

Points & Angles

Newsletter of the Metropolitan Mathematics Club of Chicago
Volume LI No. 4 Feb. 2022

Mathematical Games and Why They Matter

March Speaker Ben Orlin



From I-90 & Southbound I-294: Exit at I-190 West to O'Hare; Exit onto North Mannheim Rd.; Take Mannheim Rd. North 2.25 miles.

From Northbound I-294: Exit at West Touhy Ave.; Take Touhy Ave. to Mannheim Rd.; Turn right on Mannheim Rd.

Public Transit: Take the CTA Blue Line to the Rosemont Bus Terminal; Take Pace Bus #223 to Touhy Ave. & Lee Rd.; Walk East on Touhy to Mannheim Rd.

Friday, March 4, 2022

Doors Open/Social Hour: 6:00 PM

Dinner & Talk: 7:00 PM

Fountain Blue Banquet & Convention Center

2300 Mannheim Rd., Des Plaines
847-298-3636

\$43 for Members, \$49 for Nonmembers

*Fish option for an additional \$10

Reserve by noon, Monday, February 28

Online at mmccchicago.org

Special Programming Note: The Board of Directors has made the decision to return to Fountain Blue for the March dinner meeting. There will be a fish option available for dinner for an additional \$10.

"What is a human? It's an ape that retains youthful features (furless skin, tiny jaw, big skull) into adulthood. You and I, in short, are baby chimpanzees that never grew up. Primates that never stopped playing. I'll try to explore the profound implications of our endless play--or, barring that, I'll at least teach you some of my favorite pencil-and-paper games." - Ben Orlin

For those of us who follow what I like to call "math pop culture," Ben Orlin is heralded as both a genius and a celebrity. He is the author of the books, *Math with Bad Drawings* (as well as the long running blog of the same name), *Change is the Only Constant*, and *Math Games with Bad Drawings*. Additionally, he has written dozens of articles, popularizing and advocating for mathematics for such publications as *The Atlantic*, *The Chicago Tribune*, *The Los Angeles Times*, *Slate*, *Popular Science*, and *Vox*. Now, in describing Ben's work—if you took deep, rigorous mathematics, combined it with your favorite cartoons or comic strips from childhood, and threw in some zany, yet clever humor, you get Ben Orlin's work. In fact, many people who I have spoken to have stated, "If PBS ever did a show to make math interesting and engaging, Ben Orlin would be the host. He can do for mathematics what Carl Sagan did for science." So, if you ever sat around thinking about what Han Solo gets wrong about probability or what are the nine mathematical ways to watch a baseball game, Ben may just have the answer you are looking for!

Please join us at the Fountain Blue, as we begin (cautiously) reconnecting with our fellow math lovers for a fun and thrilling evening with the teacher, the mathematician, the author, the prolific human being—Ben Orlin.

Points from the Interior

by Aimee Hart

It has been another long winter, and it is still January as I write this. It is still cold, and things are still not back to normal. Listening to our latest speaker, Mary Wiltjer, talk about teaching last weekend, I found myself nodding along with so much of what she said. It has been very stressful to be a teacher the last two years and listen to all the rhetoric in the media and at board meetings about education and teachers. Like many of you, I have often felt beaten down. In the midst of all of this, there have been some small moments of joy this year and some new things I have tried in my classroom that I am very excited about. I thought a lot about what to write in this issue and decided that I wanted to talk about something that has been a positive change in my classroom this year and, since very few people have the bandwidth to do anything new or extra these days, offer to share the materials with anyone who is interested.

A few years ago, I was mentoring a new teacher to our department. She went to the ICTM conference and came back with an idea from a workshop and asked if I wanted to implement it with her. She wanted to highlight a diverse group of mathematicians and their accomplishments. We decided to do it once a week and call it “Mathematician Monday.” It took a couple years to really get it going. Covid hit shortly after we started. We tried it remotely last year, but our Mondays were changed to asynchronous after a few weeks, so it wasn’t until this year that we have been able to consistently do it. This project has brought a little bright spot to my Mondays. Almost every week, a student announces, “It’s Mathematician Monday!” even before I bring up the slide. To be honest, I think some of them just like the two minutes it takes from class time, but a few of them have commented in surveys that it is one of their favorite parts of our class and they look forward to it each week. One of my seniors told me that she couldn’t believe she had made it to senior year without learning anything about mathematicians in her classes and then gave me a suggestion for a mathematician she wanted to see featured in the slideshows.

If you were to ask your students (or even colleagues) if they could name a modern-day mathematician, I think the list would be pretty short. A few of them know the names of the women portrayed in *Hidden Figures*, and if you’re as old as I am, you might remember the guy who proved Fermat’s Last Theorem in the 90s. Personally, I have enjoyed learning about every mathematician I have researched and discovering some of the connections between them. (Did you know that William Claytor was Katherine Johnson’s mentor at West Virginia State College?) Students have started to see connections too, and when I use the anonymize feature in Desmos, they recognize some of the names as mathematicians we have learned about.

While it only takes about 15-20 minutes for each slide, that time can add up. At the end of last year, I decided to get a little help in creating the slides and spent a day after the AP exams in my Calculus class having each student research a mathematician and create a slide. Then we looked through the slideshow together. This gave me more slides to use this year and gave the students an opportunity to learn more about one particular mathematician. I would be happy to share the activity with anyone who emails me (harta@nth.net). I would also like to credit the person who ran the workshop at ICTM. My colleague could not remember their name. If anyone knows who it is, or if it’s you, please let me know, so I can give them credit in a future newsletter. I hope you are all surviving this long, cold winter and are still finding a few moments of joy.

Follow MMC on Social Media!



What I Didn't Learn About Teaching During a Pandemic

By Steve Starr

Those of us in the Chicagoland community of math teachers (and many beyond) know Mary Wiltjer as a force--a force for the good of mathematics education, for strengthening the community of math educators, and also for her own students. (In addition to all her other contributions, she is a full-time teacher at Glenbrook South High School.)

REPEAT after me:
We are professionals.
We are experts.
We know more about mathematics education than those who are not.
We must be the first & the last word in decisions about mathematics curriculum.

So to clarify the ambiguity of her title, she offered this alternative: “**a rant in favor of teachers**”--a rant ranging from piercing commentary about our current situation (and a call to take action!) as well as observations and opinions across a spectrum of pedagogical issues we all face as math teachers.

First of all, she says, in talking about the pandemic, let's abolish the term “learning loss”! “It implies that teachers didn't get the job done, that learning didn't occur--but learning occurred!” Teachers learned with great effort and at great cost how to survive a pandemic experience and reach students. “Everyone's life was disrupted, and we learned how to deal with it.” And that's what learning is! “So the pandemic caused things to be different, so what?” This simply and deeply underscores the fact that “all teaching and learning should start from where the learners are.” And who knows better where the learners are than teachers? Rather than benchmarks, teachers should decide what's in the curriculum and how to teach it. Mary notes, “Our profession is under attack.” Fewer young people want to be teachers--and why should they, having come up through NCLB's formulaic, dehumanized version of education? Mary charged us “to celebrate and stand up for ourselves” at every turn and to repeat the words we see at the top of this page.

Then on over a dozen issues in teaching and learning, Mary gave her passionate and insightful observations, exhortations, and reminders. Although it's hard to pick favorites, here's an all too brief sample of some topics she hit on:

Know how the brain works. Use the info. Mary talked about how the learning brain is building bridges and connections and how our teaching can foster this. “Kids should be writing words down...making predictions.” The web of connections is the foundation of learning and “showing something completely cold that comes from nowhere... you're asking so much.”

Learning needs to last far longer. A “teach a topic, drop it, move on” model doesn't work. Let's overlap concepts and methods.

Great starts. The very first day in your class sets the tone. Kids remember it!

Time. A topic Mary is passionate about: “Time should not be the measure of mathematics!” Timed tests feed into our culture's pervasive math anxiety.

“Why?” deserves an answer...often. Especially for your procedures or policies.

And finally, to end on a positive note:

Become a learner. Mary talked about how she met great teachers in improv and dog training classes, and it helped her in her own pedagogy.

Thank you, Mary, for an inspiring evening and for all you do for teachers and students!

Do you have a student who is interested in becoming a math teacher?

MMC Scholarship for High School Seniors

The Metropolitan Mathematics Club of Chicago is offering a \$2,500 scholarship for a high school senior who will pursue a career in the teaching of mathematics. The selected student will be honored at the MMC meeting in May.

A selection committee of MMC members appointed by the Board of Directors will determine the scholarship award recipient. To be eligible, an applicant must be sponsored by a current member of MMC, submit the application and a transcript, request a letter of recommendation from a mathematics teacher, and respond to the prompts in point E below. All materials must be received by March 4, 2022. Feel free to email your submissions. You will receive a reply, so you know that it is being considered. The committee will evaluate applications and will make a recommendation to the Board of Directors as to the awarding of the scholarship.

The guidelines used for selection shall be:

- A. Demonstration of overall academic scholarship with an inclusion of at least eight semesters of college preparatory mathematics. (A minimum cumulative grade point average of 3.0, where A = 4.)
- B. A statement of the intention to pursue a career in mathematics teaching.
- C. Indication of participation in extracurricular activities, especially those that may have a positive influence on a teaching career.
- D. A letter of recommendation from a math teacher who is familiar with the applicant's academic performance and his or her potential as a mathematics teacher. The teacher must be an MMC member.
- E. A short response from the candidate (1-2 paragraphs) to each of the following prompts.
 - a. What qualities do you possess that will help you in a teaching career?
 - b. Describe a teacher who has had an impact on your education.
 - c. Was there a time when you struggled with a concept in a math (or other) class? What did you do?
 - d. What was your favorite math class? Why?
 - e. Describe your favorite math problem. What makes it so great?
 - f. What excites you about mathematics?
 - g. Why do you want to teach mathematics? *This response may be longer than the others, if necessary.*

In addition to the application form (available at mmccchicago.org), applicants must also send:

- 1. A letter of recommendation from a mathematics teacher (*preferably not sent through the applicant**)
- 2. A current transcript for seven semesters of high school.*
- 3. Responses to the prompts in point E above.

**Letters of recommendation and transcripts may be sent by separate mail or e-mail.*

Send to: Carrie Fraher
Glenbrook South High School
4000 West Lake Avenue
Glenview, IL 60026
(cfraher@glenbrook225.org)

Gratitude for Conference of Workshops

By Maryjoy Heineman and Nicolette Norris, 2022 MMC Conference Co-Chairs

The second Virtual MMC Conference was held on Saturday, February 12, and it was a success. Thank you to all the speakers who were willing to present their talk in this format. The attendees enjoyed being able to connect with the math content and pedagogy. You gave us some type of normalcy during these times.

A huge thanks goes out to the planning committee: Beth Ann Ball, Steve Condie, Serg Cvetkovic, Carrie Fraher, Sheila Hardin, Aimee Hart, Laura Kaplan, Janice Krouse, Carol Nenne, Steve Starr, and Mary Wiltjer. Your dedication made it possible for this conference to transpire.

Peter DeCraene did a wonderful job with the registration and sending out all the links to the attendees. Thank you for also being available the day of to help people with their links and other issues that arose.

The MMC Board volunteers who helped with the Zoom meetings were awesome. You helped to make sure each session ran smoothly.

We certainly know that teachers have enough on their plates, but fortunately, many felt that you needed more engagement and attended our post-conference session to talk to other colleagues about what was learned in the morning. It was so great to see so many teachers excited and ready to use what they learned at the conference.

Soon you will be hearing about the MMC Conference of Workshops 2023. We hope that we can have the conference in person. Please be on the lookout for information and the call for speakers during the summer.

MMC Candidate Biographies

***Ballots for the MMC President-Elect and Board of Directors will be mailed soon.**

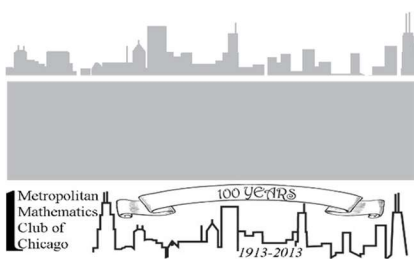
President-Elect:

Dan Hall: Dan has been teaching for 21 years, the last 16 at York High School. He has coached math team for nearly the entirety of that time both at his school and for Chicago's ARML team. Dan served on the MMC Board from 2006-2015 and would be honored to once again be part of the best professional development organization in the country.

Board of Directors:

Aimee Hart: Aimee has been teaching math for 24 years. She began her career at Josephinum Academy, a small Catholic girls' school in Chicago, and taught at Marymount International School in Rome and Walter Payton College Prep before settling at New Trier High School almost 16 years ago. She currently teaches Geometry, BC Calculus, and Geometry Design and Construction. She has been on the board of MMC since 2019 and currently serves as president.

Maryjoy Heineman: Maryjoy is a current board member and co-chair of the MMC Conference of Workshops. She teaches Geometry in Construction at Evanston Township High School and has been a member of MMC since she began teaching 17 years ago. She treasures the community that MMC provides for math teachers and would love to continue to serve on the board.



Officers

Aimee Hart, President
 Laura Kaplan, President-Elect
 Serg Cvetkovic, Past President
 Sheila Hardin, Board Chair
 Beth Ann Ball, Secretary
 Carol Nenne, Treasurer

Directors

Beth Ann Ball (2021-2024)
 Maine South H.S., Park Ridge

Steve Condie (2021-2024)
 Illinois Mathematics & Science Academy
 (retired), Aurora

Sara Curran (2020-2023)
 Homestead Elementary, Aurora

Serg Cvetkovic (2020-2023)
 Thomas Kelly H.S., Chicago

Carrie Fraher (2021-2024)
 Glenbrook South H.S., Glenview

Danielle Grenader (2021-2024)
 Cicero East Elementary, Cicero

Sheila Hardin (2020-2023)
 Oak Park & River Forest H.S., Oak Park

Aimee Hart (2019-2022)
 New Trier H.S., Winnetka

Maryjoy Heineman (2019-2022)
 Evanston Township H.S., Evanston

Laura Kaplan (2020-2023)
 Regina Dominican H.S., Wilmette

Janice Krouse (2019-2022)
 Illinois Mathematics & Science Academy, Aurora

Carol Nenne (2020-2023)
 Lemont H.S. (retired), Lemont

Nicolette Norris (2019-2022)
 Chicago Vocational Academy, Chicago

Steven Starr (2019-2022)
 Lakeview H.S. (retired), Chicago

Mary Wiltjer (2019-2022)
 Glenbrook South H.S., Glenview

Officials

Community Relations and Development	Janice Krouse
Conference Co-Chairs	Nicolette Norris Maryjoy Heineman
Conference Registrar	Peter DeGraene
Finance Committee Chair	Steve Starr
Historian	Paul Christmas
Membership Coordinator	Mary Wiltjer
NCTM/ICTM Affiliate Representative	Steve Condie
Points & Angles Editor	Sara Curran
Publicity and Posters	Paul Christmas
Scholarship Chair	Carrie Fraher
Social Media Chair	Danielle Grenader
Webmaster	Peter DeGraene

Candidate Biographies (cont.)

Liam Keigher: Liam believes in always learning and becoming better at one's craft. He has been teaching at Larkin High School in Elgin since 1995 and has been head math coach since 2000. He's been on a number of district curriculum committees in math and computer science and has been on Larkin's technology committee since 1996 (on and off as chair). He is the written topics chair on the board of North Suburban Math League and assists with the Chicago ARML team. He sponsors Larkin's Mu Alpha Theta chapter, hosting an annual middle school math contest. Liam loves what MMC brings to the study of mathematics and wants to see more offerings for people out of school to study math because he finds it so invigorating. He especially can't wait for the fantastic dinners to return!

Janice Krouse: Janice L. Krouse, Ed.D., has over 30 years of experience in mathematics education. As a member of the mathematics faculty at the Illinois Mathematics and Science Academy (IMSA), she has served in various leadership roles in which she has guided teachers in their use of collaboration and higher-order thinking in the classroom, instructional strategies, writing in mathematics and formative assessment. She is passionate about promoting the student-centered classroom and eliciting rich, mathematical thinking and discourse from all students. Janice is also a firm believer in the benefits of collaboration and relevant professional development among colleagues, which is why she has been a member of MMC since moving to Illinois in 1998. Janice is honored to serve on the board alongside such amazing mathematics educators and hopes to continue contributing to this work.

Nicolette Norris: Nicolette is currently teaching at Chicago Vocational High School. She has been a Chicago public school teacher for 20 years and has been teaching for 25 years. Nicolette presented at the 2005 Conference of Workshops. She then joined MMC in 2006. She has served on the board for the past 6 years. Nicolette is one of the co-chairs for the MMC Conference of Workshops.

Steve Starr: Steve taught 20 years at Lake View High School and since retirement continues to be involved in math education in various ways such as supervising student teachers for NWU, working with Math Circles of Chicago, and serving on the board of MMC. His interests include drawing & painting, woodwork, travel, hiking, reading, learning almost anything, and revisiting childhood fascinations with dinosaurs and volcanoes!

Mary Wiltjer: Mary has been teaching for over 25 years, with the last 14 at Glenbrook South High School. On the MMC Board she has had many roles, including President, Membership Coordinator, and Conference Co-Chair. In her time with MMC, Mary is most proud of the additional, high-quality professional development opportunities she has brought to members at very affordable prices, such as the Saturday and summer workshops and the MMC conference post-session speakers.

MMC Board Briefs

By Beth Ann Ball

The regularly scheduled meeting of the MMC Board was held Tuesday, November 16, 2021, at 7:00 p.m. over Zoom. Topics of discussion included MMC's presence on social media, the virtual conference of workshops coming up on February 12, and whether to have the January dinner meeting in person or virtually. The vote was tabled that evening to gather further information and was held electronically the next day when the Board voted to hold the January meeting virtually.

An emergency MMC Board meeting was held Monday, January 24, 2022, at 7:00 p.m. over Zoom to discuss the March dinner meeting. After a lengthy discussion of many options, the Board voted electronically on Wednesday, January 26th, that the March meeting will be held as a dinner meeting in person at Fountain Blue. The slate for President-Elect and Board of Directors was presented and passed. The next regularly scheduled meeting of the MMC Board will be on Tuesday, February 15, 2022, over Zoom. The final board meeting will occur on May 11, at 6:30 p.m. Please contact President Aimee Hart, harta@newtrier.k12.il.us, if you would like to attend.

**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.**

NAME		PREFERRED CONTACT Check one: <input type="checkbox"/> Home <input type="checkbox"/> Work	
HOME ADDRESS			
CITY	STATE	ZIP	
HOME PHONE	HOME E-MAIL		
EMPLOYER			
WORK ADDR			
CITY	STATE	ZIP	
WORK PHONE	WORK E-MAIL		
ELECTRONIC-ONLY MEMBERSHIP Check the box below for electronic-only membership. You will receive an email with a direct link to each issue of <i>Points & Angles</i> when it is posted on the web site, often before paper copies are mailed. You will no longer receive <i>Points & Angles</i> by mail. <input type="checkbox"/> Electronic-Only Membership		MEMBERSHIP TYPE Check one: <input type="checkbox"/> 1 year (\$35) <input type="checkbox"/> student*, 1 yr (\$22) <input type="checkbox"/> 2 years (\$65) <input type="checkbox"/> 1 st yr teacher*, 1 yr (\$22) <input type="checkbox"/> 3 years (\$90) <input type="checkbox"/> retired, 1 yr (\$28)	
FORM USE Check one: <input type="checkbox"/> New Membership <input type="checkbox"/> Renewal <input type="checkbox"/> Former Member <input type="checkbox"/> Change of Address		MEMBERSHIP COST \$	
* The student and 1 st -year teacher memberships are only available as electronic-only.		DONATIONS	
		SCHOLARSHIP FUND \$	
		SPEAKER FUND \$	
		TOTAL AMOUNT OF CHECK \$	

Make check payable to **MMC**

Feb. 2022

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MMC Membership and Change of Address Form
Mail completed form and check to:
MMC
1644 Portage Run
Glenview, IL 60025

Upcoming Events

Fri., Mar. 4	Ben Orlin	Mathematical Games and Why They Matter (Fountain Blue)
Fri., Apr. 22	P.J. Karafiol	What Can Math Teachers Contribute to the Conversation About Equitable Grading? (Fountain Blue)
Fri., May 20	Zalman Usiskin & Andrew Chukerman	NCTM and a Century of Mathematics Education – A Review with Music (Fountain Blue)

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

