

Points & Angles

Newsletter of the Metropolitan Mathematics Club of Chicago
Volume L No. 3 Nov. 2020

Opening the Mathematical Gates: Moving Toward Inclusivity and Belonging

December Speaker Marian Dingle



Date/Time: Friday,
December 4, at 7:00 p.m.

Location: Zoom online
platform

Registration: Register
online at mmcchicago.org

Cost: No charge;
donations welcome via
Zelle at
zelle4mmc@gmail.com

The underrepresentation of African-American and Latinx students in advanced mathematics courses in high school and STEM-related majors in college is not a new trend. Additionally, the dialogue of algebra being the “gatekeeper” course has been around for the last three decades, at the very least. Gatekeeping in this particular context, refers to a student’s algebraic fluency (which is a prerequisite for acquisition of higher-level mathematics, such as calculus and mathematical modeling) when entering high school, and there exists a considerable amount of data that indicates that African-American and Latinx students are not receiving algebra instruction in middle school at a rate comparable to that of their Caucasian and Asian counterparts. How do we level the playing field? How do we create opportunities for all students to be ready for advanced mathematics in high school (and college), regardless of background? Marian Dingle will address these important questions, as well as discuss how this stratification begins in the primary grades of elementary school and is hard to disrupt once it is set in motion.

Marian Dingle has taught elementary and middle school mathematics for 22 years in the Atlanta area. Additionally, she has been researching and giving numerous talks on teaching mathematics, using an approach that is culturally responsive, includes a strong emphasis on helping students of color develop a positive math identity, and avoids the structural and systemic forces that prematurely set them on trajectories that determine their levels of success. Any educator with an interest in bypassing the “algebra inequality” should attend this talk. Marian Dingle can be followed on her Twitter at [@DingleTeach](https://twitter.com/DingleTeach), as well as her blog at mariandingle.com.

Points From the Interior

By Serg Cvetkovic

How is everyone out there doing? Seriously. How are things going? If you are currently teaching, I am willing to bet dollars to donuts that the answer is somewhere along the lines of “stressed,” “overwhelmed,” “exhausted,” etc. I know this because I am currently teaching in a remote environment, and I am all those things and then some! Yes, remote instruction is absolutely draining. Granted, it is keeping us safe and healthy given the circumstances, but nonetheless, it is draining. You know what would make it less draining though? School and district administrations allowing us to dedicate our finite time and energy to teaching our lessons, providing guidance to our students, and taking care of our health and well-being! Sure, administrators pay lip service to this mantra, right before reminding us that we have six mandatory meetings this week that we must attend, that we have to be incorporating standardized test prep into our instruction, and that lesson plans for the entire quarter are due by 3 PM on Friday! Heck, if I wanted to be a “red-tape eating” bureaucrat, I would have gotten a job at City Hall (or the Department of Motor Vehicles). But I do not work at City Hall. Like many of you, I am a teacher of mathematics, which means that I get paid to teach mathematics to my students, not to “push paper” or to sit in meetings to throw buzzwords and acronyms around for an hour (these meetings are beginning to feel like swimming in alphabet soup). That being said, I would like to suggest to the readers out there who are currently teaching, for your own health and sanity, to focus on two things – the mathematics and the students. There is not a Nobel prize category for lesson plans. It is not the nineteenth century, where your pay is determined by how many words you write. You know what awards do exist, however? Those for great teaching! Give yourself a break. You have more than earned it for all the math you teach, as well as for all the guidance you give to the students. In the end, it is the students that really matter, and it is the knowledge and guidance that you give to them that will shape them into articulate and responsible adults. No more feelings of guilt because you are not at the same place in the curriculum as your neighbor across the hall because you taught an amazing lesson that “took too much time, but the students really enjoyed.” No more staying up on Saturday night to grade a pile of tests because you spent Wednesday and Thursday nights re-writing *War and Peace* in “Quarter Two Lesson Plan” format. No more anxiety because you chose helping struggling students after hours, instead of joining another committee, to throw around more buzzwords and acronyms and create more piles of paper that will end up in the school’s basement, in a file cabinet, next to yearbooks from the 1960s. “What should I do with all that time that I am not teaching or interacting with my students?” you may ask. Take a walk, watch a film, spend time with your friends and family, read a book, play a musical instrument, ride your bike, learn a language, literally ANYTHING that is not stressing over whether you are doing enough for your administration. In other words, “be a teacher, not a bureaucrat.” Until next time, be well and take care!

The Lonely Reality of an Academic Dreamer

By Laura Kaplan

As we continue to practice our socially distanced professional development, we were treated to an evening with Dr. Pamela Harris, Associate Professor of Mathematics at Williams College via Zoom on the evening of November 6th.

In order to provide context, Dr. Harris gave us the highlight reel of her life, detailing her education and relationship with mathematics in particular. She spoke of being born in Guadalajara, Mexico to parents who had not completed their education beyond 9th grade. She spoke of her strong desire to travel. She spoke of the importance her parents placed on finishing high school but not on college.

Her family immigrated to Milwaukee when Dr. Harris was 12. She remembers the snow being overwhelming. She remembers taking art classes. She remembers dropping calculus her senior year to do so.

The Lonely Reality of an Academic Dreamer (cont.)

Once Dr. Harris graduated from high school, her thoughts turned to college to pursue art. She did not know how to apply, and the idea of putting her family at risk was off-putting. She went to the Milwaukee Area Technical College to apply and was pleasantly surprised that she had gotten in so easily, despite being undocumented. While at MATC, Dr. Harris took a placement test which placed her math skills at a 7th grade level. Skipping math her senior year of high school had done her no favors.

Through an encouraging teacher at Milwaukee Area Technical College, who was patient with Dr. Harris when she didn't understand, Dr. Harris remembers one incident in particular where the teacher was asking for numbers that added to 5 and multiplied to 6. Dr. Harris could not fathom how that was even possible. But the teacher very patiently explained the idea, and Dr. Harris never looked back. From that class, she was encouraged to take another math class, and then another. Without even realizing it, Dr. Harris fell in love with math.

After completing two associate degrees from MATC, Dr. Harris transferred to Marquette University to stay close to home. She was pursuing a BS in Mathematics, despite not knowing what to do with a degree in mathematics. That is until she met Rebecca Sanders and Bill Rolli, professors at Marquette. They spoke of "When you go to graduate school..." regularly, and Dr. Harris started seeing herself in that role. She was finally able to think ahead rather than one course at a time.

Attending University of Wisconsin at Milwaukee was challenging for Dr. Harris. When classes began, she had a 4-month-old and her husband was 6 months into a year-long deployment. Fortunately, she applied for and obtained the Graduate Assistance in Areas of National Need Fellowship which gave her tuition assistance as well as a reduced teaching load. This helped provide the flexibility she needed at the time. Dr. Harris completed her master's degree and immediately began her doctoral program with a favorite professor there.

Upon graduation, Dr. Harris was hired as an Assistant Professor at West Point. In those four years, she was proud to give back to her adoptive country. From West Point, she was hired at Williams College where she remains today.

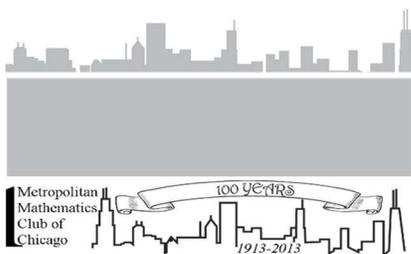
While Dr. Harris' story ends well, she believes the U.S. immigration system is "broken." She came to the country on a visa and was able to get a status change through marriage, but it doesn't work that way for everyone. Getting a status change depends on your age, where you came from, how long you've been here, and more. As a result, there is not one well-known path for immigrants to take.

Dr. Harris' experience does provide her with advice for how we as educators can best support our students and their families. She identifies six areas for educators to work on: Welcoming Environments, Services and Resources, Communicate and Demonstrate Support, Peer-to-Peer Support and Relationship Building, and Build Staff Capacity and Knowledge of Relevant Issues. These areas focus on making students, and undocumented students in particular, feel safe, while also ensuring that faculty and staff members become knowledgeable about resources for undocumented students so that those students have a go-to person when they have questions. Rather than saying, "All are welcome," for example, say specifically, "We welcome undocumented students," so they know. And rather than a person who has all the information about scholarship opportunities, have a person who specializes in those opportunities for undocumented students.

For more information, Dr. Harris pointed us to www.Unitedwedream.org.

MMC Scholarships Are Coming This Spring

We need you to help us find future mathematics teachers! Keep your eyes open for more information next month about scholarship opportunities for high school seniors who are planning to study Mathematics Education. We have streamlined the application process, and we want to support some deserving students. Do you know someone that you can nominate? Application materials will be available next month and will be due in early March. The winner(s) will be announced at our May meeting.



Assessment and Remote Learning Panel Discussion

By Beth Ann Ball

On October 26, 2020, MMC hosted a panel discussion with secondary educators on creating assessments in the remote environment. Starting off the discussion was Marti Shirley from Illinois Mathematics and Science Academy (IMSA), Aurora, IL. With students currently distance learning, the challenge is to provide an accurate, authentic online assessment. Marti took us through the Formative app and spoke of its strengths. This platform allows students who have touchpad access to draw and write their solutions, therefore allowing the student work to be visible in real time and enabling the teacher to differentiate the instruction. IMSA has created a database of problems on the same standard and can create a variety of unique assessments using Formative.

The next panelist was Beth Bushek from Glenbrook South High School in Glenview, IL. Beth shared with the attendees how she uses Google Forms in a variety of capacities for formative assessment. From social-emotional questions to quick, formative snapshots of where the students are currently in the learning cycle, the convenience of Google Forms and the familiarity of them to the students permits it to be a valuable formative assessment tool. The branching capability of the forms permit the teachers to help provide targeted instruction to a student based on their response. Beth discussed the importance and challenge of building a community of learners in a hybrid setting and spoke of how Google Forms has helped her in this process.

While all panelists spoke about the importance of asking non-traditional questions, the final panelist, Michael Buescher from Hathaway Brown School, Shaker Heights, OH, provided several examples of assessment questions for remote learning. For example, using properties of logs, write a number in three unique ways. Another example is to give students a list of expressions and have students order the list from least to greatest and justify why. He modeled how to take a standard mathematics assessment question and turn it into an extended-response question, which could provide greater insight into the students' knowledge.

The panel was moderated by MMC Board members Mary Wiltjer and Aimee Hart.

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September Board Notes

By Beth Ann Ball

The MMC Board of Directors met on Tuesday, September 15, at 7:00 p.m. via Zoom. Business involved remote meetings for the 2020-21 calendar year, which MMC will be offering for free to all virtual meeting participants. The upcoming talk includes Marian Dingle, “Opening the Mathematical Gates: Moving Toward Inclusivity and Belonging” on December 4.

The conference of workshops format is being looked into by a subcommittee. A report will be available at the next board meeting.

The next scheduled MMC Board meeting will be on Tuesday, November 17, at 7:00 p.m. via Zoom. MMC members are welcome to attend any board meeting. Anyone interested in attending a future board meeting, please contact President Serg Cvetkovic at scvetkovic@cps.edu for a link to the meeting.

Is your membership current? Check your mailing label to see when your membership expires. You can renew by mail with the form below or renew in person at the next dinner meeting.

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Upcoming Events

- Fri., Dec. 4 Marian Dingle **Opening the Mathematical Gates: Moving Toward Inclusivity and Belonging** (via Zoom)
- Fri., Jan. 22 Zalman Usiskin **Some Great Middle and High School Mathematics Lessons Worthy of More Attention** (via Zoom)
- Sat., Feb. 13 Multiple Sessions **MMC Conference** (via Zoom)
- Fri., Mar. 5 Tom Reardon **Climate Change: Creatively Use Good Mathematics to Model the Reality** (subject to change)
- Fri., May 14 Jackie Palmquist **5 Surprising Benefits of Number Talks in Secondary Math Classrooms** (subject to change)

Send upcoming event items to sburnett_308@yahoo.com no later than the date of the MMC dinner meeting preceding the issue in which the item should appear. All items are subject to editing.

Your membership renewal date appears in the upper right corner of the label

