December 2025

Canadian Mathematical Society
Société mathématique du Canada

(Vol. 57, No. 6)

CMS NOTES de la SMC

IN THIS ISSUE

Termeh Kousha (Canadian Mathematical Society)

Executive Director

As we wrap up the year at the Canadian Mathematical Society, I have been thinking about what the past few months have taught us, and taught me. It wasn't an easy year, personally or professionally, but it was one during which the strength of our community was impossible to miss.

Our two semi-annual, in Québec in the summer and in Toronto this winter, were highlights. The winter meeting, in particular, saw post-COVID record-breaking attendance with over 600 participants, which brought an incredible level of energy to the event. Being in rooms full of colleagues, hearing the hallway conversations, seeing people reconnect and collaborate, all of it reminded me why these meetings matter so much. They're where our community truly takes shape.

The CMS Summer Math Camp in Ottawa continued to grow, and this year we reached a milestone with eight camps, including our first bilingual offering. Seeing more kids get excited about math has been incredibly energizing. With most camps being sold out in Ottawa, we are very motivated and excited to expand our programming across Canada in the coming years.

Despite some real challenges behind the scenes, our competitions ran smoothly. The Canada Lynx Math Competition (CLMC), the Canadian Open Math Challenge (COMC), and Canada Jay Math Competition (CJMC) all saw strong participation and strong support from volunteers.

2023 CMS Summer Meeting (Ottawa, ON)

From left to right: Dorette Pronk (Chair, CMS Competitions Committee), myself and Robert Woodrow.

The death of Robert Woodrow was devastating for the CMS and for many people across the math community. Robert's decades of work in competitions shaped programs that thousands of students have benefited from. His absence leaves a real void. Robert touched my heart, and the hearts of so many others. He was a true mentor to many of us. At the Winter Meeting, the "Friends of Robert" gathered to share their stories, remember his legacy, and celebrate the friendships he built. For me, that event was a way for our community to grieve together while keeping his memory alive. Robert built a lasting legacy that will not fade with his passing. As Saadi, the famous Iranian poet, says:

"A man of good name never truly dies;
dead is the one whose name is never spoken with praise."

"سعدیا مرد نکونام نمیرد هرگز مرده آن است که نامش به نکویی نبرند"

Robert's name will always be spoken with kindness, praise and respect.

What has helped, in the midst of that loss, is seeing how many people stepped forward this year. Responsibilities shifted quickly, and several individuals took on more than they expected. Their willingness to do so ensured that the work continued. I think Robert would have been proud of that. I would also like to take a moment to thank everyone who stepped up and helped the CMS move forward in his absence.

On the international scene, our students had a great year. At the European Girls Mathematical Olympiad (EGMO), the Canadian team earned four medals. At the International Mathematical Olympiad (IMO), Math Team Canada brought home five medals. These results reflect not just talent, but years of hard work, from the students themselves, their families, their teachers, and the many volunteers who make these programs possible.

Another major development this year was the launch of our new open-access journal, Canadian Mathematical Communications (CMC), which began accepting papers in 2025. The first issues will be published in the coming months, marking an important expansion of our publishing work.

On a personal note, this past year was very difficult for me. There were moments that demanded far more energy than I felt I had to give, and many times when I wondered if my journey with the CMS needed to come to an end. I won't pretend otherwise. But I also don't want those challenges to overshadow the people who showed up, offered support, and quietly kept things moving forward when I couldn't be everywhere at once. I am deeply grateful for that.

I was truly overwhelmed by the support and kindness of so many volunteers in our Society, who gave their time and energy to help set things right again. I would like to take a moment to thank them all, without naming individuals, and to express my sincere appreciation to each and every one of them. I believe we all grow and learn from difficult times, and after all, "the voices that tried to break us, ended up shaping our resilience."

"All that time […], I was building something […] I built a legacy that you can't undo […] thanK you aIMee!"

I want to acknowledge and thank the staff who kept the CMS running every day: Julia, Maria, Lindsay, Sarah, Steve, Trevor, Xinxin and Yvette. Thank you for your patience, flexibility, and steady work throughout a demanding year.

And to our volunteers, committees, members, and CMS partners: thank you. The CMS runs on shared effort. Every competition problem written, every meeting organized, every peer review completed, every camp delivered, it all adds up, and it all matters.

Even with its challenges, this year moved us forward. We expanded programs, welcomed new members and volunteers, celebrated student achievements, and supported one another through difficult moments. As we head into the new year, we do so with momentum, with new initiatives underway, and with a community that continues to show its strength when it's most needed.

Thank you for being part of this work and for helping the CMS in achieving its mission of promoting math in Canada, and Canadian math across the world.

Canadian Mathematical Society — 616 Cooper St., Ottawa, ON K1R 5J2, Canada

Not Alone

Editorial December 2025 (Vol. 57, No. 6)

Prof. Robert Dawson (Saint Mary's University)
Editor-in-Chief

In a few weeks, my half-year sabbatical will come to an end. Though I've spent much of the time in an international collaboration, I haven't travelled beyond Nova Scotia except for a few vacation days in New Brunswick. Our work took place by email, and it seems to have produced results. In some ways, it would have been nice to travel: Budapest is beautiful (though the language totally defeated me on my previous trip.) But relocating for months would have made no sense, and the work progressed slowly, so that a couple weeks might have made little difference. So I saved a bit of carbon and worked from Halifax. Not in Budapest, but not alone: modern technology kept me in touch with my coauthors, often daily.

In earlier work, we'd shown that a properly-shaped tetrahedron can be weighted to be stable on only one face. Weirdly, if this can be done for one face of some particular tetrahedron, a different weighting can make it monostable on any other face. Early this year, my Hungarian colleagues had built a working model. It had been surprisingly difficult: the outer tetrahedron was a feather-light skeleton of carbon-fibre rods, the weight was precision-machined tungsten carbide, and it *just* worked! The design had made use of several heuristics and hunches, as well as innumerable machine cycles of numerical optimization. Now, "the proof of the pudding is in the eating," and the *Bille* (from the Hungarian word for "tip over") certainly worked. But we wanted to know why we had to push the limits of available materials to make it happen—and why two of the four falling patterns would (it appeared) have required materials known only to science fiction!

While our work was based on ideas (solid geometry, centres of mass) familiar for centuries, it rapidly took a turn into new territory. Nonetheless, we were not in an untracked wilderness: when we needed guidance, there were often blazes on the trees. We got one basic idea from a puzzle-problem in an old Martin Gardner column, though it needed a lot of work to adapt it for our purpose! At one point, it looked as it we would need a long and complicated piece of multivariate calculus to prove a technical point, but (after translating some notation to work with what we were doing) we found that result (up to a scaling constant) in a paper on integral geometry. Though we were working on a quirky new problem, the literature kept us in touch with the larger mathematical community, even across the decades. We were not alone.

And my wish for all our readers in the new year is this: may you never be alone in your mathematical endeavours.

Egan J Chernoff (University of Saskatchewan)
Notes Contributing Editor

Education Notes bring mathematical and educational ideas forth to the CMS readership in a manner that promotes discussion of relevant topics including research, activities, issues, and noteworthy news items. Comments, suggestions, and submissions are welcome.

Egan J Chernoff, *University of Saskatchewan (egan.chernoff@usask.ca)*
Kseniya Garaschuk, *University of the Fraser Valley (kseniya.garaschuk@ufv.ca)*

I am not a sports writer. Far from it. I do know a trick of the trade, however. A little inside baseball, if you will. Sports writers, especially sports deadline writers, write two versions of their article before and as the game goes on. This way, no matter which team wins, they get to run their story. Well played.

The two story approach is the one I took when (very unsolicitedly and very unofficially) agreeing to be the (very unofficial) sports writer for Game Seven of the 2025 World Series between the Toronto Blue Jays and Los Angeles Dodgers for the *Education Notes* section of *CMS Notes*. Recognizing that "*CMS Notes* is the official newsletter of the Canadian Mathematical Society and is an important medium of communication between the Society and its members, and the Canadian mathematical community" (noted here: https://notes.math.ca/en/about-cms-notes/), I took the responsibility that I thrust upon myself quite seriously.

In full disclosure, as a Canadian, as a status only professor at the University of Toronto, as a fan of the Toronto Blue Jays, I'm clearly biased. For example, before the game, I spent way more time working on the 'JAYS WIN! JAYS WIN! JAYS WIN!' version of my article. Also in full disclosure, the angle that I was taking was going to highlight the recent consternation that Canadians are still feely regarding their neighbour(s) to the South.

Based on what happened, however, the 'Jays Win! Jays Win! Jays Win!' version of my article will never get published. I can't even look at it at this point, and I know exactly where it "sits" on my computer. My homage to Harry Caray, my musings on the Montreal Expos, a recounting the 2025 4 Nations Face-Off, all of it, will never see the light of day. I'm not sure which stage of grief that equates to but it captures the stage I'm in at the time of this writing. Can't. Even. Look. At. It.

For those of you wondering what any of this has to do with *Education Notes* or *CMS Notes*, the heart of the article I wanted to write had a lovely (in my opinion) take on America's Pastime having changed from a game of inches to a game of centimetres. Metric versus Imperial, exchange rates, the Toronto Raptors (and Vancouver Grizzlies), game seven (versus a game nine), Loonies buried at centre ice, all of it was going to feed back into a narrative about America's Pastime, baseball, having gone from a game of inches to a game of centimetres. A historical conversion rate conversation, yes, would then follow. The dimensions of the diamond, the number of innings, the number nine, the number three, all of it was ripe for some contemporary, celebratory Canadian critique.

Alas, two outs away from the Toronto Blue Jays winning the World Series, just like that, the article that I was writing, the article that I wanted to write, was tentatively shelved. Why? Well, if I'm being true to what I was writing, a pitch was thrown in the top of the ninth inning that was misplaced, by mere centimetres, and the game was suddenly, devastatingly tied. (With that said, two other pitches, in previous innings were also missed by mere centimetres, which led to the tie.) What seemed liked seconds later, a video review at home plate almost confirmed that baseball was going to become a game of centimetres just like I had conjured up in my head so well. Seconds after that, making matters worse, two humans, running at full speed, running into each other, somehow navigated a bunch of centimetres and Game Seven is headed into a tenth, a decimal inning.

How good my game of centimetres article could have been, especially based on what happened in the tenth and eleventh innings. More hits to the warning track, more bases loaded, more forcing the runner out at home plate, more walks, more home runs, and all of it happening, from my perspective, from the perspective of Canadians, by mere centimetres. However, it was in the eleventh and final inning that I went from tentatively to permanently shelving the 'Jays Win!? Jays Win!? Jays Win!?' version of my article because the Toronto Blue Jays, in the end, sadly, did not win Game Seven of the 2025 World Series. The minutiae associated with pinch runners, leads off of third base, hits to the warning track, as it turns out, was still going to be measured, at least in 2025, according to a familiar standardized metric for the game of baseball: inches. Inches, thanks to the Los Angeles Dodgers. Sure, the Blue Jays and their organization were rightly devastated by the loss. The fans of the Blue Jays, of course, were similarly devasted. Me, I, too, was devastated.

Amidst all the devastation, as I had alluded to early, I realized that I had accepted a responsibility as the (very unofficial) sports writer for Game Seven for the *Education Notes* section of *CMS Notes*. So, not only had the Jays lost, but I was now without an article. Look, I lied, I didn't write two stories. There's no way that I would start an article where the Jays would lose Game Seven before the beginning of Game Seven. Sure, I knew the little trick of the trade, the inside baseball move, but that doesn't mean that I did it!? The Jays were going to win the World Series. The big problem now, was that I was without an article I had promised and dealing with the loss.

I'm not sure how you felt or what you did in the immediate aftermath after the Jays lost the World Series in spectacular fashion. I am sure, however, that it was worse for me than it was for you (as long as "you" are not Jack Michaels). Look, I'm not saying that I'm a bigger fan, for example. There is no "I" in "We want it all" which was the Jays slogan for the season. Ok, sure, there's one "I" in "We want it all". It's just that I, too, experienced the loss, but I had also committed to writing an article about the experience, and I went from almost having it all to having nothing. With cold chicken wings and a now warm beer in front me, I turned to the internet for solace.

Only taking 9 or 10 or 11 clicks of the mouse, I was transported back in time and was watching Game 6 of the 1993 World Series between the Toronto Blue Jays and the Philadelphia Phillies on YouTube. For those of you getting ahead of me, the end of this article might not be going where you think it's going. It's not about being ahead three games to two in the series back then and now. It's not about trailing by one in the bottom of the ninth back then and now. It's not about back to back championships on the line. All of that struck me, sure, but there was something else that really struck me when watching the sixth games of the 1992 and 1993 World Series which I was doing to deal with losing the 2025 World Series.

I began to pay particular attention to the differences between the infographics displayed in the television broadcasts of the 1993 and 2025 World Series. Shocked, the infographics, three decades later, were almost identical when information about the hitter was displayed on television: Average (AVG), Home Runs (HR) and Runs Batted In (RBIs). All the advanced analytics, all the advanced metrics and, still, AVG, HR and RBIS was the main information being shown to television viewers. The glaring difference, however, is that OPS, which is an acronym for On Base Plus Slugging was/is the new stat on the block. I decided, as a way to further distract myself from what had just happened, to dig deeper into OPS.

Sure, I knew that it was a sum of percentages, On Base (OBP) and Slugging (SLG). I also knew that getting on base is important and "slugging" is important. I started to look it up further because I didn't really pay attention to or know about the base line (pun – no pun), that is, why is 0.800 a marker. Concurrently, as I doom scrolled the internet for OPS information, as I dealt with the Jays losing the 2025 World Series, as I watched the Jays winning the 1993 Word Series on YouTube, I learned that OPS gained prominence as a television infographic because, get this, in the world of advanced analytics and sabermetrics, and technology as advanced as ever, OPS is widely adopted for television because it is deemed, by some, as the easiest and most straightforward to calculate.

Yes, I was sad when I learned that the Jays lost the World Series. I'm even more sad, however, to learn that the sabermetrics is letting the tail wag the dog. To have, of all the advanced metrics, OPS gain television prominence because it's easy to calculate is sad. Maybe it's not sad and I'm just clouded by the loss. Either way, as my Father in Law always said at the end of each of NFL season, especially when the San Francisco 49ers didn't win the Super Bowl, there's always next year. He's right, and I'm looking forward to following the Toronto Blue Jays, advanced analytics, and sabermetrics next years. Go Jays!

CSHPM Notes December 2025 (Vol. 57, No. 6)

Ellen Abrams (University of Toronto)

CSHPM Notes brings scholarly work on the history and philosophy of mathematics to the broader mathematics community. Authors are members of the Canadian Society for History and Philosophy of Mathematics (CSHPM). Comments and suggestions are welcome; they may be directed to the column's editors:
Amy Ackerberg-Hastings, *independent scholar (aackerbe@verizon.net)*
Nicolas Fillion, *Simon Fraser University (nfillion@sfu.ca)*

As a historian of mathematics and gender, my research often involves questions about various forms of masculinity. Yet, two women have remained central to my work: Caroline Seely (1887–1961) and Margaret Rossiter (1944–2025). Caroline Seely was an American mathematician who earned her PhD from Columbia University in 1915 and worked for more than two decades as a clerical assistant at the American Mathematical Society (AMS). Margaret Rossiter, who passed away last August, was one of the most important historians of science in the past century. In what follows, I'll explain how Rossiter's work can help historians understand Seely and how both relate to histories of mathematics and masculinity.

As recent tributes have noted, Rossiter is known primarily for her three-volume *Women Scientists in America*.[1] According to a profile in *Smithsonian Magazine*, Rossiter "almost single-handedly made relevant" the history of women in science as a topic of scholarly interest.[2] To write her books, Rossiter spent decades traveling across the United States, tracking down information about women scientists, and compiling as many archival traces as she could find. "Finding" women scientists in the archives was (and still is) difficult work because the process of archival preservation is often organized around famous individuals, including celebrated scientists. Yet, women scientists were rarely considered scientists, let alone celebrated. So, from an archival perspective, they seemed not to exist.

The documentary evidence in Rossiter's work is extraordinary. But beyond shedding light on individual women scientists, Rossiter compiled and analyzed the details of their lives and careers to uncover the systemic patterns and mechanisms of discrimination that many of them were up against. Rossiter wrote about the distinctions between labor markets for men and women in science, for example, which often involved hiring overqualified women researchers for underpaid jobs as assistants or calculators.

Figure 1. Margaret Rossiter (1944–2025). Cornell University.

I encountered one of these early-twentieth-century overqualified women researchers during my third year as a graduate student in Professor Rossiter's former department at Cornell. In the spring of 2017 at Brown University, I visited the beautiful John Hay Library, which houses the archives of the American Mathematical Society (AMS). Like most institutions' administrative records, the AMS's can be quite boring. And, like most archival reading rooms, the John Hay is meant to stay perfectly quiet. So I was surprised to find myself laughing out loud while reading through letters from a clerical assistant named Caroline Eustis Seely.

An example of Seely's (sometimes snarky) humor comes from a letter to the Secretary of the AMS, Roland Richardson, written in August 1923. Seely was busy helping to manage the process of legal incorporation for the Society, and she began the letter by joking, "I thought ladies were generally excused from having to read law, on account of mental incapacity. Anyway . . .", and then proceeded to explain the details of a particular section from the Education Law of 1910.[3]

Figure 2. Caroline Seely (1887–1961). *Notices of the AMS*.

Rossiter's work, for example, documented the reality that earning a PhD rarely led to research-oriented employment for American women in the early twentieth century. Instead, women scientists were often confined to "women's work," such as assisting other researchers, teaching young women, or performing clerical jobs. As Rossiter has demonstrated, the rise and professionalization of "big science" brought with it new administrative and auxiliary roles that were generally deemed "appropriate" for women. Although other forms of science may have generated more assistant-type roles than mathematics did, Seely's work was crucial to new forms of bigness in American mathematics that resulted from a rapid period of fundraising and professionalization throughout the 1920s.[5]

Overall, Rossiter's publications have helped document the specific practices and trends that have kept women out of science and women scientists out of the spotlight, thus making science seem like something that women don't do. My own research on mathematics and masculinities asks a related and somewhat complementary question: What has made mathematics seem like something that men do? The historical exclusion of women from the category "mathematician" is part of the answer. But I am also interested in the cultural dynamics that have worked to associate mathematics with different kinds of people, perceptions, and ways of being in the world. As such, the analysis of gender in my research is less about categories such as men and women and more about the processes of power and identity that are formed in and around cultural activities and products such as mathematics.[6] Somewhat paradoxically, part of my analysis considers how Seely and her administrative labor helped to enact new forms of masculinity for early-twentieth-century American mathematicians. Specifically, I argue that Seely's work served as a foil to the prestige of men's research while simultaneously making said research possible. By the end of World War I, American mathematicians had established a professional hierarchy that valued the pursuit of abstract research above both applied research and teaching. This hierarchy was notably gendered, as women were often confined to teaching positions with full course loads while the prestige of abstract research was reserved for men. New forms of funding and institutional support that were central to American mathematics in the 1920s worked to intensify these dynamics. New postdoctoral fellowships bolstered the talents of promising young men, for example, while funding for publications benefitted researchers at the "top" of the professional hierarchy. Indeed, during this time, American mathematicians began to define themselves increasingly in terms of published research, new forms of funding, and international repute. Through her work at the AMS, including negotiating with printers, managing capital campaigns, and corresponding with mathematicians worldwide, Seely was central to developing these mechanisms of prestige and professionalism. At the same time, Seely herself and the "girls" she hired to help with office work became a point of contrast to professional researchers. As Rossiter has noted, even as the number of women scientists began to increase, "only a few were considered 'professionals'."[7] Although in fact Seely's work relied on a range of mathematical and administrative expertise, her position reinforced pre-existing assumptions about women and menial labor while professional research reputation became its own form of masculinity.

Throughout the 1920s, for example, attending and presenting at AMS meetings remained a central component of developing a professional research reputation. Seely both attended and presented at many of the AMS's regular, annual, and summer meetings. For all meetings, she was a key organizer, and much of her work involved making separate accommodation and scheduling arrangements for men and women. In December 1922, she wrote to Richardson, referencing other AMS leaders, Thomas Fiske and Herbert Slaught:

> *The programme looks all right to me.*
>
> It seems to me the women are well taken care of, and get a great deal of tea. I warn you there is always trouble about how we get seated at general dinners. The ladies don't like to be segregated off in a corner (Fiske made that awful break once in New York), and yet if left to themselves are likely to segregate themselves and then be discontented because they have. Once Slaught had a good solution (wasn't it in Chicago) of announcing that no two ladies were to be allowed to sit together; as there is always a superfluity of men, the women haters can get together in spite of this. I suppose I oughtn't to give away trade secrets like this, but they all come and confide in me if they don't like things.[8]

As Rossiter's work has shown, by the 1920s women scientists had fought successfully to attend scientific conferences that were previously restricted to men. Yet, it was often in the informal spaces at conferences, such as dining rooms, that research partnerships, new ideas, and professional reputations were formed. To separate women from men at mealtimes would have meant separating them from professional research mathematics.

It would not be an exaggeration to say that sustained efforts over the past half-century to support the advancement of women and other underrepresented scholars in science can be tied almost directly to the findings in Rossiter's work. Indeed, few historians have had the level of impact on contemporary perceptions that Rossiter has had on our understanding of women's participation in science. Like others, I hope to continue this work, in part by telling stories such as Seely's.

Ellen Abrams is an Assistant Professor at the University of Toronto Institute for the History and Philosophy of Science and Technology. She is currently writing a book about mathematics and masculinities in the United States.

[2] Dominus, Susan. (2019, October) Women Scientists Were Written Out of History. It's Margaret Rossiter's Lifelong Mission to Fix That. *Smithsonian Magazine*. https://www.smithsonianmag.com/science-nature/unheralded-women-scientists-finally-getting-their-due-180973082/ (accessed 29 October 2025).

[3] Seely, Caroline, to Roland Richardson. (1923, August 15). Rowland George Dwight Richardson Papers, American Mathematical Society Records, Box 21, Folder 121. The John Hay Library, Brown University, Providence, RI. Benjamin Braun, Sloan Despeaux, and I write more about Seely's institution-building efforts in a forthcoming article in the *Bulletin of the American Mathematical Society*.

[4] Green, Judy, and Jeanne LaDuke. (2009) *Pioneering Women in American Mathematics: The Pre-1940 PhD's*. Providence, RI: The American Mathematical Society. For a more recent overview of Seely's career, see Tattersall, James J., and Shawn L. McMurran (2023), Caroline Seely at the AMS (1913–1935): From Executive Assistant to Associate Editor, *Notices of the American Mathematical Society* 70(7), 1121–1129.

[5] Parshall, Karen Hunger. (2022) *The New Era in American Mathematics, 1920–1950.* Princeton: Princeton University Press.

[6] See, for example, Abrams, Ellen (2020) "Indebted to No One": Grounding and Gendering the Self-Made Mathematician. *Historical Studies in the Natural Sciences* 50(3), 217–247.

[7] Rossiter (1984), p. 73.

[8] Seely, Caroline, to Roland Richardson. (1922, December 2) Rowland George Dwight Richardson Papers, American Mathematical Society Records, Box 21, Folder 99. The John Hay Library, Brown University, Providence, RI. I have also written about this letter in Abrams, Ellen (2023), "Caroline Eustis Seely (1887–1961): A Letter to the American Mathematical Society (1922). In *Women in the History of Science: A Sourcebook*, edited by Hannah Wills et al., 371–375. London: UCL Press. https://doi.org/10.2307/j.ctv2w61bc7.64.

As you will see in this year's Council and AGM minutes, the Federation is not holding a full Congress in 2026 while it reevaluates and reinvents the Congress model for 21st-century academic landscapes. Our colleagues in the Canadian Philosophical Association immediately stepped up to make arrangements for an independent meeting and invited several related societies to join them at Dalhousie University in Halifax, Nova Scotia. Participating associations and meeting dates are:

- Canadian Society for History and Philosophy of Mathematics (CSHPM), June 4–6
- Canadian Society for the History and Philosophy of Science (CSHPS), June 4–6
- Canadian Philosophical Association (CPA), June 6–9
- Canadian Society for the Study of Practical Ethics (CSSPE), June 7–9

See CSHPM's call for papers elsewhere in this issue. If you have an idea for a joint session with one of these societies, please reach out to Maria Zack, mzack@pointloma.edu, who is organizing CSHPM's general sessions, and/or to Nic Fillion, nfillion@sfu.ca, who is organizing CPA's sessions. Registration and housing information will be distributed via CPA when it is available.

CALL FOR PAPERS / APPEL À COMMUNICATIONS

Canadian Society for History and Philosophy of Mathematics
Société canadienne d'histoire et de philosophie des mathématiques

Annual Meeting / Colloque annuel
Dalhousie University / Université Dalhousie
4-6 June 2026 / 4-6 juin 2026 / Halifax, Nova Scotia

Special Session / Séance Spéciale
Ancient Mathematics / Mathématiques dans l'Antiquité
Kenneth May Lecturer / Conférencière Kenneth May
Jacqueline Feke, University of Waterloo

The CSHPM will hold its 2026 Annual Meeting in Halifax at Dalhousie University in conjunction with the 2026 Meeting of the Canadian Philosophical Association and the Canadian Society for the History and Philosophy of Science, Thursday - Saturday, June 4-6, 2026.

Special Session - Ancient Mathematics: Papers are welcome on the history and/or philosophy of mathematics in the ancient world, or on any related topic. Talks concerning the mathematics of any pre-modern culture are welcome. Talks may be given in either English or French.

General Session: Papers are welcome on any subject relating to the history of mathematics, its use in the teaching of mathematics, the philosophy of mathematics, or a related topic. Talks may be given in either English or French.

Proposals for special events such as stand-alone paper sessions, panels, or symposia are welcome; please direct your proposal to all three organizers.

Travel stipends of $750 CA are available for up to six papers given by graduate students and early career scholars (post-2023 PhD) at this meeting.

Please send your title and abstract (200 words or less) in Word or in the body of an email by February 1, 2026, to: / Veuillez envoyer le titre de votre communication, ainsi qu'un bref résumé de 200 mots ou moins en format Word ou dans le corps d'un courriel avant le 1 février 2026 à:

GENERAL SESSION / SÉANCE GÉNÉRALE:
Maria Zack, mzack@pointloma.edu

La SCHPM tiendra l'édition 2026 de son colloque annuel à l'Université Dalhousie à Halifax, dans le cadre de l'Association Canadienne de philosophie et de la Société Canadienne d'histoire et de philosophie des sciences, du jeudi 4 juin au samedi 6 juin 2026.

Séance spéciale - Mathématiques dans l'Antiquité : Les articles touchant à l'histoire et/ou à la philosophie des mathématiques dans l'antiquité sont bienvenus. Les présentations portant sur tout sujet lié aux mathématiques prémodernes sont aussi bienvenues. Les présentations peuvent être en français ou en anglais.

Séance générale : Les articles portant sur tout sujet lié à l'histoire des mathématiques, à son utilisation dans l'enseignement des mathématiques, à la philosophie des mathématiques, ou tout autre sujet connexe sont bienvenus. Les présentations peuvent être en anglais ou en français, et peuvent porter sur des travaux en cours.

Les propositions d'événements spéciaux tels que des sessions sur un ouvrage, des séances ou des colloques sont aussi bienvenues ; veuillez adresser votre proposition aux trois organisateurs.

Des bourses de voyage de 750 $ CA sont disponibles pour un maximum de six communications d'étudiants gradués et de chercheurs en début de carrière (doctorat post-2023).

SPECIAL SESSION / SÉANCE SPÉCIALE:
Robert E. Bradley, bradley@adelphi.edu
Duncan Melville, dmelville@stlawu.edu

Ask not what your country can do for you—
ask what *you* can do for your country.
John F. Kennedy, Inaugural Address, 1961

Large language models have changed the way many people write. For mathematicians, this transformation raises an obvious and intriguing question: can a tool that predicts text really support mathematical work, where precision and structure are paramount?

As I experimented with ChatGPT, I discovered that it can— so long as I use it as a collaborator, not as an oracle. In this article, the first of two parts, I illustrate how ChatGPT assists me in drawing diagrams, a crucial task in lattice theory.

Some of the code ChatGPT generates is lengthy; the complete files are available online:

https://www.icloud.com/iclouddrive/0f6TeZT0WjrQvmUKN0X3HAatQ#Data_files

Throughout, I remind myself: ChatGPT is an *assistant*. It performs best when I correct and shape its contributions.

1. DRAWING DIAGRAMS

Lattice theory is visual. Most of my proofs begin with sketches of diagrams, and for decades I drew these by hand. I do not use TikZ to draw diagrams. It is very powerful, but it offers essentially no helpful error messages; it is very easy to make a small mistake and very hard to find it. ChatGPT, by contrast, generates accurate TikZ code even from a short description.

A first example. Consider the lattice N_6, with covering relations

$$\omega < \beta < \tau, \qquad \omega < \gamma < \tau, \qquad \tau < \upsilon,$$

where α is both an atom and a coatom. A brief prompt produces a workable drawing; see Figure 1.

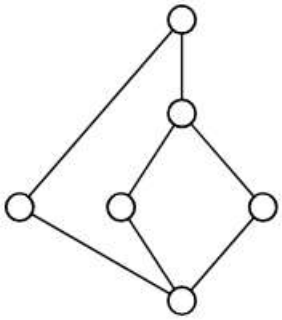

Figure 1. A basic diagram of the lattice N_6.

For publication, I want a more polished version. Instead of editing by hand, I ask ChatGPT for a stylized version. The result is Figure 2.

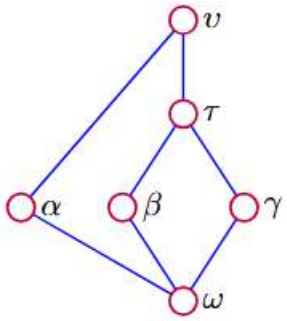

Figure 2. A stylized diagram of N_6.

A larger example: a lattice of sublattices. The lattice of all sublattices of N_6 is large and intricate. Drawing it manually is hardly feasible; drawing it in TikZ is hopeless. ChatGPT, on the other hand, generates a six-page TikZ file that compiles into a clean sideways diagram.

There is also a practical limit: if a diagram has too many edges, it becomes very hard to read. For the lattice of sublattices of N_6 we are close to this limit, but the result is still usable and informative.

This is where ChatGPT's value becomes clearest. It takes only seconds to generate such a complex diagram, so I can experiment freely, try different layouts, or emphasize different structural features—something I never attempted before.

Legend. For reference, here are the 36 sublattices of N_6, indexed by $a, b, c, \ldots, J$:

$$
\begin{array}{lll}
\mathtt{a} = \varnothing & \mathtt{m} = \{\omega, \alpha\} & \mathtt{y} = \{\omega, \gamma, \upsilon\} \\
\mathtt{b} = \{\alpha\} & \mathtt{n} = \{\omega, \beta\} & \mathtt{z} = \{\omega, \tau, \upsilon\} \\
\mathtt{c} = \{\beta\} & \mathtt{o} = \{\omega, \gamma\} & \mathtt{A} = \{\omega, \beta, \alpha, \upsilon\} \\
\mathtt{d} = \{\gamma\} & \mathtt{p} = \{\omega, \tau\} & \mathtt{B} = \{\omega, \beta, \gamma, \tau\} \\
\mathtt{e} = \{\omega\} & \mathtt{q} = \{\omega, \upsilon\} & \mathtt{C} = \{\omega, \beta, \tau, \upsilon\} \\
\mathtt{f} = \{\tau\} & \mathtt{r} = \{\tau, \upsilon\} & \mathtt{D} = \{\omega, \gamma, \alpha, \upsilon\} \\
\mathtt{g} = \{\upsilon\} & \mathtt{s} = \{\beta, \tau, \upsilon\} & \mathtt{E} = \{\omega, \gamma, \tau, \upsilon\} \\
\mathtt{h} = \{\alpha, \upsilon\} & \mathtt{t} = \{\gamma, \tau, \upsilon\} & \mathtt{F} = \{\omega, \tau, \alpha, \upsilon\} \\
\mathtt{i} = \{\beta, \tau\} & \mathtt{u} = \{\omega, \alpha, \upsilon\} & \mathtt{G} = \{\omega, \beta, \gamma, \tau, \upsilon\} \\
\mathtt{j} = \{\beta, \upsilon\} & \mathtt{v} = \{\omega, \beta, \tau\} & \mathtt{H} = \{\omega, \beta, \tau, \alpha, \upsilon\} \\
\mathtt{k} = \{\gamma, \tau\} & \mathtt{w} = \{\omega, \beta, \upsilon\} & \mathtt{I} = \{\omega, \gamma, \tau, \alpha, \upsilon\} \\
\mathtt{l} = \{\gamma, \upsilon\} & \mathtt{x} = \{\omega, \gamma, \tau\} & \mathtt{J} = \{\omega, \beta, \gamma, \tau, \alpha, \upsilon\}
\end{array}
$$

Let me warn you again: **Trust but verify**. You **must** check that the Legend and Figure 3 are correct **by hand**. Tedious but necessary.

What does this mean in practice? ChatGPT can produce a diagram and a legend that look entirely convincing. The circles are neatly spaced, the edges are straight, and every node carries a clean label. It is very tempting to accept such output as authoritative, especially, when the underlying structure—here, the lattice of all sublattices of N_6—is too large to visualize comfortably on one's own. But ChatGPT has **no** built-in understanding of lattices or sublattices; it is arranging points and lines according to patterns it has learned from text. A single misplaced edge or a missing inclusion can turn a correct diagram into a subtly incorrect one.

So before you trust the picture, you have to do the work that only a mathematician can do. Start from the definition of each sublattice in the legend, confirm that it is closed under the lattice operations, and then check that the corresponding point in Figure 3 is placed at the correct level. Verify, for each cover relation in the diagram, that it really represents a cover in the lattice of sublattices, and that no intermediate sublattice has been omitted. Count the elements: there should be exactly 36 sublattices, each appearing once in both the legend and the diagram. If any of these checks fail, the figure must be corrected.

This may feel old-fashioned in a world where the diagram appears with a single prompt, but the responsibility has not changed. ChatGPT accelerates the *production* of diagrams; it does not certify their *correctness*. When it comes to mathematical content, the final authority is still the reader who goes through the definitions, verifications, and cross-checks by hand. Only after this scrutiny has been applied is the diagram ready to be trusted in print.

2. WHAT I LEARNED FROM THESE EXPERIMENTS.

Three observations now guide my use of ChatGPT for diagramming:

(1) **It excels at structural understanding.** Even a brief description produces TikZ code capturing the correct order-theoretic relationships.

(2) **It still needs my judgment.** I adjust spacing, colors, annotations, and I check the result for accuracy. ChatGPT provides the scaffolding; I refine it.

(3) **The productivity gains are substantial.** Tasks that once consumed hours now take minutes. This changes the way I explore examples and encourages experimentation that was previously too time-consuming.

3. CONCLUSION

I have always relied on tools—chalk, pencils, symbolic software, TikZ, and LATEX. ChatGPT now joins this toolkit. It does not replace mathematical thinking; it amplifies it by clearing away routine obstacles. The result is not only efficiency but freedom: I can try more ideas, draw more pictures, and explore more patterns.

In Part II of this article, I turn to another domain where ChatGPT has become indispensable to me: small-case computation and the construction of examples—activities central to mathematical discovery.

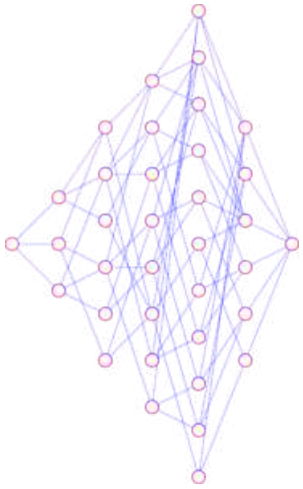

Figure 3. The lattice of all sublattices of N_6, drawn sideways.

Call for Sessions

2026 CMS Summer Meeting | Saint John, NB

The Canadian Mathematical Society (CMS) welcomes and invites scientific session proposals for the 2026 CMS Summer Meeting in Saint John, New Brunswick from June 5-8, 2026.

- The purpose of the scientific sessions is to share cutting edge research on a given mathematical topic, as suggested by the organizers.
- Sessions are scheduled blocks, with each block ranging from 2 to 2.5 hours in length, and take place from June 6-8. Typical scientific sessions have between 10 and 20 talks of 20 minutes each, with 10 minutes between talks, but 50-min talks are possible. Indeed, the organizers are welcome to suggest non-traditional usage of the block times and format.
- In accordance with the CMS mandate to propose conferences which are accessible and welcoming to all groups, diversity amongst organizers and speakers is strongly encouraged. To support organizers in their important work and in their efforts towards inclusivity and diversity, the CMS will host an open call for abstracts for all sessions, and asks organizers to consider all eligible abstract submissions for their session.
- Diversity includes topics of interest, career stages, geographic location, and demographics; designated underrepresented groups include, but are not limited to, women, Indigenous Peoples, persons with disabilities, members of visible minority/racialized groups, and members of LGBTQ2+ communities.
- Note that there will be a separate follow-up call for Education Sessions.
- All proposed sessions should be in line with the CMS Code of Conduct.

Proposals should be submitted online, and will require the following:

1. Names, affiliations, and contact information for two or three organizers: A lead organizer and one or two co-organizer(s).
2. A title and a two to three-sentence summary that will be posted on the website for potential speakers.
3. The number of blocks requested (blocks are 2 or 2.5 hours long).
4. A pdf file including a description of the topic and purpose of the session (1-2 paragraphs), as well as a description of considerations made towards an equitable and inclusive session for a diverse group of participants. This file will not be publicly posted.
5. A spreadsheet including list of possible speakers. Please have columns "Last Name", "First Name", "Affiliation", "Career Stage", and "Webpage", with as much information filled out for potential speakers as possible. This file will not be publicly posted. The template for the list of potential speakers can be found here.

Proposals will be selected by the Scientific Organizing Committee, limited by available classroom space, with priority for sessions that show intention to include a mix of senior and junior researchers, to make parts of their session accessible to graduate students, and to include speakers from designated underrepresented groups.

A note on Organizers

The lead organizer should hold a PhD or equivalent in the area of expertise relevant to the subject of the session. Having a senior researcher (e.g. Professor or tenured Associate Professor) paired with someone earlier in their career (e.g. tenure track Assistant Professor or Postdoctoral Fellow) would be ideal. We ask that each potential organizer only propose a single session.

Submission Forms and Deadlines

Please submit proposals by filling out this form. There will be two rounds of submissions. Proposals submitted by January 16, 2026, will be considered in the first round, with responses ongoing. The deadline for the second round will be March 30, 2026

Réunion d'été 2026 de la SMC | Saint John, NB

Appel à *Sessions*

La Société mathématique du Canada (SMC) sollicite les propositions de sessions scientifiques pour la Réunion d'été 2026 de la SMC qui se tiendra à Saint John, au Nouveau-Brunswick, du 5 au 8 juin 2026.

- L'objectif des sessions scientifiques est de partager les recherches de pointe sur un sujet mathématique donné, tel que suggéré par les organisateur(trice)s.
- Les sessions sont des blocs programmés, chacun d'une durée de 2 à 2,5 heures, et se déroulent du 6 au 8 juin. Les sessions scientifiques typiques comprennent entre 10 et 20 présentations de 20 minutes chacune, avec 10 minutes entre chaque présentation, mais des présentations de 50 minutes sont possibles. En effet, les organisateur(trice)s sont invité(e)s à suggérer une utilisation et un format non traditionnels des blocs de temps.
- Conformément à la mission de la SMC qui consiste à proposer des conférences accessibles et accueillantes pour tous les groupes, la diversité parmi les organisateur(trice)s et les orateurs(trices) est fortement encouragée. Afin de soutenir les organisateur(trice)s dans leur travail important et dans leurs efforts en faveur de l'inclusion et de la diversité, la SMC lancera un appel à résumés ouvert pour toutes les sessions et demandera aux organisateur(trice)s d'examiner toutes les soumissions de résumés éligibles pour leur session.
- La diversité comprend les sujets d'intérêt, les étapes de carrière, la situation géographique et les données démographiques ; les groupes sous-représentés désignés comprennent, sans s'y limiter, les femmes, les peuples autochtones, les personnes handicapées, les membres de minorités visibles/groupes racialisés et les membres des communautés LGBTQ2+.
- Veuillez noter qu'il y aura un appel séparé pour les sessions d'éducation.
- Toutes les sessions proposées doivent être conformes au code de conduite de la SMC.

Les propositions doivent être soumises en ligne et doivent comprendre les éléments suivants :

1. Noms, affiliations et coordonnées de deux ou trois organisateur(trice)s : un(e) organisateur(trice) principal(e) et un(e) ou deux coorganisateur(trice)s.
2. Un titre et un résumé de deux à trois phrases qui seront publiés sur le site Web à l'intention des orateur(trice)s potentiel(le)s.
3. Le nombre de blocs demandés (les blocs durent 2 ou 2,5 heures).
4. Un fichier pdf comprenant une description du thème et de l'objectif de la session (1 à 2 paragraphes), ainsi qu'une description des considérations prises en compte pour garantir une session équitable et inclusive pour un groupe diversifié de participant(e)s. Ce fichier ne sera pas publié.
5. Un fichier Excel comprenant la liste des orateur(trice)s potentiel(le)s. Veuillez inclure les colonnes « Nom », « Prénom », « Affiliation », « Étape de carrière » et « Page Web », en fournissant autant d'informations que possible sur les orateur(trice)s potentiel(le)s. Ce fichier ne sera pas publié. Le modèle pour la liste des orateur(trice)s potentiel(le)s est disponible ici.

Les propositions seront sélectionnées par le comité scientifique organisateur, en fonction de l'espace disponible dans les salles de classe, la priorité étant donnée aux sessions qui montrent l'intention d'inclure un mélange de chercheur(euse)s expérimenté(e)s et débutant(e)s, de rendre certaines parties de leur session accessibles aux étudiant(e)s diplômé(e)s et d'inclure des orateur(trice)s issu(e)s de groupes sous-représentés désignés.

À propos des organisteur(trice)s

L'organisateur(trice) principal(e) doit être titulaire d'un doctorat ou d'un diplôme équivalent dans le domaine d'expertise correspondant au thème de la session. L'idéal serait de jumeler un(e) chercheur(euse) chevronné(e) (par exemple, un.e professeur.e ou un.e professeur.e agrégé.e titulaire) avec une personne en début de carrière (par exemple, un.e professeur.e adjoint.e en voie de titularisation ou un.e postdoctorant.e). Nous demandons à chaque organisateur(trice) potentiel(le) de ne proposer qu'une seule session.

Formulaire de soumission et dates limites

Veuillez soumettre vos propositions en remplissant ce formulaire. Il y aura deux cycles de soumission. Les propositions soumises avant le 16 janvier 2026 seront examinées lors du premier cycle, et les réponses seront envoyées au fur et à mesure. La date limite pour le deuxième cycle est fixée au 30 mars 2026.

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The Canadian Mathematical Society (CMS) is currently accepting nominations for the **2026 CMS Blair Spearman Doctoral Prize**.

Deadline: January 31, 2026. No nominations will be accepted beyond this deadline. The prize is awarded to one recipient of a Ph.D. from a Canadian university whose overall performance in graduate school is judged to be the most outstanding. Although the dissertation will be the most important criterion (the impact of the results, the creativity of the work, the quality of exposition, etc.) it will not be the only one. Other publications, activities in support of students and other accomplishments will also be considered.

Visit our website for more information:https://cms.math.ca/awards/doctoral-prize/nomination-information/

Canadian Mathematical Society — 616 Cooper St., Ottawa, ON K1R 5J2, Canada