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NOTES

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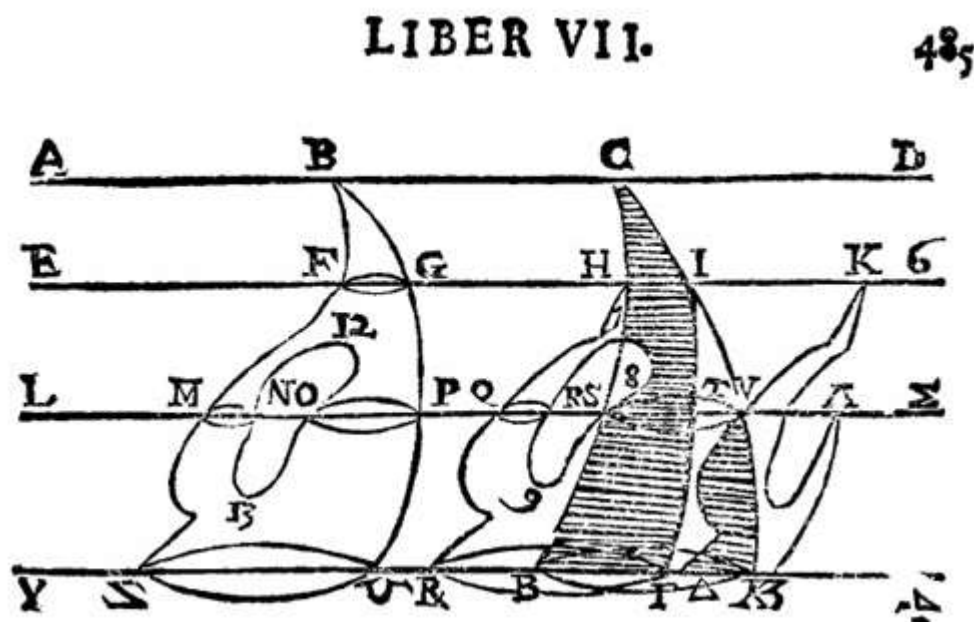
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Amy Ackerberg-Hastings (Co-editor, CSHPM Notes)



Since 2014, the Canadian Society for History and Philosophy of Mathematics (CSHPM) has provided a column called [CSHPM Notes](#) to *Notes of the Canadian Mathematical Society* (a list through December 2024 appears below; don't miss the latest installment by Tom Drucker in this issue). These short essays have shared glimpses into the practices of historians and philosophers with Canada's mathematicians; they have also revealed the astounding variety of CSHPM members' research interests and professional activities.

However, the 2013 invitation from then-CMS Executive Director Johan Rudnick that led to the creation of CSHPM Notes did not materialize from the ether. Rather, the societies have been intertwined since before CSHPM existed. Kenneth O. May of the University of Toronto (UT) and other historians of mathematics were organizing sessions at Canadian Mathematical Congress conferences by the early 1970s, and they contemplated holding CSHPM's founding meeting at the 1974 Summer Meeting at Université Laval before conducting it a few days earlier at the Learned Societies Conference at UT. Special sessions on the history of mathematics continued at CMS meetings, and CMS and CSHPM held a joint conference at McMaster University in 1977.

Long-time members Tom Archibald and Louis Charbonneau wrote "Mathematics in Canada before 1945: A Preliminary Survey" for CMS's semicentennial in 1995 [1]; joint meetings resumed in 2000 at McMaster University and in 2005 at the University of Waterloo; and CSHPM organized a long-running special session on history and philosophy at Winter Meetings in the 21st century. CSHPM's 2005 collection of many of its keynote lectures (named for May) appeared under the *CMS Books in Mathematics* imprint [2].

In addition to these decades of shared efforts to further the history and philosophy of mathematics in Canada, CSHPM welcomes CMS members to join in any of its multiple endeavors that are occurring right now. We will be meeting at George Brown College in Toronto May 31–June 2 with the Canadian Federation for the Humanities and Social Sciences Congress. The program features a general session for any topic related to the history or philosophy of mathematics and a special session on "conceptual change in mathematics." Abstracts were due February 1, but we may be able to accommodate late arrivals; write to [Rob Bradley](#) and [Amy Ackerberg-Hastings](#) for the general session and [Nic Fillion](#) for the special session. Register to attend [here](#).

CSHPM also invites article submissions for its series of collected volumes with Birkhäuser/Springer, *Annals of the Canadian Society for History and Philosophy of Mathematics*. Editors [Maria Zack](#) and [David Waszek](#) consider research in the areas of history and philosophy of mathematics as well as pedagogy for teaching the history and philosophy of mathematics. Typical papers are 5000–7000 words, but length can be flexible. If your institutional library has a Springer ebook subscription, you may be able to read the previous volumes for free.

A [newsletter](#) comes out twice a year with information and column-style articles of interest to historians and philosophers of mathematics; please send materials to [Amy Ackerberg-Hastings](#). An [online colloquium](#) open to all is convened occasionally. Planning or participating in an event in the history or philosophy of mathematics? Let me know and I will share it with our email list (ca 150 members) and [Facebook page](#) (ca 1600 followers). Finally, while we welcome members any time, [now is the perfect opportunity to sign up](#) and learn more. Dues are as low as \$10 for student, retired, unwaged, and developing nations members and \$30 for regular members. Add-ons are available until March 1 and include reduced subscrip-

tions to *Historia Mathematica*, *Philosophia Mathematica*, and *SCIAMVS* (devoted to studies of the sources of pre-modern exact sciences) as well as reciprocal memberships with the Canadian Society for the History and Philosophy of Science and the British Society for the History of Mathematics.

In sum (pun intended), adding together CMS and CSHPM has resulted in rich scholarship and academic collegiality. We look forward to continuing this wonderful partnership for many years to come.

References

[1] Archibald, Thomas, and Louis Charboneau. (1995) Mathematics in Canada before 1945: A Preliminary Survey. In *Mathematics in Canada/Les mathématiques au Canada*, edited by Peter Fillmore, 1–43. *Canadian Mathematical Society/Société mathématique du Canada 1945–1995*, vol. 1. Ottawa: CMS and University of Toronto Press. A version in French followed on pages 45–90.

[2] Van Brummelen, Glen, and Michael Kinyon, eds. (2005) *Mathematics and the Historian's Craft: The Kenneth O. May Lectures*. *CMS Books in Mathematics*, vol. 21. New York: Canadian Mathematical Society and Springer.

Chronological List of CSHPM Notes, 2014–2024

1. Tom Archibald, "Mediaeval and Renaissance algebra," March/April 2014, pp. 6–7, <https://notes.math.ca/archives/Notesv46n2.pdf>.
2. Craig Fraser, the 2013 Kenneth O. May Prizes, September 2014, pp. 16–17, <https://notes.math.ca/archives/Notesv46n4.pdf>.
3. David Orenstein, "Archives for History of Mathematics," October/November 2014, pp. 18–19, <https://notes.math.ca/archives/Notesv46n5.pdf>.
4. Tom Drucker, "Who Hijacked the Philosophy of Mathematics?" December 2014, pp. 16–17, <https://notes.math.ca/archives/Notesv46n6.pdf>.
5. Glen Van Brummelen, "Why Use History in a Mathematics Classroom?" February 2015, pp. 16–17, <https://notes.math.ca/archives/Notesv47n1.pdf>.
6. Amy Ackerberg-Hastings, "Online Collections of Mathematical Objects," March/April 2015, pp. 18–19, <https://notes.math.ca/archives/Notesv47n2.pdf>.
7. Len Berggren, "The New History of Ancient Mathematics," June 2015, pp. 18–19, <https://notes.math.ca/archives/Notesv47n3.pdf>.
8. Robert Thomas, "Remarks on the History of CSHPM, History of Mathematics (HOM), and Philosophy of Mathematics (POM)," September 2015, pp. 15–16, <https://notes.math.ca/archives/Notesv47n4.pdf>.
9. Glen Van Brummelen, "History of Mathematics and the Forgotten Century," December 2015, pp. 14–15, <https://notes.math.ca/archives/Notesv47n6.pdf>.
10. Amy Shell-Gellasch and John Thoo, "A New Look at General-Education Mathematics Courses," February 2016, pp. 14–15, <https://notes.math.ca/archives/Notesv48n1.pdf>.
11. Amy Ackerberg-Hastings, "The Value of 'Dated' Histories of Mathematics," March/April 2016, pp. 18–19, <https://notesmath.ca/archives/Notesv48n2.pdf>.
12. David Orenstein, "Mathematics in 'Jazz Age' Toronto," June 2016, pp. 18–19, <https://notes.math.ca/archives/Notesv48n3.pdf>.
13. Sylvia Nickerson, "How Objects Reveal Mathematical Culture," September 2016, pp. 18–19, <https://notes.math.ca/archives/Notesv48n4.pdf>.
14. Gregg De Young, "Lessons from Old Textbooks: Introducing Modern Geometry to the Middle East," October/November 2016, pp. 16–17, <https://notes.math.ca/archives/Notesv48n5.pdf>.
15. Robert H. C. Moir, "Exploring Epistemology of Applied Math: Where Mathematicians and Philosophers Meet," December 2016, pp. 18–20, <https://notes.math.ca/archives/Notesv48n6.pdf>.
16. Michael Molinsky, "Bonaventura Cavalieri and the CSHPM Logo," February 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n1.pdf>.
17. Tom Drucker, "The Unreasonable Effectiveness of Logic," March/April 2017, pp. 14–15, <https://notes.math.ca/archives/Notesv49n2.pdf>.
18. David Orenstein, "Bertrand Russell Archives at McMaster University," June 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n3.pdf>.
19. Robert Thomas, "Constructions on a Spherical Blackboard," September 2017, pp. 16–17, <https://notes.math.ca/archives/Notesv49n4.pdf>.
20. Duncan J. Melville, "Learning Mesopotamian Mathematics," October/November 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n5.pdf>.
21. Dan Curtin and Danny Otero, "ORESME turns 20: how a reading group in the history of mathematics thrives," December 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n6.pdf>.
22. Craig Fraser, "Library Classification in Mathematics," February 2018, pp. 18–19, <https://notes.math.ca/archives/Notesv50n1.pdf>.
23. Jean-Pierre Marquis, "Mathematical Structures: Behind and Beyond," March/April 2018, pp. 16–17, <https://notesmath.ca/archives/Notesv50n2.pdf>.
24. Roger Godard, "Joseph Fourier on Convolution and the Memory Problem," June 2018, pp. 18–19, <https://notes.math.ca/archives/Notesv50n3.pdf>.
25. Mariya Boyko, "Theory Over Practice in Soviet Mathematics Textbooks of the 1950s," September 2018, pp. 20–21, <https://notes.math.ca/archives/Notesv50n4.pdf>.
26. Amy Ackerberg-Hastings, "Trivium, Tradition, Truth: Playfair's Axiom," October/November 2018, pp. 16–17, <https://notes.math.ca/archives/Notesv50n5.pdf>.
27. Janet Heine Barnett, "Why Use Primary Sources in a Mathematics Classroom?" December 2018, pp. 16–17, <https://notes.math.ca/archives/Notesv50n6.pdf>.
28. Ubiratan D'Ambrosio, "The Program Ethnomathematics: Basic Ideas," February 2019, pp. 10–11, <https://notes.math.ca/archives/Notesv51n1.pdf>.
29. Eamon Darnell and Aaron Thomas-Bolduc, "(Writing About) Takeuti's Well-ordering Proof: A Collaboration Story," March/April 2019, pp. 12–13, <https://notes.math.ca/archives/Notesv51n2.pdf>.
30. Craig Fraser and Andrew Schroter, "Past, Present, and Anachronism in the History of Mathematics," June 2019, pp. 16–17, <https://notes.math.ca/archives/Notesv51n3.pdf>.
31. Judy Green and Jeanne LaDuke, "Canadian Women Who Earned PhDs in Mathematics before 1940," September 2019, pp. 14–15, <https://notes.math.ca/archives/Notesv51n4.pdf>.
32. Robert H. C. Moir, "Investigating the Structure of Inference in Scientific Practice with 'Effective Logic,'" October/November 2019, pp. 16–18, <https://notesmath.ca/archives/Notesv51n5.pdf>.
33. Glen Van Brummelen, "On the Path to Community: Experiencing a Summer Math Camp," December 2019, pp. 12–13, <https://notes.math.ca/archives/Notesv51n6.pdf>.
34. Mariya Boyko, "Soviet Mathematics Education in the Late 1970s—New Concerns," February 2020, pp. 12–13, <https://notes.math.ca/en/article/cshpm-notes/>.
35. Bill Hackborn, "The Two Cultures of Mathematics," March/April 2020, pp. 15–16, <https://notes.math.ca/en/article/the-two-cultures-of-mathematics/>.
36. Roger Godard and John de Boer, "An Homage to Gauss and His Model of the Earth's Magnetic Field," June 2020, pp. 16–19, <https://notes.math.ca/en/article/an-homage-to-gauss-and-his-model-of-the-earths-magnetic-field/>.
37. Adrian Rice, "Ada Lovelace: New Light on Her Mathematics," September 2020, pp. 11–13, <https://notes.math.ca/en/article/ada-lovelace-new-light-on-her-mathematics/>.
38. Maritza Branker, "Taking a Cue from Cauchy," October/November 2020, pp. 8–9, <https://notes.math.ca/en/article/taking-a-cue-from-cauchy/>.
39. Amy Ackerberg-Hastings, "Ephemeral Mathematics," December 2020, pp. 15–18, <https://notes.math.ca/en/article/ephemeral-mathematics/>.
40. Brittany Carlson, "Mary Boole's Anti-Math-Anxiety Pedagogy and the Use of Narrative, Ephemera, and Mathematical Discovery," February 2021, <https://notes.math.ca/en/article/> 2

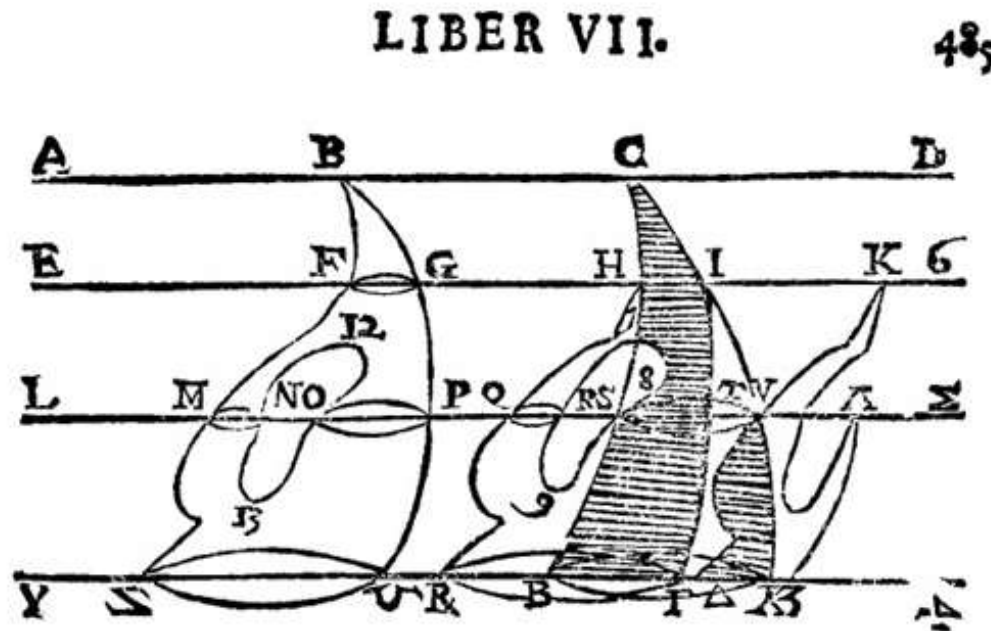
- mary-booles-anti-math-anxiety-pedagogy-and-the-use-of-narrative-ephemera-and-mathematical-discovery/ .
41. Craig Fraser and Michio Nakane, "A Collaborative Research Project in the History of Mathematics: The History of Canonical Transformations in Hamilton-Jacobi Theory," March/April 2021, <https://notes.math.ca/en/article/a-collaborative-research-project-in-the-history-of-mathematics-the-history-of-canonical-transformations-in-hamilton-jacobi-theory/> .
 42. Jacqueline Feke, "The Ethics of Ancient Mathematics: The Case of Claudius Ptolemy," June 2021, <https://notes.math.ca/en/article/the-ethics-of-ancient-mathematics-the-case-of-claudius-ptolemy/> .
 43. Jean-Pierre Marquis, "Bourbaki, Structuralism, and Categories," September 2021, <https://notes.math.ca/en/article/bourbaki-structuralism-and-categories/> .
 44. Duncan Melville, "Hidden Mathematics," October/November 2021, <https://notes.math.ca/en/article/hidden-mathematics/> .
 45. David Orenstein, "A Mathematical Centennial: The December 1921 Toronto Meeting of the AAAS," December 2021, <https://notes.math.ca/en/article/a-mathematical-centennial-the-december-1921-toronto-meeting-of-the-aaas/> .
 46. David Bellhouse, "William Playfair's Statistical Graphs," February 2022, <https://notes.math.ca/en/article/william-playfairs-statistical-graphs/> .
 47. David Zitarelli, "Profiles of Early Canadian Mathematicians," March/April 2022, <https://notes.math.ca/en/article/profiles-of-early-canadian-mathematicians/> .
 48. Jeffrey Oaks, "Arabic Arithmetic in Context: al-Hawārī's *Essential Commentary*," June 2022, <https://notes.math.ca/en/article/arabic-arithmetic-in-context-al-hawaris-essential-commentary/> .
 49. Michael Molinsky, "Original Sources of Some Common Quotations," September 2022, <https://notes.math.ca/en/article/the-original-sources-of-some-common-quotations/> .
 50. Thomas Drucker, "Why Everyone Loves History of Mathematics . . . But Philosophy of Mathematics is an Acquired Taste," November 2022, <https://notes.math.ca/en/article/why-everyone-loves-history-of-mathematics-but-philosophy-of-mathematics-is-an-acquired-taste/> .
 51. Brigitte Stenhouse, "Quaternions at Twilight: Remembering Mary Somerville 150 Years After Her Death," December 2022, <https://notes.math.ca/en/article/quaternions-at-twilight-remembering-mary-somerville-150-years-after-her-death/> .
 52. Amy Shell-Gellasch, "Catching the Eye: Using Images to Bring History to Life in the Classroom," February 2023, <https://notes.math.ca/en/article/catching-the-eye-using-images-to-bring-history-to-life-in-the-classroom/> .
 53. Craig Fraser, "The Birth of Modern Cosmology," March 2023, <https://notes.math.ca/en/article/the-birth-of-modern-cosmology/> .
 54. Amy Ackerberg-Hastings, "When Organizational Histories, Anniversaries, and Women in STEM Intersect," June 2023, <https://notes.math.ca/en/article/when-organizational-histories-anniversaries-and-women-in-stem-intersect-1/> .
 55. Jessie Hall, "Computing Machines and the Philosophy of Mind," September 2023, <https://notes.math.ca/en/article/column-55-on-computing-machines-and-philosophy-of-mind/> .
 56. Eugene Boman and Robert Rogers, "Teaching Calculus Through History's Lens," October 2023, <https://notes.math.ca/en/article/teaching-calculus-through-historys-lens/> .
 57. Christopher Baltus, "Geometric Transformations, 1800–1855," December 2023, <https://notes.math.ca/en/article/geometric-transformations-1800-1855/> .
 58. Hardy Grant (posthumous), "How I Learned to Love the History of Mathematics," February 2024, <https://notes.math.ca/en/article/how-i-learned-to-love-the-history-of-mathematics/> .
 59. Roger Godard, "The Histories of Mathematics," March/April 2024, <https://notes.math.ca/en/article/the-histories-of-mathematics/> .
 60. Michael Molinsky, "50 Years of CSHPM," June 2024, <https://notes.math.ca/en/article/50-years-of-cshpm/> .
 61. Tessa Ng, "Mathematical Constitution and Theory Uniqueness in Physics," September 2024, <https://notes.math.ca/en/article/mathematical-constitution-and-theory-uniqueness-in-physics/> .
 62. Zoe Ashton, "Rigor in Context," October/November 2024, <https://notes.math.ca/en/article/rigor-in-context/> .
 63. Brenda Davison, "The Surprising Role of the Pendulum in Stokes's Discovery of New Physical Theory and Use of Divergent Series," December 2024, <https://notes.math.ca/en/article/the-surprising-role-of-the-pendulum-in-stokess-discovery-of-new-physical-theory-and-use-of-divergent-series/> .

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Depuis 2014, la Société canadienne d'histoire et de philosophie des mathématiques (SCHPM) publie une chronique intitulée Notes de la SCHPM dans les Notes de la Société mathématique du Canada (la liste jusqu'en décembre 2024 figure ci-dessous ; ne manquez pas le dernier article de Tom Drucker dans le présent numéro). Ces courts essais ont permis de jeter un coup d'œil sur les pratiques des historiens et des philosophes avec les mathématiciens canadiens ; ils ont également révélé l'étonnante variété des intérêts de recherche et des activités professionnelles des membres de la SCHPM.

Cependant, l'invitation lancée en 2013 par Johan Rudnick, alors directeur exécutif de la SMC, qui a conduit à la création des Notes de la SCHPM, ne s'est pas matérialisée à partir de l'éther. Au contraire, les deux sociétés sont liées depuis bien avant l'existence de la SCHPM. Kenneth O. May de l'Université de Toronto (UT) et d'autres historiens des mathématiques organisaient des séances lors des conférences du Congrès mathématique du Canada au début des années 1970, et ils ont envisagé de tenir la réunion de fondation de la SCHPM lors de la réunion d'été de 1974 à l'Université Laval avant de la tenir quelques jours plus tôt lors de la conférence des sociétés savantes à l'UT. Des séances spéciales sur l'histoire des mathématiques ont continué d'être organisées lors des réunions de la SMC, et la SMC et la SCHPM ont tenu une conférence conjointe à l'Université McMaster en 1977.

Tom Archibald et Louis Charbonneau, membres de longue date, ont écrit « Mathematics in Canada before 1945 : A Preliminary Survey » pour le demi-centenaire de la SMC en 1995 [1] ; les réunions conjointes ont repris en 2000 à l'Université McMaster et en 2005 à l'Université de Waterloo ; et la SCHPM a organisé une session spéciale de longue durée sur l'histoire et la philosophie lors des réunions d'hiver au 21^e siècle. En 2005, la collection de conférences de la SCHPM (nommée en l'honneur de May) a été publiée sous la marque SMC *Livres en mathématiques* [2].

En plus de ces décennies d'efforts communs pour faire avancer l'histoire et la philosophie des mathématiques au Canada, la SCHPM invite les membres de la SMC à se joindre à l'une ou l'autre de ses multiples activités qui se déroulent en ce moment même. Nous nous réunirons au George Brown College à Toronto du 31 mai au 2 juin dans le cadre du Congrès de la Fédération canadienne des sciences humaines. Le programme prévoit une session générale pour tout sujet lié à l'histoire ou à la philosophie des mathématiques et une session spéciale sur le « changement conceptuel en mathématiques ». Les résumés devaient être envoyés au plus tard le 1^{er} février, mais nous pourrions peut-être accueillir des retardataires ; écrivez à [Rob Bradley](#) et [Amy Ackerberg-Hastings](#) pour la session générale et à [Nic Fillion](#) pour la session spéciale. Inscrivez-vous [ici](#).

La SCHPM invite également à soumettre des articles pour sa série de volumes rassemblés avec Birkhäuser/Springer, [Annales de la Société canadienne d'histoire et de philosophie des mathématiques](#). Les rédacteurs [Maria Zack](#) et [David Waszek](#) prennent en considération les recherches dans les domaines de l'histoire et de la philosophie des mathématiques ainsi que la pédagogie pour l'enseignement de l'histoire et de la philosophie des mathématiques. Les articles comptent généralement entre 5 000 et 7 000 mots, mais leur longueur peut être flexible. Si votre bibliothèque institutionnelle est abonnée à Springer ebook, vous pourrez peut-être lire gratuitement les volumes précédents.

Un [bulletin d'information](#) est publié deux fois par an et contient des informations et des articles de style chronique intéressant les historiens et les philosophes des mathématiques ; veuillez envoyer vos articles à [Amy Ackerberg-Hastings](#). Un colloque en ligne ouvert à tous est organisé occasionnellement. Vous planifiez ou participez à un événement dans le domaine de l'histoire ou de la philosophie des mathématiques ? Faites-le moi savoir et je le communiquerai à notre liste de courriel (environ 150 membres) et à notre [page Facebook](#) (environ 1600 abonnés). Enfin, même si nous accueillons les membres à tout moment, [c'est l'occasion idéale de s'inscrire et d'en savoir plus](#). Les cotisations ne sont que de 10 \$ pour les élèves, les retraités, les personnes sans emploi et les membres des pays en développement, et de 30 \$ pour les membres réguliers. Les abonnements supplémentaires sont disponibles jusqu'au 1er mars et comprennent des abonnements réduits à *Historia Mathematica*, *Philosophia Mathematica* et *SIAMVS* (consacré à l'étude des sources des sciences exactes prémodernes) ainsi que des adhésions réciproques à la Société canadienne d'histoire et de philosophie des sciences et à la British Society for the History of Mathematics.

En somme (jeu de mots voulu), additionner la SMC et la SCHPM a donné lieu à une riche érudition et à une collégialité académique. Nous nous réjouissons de poursuivre ce merveilleux partenariat pendant de nombreuses années.

Références

[1] Archibald, Thomas, and Louis Charboneau. (1995) Mathematics in Canada before 1945: A Preliminary Survey. In *Mathematics in Canada/Les mathématiques au Canada*, edited by Peter Fillmore, 1–43. *Canadian Mathematical Society/Société mathématique du Canada 1945–1995*, vol. 1. Ottawa: CMS and University of Toronto Press. A version in French followed on pages 45–90.

[2] Van Brummelen, Glen, and Michael Kinyon, eds. (2005) *Mathematics and the Historian's Craft: The Kenneth O. May Lectures*. *CMS Books in Mathematics*, vol. 21. New York: Canadian Mathematical Society and Springer.

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3. David Orenstein, "Archives for History of Mathematics," October/November 2014, pp. 18–19, <https://notes.math.ca/archives/Notesv46n5.pdf>.
4. Tom Drucker, "Who Hijacked the Philosophy of Mathematics?" December 2014, pp. 16–17, <https://notes.math.ca/archives/Notesv46n6.pdf>.
5. Glen Van Brummelen, "Why Use History in a Mathematics Classroom?" February 2015, pp. 16–17, <https://notes.math.ca/archives/Notesv47n1.pdf>.
6. Amy Ackerberg-Hastings, "Online Collections of Mathematical Objects," March/April 2015, pp. 18–19, <https://notes.math.ca/archives/Notesv47n2.pdf>.
7. Len Berggren, "The New History of Ancient Mathematics," June 2015, pp. 18–19, <https://notes.math.ca/archives/Notesv47n3.pdf>.
8. Robert Thomas, "Remarks on the History of CSHPM, History of Mathematics (HOM), and Philosophy of Mathematics (POM)," September 2015, pp. 15–16, <https://notes.math.ca/archives/Notesv47n4.pdf>.
9. Glen Van Brummelen, "History of Mathematics and the Forgotten Century," December 2015, pp. 14–15, <https://notes.math.ca/archives/Notesv47n6.pdf>.
10. Amy Shell-Gellasch and John Thoo, "A New Look at General-Education Mathematics Courses," February 2016, pp. 14–15, <https://notes.math.ca/archives/Notesv48n1.pdf>.
11. Amy Ackerberg-Hastings, "The Value of 'Dated' Histories of Mathematics," March/April 2016, pp. 18–19, <https://notesmath.ca/archives/Notesv48n2.pdf>.
12. David Orenstein, "Mathematics in 'Jazz Age' Toronto," June 2016, pp. 18–19, <https://notes.math.ca/archives/Notesv48n3.pdf>.
13. Sylvia Nickerson, "How Objects Reveal Mathematical Culture," September 2016, pp. 18–19, <https://notes.math.ca/archives/Notesv48n4.pdf>.
14. Gregg De Young, "Lessons from Old Textbooks: Introducing Modern Geometry to the Middle East," October/November 2016, pp. 16–17, <https://notes.math.ca/archives/Notesv48n5.pdf>.
15. Robert H. C. Moir, "Exploring Epistemology of Applied Math: Where Mathematicians and Philosophers Meet," December 2016, pp. 18–20, <https://notes.math.ca/archives/Notesv48n6.pdf>.
16. Michael Molinsky, "Bonaventura Cavalieri and the CSHPM Logo," February 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n1.pdf>.
17. Tom Drucker, "The Unreasonable Effectiveness of Logic," March/April 2017, pp. 14–15, <https://notes.math.ca/archives/Notesv49n2.pdf>.
18. David Orenstein, "Bertrand Russell Archives at McMaster University," June 2017, pp. 18–19, <https://notes.mathca/archives/Notesv49n3.pdf>.
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20. Duncan J. Melville, "Learning Mesopotamian Mathematics," October/November 2017, pp. 18–19, <https://notes.math.ca/archives/Notesv49n5.pdf>.
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22. Craig Fraser, "Library Classification in Mathematics," February 2018, pp. 18–19, <https://notes.math.ca/archives/Notesv50n1.pdf>.
23. Jean-Pierre Marquis, "Mathematical Structures: Behind and Beyond," March/April 2018, pp. 16–17, <https://notesmath.ca/archives/Notesv50n2.pdf>.
24. Roger Godard, "Joseph Fourier on Convolution and the Memory Problem," June 2018, pp. 18–19, <https://notes.math.ca/archives/Notesv50n3.pdf>.
25. Mariya Boyko, "Theory Over Practice in Soviet Mathematics Textbooks of the 1950s," September 2018, pp. 20–21, <https://notes.math.ca/archives/Notesv50n4.pdf>.
26. Amy Ackerberg-Hastings, "Trivia, Tradition, Truth: Playfair's Axiom," October/November 2018, pp. 16–17, <https://notes.math.ca/archives/Notesv50n5.pdf>.
27. Janet Heine Barnett, "Why Use Primary Sources in a Mathematics Classroom?" December 2018, pp. 16–17, <https://notes.math.ca/archives/Notesv50n6.pdf>.
28. Ubiratan D'Ambrosio, "The Program Ethnomathematics: Basic Ideas," February 2019, pp. 10–11, <https://notes.math.ca/archives/Notesv51n1.pdf>.

29. Eamon Darnell and Aaron Thomas-Bolduc, "(Writing About) Takeuti's Well-ordering Proof: A Collaboration Story," March/April 2019, pp. 12–13, <https://notes.math.ca/archives/Notesv51n2.pdf>.
30. Craig Fraser and Andrew Schroter, "Past, Present, and Anachronism in the History of Mathematics," June 2019, pp. 16–17, <https://notes.math.ca/archives/Notesv51n3.pdf>.
31. Judy Green and Jeanne LaDuke, "Canadian Women Who Earned PhDs in Mathematics before 1940," September 2019, pp. 14–15, <https://notes.math.ca/archives/Notesv51n4.pdf>.
32. Robert H. C. Moir, "Investigating the Structure of Inference in Scientific Practice with 'Effective Logic,'" October/November 2019, pp.16–18, <https://notesmath.ca/archives/Notesv51n5.pdf>.
33. Glen Van Brummelen, "On the Path to Community: Experiencing a Summer Math Camp," December 2019, pp. 12–13, <https://notes.math.ca/archives/Notesv51n6.pdf>.
34. Mariya Boyko, "Soviet Mathematics Education in the Late 1970s—New Concerns," February 2020, pp. 12–13, <https://notes.math.ca/en/article/cshpm-notes/>.
35. Bill Hackborn, "The Two Cultures of Mathematics," March/April 2020, pp. 15–16, <https://notes.math.ca/en/article/the-two-cultures-of-mathematics/>.
36. Roger Godard and John de Boer, "An Homage to Gauss and His Model of the Earth's Magnetic Field," June 2020, pp. 16–19, <https://notes.math.ca/en/article/an-homage-to-gauss-and-his-model-of-the-earths-magnetic-field/>.
37. Adrian Rice, "Ada Lovelace: New Light on Her Mathematics," September 2020, pp. 11–13, <https://notes.math.ca/en/article/ada-lovelace-new-light-on-her-mathematics/>.
38. Maritza Branker, « Taking a Cue from Cauchy," October/November 2020, pp. 8–9, <https://notes.math.ca/en/article/taking-a-cue-from-cauchy/>.
39. Amy Ackerberg-Hastings, "Ephemeral Mathematics," December 2020, pp. 15–18, <https://notes.math.ca/en/article/ephemeral-mathematics/>.
40. Brittany Carlson, "Mary Boole's Anti-Math-Anxiety Pedagogy and the Use of Narrative, Ephemera, and Mathematical Discovery," February 2021, <https://notes.math.ca/en/article/mary-booles-anti-math-anxiety-pedagogy-and-the-use-of-narrative-ephemera-and-mathematical-discovery/>.
41. Craig Fraser and Michiyo Nakane, "A Collaborative Research Project in the History of Mathematics: The History of Canonical Transformations in Hamilton-Jacobi Theory," March/April 2021, <https://notes.math.ca/en/article/a-collaborative-research-project-in-the-history-of-mathematics-the-history-of-canonical-transformations-in-hamilton-jacobi-theory/>.
42. Jacqueline Feke, "The Ethics of Ancient Mathematics: The Case of Claudius Ptolemy," June 2021, <https://notes.math.ca/en/article/the-ethics-of-ancient-mathematics-the-case-of-claudius-ptolemy/>.
43. Jean-Pierre Marquis, "Bourbaki, Structuralism, and Categories," September 2021, <https://notes.math.ca/en/article/bourbaki-structuralism-and-categories/>.
44. Duncan Melville, "Hidden Mathematics," October/November 2021, <https://notes.math.ca/en/article/hidden-mathematics/>.
45. David Orenstein, "A Mathematical Centennial: The December 1921 Toronto Meeting of the AAAS," December 2021, <https://notes.math.ca/en/article/a-mathematical-centennial-the-december-1921-toronto-meeting-of-the-aaas/>.
46. David Bellhouse, "William Playfair's Statistical Graphs," February 2022, <https://notes.math.ca/en/article/william-playfairs-statistical-graphs/>.
47. David Zitarelli, "Profiles of Early Canadian Mathematicians," March/April 2022, <https://notes.math.ca/en/article/profiles-of-early-canadian-mathematicians/>.
48. Jeffrey Oaks, « Arabic Arithmetic in Context: al-Hawārī's *Essential Commentary*," June 2022, <https://notes.math.ca/en/article/arabic-arithmetic-in-context-al-hawaris-essential-commentary/>.
49. Michael Molinsky, "Original Sources of Some Common Quotations," September 2022, <https://notes.math.ca/en/article/the-original-sources-of-some-common-quotations/>.
50. Thomas Drucker, "Why Everyone Loves History of Mathematics . . . But Philosophy of Mathematics is an Acquired Taste," November 2022, <https://notes.math.ca/en/article/why-everyone-loves-history-of-mathematics-but-philosophy-of-mathematics-is-an-acquired-taste/>.
51. Brigitte Stenhouse, "Quaternions at Twilight: Remembering Mary Somerville 150 Years After Her Death," December 2022, <https://notes.math.ca/en/article/quaternions-at-twilight-remembering-mary-somerville-150-years-after-her-death/>.
52. Amy Shell-Gellasch, "Catching the Eye: Using Images to Bring History to Life in the Classroom," February 2023, <https://notes.math.ca/en/article/catching-the-eye-using-images-to-bring-history-to-life-in-the-classroom/>.
53. Craig Fraser, "The Birth of Modern Cosmology," March 2023, <https://notes.math.ca/en/article/the-birth-of-modern-cosmology/>.
54. Amy Ackerberg-Hastings, "When Organizational Histories, Anniversaries, and Women in STEM Intersect," June 2023, <https://notes.math.ca/en/article/when-organizational-histories-anniversaries-and-women-in-stem-intersect-1/>.
55. Jessie Hall, "Computing Machines and the Philosophy of Mind," September 2023, <https://notes.math.ca/en/article/column-55-on-computing-machines-and-philosophy-of-mind/>.
56. Eugene Boman and Robert Rogers, "Teaching Calculus Through History's Lens," October 2023, <https://notes.math.ca/en/article/teaching-calculus-through-historys-lens/>.
57. Christopher Baltus, "Geometric Transformations, 1800–1855," December 2023, <https://notes.math.ca/en/article/geometric-transformations-1800-1855/>.
58. Hardy Grant (posthumous), "How I Learned to Love the History of Mathematics," February 2024, <https://notes.math.ca/en/article/how-i-learned-to-love-the-history-of-mathematics/>.
59. Roger Godard, "The Histories of Mathematics," March/April 2024, <https://notes.math.ca/en/article/the-histories-of-mathematics/>.
60. Michael Molinsky, "50 Years of CSHPM," June 2024, <https://notes.math.ca/en/article/50-years-of-cshpm/>.
61. Tessa Ng, "Mathematical Constitution and Theory Uniqueness in Physics," September 2024, <https://notes.math.ca/en/article/mathematical-constitution-and-theory-uniqueness-in-physics/>.
62. Zoe Ashton, "Rigor in Context," October/November 2024, <https://notes.math.ca/en/article/rigor-in-context/>.
63. Brenda Davison, "The Surprising Role of the Pendulum in Stokes's Discovery of New Physical Theory and Use of Divergent Series," December 2024, <https://notes.math.ca/en/article/the-surprising-role-of-the-pendulum-in-stokes-discovery-of-new-physical-theory-and-use-of-divergent-series/>.

Robert Dawson (Saint Mary's University)

Editor, CMS Notes

For most people, numerology is the belief that numbers are “lucky” or “unlucky.” Many Western hotels omit the thirteenth floor, and the thirteenth room on each remaining floor, in deference to such superstition. In some Far Eastern cultures the digit four is similarly unlucky (due to a homonym with words denoting “death.”) I’ve been in hotels that try to satisfy both sets of guests... the elevator controls look distinctly gappy! A few more such aversions and the hotel would be reduced to telling every guest “your room’s up a few floors and along the hall.”

Among mathematicians, the word is used humorously for the belief that some numbers are “interesting,” especially when stated in isolation from any heavyweight theory. The Pythagoreans and their successors studied square, triangular, perfect, and other types of numbers. They don’t seem to have done so in the belief that (say) pentagonal numbers were sacred to Aphrodite, or that you should not buy fish on a perfect-numbered day. Nor, at first, did anybody study any deep theory behind these numbers that we know of. They were justified by the numbers’ beauty.

But of course, one person’s frivolous observation is another person’s PhD thesis or Fields medal. You may think it’s entertaining that $1^1 + 2^2 + \dots + 24^2 = 70^2$, and it certainly is. But Lucas conjectured in 1875 that this was the *only* nontrivial case in which a pyramidal number was also square... and it was 43 years before G.N. Watson proved it, via a very non-frivolous utilization of elliptic functions. Furthermore, there are deep connections between this and the very high symmetry of the 24-dimensional Leech lattice, which in turn relates to properties of the sporadic simple groups.

Speaking of sums of powers, you probably remember that G. H. Hardy had a story about a time when he was visiting Ramanujan in hospital when the latter was ill and depressed, and remarked, to try to get a conversation going, that the taxicab he’d taken to the hospital had the rather uninteresting plate number **1729**. Ramanujan immediately identified it (supposedly to Hardy’s surprise) as the first number that was the sum of two cubes in two distinct ways.

I’ve sometimes wondered about the surprise. Of course, Hardy knew that Ramanujan loved numbers, but nobody has elsewhere suggested that taxi numbers had a special place in his affections, as locomotive numbers do for trainspotters. And if not, why should Hardy bother remembering a taxi number for him — unless he too saw that it was interesting? And surely he could have seen it, due to the happy coincidence that, to anybody knowing the first few cubes, the partitions $1000 + 729$ and $1728 + 1$ are both obvious at a glance in decimal notation. I think Hardy probably knew exactly what he was bringing to entertain the invalid!

Anyhow, this is the year 2025 of the Common Era, and 2025 is a very interesting number indeed. It is (as I’ve already seen in an email from one math organization) a perfect square: the only such year in most of our lifetimes. But that’s not all! Specifically, it is 45^2 , and 45 is (yes!) a triangular number. And we all remember (from first-year calculus) what the squares of triangular number are: they’re the hyperpyramidal numbers, the sums of the first n cubes! $2025 = 1^3 + 2^3 + \dots + 9^3$. We haven’t had a year number like that since before Chaucer was born, and the next won’t be until **3025**.

Add **3025** to this year’s number, of course, and you get **5050**... which we all recognize as the answer that young Gauss supposedly obtained almost instantly when his schoolmaster tried to keep the kids quiet by making them compute $1 + 2 + \dots + 100$. A coincidence? Not really! If we represent $1 + 2 + \dots + n$ by $\Delta(n)$, then it’s very easily shown that $\Delta(n^2) = \Delta^2(n - 1) + \Delta^2(n)$. Unfortunately, this seems to be as far as it goes: it’s not, as far as I can see, the beginning of a nice pattern for higher powers. Just the Strong Law of Low-Degree Polynomials at work?

I doubt if this will make the year specially lucky... but at least it’s something to think about when the news gets too depressing. I wish the best of luck to all our readers in these potentially difficult times.

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Robert Dawson (Saint Mary's University)

Editor, CMS Notes

Pour la plupart des gens, la numérologie est la croyance que les nombres sont « chanceux » ou « malchanceux ». De nombreux hôtels occidentaux omettent le treizième étage et la treizième chambre de chaque étage restant, par respect pour cette superstition. Dans certaines cultures d'Extrême-Orient, le chiffre quatre porte également malheur (en raison d'une homonymie avec des mots désignant la « mort »). J'ai visité des hôtels qui tentaient de satisfaire les deux catégories de clients... les commandes d'ascenseur ont l'air nettement trouées ! Quelques autres aversions de ce type et l'hôtel en serait réduit à dire à chaque client « votre chambre se trouve quelques étages plus haut et le long du couloir ».

Parmi les mathématiciens, le mot est utilisé avec humour pour désigner la croyance selon laquelle certains nombres sont « intéressants », en particulier lorsqu'ils sont énoncés indépendamment de toute théorie lourde. Les pythagoriciens et leurs successeurs ont étudié les nombres carrés, triangulaires, parfaits et d'autres types de nombres. Ils ne semblent pas l'avoir fait dans l'idée que les nombres pentagonaux (par exemple) étaient sacrés pour Aphrodite ou qu'il ne fallait pas acheter de poisson un jour où les nombres étaient parfaits. Au début, personne n'a non plus étudié de théorie profonde derrière ces nombres, à notre connaissance. Ils étaient justifiés par la beauté des nombres.

Mais bien sûr, l'observation frivole d'une personne est la thèse de doctorat ou la médaille Fields d'une autre personne. Vous pouvez penser qu'il est amusant que $1^1 + 2^2 + \dots + 24^2 = 70^2$, et c'est certainement le cas. Mais Lucas a conjecturé en 1875 que c'était le *seul* cas non trivial dans lequel un nombre pyramidal était également carré... et il a fallu attendre 43 ans pour que G.N. Watson le prouve, grâce à une utilisation très peu frivole des fonctions elliptiques. En outre, il existe des liens étroits entre ce phénomène et la très grande symétrie du réseau de Leech à 24 dimensions, qui à son tour est lié aux propriétés des groupes simples sporadiques.

À propos de sommes de puissances, vous vous souvenez sans doute que G. H. Hardy a raconté qu'il avait rendu visite à Ramanujan à l'hôpital, alors que ce dernier était malade et déprimé, et qu'il avait fait remarquer, pour tenter d'engager la conversation, que le taxi qu'il avait pris pour se rendre à l'hôpital portait le numéro de plaque 1729, plutôt inintéressant. Ramanujan l'identifia immédiatement (soi-disant à la surprise de Hardy) comme le premier nombre qui était la somme de deux cubes de deux manières distinctes.

Je me suis parfois interrogé sur cette surprise. Bien sûr, Hardy savait que Ramanujan aimait les nombres, mais personne n'a suggéré ailleurs que les numéros de taxi occupaient une place spéciale dans ses affections, comme les numéros de locomotive le font pour les observateurs de trains. Et si ce n'est pas le cas, pourquoi Hardy aurait-il pris la peine de se souvenir d'un numéro de taxi pour lui – à moins qu'il n'ait lui aussi vu qu'il était intéressant ? Et il aurait certainement pu le voir, grâce à l'heureuse coïncidence que, pour quiconque connaît les premiers cubes, les partitions $1000 + 729$ et $1728 + 1$ sont toutes deux évidentes au premier coup d'œil en notation décimale. Je pense que Hardy savait exactement ce qu'il apportait pour divertir l'invalidé !

Quoi qu'il en soit, nous sommes en l'an 2025 de l'ère commune, et 2025 est un nombre très intéressant. C'est (comme je l'ai déjà vu dans un courriel d'une organisation mathématique) un carré parfait : la seule année de ce type dans la plupart de nos vies. Mais ce n'est pas tout ! Plus précisément, il s'agit de 45^2 , et 45 est (oui !) un nombre triangulaire. Et nous nous souvenons tous (depuis la première année de calcul) de ce que sont les carrés des nombres triangulaires : ce sont les nombres hyperpyramidaux, les sommes des n premiers cubes ! $2025 = 1^3 + 2^3 + \dots + 9^3$, premiers cubes !

Ajoutez 3025 au nombre de cette année, bien sûr, et vous obtenez 5050... que nous reconnaissons tous comme la réponse que le jeune Gauss aurait obtenue presque instantanément lorsque son maître d'école essayait de faire taire les enfants en leur faisant calculer $1 + 2 + \dots + 100$. Une coïncidence ? Pas vraiment ! Si l'on représente $1 + 2 + \dots + n$ par $\Delta(n)$, alors on montre très facilement que $\Delta(n^2) = \Delta^2(n-1) + \Delta^2(n)$. Malheureusement, cela ne semble pas aller plus loin : ce n'est pas, pour autant que je puisse le voir, le début d'un joli schéma pour les puissances supérieures. S'agit-il simplement de la loi forte des polynômes de faible degré ?

Je doute que cela rende l'année particulièrement chanceuse... mais c'est au moins une chose à laquelle on peut penser lorsque les nouvelles sont trop déprimantes. Je souhaite bonne chance à tous nos lecteur(trice)s en ces temps potentiellement difficiles.

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Egan J Chernoff (University of Saskatchewan)

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.

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At least for me, it takes a bit of time for the sheer scale of another person's remarkable achievement to truly snap into focus. Alex Ovechkin approaching Wayne Gretzky's record for most goals in National Hockey League (NHL) history, for example. Such was the case for me, recently, when I considered John Grant McLoughlin and his tenure at *Education Notes*.

As he mentioned in his final article as co-editor ("Sharing Mathematics: An Unfinished Tapestry"), John took on the editorial role for *Education Notes* beginning in 2010. That's a long time ago. Maybe it had something to do with the Gregorian Calendar having just "flipped" to 2025, I am not sure, but I decided to dig into the "Previous Issues" and "Archived Issues" sections of *CMS Notes* to get a better sense of what John and his co-editors have been up to for all those years. Alternatively stated, here is a quick look at John Grant McLoughlin and *Education Notes* by the numbers.

During his tenure, *CMS Notes* was published six times a year. In February, March/April, May, September, October/November and December from 2010 to 2019; and, in February, March, June, September, October and December from 2020 to 2024. Not only, then, was John, along with his co-editors, instrumental to *Education Notes* for a 15 year run (2024-2010+1), he was, also, an instrumental part of the publication of *CMS Notes* for the last 90 (15 x 6) issues. Ninety!

Myself involved with different editorial activities during my career, I wish to highlight, here, the behind the scenes, the less than glamorous, the thankless editorial activity required to publish 90 articles in *Education Notes* over a 15-year period. Vision, organization and management, yes, are all required. One must also consider the editing, back and forth communication with authors and, importantly, the deadlines. Add changing styles, changing formats and trends to the mix. Proof reading, copy editing, guidelines, spelling, grammar... the list just goes on and on. I would be remiss not to mention one overarching metric necessary for John's editorial duties: time. Speaking of metrics, there are some rather fun/alternative ways to "measure" John's tenure at *Education Notes*.

One could frame John's 90 contributions over the past fifteen years relative to, for example, the number of CMS Presidents during the same period of time. Alternatively, one could come up with a list of the all the different contributors and their relative details, for example, the universities or provinces in which they reside. With the help of technology, one could provide an aggregate account of the number of pages or words with which John was involved. Looking to the past could also put things into perspective. By way of example, the Winter Olympics were held in Vancouver, BC in 2010, and is the same year in which the iPad was introduced and Instagram was launched. No matter the metric, I think it truly falls short in capturing John's contribution to the Canadian Mathematical Society. There is, I will argue, one metric that comes somewhat close.

Table 1. JGM Contributions to Education Notes

	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
No. 6	JGM						JGM	JGM				JGM	JGM		
No. 5					JGM										
No. 4						JGM					JGM				JGM
No. 3	JGM								JGM	JGM		JGM			JGM
No. 2	JGM		JGM					JGM							JGM
No. 1				JGM	JGM			JGM							

I wasn't kidding when I said that I dug into the Previous and Archived Issues of *CMS Notes*. In doing so, I learned a lot. For example, I learned that, despite advances in technology, I have a fondness for newsletters in pdf form. I also learned that I would like, in our (read: Kseniya and Egan's) tenure, to have Book Reviews and, especially, Brief Book Reviews as part of *Education Notes*. I was particularly fond of John's editorial excerpts which were added to procured contributions as a nice touch, nicely done to set the stage for the reader. Most importantly, in my opinion, as shown in Table 1., I learned that John contributed, either by himself or with co-authors on 21 different occasions. Twenty-one!

By the numbers, John Grant McLoughlin's commitment to *Education Notes*, *CMS Notes*, and the Canadian Mathematics Society is unassailable. Although John and I met in person on numerous occasions, it took me digging back into past and archived issues of CMS Notes to get a true sense of how big his shoes truly are.

Thankfully, Kseniya is there to help with the Shift Change at the *Education Notes*. Thank you, Kseniya. Thank you, John.

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Why Professor AI Should Not Get Tenure: A Philosophical Perspective

CSHPM Notes

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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:

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The popularity of artificial intelligence (AI) these days is fairly ubiquitous. From its use in political campaigns to saving authors the need to write their own text, it is impossible to get away from those singing its virtues. One of the earliest advocates of AI was the British mathematician and pioneer of computer science Alan Turing. Perhaps his most famous article on the subject was ‘[Computing Machinery and Intelligence](#)’, which appeared in *Mind* in 1950 [6]. If one looks at the kind of evidence Turing gave there in defense of the possibility of AI, some of it may be turned against the claim that artificial intelligence is entitled to assert that it is a mathematician.

As a reminder, Turing gives three tasks which might be assigned to a machine or a human being, and he indicates the way in which the former might plausibly claim to be the latter. The first task is to write a sonnet on the subject of the [Forth Bridge](#). The cagy computer could respond plausibly, ‘Count me out on this one. I never could write poetry.’ The second is to add 34957 to 70764. Turing indicates that the machine could wait thirty seconds to simulate a human reaction and then supply the answer ‘105621’. The third comes in two parts, the first asking if the machine plays chess and, on receiving an affirmative answer, posing a problem about what to do in a certain position. Although Turing doesn’t quite specify the position, the machine (after a fifteen-second pause) responds with the correct mating move.



Figure 1. A request to an AI image generator for “Alan Turing using artificial intelligence” reinforces that the technology still has a ways to go. [Microsoft Bing Image Creator](#).

Seventy-five years after Turing's article, it is possible to go through each of these tasks and see how machines have progressed in being able to carry them out. If we start with the third, there is no doubt that the success of [Deep Blue in defeating Garry Kasparov](#) in a match in the 1990s put the chess world on notice that human chess players were going to have to recognize human limitations. There had been chess-playing programs of varying degrees of strength, but International Master David N.L. Levy of Scotland had been making bets at five-year intervals that no machine was going to be able to beat him and winning each time. Deep Blue provided the evidence that Levy's success had run out.

It is worth mentioning that that was not the end of the story for computer chess. A major project to produce a Go-playing program that was capable of giving problems to leading Go players produced a program called [AlphaGo](#), and its success in a game with a strong opponent generated a good deal of interest. Most previous programs had been based on using the computer's ability to analyze enormous numbers of positions in a short time, while AlphaGo took advantage of a learning algorithm based on the machine's playing an enormous number of games against itself. Since Go is more complex than chess, it would not have been surprising for a version of the program to have an immense edge over chess-playing programs, and so it proved. [AlphaZero](#), the chess version of AlphaGo, became the envy of the international chess-playing community. Turing's modest request has been transmuted into an industry.



Figure 2. A 90-minute documentary, *AlphaGo* (2017), may be viewed on [YouTube](#). The DeepMind AI machine is on the left, and 18-time World Go Champion Lee Sedol is on the right. Still from [IMDB.com](#).

The second of the tasks might have seemed to call on the computational strength of a machine. What was clever about Turing's proposed response was not just the time involved, but the fact that the answer given was one digit off from the correct '105721'. What Turing was attempting to demonstrate was that machines could imitate human intelligence, and human beings are liable to mistakes. One is reminded of the [short story by Lord Dunsany](#) in which the computer demonstrates its capacity to imitate a human chess player by cheating [5]. It is just as well, in view of the universal dependence on computers to carry out complicated calculations, that the machines are being programmed only to match the capacity of human beings.

The answer for the first task depends for its plausibility on a human reluctance to claim the ability to write poetry. It might be argued that these days machines do generate rhyming verse in quantity. What might be lacking is an aesthetic quality that readers would hope to get from genuine poetry. If all one is trying to do is come up with the text for the interior of a greeting card, AI has achieved a useful status.

The relevance of this to mathematics becomes a little clearer in looking at the computer's ability to generate proofs. It has been able to do this for decades, as indicated by Daniel J. O'Leary's '*Principia Mathematica and the Development of Automated Theorem Proving*' (published in 1991 but written in 1984) [2]. On a larger scale, Alan Bundy's 1983 *The Computer Modelling of Mathematical Reasoning* indicates strategies current at the time for achieving proofs in a variety of mathematical areas [1]. Since then, the computer has gone from strength to strength in generating proofs.

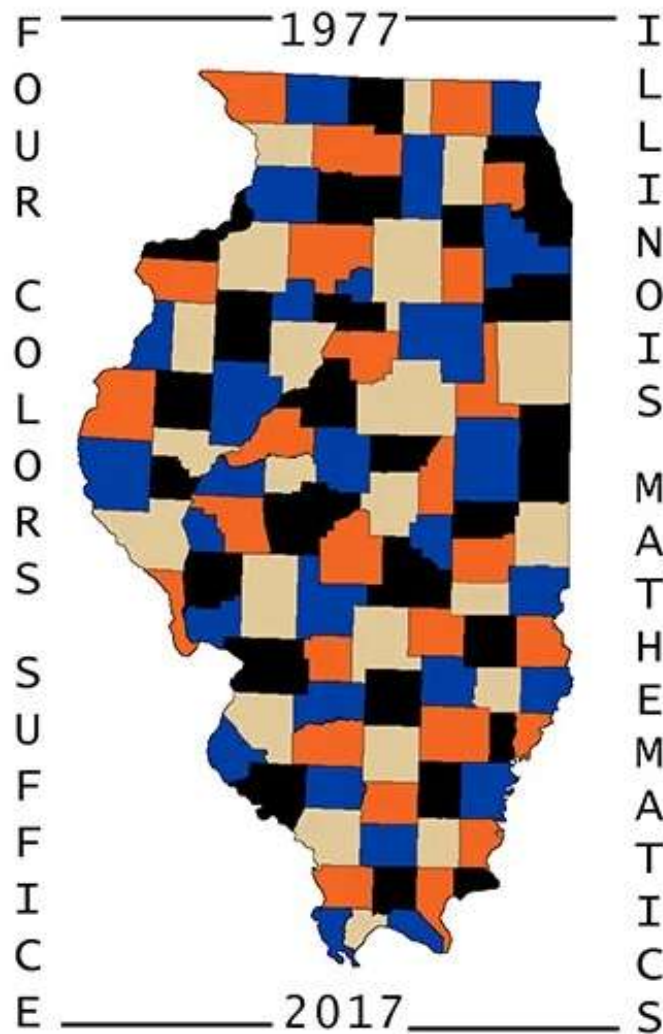


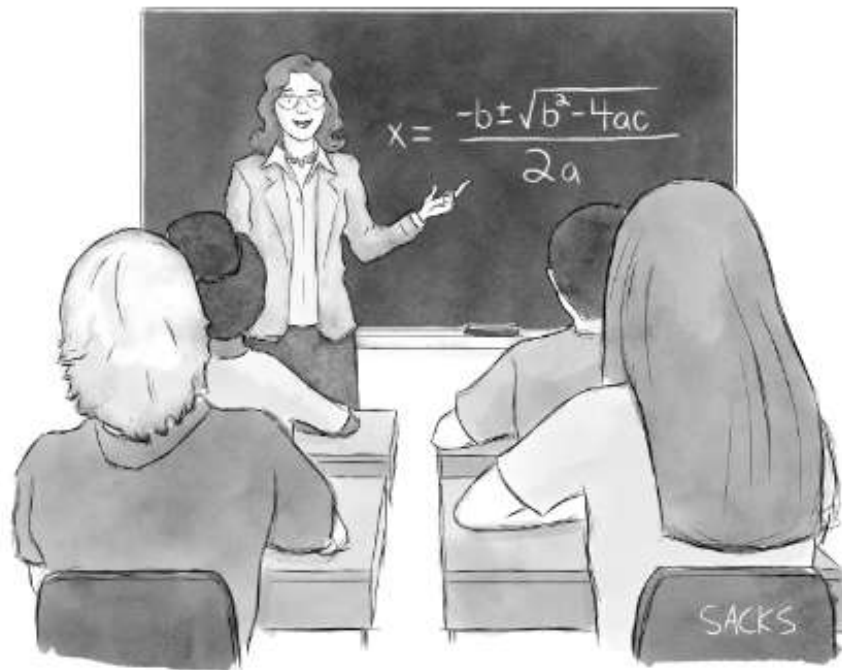
Figure 3. In 2017, the University of Illinois celebrated the 40th anniversary of the famous computer-aided proof of the Four Color Theorem by Kenneth Appel and Wolfgang Haken.

[University of Illinois Urbana-Champaign, College of Arts & Sciences, Department of Mathematics.](#)

Just as poetry, however, requires more than just the ability to rhyme, good mathematics requires the ability to appreciate elegance. When one is confronted by two proofs of the same result, one offering only a justification and the other offering an explanation, the mathematician should be able to recognize which one is the more genuine. When a computer is using a formalized version of an area in mathematics to generate proofs, it might be able to recognize brevity but not elegance.

This point is connected with the insistence by Sir Roger Penrose in his books *The Emperor's New Mind* (Oxford, 1989) and *Shadows of the Mind* (Oxford, 1994), in the latter of which he responds to many criticisms of the earlier volume [3, 4]. He argues that more important than intelligence is consciousness, and consciousness requires the ability to use non-algorithmic processes. It is safe to say that Penrose's second volume did not dismiss all of the objections that had been raised earlier, and his use of Gödel's theorem also continues to be debated. If, however, one is inclined to think that elegance cannot be reduced to an algorithm, then perhaps the mathematician needs to be more than a machine.

Why should tenure not be granted to Professor AI? The machine may be able to produce any number of proofs that it can offer to a classroom. It will not be able to provide the kind of explanation either of why proofs are needed in the first place nor how to tell a good proof from a bad one. There may be many professions in which the progress of artificial intelligence has struck fear into the hearts of the practitioners. Even some in academia are talking of an early retirement as a way of avoiding having to deal with, say, ChatGPT. Mathematicians should not have to be similarly concerned, if their teaching at least involves more than getting students to memorize the quadratic formula.



“To prepare you for how much of adult life is wasted on needless tasks, you’re going to memorize this, use it a lot over the next four years, and then never see it again for the rest of your life.”

Cartoon by Adam Sacks December 4, 2024

Figure 4. Adam Sacks’s cartoon on page 52 of the 16 December 2024 issue of *The New Yorker* can also stimulate considerable discussion among mathematicians, as it did in MAA’s Connect community. [Slide 19](#).

References

- [1] Bundy, Alan. (1983) *The Computer Modelling of Mathematical Reasoning*. San Diego: Academic Press.
- [2] O’Leary, Daniel J. (1991) *Principia Mathematica and the Development of Automated Theorem Proving*. In *Perspectives on the History of Mathematical Logic*, edited by Thomas Drucker, 47–53. Boston: Birkhäuser.
- [3] Penrose, Roger. (1989) *The Emperor’s New Mind*. Oxford: Oxford University Press.
- [4] Penrose, Roger. (1994) *Shadows of the Mind*. Oxford: Oxford University Press.
- [5] Plunkett, Edward John Moreton Drax (Lord Dunsany). (1952) *The New Master*. In *The Little Tales of Smethers and Other Stories*, 138–148. London: Jarrolds Ltd.
- [6] Turing, Alan. (1950) *Computing Machinery and Intelligence*. *Mind* 49, 433–460.

Thomas Drucker studied history of mathematics at Princeton under Michael S. Mahoney and at Toronto under Kenneth O. May. At the 2025 Joint Mathematics Meetings in Seattle, he delivered the Philosophy of Mathematics Special Interest Group of the Mathematical Association of America’s invited lecture, “From Computing Machinery and Intelligence to Snake Oil.” He retired from teaching at the University of Wisconsin–Whitewater in 2021.

Call for Nominations: 2025 Graham Wright Award for Distinguished Service

Calls for Nominations

February 2025 (Vol. 57, No. 1)

The Canadian Mathematical Society (CMS) is currently accepting nominations for the 2025 Graham Wright Award for Distinguished Service. This award was inaugurated to recognize individuals who have made sustained and significant contributions to the Canadian mathematical community and, in particular, to the Canadian Mathematical Society.

The CMS aims to promote and celebrate diversity in the broadest sense. We strongly encourage department chairs and nominating committees to put forward nominations for outstanding colleagues regardless of race, gender, ethnicity or sexual orientation.

All documentation should be submitted electronically, preferably in PDF format, **by March 31, 2025**, to gwaward@cms.math.ca. No nominations will be accepted beyond this deadline.

For more information, please visit <https://cms.math.ca/awards/graham-wright-award/nomination-information/>

. . .

La Société mathématique du Canada (SMC) accepte actuellement les mises en nomination pour le prix Graham Wright pour service méritoire 2025. Ce prix a été inauguré pour récompenser les personnes qui contribuent de façon importante et soutenue à la communauté mathématique canadienne et, notamment, à la Société mathématique du Canada.

La SMC a pour but de promouvoir et de célébrer la diversité au sens le plus large. Nous encourageons fortement les directeurs et les directrices de département et les comités de mise en candidature à proposer des collègues exceptionnel.le.s sans distinction de race, de genre, d'appartenance ethnique ou d'orientation sexuelle.

Veillez faire parvenir tous les documents par voie électronique, de préférence en format PDF, **avant le 31 mars 2025**, à prixgw@smc.math.ca. Aucune mise en nomination ne sera acceptée au-delà de cette date.

Pour de plus amples renseignements, veuillez consulter <https://smc.math.ca/prix/prix-graham-wright/informations-de-mise-en-candidature/>

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

Call for Nominations: Editor-in-Chief (EIC), Crux Mathematicorum

Calls for Nominations

February 2025 (Vol. 57, No. 1)

The CMS invites expressions of interest for the **Editor-In-Chief (EIC) of Crux**; one EIC is being solicited, with a five-year term scheduled to commence **January 1, 2026**. Funding from the CMS is available for this EIC position.

Since 1975, Crux Mathematicorum has published problems and solutions, aimed primarily at secondary and undergraduate students. First by subscription, and now as a free online publication, Crux provides a valuable resource to students and educators around the world. For more on the publication, see the website: <https://cms.math.ca/publications/crux/>

Expressions of interest should include a cover letter, your curriculum vitae, and an expression of views regarding the publication including any proposed changes or new directions in policy. Please also include an indication of support from your home institution.

Please submit your expression of interest electronically to communications@cms.math.ca before July 15, 2025.

To view the terms of reference for this position, please visit: <https://cms.math.ca/about-the-cms/governance/terms-of-reference/>

La SMC invite les manifestations d'intérêt pour le poste de **rédacteur en chef (REC) de Crux** ; un REC est recherché, avec un mandat de cinq ans prévu pour débiter le **1er janvier 2026**. Un financement de la SMC est disponible pour ce poste de rédacteur en chef.

Depuis 1975, Crux Mathematicorum publie des problèmes et des solutions, destinés principalement aux étudiants du secondaire et du premier cycle. D'abord par abonnement, et maintenant en tant que publication en ligne gratuite, Crux fournit une ressource précieuse aux étudiants et aux éducateurs du monde entier. Pour en savoir plus sur la publication, consultez le site Web : <https://smc.math.ca/publications/crux-fr/> Les manifestations d'intérêt doivent comprendre une lettre de motivation, votre curriculum vitae et une expression de votre point de vue sur la publication, y compris toute proposition de changement ou de nouvelle orientation des politiques. Veuillez également inclure une indication du soutien de votre institution d'origine.

Veuillez soumettre votre manifestation d'intérêt par voie électronique à communications@cms.math.ca avant le **15 juillet 2025**.

Pour consulter les termes de mandat de ce poste, veuillez vous rendre sur le site Web : <https://smc.math.ca/apropos-de-la-smc/la-gouvernance/termes-de-mandat/>

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

Call for Nominations: 2025 Adrien Pouliot Award

Calls for Nominations

February 2025 (Vol. 57, No. 1)

The Canadian Mathematical Society (CMS) is currently accepting nominations for the 2025 Adrien Pouliot Award. This award was inaugurated to recognize individuals or teams of individuals who have made significant and sustained contributions to mathematics education in Canada.

The CMS aims to promote and celebrate diversity in the broadest sense. We strongly encourage department chairs and nominating committees to put forward nominations for outstanding colleagues regardless of race, gender, ethnicity or sexual orientation.

Please submit your nomination electronically, preferably in PDF format, to apaward@cms.math.ca, **before April 30, 2025**. No nominations will be accepted beyond this deadline.

For more information, please visit <https://cms.math.ca/awards/adrien-pouliot-award/nomination-information/>

. . .

La Société mathématique du Canada (SMC) accepte actuellement les mises en nomination pour le prix Adrien Pouliot 2025. Ce prix rend hommage aux personnes ou aux groupes qui ont fait une contribution importante et soutenue à l'enseignement des mathématiques au Canada.

La SMC a pour but de promouvoir et de célébrer la diversité au sens le plus large. Nous encourageons fortement les directrices et les directeurs de départements et les comités de mise en candidature à proposer des collègues exceptionnels sans distinction de race, de genre, d'appartenance ethnique ou d'orientation sexuelle.

Veuillez faire parvenir votre mise en nomination par voie électronique, de préférence en format PDF, à prixap@smc.math.ca, **avant le 30 avril 2025**. Aucune mise en nomination ne sera acceptée au-delà de cette date.

Pour de plus amples renseignements, veuillez consulter <https://smc.math.ca/prix/prix-adrien-pouliot/informations-de-mise-en-candidature/>

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

Call for Nominations: 2025 Fellows of the CMS

Calls for Nominations

February 2025 (Vol. 57, No. 1)

The Canadian Mathematical Society (CMS) is currently accepting nominations for the 2025 Fellows of the CMS. The CMS Fellows program recognizes CMS members who have made excellent contributions to mathematical research, teaching, or exposition; as well as having distinguished themselves in service to Canada's mathematical community.

The CMS aims to promote and celebrate diversity in the broadest sense. We strongly encourage you to put forward nominations for outstanding colleagues regardless of race, gender, ethnicity or sexual orientation.

Nominations should be submitted electronically, preferably in PDF format, to fellows@cms.math.ca, **before March 31, 2025**. No nominations will be accepted beyond this deadline.

For more information, please visit <https://cms.math.ca/awards/fellows-of-the-cms/nomination-information/>

. . .

La Société mathématique du Canada (SMC) accepte actuellement les mises en nomination pour les Fellows 2025 de la SMC. Le programme des Fellows récompense les membres de la SMC qui ont fait une contribution exceptionnelle aux mathématiques en recherche, en enseignement, ou en diffusion, tout en se distinguant au service de la communauté mathématique canadienne.

La SMC a pour but de promouvoir et de célébrer la diversité au sens le plus large. Nous vous encourageons fortement à proposer des collègues sans distinction de race, de genre, d'appartenance ethnique ou d'orientation sexuelle.

Veuillez faire parvenir tous les documents par voie électronique, de préférence en format PDF, à fellows@smc.math.ca, **avant le 31 mars 2025**. Aucune mise en nomination ne sera acceptée au-delà de cette date.

Pour de plus amples renseignements, veuillez consulter <https://smc.math.ca/prix/fellows-de-la-smc/informations-de-mise-en-candidature/>

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



The Canadian Mathematical Society (CMS) welcomes and invites scientific session proposals for the 2025 CMS Summer Meeting in Québec, QC from June 6 to June 9, 2025.

- 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 6-9. 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.
- The CMS will host an open call for abstracts for all sessions, and asks organizers to consider all eligible abstract submissions for their session.
- The CMS strives for inclusive meetings with diverse representation, and it is important to strive for this when organizing Scientific Sessions. [Please see here for more information](#) about what is meant by diversity, and for tips towards organizing an inclusive session.
- Note that there is a separate 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 room space, taking into consideration the topics, purposes, diversity and inclusivity of the proposals, both individually and when taken all together.

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 Form and Deadlines:

Please submit proposals by filling out [this form](#). There will be two rounds of submissions. Proposals submitted by **January 31, 2025**, will be considered in the first round, with responses shortly thereafter. The deadline for the second round will be **March 14, 2025**.

Submit Session



La Société mathématique du Canada (SMC) accueille et invite les propositions de sessions scientifiques pour la réunion d'été 2025 de la SMC qui se tiendra à Québec (Québec) du 6 au 9 juin 2025.

- L'objectif des sessions scientifiques est de partager la recherche de pointe sur un sujet mathématique donné, tel que suggéré par les organisateur.trice.s.
- Les sessions sont programmées par blocs, chaque bloc ayant une durée de 2 à 2,5 heures, et se déroulent à partir de 6 au 9 juin. Les sessions scientifiques typiques comportent entre 9 et 18 exposés de 20 minutes chacun, avec 10 minutes entre les exposés, mais des exposés de 50 minutes sont possibles. En effet, les organisateur.trice.s sont invité.e.s à proposer une utilisation non traditionnelle des horaires et du format des blocs.
- La SMC lancera un appel à résumés pour toutes les sessions et demande aux organisateur.trice.s de prendre en considération toutes les soumissions de résumés éligibles pour leur session.
- La SMC s'efforce d'organiser des réunions inclusives avec une représentation diversifiée, et il est important de s'efforcer d'atteindre cet objectif lors de l'organisation des sessions scientifiques. Veuillez [consulter la page pour plus d'informations](#) sur ce que l'on entend par diversité et pour des conseils sur l'organisation d'une session inclusive.
- 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 comporter les éléments suivants :

1. Les noms, affiliations et coordonnées de deux ou trois organisateurs : Un organisateur principal et un ou deux co-organiseurs.
2. Un titre et un résumé de deux à trois phrases qui seront affichés sur le site Web à l'intention des orateurs potentiels.
3. Le nombre de blocs demandés (les blocs durent 2 ou 2,5 heures).
4. Un fichier pdf comprenant une description du sujet et de l'objectif de la session (1 à 2 paragraphes), pour examen par le comité scientifique, qui ne sera pas affiché.
5. Un tableur excel comprenant la liste des orateurs possibles. Les colonnes « Nom », « Prénom », « Affiliation », « Stade de carrière » et « Page Web » doivent contenir autant d'informations que possible sur les orateurs potentiels.

Les propositions seront sélectionnées par le comité d'organisation scientifique, dans la limite des places disponibles dans les salles de classe, avec une priorité pour les sessions qui montrent l'intention d'inclure un mélange de chercheur.cheuse.s senior.e.s et junior.e.s, de rendre certaines parties de leur session accessibles aux étudiant.e.s de troisième cycle, et d'inclure des orateur.trice.s issus de groupes sous-représentés désignés.

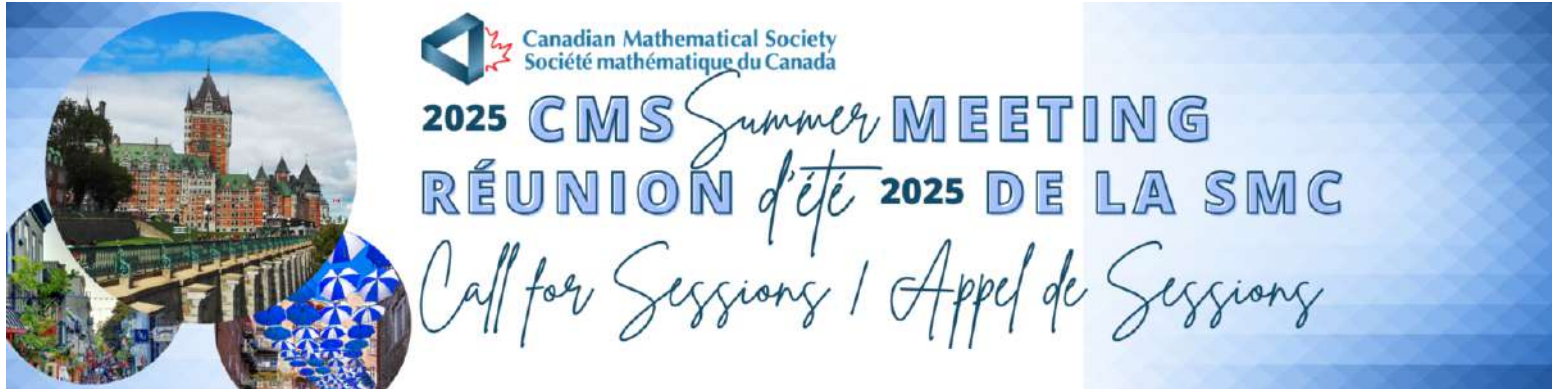
Note sur les organisateur.trice.s

L'organisateur.trice principal.e doit être titulaire d'un doctorat ou d'un diplôme équivalent dans le domaine d'expertise correspondant au sujet de la session. L'idéal serait qu'un.e chercheur.euse expérimenté.e (par exemple, un.e professeur.e ou un.e professeur.e associé.e) soit associé.e à une personne en début de carrière (par exemple, un.e professeur.e assistante ou un.e boursier.ère postdoctoral.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 séries de soumissions. Les propositions soumises avant le **31 janvier 2025** seront examinées lors du premier tour et les réponses seront données peu de temps après. La date limite pour le deuxième tour sera le **14 mars 2025**.

[Soumettre une session](#)



The Canadian Mathematical Society (CMS) welcomes and invites education session proposals for the 2025 CMS Summer Meeting in Quebec City, Quebec, from June 6, 2025, to June 9, 2025.

The education session proposals will be selected by the CMS Meeting Education Session Committee, which will also schedule the accepted sessions, in communication with the session co-organizers.

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. [Please see here for more information](#) about what is meant by diversity, and for tips towards organizing an inclusive session.

Note that there will be a separate call for Scientific 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 all session co-organizers. Early career researchers are welcomed to propose sessions.
2. The education session's title, and a 2-3-sentence summary that will be posted on the CMS Meeting website if your proposal is selected.
3. 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.
4. Indicate the number of time blocks needed. A block can be between 2 and 2.5 hours in length.
5. A possible list of speakers with their full name and affiliation. An inclusive and diverse set of speakers is highly encouraged.
6. The structure of your session. Traditionally, each presenter gets 20 minutes to talk, 5 minutes of Q&A, and a 5-minute buffer for transition. We are open to different formats as well, such as a panel, interactive session/workshop, 10-minute lightning talks, etc.

Proposals will be selected by the CMS Education Oversight Meetings Committee. If you have any questions, please email Andie Burazin (a.burazin@utoronto.ca) and Sarah Watson (meetings@cms.math.ca).

The CMS kindly asks session organizers to consider all eligible abstract submissions for their session, as up to 30 speakers per session can be accommodated.

All sessions will take place from June 6, 2025, to June 9, 2025.

Submission Form and Deadlines:

Please submit proposals by [filling out this form](#). There will be two rounds of submissions. Proposals submitted by January 31, 2025, will be considered in the first round, where preference will be given to first round submissions. The deadline for the second round will be March 14, 2025.

Submit Session



La Société mathématique du Canada (SMC) accueille et invite les propositions de sessions d'éducation pour la Réunion d'été 2025 de la SMC, qui se tiendra à Québec (Québec) du 6 au 9 juin 2025.

Les propositions de sessions d'éducation seront sélectionnées par le Comité des sessions d'éducation des réunions de la SMC, qui établira également le calendrier des sessions acceptées, en communication avec les co-organisateur.trice.s de la session.

Conformément au mandat de la SMC de proposer des conférences accessibles et accueillantes pour tous les groupes, la diversité parmi les organisateur.trice.s et les conférencier.ère.s 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 demande aux organisateur.trice.s de prendre en considération toutes les soumissions de résumés éligibles pour leur session.

La SMC s'efforce d'organiser des réunions inclusives avec une représentation diversifiée, et il est important de s'efforcer d'atteindre cet objectif lors de l'organisation des sessions scientifiques. Veuillez [consulter la page pour plus d'informations](#) sur ce que l'on entend par diversité et pour des conseils sur l'organisation d'une session inclusive.

Veillez noter qu'il y aura un appel distinct pour les sessions scientifiques.

Toutes les sessions proposées doivent être conformes au code de conduite de la SMC.

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

1. Noms, affiliations et coordonnées de tous les co-organisateur.trice.s de la session. Les chercheur.euse.s en début de carrière sont invités à proposer des sessions.
2. Le titre de la session et un résumé de deux à trois phrases qui sera affiché sur le site Web de la réunion si votre proposition est retenue.
3. Une brève description du sujet et de l'objectif de la session (1 à 2 paragraphes), pour examen par le Comité des réunions d'éducation de la SMC, qui ne sera pas publiée en ligne.
4. Indiquez le nombre de blocs de temps nécessaires. Un bloc peut durer entre 2 et 2,5 heures.
5. Une liste d'orateur.trice.s avec leur nom complet et leur affiliation, qui ont confirmé ou qui ont exprimé leur intérêt et ont été approchés, avant de soumettre la proposition. Il est vivement recommandé de faire appel à un ensemble d'orateur.trice.s inclusif et diversifié.
6. La structure de votre session. Traditionnellement, chaque intervenant.e dispose de 20 minutes pour parler, de 5 minutes de questions-réponses et d'une période transitoire de 5 minutes. Nous sommes également ouverts à d'autres formats, tels qu'un panel, une session interactive ou un atelier, des exposés éclair de 10 minutes, etc.

Les propositions seront sélectionnées par le Comité des réunions d'éducation de la SMC. Si vous avez des questions, veuillez envoyer un courriel à Andie Burazin (a.burazin@utoronto.ca) et Sarah Watson (meetings@cms.math.ca).

La SMC demande aux organisateur.trice.s de sessions de prendre en considération toutes les soumissions de résumés éligibles pour leur session, étant donné que jusqu'à 30 orateur.trice.s par session peuvent être accueilli.e.s.

Toutes les sessions auront lieu du 6 juin 2025 au 9 juin 2025.

Formulaire de soumission et dates limites :

Veillez soumettre vos propositions en remplissant [ce formulaire](#). Il y aura deux séries de soumissions. Les propositions soumises avant le 31 janvier 2025 seront examinées lors du premier tour, la préférence étant donnée aux propositions soumises lors du premier tour. La date limite pour le deuxième tour sera le 14 mars 2025.

Soumettre une session

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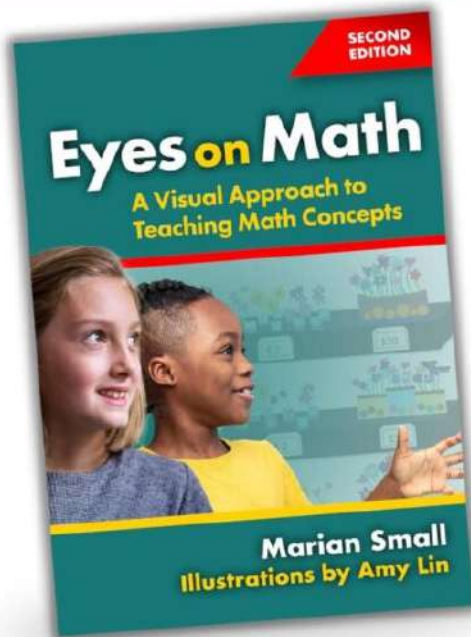
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Get ready for a challenge! "Crux Corner" is a new feature in CMS Notes, bringing you problems from *Crux Mathematicorum* (CRUX), the CMS's world-class problem-solving journal. CRUX is a fantastic resource for secondary and undergraduate students, packed with challenging problems and elegant solutions. Plus, it's free online! See a selection of problems below. Click here to access more Crux problems: <https://cms.math.ca/publications/crux/>

December issue, Crux 50 (10):
S16.

Prove that a positive integer n is prime if and only if there is a unique pair of positive integers j and k such that $\frac{1}{j} = \frac{1}{n} + \frac{1}{k}$.

5000. *Proposed by Bill Sands. Dedicated in memoriam to Andy Liu.*

There is a straight row of vertical cylinders stretching in both directions, each of radius 1 metre, and equally spaced at a distance of $s > 2$ metres apart (centre to centre). You are standing at a point $d > 1$ metres from the line through the centres of the cylinders. From your position, you can see a number of the cylinders completely, but eventually the cylinders in both directions become partly covered by cylinders closer to you.

a) Show that you can see at most $2 \left\lceil \frac{d+1}{2} \right\rceil$ complete cylinders, that is, not partly obscured by other cylinders.

b) Suppose that d is an integer and that $s > \frac{2d}{\sqrt{2d-1}}$. Show that you can see at least $2 \left\lceil \frac{d-1}{2} \right\rceil$ complete cylinders.

c) Suppose in addition that the perpendicular drawn from you to the line of centres hits that line at a point exactly halfway between two neighbouring cylinders. How many cylinders can you see completely?

January issue, Crux 51 (1):
MA304.

At a picnic, there are c children, m mothers, and f fathers, with $2 \leq f < m < c$. Every person shakes hand with every other person. The sum of the number of handshakes amongst the children, amongst the mothers, and amongst the fathers is 80. How many persons attended the picnic?

OC715.

A mathematician has 19 different weights, the masses of which in kilograms are equal to $\ln 2, \ln 3, \ln 4, \dots, \ln 20$, and an absolutely precise two-pan scale. He puts several weights on the scale so that equilibrium is established. What is the greatest number of weights that could be on the scale?

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CMS Student Committee



The CMS Student committee is pleased to announce that the 2025 *Canadian Undergraduate Mathematics Conference* (CUMC) will be held at the **University of Waterloo**, from **June 23rd – June 27th, 2025!** Be on the lookout for more announcements in the upcoming months for further information. We hope to see you there,

StudC (<https://studc.math.ca>)

. . .

Le comité étudiant de SMC a le plaisir de vous annoncer que le *Congrès canadien des étudiant.e.s en mathématiques 2025* (CCÉM) aura lieu à l'**Université de Waterloo**, du **23 au 27 juin** ! Soyez à l'affût d'autres annonces dans les mois à venir pour plus d'informations. Nous avons hâte de vous y rencontrer,

StudC (<https://studc.math.ca>)

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CMS Student Committee

Click the picture below to view several conferences in Canada which are adequate or even addressed to students. Along with them is listed their **subject**, the **targeted demographic**, the **language**, their **location**, their exact or approximate **dates** and their **website**. If a conference that you know does not appear and you want to share or advertise it, please contact chair-studc@cms.math.ca with the required details.



STUDENT CONFERENCES

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