Access & Equity [Grades 6 - 8]

Participants will leave with an appreciation of the work we do in elementary school to develop number sense in students along with increasing opportunities for equity and access to rich mathematical ideas. The use of notice/wonder has been a game changer in our classrooms! Participants will have time during the session to share how this work connects to their world as teachers of middle school mathematics as we all work to build a more coherent experience for all students.

Session 10 - Room 211

Rachael Gorsuch (gorsuchr@columbusacademy.org)

John Street (streetj@columbusacademy.org)

Old School Meets New School: Teaching with Multiple Representations

Theme: Research-Based Practices [High School]

In today's culture, students and teachers are engaging through problems with technology more and more. The advantages of technology are the ease of seeing graphical and table representations. How does algebraic thinking fit in with technology though? Come join a teacher of 50 years and a teacher of 13 years as they share the conversations they've grown from in an effort to marry algebraic thinking with the multiple representations made possible with graphing technology. Wherever you are on the teaching spectrum, we'd love to have you come join the conversation of how we can listen and learn from each other about helping students see math.

Session 11 - Room 213

Greg Foley (foleyg@ohio.edu)

Quantitative Reasoning: The Third Pathway

Theme: Access & Equity [Quantitative Reasoning/Modeling]

The traditional mathematical pathway leads to calculus. Statistics has become an accepted second pathway. Come engage in a critical conversation about Quantitative Reasoning—a third pathway that includes problem solving, quantitative literacy, statistical reasoning, and mathematical modeling. It prepares students for statistics, for using mathematics in many fields, and for adult life.

3:15 - 4:00 *Catalyzing Change* Book Study

Bring a copy of the book with you to one of the rooms based on your nametag:

Group A - Room 214

Group B - Room 211

Group C - Room 215

Tuesday, August 6 Schedule

Breakfast	8:00 - 8:30	Dining Hall			
Session 1 [45]	8:45 - 9:30	12. Tienda Access & Equity All Room 214	13. Gorsuch/McCue Ess. Concepts 9 - 12 Room 211	14. Simon Practices 9 - 12 US Library	
Session 2 [90]	9:45 - 11:15	15. Hammer Why Do Math? 9 - 12 Room 214	16. Haney Why Do Math? All US Library	17. Piemme Why Do Math? All US Library Maker Space	
Session 3 [45]	11:30 - 12:15	18. Chou Ess. Concepts PC, Calc Room 214	19. Schorn Access & Equity 6 - 8 US Library	20. Gorsuch/Dow Ess. Concepts PC, Modeling Room 213	
Lunch	12:15 - 1:00	Main hallway 2nd floor of Upper School			
Session 4 [Mini]	1:00 - 2:00	05. Castle Ess. Concepts 6 - 8 Room 214	06. Sauer Practices 9 - 12 Room 211	07. Chou Ess. Concepts A2, PC Room 215	08. Corey Why Do Math? 6 - 8, Geo Room 213
Session 5 [90]	2:15 - 3:45	21. Castle/Platt Access & Equity 6 - 8 Room 214	22. Kelley Why Do Math? 8, Alg 1 US Library	23. Abend Why Do Math? Calc Room 215	
Break	3:45 - 4:00				
CC Book Study	4:00 - 5:00	Group A - Room 214	Group B - Room 211	Group C - Room 215	
Social	5:30 - 7:30	World of Beer Easton 3934 Townsfair Way			

8:45 – 9:30 [45 minute sessions]

Session 12 – Room 214

Monica Tienda (mtienda69@gmail.com)

The Status is Not Quo: Making Math More Equitable

Theme: Access & Equity [All]

Many of us, when we think of addressing equitable student outcomes in mathematics education, think of advocating for every student to have access to a rigorous and coherent curriculum. But often well-intentioned equity-oriented reforms only maintain the status quo; the status is NOT quo. We as educators must do better.

Session 13 – Room 211

Rachael Gorsuch (gorsuchr@columbusacademy.org)

Matt McCue (mccuem@columbusacademy.org)

Diving Into the ACT and SAT to Engage Students

Theme: Essential Concepts [High School]

Join teachers who have spent time over the past year looking to meaningfully integrate ACT and SAT released questions into their curriculum to spark conversation and provide low-stakes opportunities for practice throughout the school year. Concerned with the stress students felt as they crammed for the ACT and SAT tests, these teachers researched how questions from standardized tests aligned with their curriculum and found ways to start the conversations with their students in a way in which students could see connections with their content, as well as take time to discuss to develop personal strategies. Participants in this session will be given access to the bank of released test questions that are organized by topic, as well as learn strategies for incorporating questions without "teaching to the test."

Session 14 – US Library

Leah Simon (simonlm2@miamioh.edu)

Creating Opportunities for Students to Design Mathematics

Theme: Research-Based Practices [High School]

In this session, you will gain an understanding of mathematical design thinking and what this can look like in the classroom. A set of mathematical design tasks that support student agency, sense-making, and connections will be shared and explored. These activities emphasize modeling and prototyping.

9:45 - 11:15 [90 minute sessions]

Session 15 - Room 214

Xenia Hammer (xhammer@castilleja.org)

Creating Maps using Triangulation and Law of Sines and Law of Cosines

Theme: Why Do Math? [HS]

How do people create maps? I will share a 3 day lesson plan for creating a campus map using triangulation and Law of Sines and Law of Cosines. Just by measuring one segment and a few angles, students apply trigonometry to create a map of campus. Students gain an appreciation of all the work that goes into creating maps, practical uses of trigonometry, challenges of measurement and lots of practice with Law of Sines and Cosines.

Session 16 - US Library

Heather Haney (haneyh@blueponyk12.com)

Math Teacher Circles and Rational Tangles

Theme: Why Do Math? [All]

In a Math Teachers' Circle, we will discover "Conway's Rational Tangles," a mathematical rope dance with two moves: twist and rotate. Given that "untwist" and "unrotate" aren't legal moves, is it always possible to return to an untangled state?

Session 17 - US Library Maker Space

David Piemme (piemmed@winchesterthurston.org)

Integrating CAD Modeling and 3D Printing into the Curriculum

Theme: Why Do Math? [All]

This workshop will explore ways to include CAD and 3D Printing into the math classroom and other areas as well. Teachers and administrators will leave with several project ideas that can be adapted for multiple grade levels.

11:30 – 12:15 [45 minute sessions]

Session 18 – Room 214

Rachel Chou (rchou@menloschool.org)

Parametrics: A bug crawls along a Lissajous Curve & More

Theme: Essential Concepts [Precalculus, Calculus]

Come spend the hour diving into an interesting parametrics activity. The task begins with an accessible task that engenders an interesting conversation amongst students about rates of growth of a variety of previously studied functions (linear, polynomial, square root, rational, logarithmic, exponential, and sinusoidal). The activity leads students to an interesting challenge concerning a bug's travel path along a particular Lissajous curve. Along the way, be prepared to be surprised by some interesting properties of Lissajous curves.

Session 19 – US Library

Frank Schorn (frank.schorn@gmail.com)

Students Can Solve Word Problems: A View From My Classroom

Theme: Access & Equity [Grades 6 – 8]

Do word problems pose challenges to your students? My students struggle with them too. In this session, math teachers will develop skills in how to support their students' literacy development and in helping them be more attentive readers. And more attentive readers become better problem solvers!

Session 20 – Room 213

Rachael Gorsuch (gorsuchr@columbusacademy.org)

Craig Dow (dowc@columbusacademy.org)

Updating the Curriculum: More Modeling!

Theme: Essential Concepts [Precalculus, Modeling]

Join precalculus teachers who have taken the words of the *Catalyzing Change in High School Mathematics* book to heart and are excited to share how their conversations and revisions to the course have led to deeper student engagement. This session will share how to successfully integrate traditional and inquiry based learning to create a student-centered curriculum. Modeling tasks used in the precalculus course will be shared, as well as curriculum sequencing decisions that may surprise you. After all, who starts precalculus with trigonometry? Find out more about this change and others that create more mathematical modeling opportunities.

1:00 – 2:00 [Mini course sessions]

Session 05 – Room 214

Katie Castle (castlek@columbusacademy.org)

Middle School Math Explorations

Theme: Essential Concepts [Grades 6–8]

Exploring with manipulatives and working through applicable challenges help students to develop conceptual understanding of major topics. Come take part in hands-on explorations and projects, and design your own for use in your classroom! Leave the sessions with specific activities designed to enhance students' ability to retain information and explain the "why" behind mathematical processes.

Session 06 – Room 211

Johnothon Sauer (harkness430@gmail.com)

The Harkness Method: Discussion-Based Learning for Maximum Engagement

Theme: Research-Based Practices [High School]

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Session 07 – Room 215

Rachel Chou (rchou@menloschool.org)

A Novel Approach to the Study of Linear Transformations of Functions

Theme: Essential Concepts [Algebra 2, Precalculus]

Do you teach transformations of functions? Are you interested in looking at transformations through a different lens, and in such a way that can help your students apply their knowledge of linear transformations of functions in different contexts such as to the derivatives of linear transformations of functions, or to polar or parametric functions? In this session we will consider a novel approach to studying transformations of functions. Teachers will leave with problem sets and lesson plans to share.

Session 08 - Room 213

Sean Corey (coreys@columbusacademy.org)

Using Coding to Teach MS and HS Mathematics

Theme: Why Do Math? [Grades 6 - 8, Geometry]

Participants will collaboratively create their own integrated computer science learning activity centered around teaching foundational concepts of scale factor, intro to angles, polygons, Pythagorean Theorem and more using code.orgs app lab and turtle to create student centered engaging apps while learning math standards.

2:15 - 3:45 [90 minute sessions]

Session 21 - Room 214

Katie Castle (castlek@columbusacademy.org)

Michelle Platt (plattm@columbusacademy.org)

Social Justice in the Math Classroom

Theme: Access & Equity [Grades 6-8]

Learning about social justice is not just for Social Studies class! Come explore ways to enhance students' learning about social justice in math class. Experience a thematic Middle School exploration of issues including poverty, homelessness, medical care, hunger, and more, while studying proportions, percents, data collection, and functions. Participants will engage in activities and leave with tasks to implement in the classroom.

Session 22 - US Library

Nicole Kelley (kelley@gjps.org)

45 Concepts in 15 Days: Algebra through Patterns and Play

Theme: Why Do Math? [Grade 8, Algebra 1]

Through games, patterns and problem solving, expose your students to 45 of the major Algebra concepts in the first 15 days of school. Use these experiences to frame the rest of your curriculum and allow students to have fun playing with math while also providing a purpose and excitement for learning Algebra.

Session 23 - Room 215

Brian Abend (babend@bancroftschool.org)

Field Trips To Nowhere: Driving Home Calculus Concepts for All Learners Through Inquiry

Theme: Essential Concepts [Calculus]

Get on the bus! Time to take a journey through the big Aha! moments in calculus. Come learn how a field trip to nowhere (yes, a field trip!) can jump-start your AB, BC, or non-AP calculus course from Day 1, and a simple question about polynomial derivatives can keep momentum going. First stop: FTC. Second stop: sequences and series. All aboard!

4:00 - 5:00 *Catalyzing Change* Book Study

Bring a copy of the book with you to one of the rooms based on your nametag:

Group A - Room 214

Group B - Room 211

Group C - Room 215

5:30 - 7:30 Social Event

Join us at the *World of Beer* for free food, drinks, and socializing with fellow math folk! This is only a 2 minute walk from the Residence Inn Marriott Hotel.

The address is:
World of Beer
Easton Town Center
3934 Townsfair Way
Columbus, OH
43219



Wednesday, August 7 Schedule

Breakfast	8:00 - 8:30	Dining Hall			
Keynote	8:45 - 9:45	24. Nguyen <i>Keynote</i> Practices All Dining Hall			
Keynote Reflection	9:45 - 10:30	Dining Hall			
Session 1 [90]	10:45 - 12:15	25. Edwards Why Do Math? 6 - 8 US Library	26. Kissell/ Robinson Ess. Concepts 6 - 8, A1 - A2 Room 211	27. Chou Ess. Concepts PC, Calc Room 213	
Lunch	12:15 - 1:00	Main hallway 2nd floor of Upper School			
Session 2 [Mini]	1:00 - 2:00	05. Castle Ess. Concepts 6 - 8 Room 214	06. Sauer Practices 9 - 12 Room 211	07. Chou Ess. Concepts A2, PC Room 215	08. Corey Why Do Math? 6 - 8, Geo Room 213
Session 3 [45]	2:15 - 3:00	28. Bolognese Why Do Math? All US Library	29. Abend Access & Equity All Room 211	30. Key Access & Equity 9 - 12 Room 215	
Break	3:00 - 3:15				
Session 4 [90]	3:15 - 4:45	31. Bolognese Practices All US Library	32. Shah Why Do Math? 6- 8, A1, Geo Room 211	33. Dennett Access & Equity 9 - 12 Room 215	

8:45 - 9:45 [Keynote Session]

Session 24 - Dining Hall Fireside

Fawn Nguyen (fawnpnguyen@gmail.com)

What If We've Been Teaching Mathematics All Wrong?

Theme: Research-Based Practices [All]

One of the biggest myths is that mathematics is all about computation. John Allen Paulos wrote in his book *Innumeracy*, "... mathematics has as much to do with computation as writing has to do with typing." Yet, school mathematics continues to focus heavily on computation and arithmetic and not nearly enough on critical thinking and problem-solving. What the Common Core gets right is the 8 Mathematical Practices, and these competencies depend on instruction and curriculum that expose students to mathematics as a way of thinking and solving problems.

10:45 - 12:15 [90 minute session]

Session 25 - US Library

Michael Todd Edwards (edwardm2@miamioh.edu)

Amazing stories: Connecting history and mathematics with authentic contexts and the origins of data displays

Theme: Why Do Math? [Grades 6 - 8, Quantitative Reasoning/Modeling]

Participants explore stories behind the development of familiar mathematics in their classrooms--Playfair's ground-breaking line graphs, Nightingale's coxcomb diagrams, Graunt's life tables--as they learn ways to use history to motivate instruction.

Session 26 - Room 211

Jason Kissell (kissel.22@gmail.com)

Mark Robinson (markrobinson@bwls.net)

Stats for the Anti-Stats Teacher

Theme: Essential Concepts [Grades 6-8, Algebra 1, Geometry, Algebra 2]

This session is not for the stats teacher! We will show you how connected the CCSS are from 6th grade through high school and into AP Statistics for probability and statistics, as well as participating in some typical middle school stats problems that can easily extend through AP Stats. Scaredy-Stats are encouraged to attend!

Session 27 - Room 213

Rachel Chou (rchou@menloschool.org)

A Student-Centered Approach to Polar Functions That Makes Connections to Strands Across Precalculus

Theme: Essential Concepts [Precalculus, Calculus]

Why study polar functions? How can we approach this topic with our students in a forward-thinking way that puts students in the driver seat and allows them to make connections to previously studied concepts? Come find out in this hands-on session which will send you home with lesson plans you can use!

1:00 - 2:00 [Mini course sessions]

Session 05 - Room 214

Katie Castle (castlek@columbusacademy.org)

Middle School Math Explorations

Theme: Essential Concepts [Grades 6-8]

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Session 06 - Room 211

Johnothon Sauer (harkness430@gmail.com)

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Theme: Research-Based Practices [High School]

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Session 08 - Room 213

Sean Corey (coreys@columbusacademy.org)

Using Coding to Teach MS and HS Mathematics

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2:15 - 3:00 [45 minute sessions]

Session 28 - US Library

Chris Bolognese (bolognesec@columbusacademy.org)

Building On Student Thinking With Problem-Posing

Theme: Research-Based Practices [All]

We want students to take on the disposition of problem-solvers, but how can we leverage students to be problem authors? Come to this session to learn how “problem-posing” can be implemented in your classroom to get students to pose and solve their own questions.

Session 29 - Room 211

Brian Abend (babend@bancroftschool.org)

Numerical Grades: What's the Point?

Theme: Access & Equity [All]

Success in mathematics is usually determined by numbers, numbers tied so strongly to procedural fluency and algebraic ability that they leave very little room (or no room at all) for mathematical practices or conceptual understanding. This isn't acceptable and our students deserve better. Let's honor their thinking, creativity, and ability without the use of numbers so all students can find success in the mathematics classroom.

Session 30 - Room 215

Karen Key (kkey@ransomeverglades.org)

The Power of Discussion: Engaging Students to Build a Confident Mathematical Identity

Theme: Access & Equity [High School]

Student Takeover - increase student engagement, support mathematics success, and empower students to build a positive math identity.

3:15 - 4:45 [90 minute sessions]

Session 31 - US Library

Chris Bolognese (bolognesec@columbusacademy.org)

Learn to D.A.B.! Using Desmos Activity Builder

Theme: Research-Based Practices [All]

Have you heard of Desmos but want to learn more about how to use pre-made activities? Or even better, make your own? Chris recently attended a Desmos Fellowship in San Francisco and wants to share tips and tricks. Come to this hands-on session to learn more about the power of Desmos, specifically how to implement activities or construct your own. Users of all levels of expertise are welcome!

Session 32 - Room 211

Raj Shah (raj@mathplusacademy.com)

Keys to Making Math Irresistible

Theme: Why Do Math? [Grades 6-8, Algebra 1, Geometry]

Success in mathematics is usually determined by numbers, numbers tied so strongly to procedural fluency and algebraic ability that they leave very little room (or no room at all) for mathematical practices or conceptual understanding. This isn't acceptable and our students deserve better. Let's honor their thinking, creativity, and ability without the use of numbers so all students can find success in the mathematics classroom.

Session 33 - Room 215

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Stable Matchings and Issues of Equity in the Contexts of Problems

Theme: Access & Equity [High School]

We'll begin by exploring a problem introduced in 1962 by Gale and Shapley relating to matchings. Time to play with and explore this problem will illuminate the way this problem offers multiple entry points while still allowing for deep connections and rich real-life applications. We'll conclude with a discussion of how the contexts we present problems in to students may influence mathematical identities.