Bienvenue au numéro de novembre des Notes de la SMC

Table des matières

Novembre 2022 : tome 54, no. 5

Article de couverture

Pourquoi je soutiens ma Société — *Monica Nevins*

Éditorial

Euclide et l'éclipse — *Robert Dawson*

Notes de la SCHPM

Why Everyone Loves History of Mathematics . . . But Philosophy of Mathematics is an Acquired Taste — *Thomas Drucker*

Notes pédagogiques

An Invitation to Eventmath — *Greg Stanton*

Comptes rendus

The Life of Primes in 37 Episodes — *Karl Dilcher*

Notices nécrologiques

Activist U of T math professor Chandler Davis devoted himself to progressive causes — *Peter Rosenthal*

In Memoriam: Alan Walter Kelm (3 mai 1964 – 30 septembre 2022)

Réunions de la SMC

Appel de Sessions scientifiques : Réunion d'été de la SMC 2023

Appel à propositions de Sessions en matière d'éducation : Réunion d'été 2023

Appel de candidatures

Prix de doctorat Blair-Spearman de la SMC

NOTES de la SMC

Pourquoi je soutiens ma Société

Article de couverture

Novembre 2022 (tome 54, no. 5)

Monica Nevins

Vice President - Ontario

À Alan Kelm, une âme chère dont le dévouement à la SMC était sans limite

Il semble approprié de rendre hommage à notre cher collègue regretté – le gourou informatique de la SMC – pour réfléchir à la façon dont j'ai soutenu ma Société au fil des ans et aux raisons de ce soutien.

Pendant mes études supérieures aux États-Unis, j'avais reçu une adhésion gratuite à l'American Mathematical Society et j'ai appris l'existence d'une communauté plus vaste dont je n'avais jamais imaginé l'existence. Il était naturel pour moi de m'inscrire à la SMC, puis à l'Association pour les Femmes en mathématiques (AWM) ; cela m'a donné une identité, même si je ne savais pas encore si j'avais mérité le titre de « mathématicienne ».

Pendant de nombreuses années, alors que j'établissais en parallèle ma carrière et ma famille, mon adhésion à la SMC a été un merveilleux accessoire : je lisais parfois les Notes pour y trouver des nouvelles de ma profession, et j'attendais toujours avec impatience de voir quelles sessions étaient prévues lors des réunions semestrielles, au cas où je pourrais y assister. Au sein de mon département, j'aimais donner un coup de main au camp de mathématiques annuel de la SMC, reconnaissante que d'autres personnes créent ces merveilleuses opportunités pour les jeunes esprits mathématiques.

Au fur et à mesure que ma carrière universitaire s'installait dans la routine, je me suis retrouvé à en chercher plus : un nouveau défi, de nouvelles choses à apprendre. En même temps, j'ai ressenti le besoin de commencer à donner en retour, et de rendre ma communauté meilleure pour la prochaine génération. Dans mon université, j'ai occupé des postes administratifs, organisé des ateliers de recherche et joué un rôle plus important dans la sensibilisation et le mentorat. Mais j'ai fini par sentir les limites de l'impact de ce travail, et je voulais plus : plus d'impact, plus d'opportunités, plus de portée, et une plus grande communauté d'apprentissage… et c'est ce que la SMC m'a donné.

J'ai siégé au conseil d'administration et, plus récemment, au Comité exécutif en tant que vice-présidente. J'ai fait partie de plusieurs comités, travaillant avec des collègues étonnants et passionnés. Je me suis engagée comme directrice scientifique de la ~~2020 réunion d'été~~ du 75e plus une réunion d'été en ligne de la SMC en 2021 et de la (s'il vous plaît, oh, s'il vous plaît) Réunion d'été de 2023 à Ottawa.

Dans le cadre de mes fonctions, j'ai eu des occasions incroyables, comme représenter la communauté mathématique auprès du CRSNG et des membres de mon parlement provincial, au nom de la SMC. En tant que membre du comité sur l'équité, la diversité et l'inclusivité de la SMC, j'ai aidé à mettre en place l'appel ouvert de résumés qui fait maintenant partie de nos réunions semestrielles – un changement qui, nous l'espérons, accueillera encore plus de membres de notre communauté à la SMC. Et sur une note personnelle, je pense avoir visité plus de villes canadiennes dans le but d'assister à une réunion de la SMC que pour n'importe quelles vacances !

J'ai également appris beaucoup de choses sur ce que fait la Société. Par exemple, l'Olympiade mathématique est la compétition de mathématiques la plus prestigieuse au monde et notre équipe canadienne a obtenu d'excellents résultats au fil des ans. J'avais tenu pour acquis qu'il s'agissait d'un programme gouvernemental (ou du moins parrainé par le gouvernement) – mais non, c'est la Société mathématique du Canada qui se charge de tout : du recrutement, de la sélection et de la formation de l'équipe, à la gestion de la logistique pour l'envoyer représenter le Canada, à l'autre bout du monde.

D'autre part, la SMC gère et finance un réseau massif de camps mathématiques pour les enfants d'âge scolaire, dirigés par des organisateurs locaux bénévoles qui se consacrent à inspirer notre prochaine génération de mathématiciens. Il s'agit d'une collection diversifiée – chaque camp a sa propre population cible (des élèves du spectre, aux élèves du Nord, aux élèves d'une classe particulière) et son propre style (des camps de week-end aux camps de jour et aux camps de nuit d'une semaine). Mais c'est par le biais de la SMC et de ces camps de mathématiques emblématiques que ces efforts individuels sont amplifiés pour former une communauté nationale de sensibilisation aux mathématiques.

Me porter volontaire pour servir de directeur scientifique d'une réunion d'été a été un pas en avant pour moi. Une énorme motivation était la fierté de mon université – je voulais montrer notre nouveau bâtiment de mathématiques, et mettre en valeur la diversité, la richesse et le succès de notre portefeuille collectif de recherche mathématique. Au début, je m'inquiétais du travail que cela impliquait – j'ai déjà organisé de petits ateliers mathématiques dans mon université, et les problèmes logistiques prenaient toujours dix fois plus de temps que ce que j'avais prévu. Mais la machine à réunions de la SMC est bien huilée, et cela me fait beaucoup de plaisir de me concentrer sur les aspects mathématiques de cette conférence nationale.

Je suis membre à vie de la SMC, et je suis fier d'être un donateur annuel. Je considère mon don comme un investissement dans l'avenir – comme la nouvelle Maison des mathématiques ! – en veillant à ce que la prochaine génération ait ce sentiment de communauté que j'ai tant aimé. La SMC n'est pas une institution stagnante : elle grandit, change et évolue en fonction des besoins et des initiatives de ses membres, de son équipe de direction (notamment la directrice générale Termeh Kousha, dont les innovations de ces dernières années ont remis la SMC sur la voie du succès) et des membres de ses nombreux comités, chacun travaillant sur une partie du tout.

Mon soutien n'est pas entièrement désintéressé. Mon département et mon doyen reconnaissent mes contributions à la Société mathématique du Canada, ce qui me permet de mieux me faire entendre lorsque je défends une cause, à quelque niveau que ce soit. J'ai rencontré et travaillé avec des collègues de partout au Canada, dans toutes les disciplines mathématiques, et je profite de pouvoir puiser dans un réseau aussi extraordinaire. Grâce à la SMC, j'ai l'occasion de jouer un rôle de premier plan dans des causes qui me tiennent à cœur, à l'échelle nationale. Et surtout, je suis profondément honorée d'avoir été nommée *Fellow* de la SMC.

Vous songez à vous impliquer plus dans votre Société, à investir dans l'avenir de notre communauté mathématique canadienne ? Voici quelques idées, pour tous les goûts :

- Inscrivez des étudiants des études supérieures comme membres étudiants ; il y a un rabais si cela fait partie de l'adhésion institutionnelle de votre département ;
- Lisez les Notes de la SMC et contribuez aux articles sur ce qui vous intéresse ;
- Soumettez vos articles de recherche aux revues de votre Société ;
- Proposez un Camp mathématique de la SMC, et inspirez la prochaine génération ;
- Organisez des sessions aux conférences de la SMC (y compris la belle conférence à Ottawa l'été prochain !), et encouragez vos étudiants diplômés à y participer ;
- Faites une demande pour vous joindre à un comité de la SMC, pour travailler avec des collègues de partout au Canada et contribuez à une cause qui vous tient à cœur.

En fin de compte, je soutiens ma Société grâce aux personnes qui la composent. Je suis fière de faire partie de cette entreprise conjointe avec mes collègues des comités et avec le personnel dévoué du bureau – qui vient toute juste de s'installer à la nouvelle Maison des mathématiques… avec sa salle de serveurs Alan Kelm nouvellement baptisée.

Euclide et l'éclipse

Éditorial

Novembre 2022 (tome 54, no. 5)

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

Le matin du 8 novembre, une éclipse totale de lune était visible dans tout le Canada. En Nouvelle-Écosse, elle s'est produite un peu avant le lever du soleil, un moment propice à l'observation. Je me suis donc réveillé tôt et j'ai regardé par la fenêtre : le disque de la lune était déjà à moitié obscurci, avec une faible lueur cuivrée tout juste visible sur la moitié éclipsée. J'ai réveillé ma femme, et nous avons regardé aux jumelles le reste de la lune glisser dans l'ombre. Alors que le demi-disque que nous avons vu au début ne semblait pas très différent d'une demi-lune croissante ordinaire (sauf qu'il avait une semaine de retard), au fur et à mesure que l'éclipse progressait, la forme n'était pas le croissant familier mais presque un segment parfait, un bord droit et un autre courbé.

Au moment de l'éclipse totale, la lune avait l'air étonnamment tridimensionnelle – la douce lumière du coucher du soleil qui l'éclairait encore montrait sa forme d'une manière que la lumière crue du soleil ne fait jamais. Puis le soleil s'est levé, le ciel s'est éclairci, et la boule ocre s'est fondue dans le ciel de l'aube comme un chat du Cheshire.

Un spectacle magnifique : et cela m'a incité à réfléchir à la géométrie impliquée. Il est clair qu'une pleine lune est une condition nécessaire pour une éclipse lunaire (et une nouvelle lune pour une éclipse solaire) : mais pourquoi n'est-elle pas suffisante ? La réponse, bien sûr, est que l'orbite de la lune autour de la terre n'est pas dans le même plan que l'orbite de la terre autour du soleil. Les trois corps ne peuvent s'aligner que lorsque la lune traverse le plan de l'écliptique (c'est pour cela qu'on l'appelle ainsi !) Les éclipses devraient donc se produire deux fois par an.

Et, en gros, c'est ce qui se passe. Mais le plan de l'orbite de la lune précède d'environ 18,6 ans, donc l'intervalle entre les éclipses est juste un peu moins de six mois. Et parfois, la lune n'est pas tout à fait pleine au moment où elle traverse l'écliptique : un manque de justesse donne une éclipse partielle, un manque plus important une « éclipse pénombrale » presque indétectable. Les éclipses solaires, qui exigent que les trois corps soient alignés avec une précision bien plus grande, suivent des cycles similaires, mais avec moins de « coups ». Cela devient compliqué !

Ces cycles en interaction nous mènent rapidement à la théorie des nombres. Et ils ont cet effet sur les gens depuis longtemps : en témoigne le vocabulaire associé à la chronologie des éclipses. « Cycle de Saros », « exeligmos », « mois draconique » : ce sont des noms, sinon de Harry Potter, certainement de l'antiquité. Après que nos ancêtres se soient habitués à prédire le retour des différentes saisons, la prédiction des éclipses était le projet suivant évident.

Et je présume que c'est la raison pour laquelle les Éléments d'Euclide, bien qu'étant avant tout un ouvrage sur la géométrie, fait un détour pour quatre de ses treize livres par la théorie des nombres – plutôt que, disons, le calcul ou la théorie des équations quadratiques. La théorie des nombres répondait à une question importante – « quand aura lieu la prochaine éclipse ? » – d'intérêt pour tous. Il est donc possible que les éclipses expliquent en partie pourquoi l'un des résultats les plus connus des *Éléments* – le seul auquel le nom d'Euclide est largement attaché – est un algorithme de la théorie des nombres.

Why Everyone Loves History of Mathematics . . . But Philosophy of Mathematics is an Acquired Taste

Notes de la SCHPM Novembre 2022 (tome 54, no. 5)

Thomas Drucker (University of Wisconsin-Whitewater)

CSHPM Notes bring 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 either of the column's co-editors:

Amy Ackerberg-Hastings, *Independent Scholar (aackerbe@verizon.net)*
Hardy Grant, *York University [retired] (hardygrant@yahoo.com)*

Statistics suggest that history of mathematics is perhaps three times more popular among mathematicians than philosophy of mathematics (based on membership in various groups). Those who wear both hats are likely to find larger audiences at their historical talks than their philosophical ones. Unless one is inclined to argue that historians are more genial by nature than philosophers, there is likely to be something about the disciplines and how they are practiced that leads to the disparity. Recent work in both fields suggests that the gap is not likely to be narrowed, although some attempts are being made.

History (as it is taught) is often a matter of stories about what happened, the kind of things that the late Ivor Grattan-Guinness described as 'heritage' [5]. Such stories have an appeal that goes beyond the question of whether they are, in fact, history. Luring students into an area can start with a judicious choice of story, even if such tales have to be told with mental reservations.

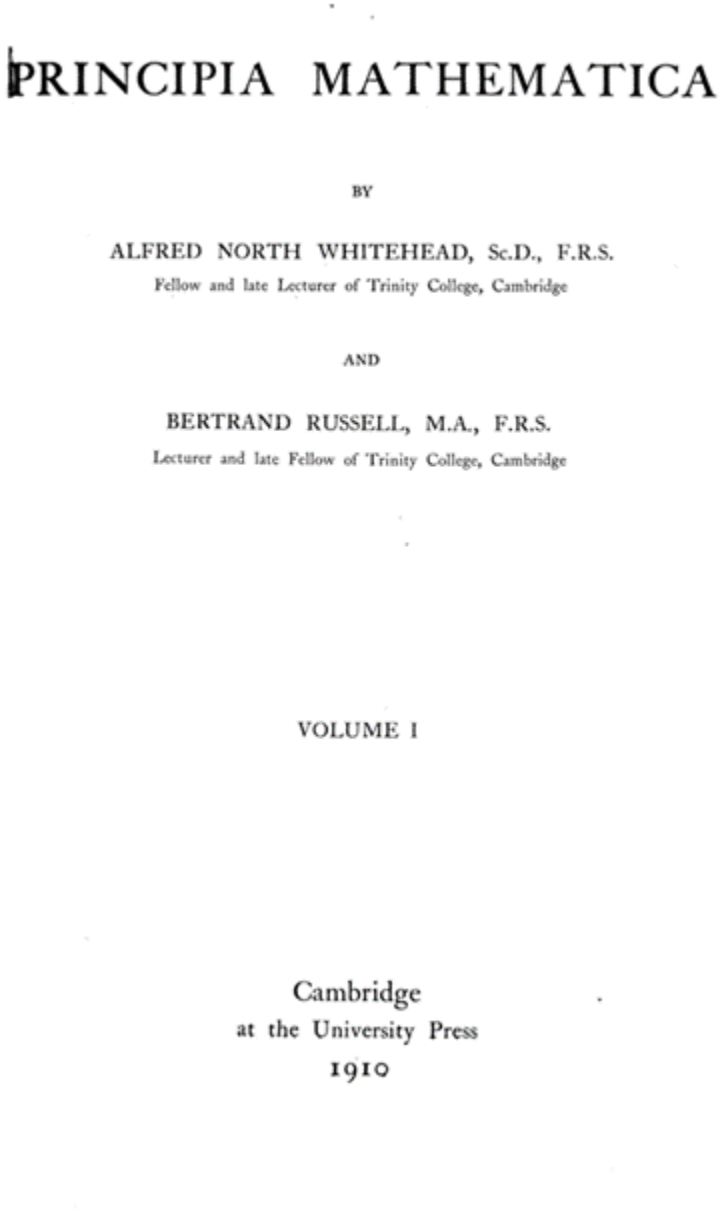
Once the audience is there, one can proceed to disabuse them of some of those stories. Getting to 'what really happened' is harder work than passing along stories. A good example is Tony Rothman's essay 'Genius and Biographers' [9]. He takes down the image of Galois as built up by Eric Temple Bell [1] and Leopold Infeld [6] and tries to leave the historical Galois in its place. I have yet to encounter a student who preferred Rothman's account to Bell's, but historians admit that *ben trovato* stories might be just the lure to get students interested enough to work harder.

Figure 1. Evariste Galois (1811–1832). Wikimedia Commons.

Philosophy, on the other hand, addresses certain kinds of questions, and it is simply more difficult to get students to acknowledge an interest in some of those areas. One can trot out terms like 'metaphysics' or 'epistemology' without seeing light in the eyes of listeners. When students sign up for philosophy courses, they are often looking forward to the kind of pop philosophy that

populates so many discussions of medical ethics. Even writers as felicitous as Bertrand Russell can be a hard slog compared to what is expected.

Further, convincing arguments in philosophy can be complicated. Gödel's case for the incompleteness of *Principia Mathematica* and 'related systems' has been rephrased many times, but it is not bedtime reading. Then again neither are many mathematical arguments, and one might think that mathematicians, in particular, would find the philosophical use of detailed arguments quite familiar.



PRINCIPIA MATHEMATICA

BY

ALFRED NORTH WHITEHEAD, Sc.D., F.R.S.
Fellow and late Lecturer of Trinity College, Cambridge

AND

BERTRAND RUSSELL, M.A., F.R.S.
Lecturer and late Fellow of Trinity College, Cambridge

VOLUME I

Cambridge
at the University Press
1910

Figure 2. First edition of Whitehead and Russell's *Principia Mathematica*.
Bertrand Russell Archives.

What explains the lack of appeal to many mathematicians of the kind of argument that shows up in the setting of philosophy of mathematics isn't only the reader's looking for something lighter. It can be argued that the reason for wading through long arguments such as the classification of finite simple groups is that one ends with a conclusion that is indisputable. The same could apply to, say, Andrew Wiles's proof of Fermat's Last Theorem. In mathematical reasoning, one reaches the top of a mountain.

By contrast, after a heavy dose of closely reasoned philosophy, the conclusion at which one arrives is likely to be the object of a symposium in which various reasons for doubting it are advanced. After the letter Russell wrote to Frege in 1902 pointing out the paradox named for him, one might have thought (with Frege) that his system was in ruins. The prevalence of neo-Fregean attempts to resuscitate the Fregean system (see, for example, John Burgess's *Fixing Frege* [2], as well as many papers by Crispin Wright and Bob Hale) shows that Frege may have been buried prematurely. In view of the shortage of knock-down arguments in philosophy, the value of investing many hours of effort in any alternative system can be questioned. Those who spent their time working through *Principia Mathematica* may have decided against similar investments in other systems, e.g., W.V.O. Quine's New Foundations.

Another consideration that may go some distance to explain the relative popularity of history over philosophy within mathematics is the areas of mathematics on which those two disciplines are characteristically brought to bear. There are histories of mathematics at large. There are histories of specialties within mathematics (like algebra or analysis). There are histories of sub-specialties

within the specialties (like combinatorial group theory or Fourier analysis). Mathematicians working in any area can look back at the history of that area to see what has led to the current state of knowledge.

Philosophy of mathematics does not cast its net so widely. For centuries, arithmetic and geometry may have been the sole subjects of philosophical interest. With the rise of calculus, the issue of how to provide a suitable foundation became a matter of philosophical interest, and generally questions about foundations became central to investigations into philosophy. More recently, there has been a parting of the ways among philosophers between further work in foundations and more general philosophical interest in mathematics. Those working in philosophy departments are ready to turn back to arithmetic in a search for answers to questions about metaphysics and epistemology. Those working in mathematics departments are more likely to be pursuing issues such as whether set theory is a satisfactory foundation for mathematics at large.

Tastes in mathematics do make a difference in the kind of question at the center of such foundational discussions. The ascendancy of category theory, including its increasing presence in undergraduate and graduate curricula, certainly contributed to the appeal of its use as a foundation for mathematics, in competition with the traditional role of set theory. Readers of that kind of discussion should have picked up some of the language and techniques of both areas in order to make a comparison. However, if the question is which approach makes for the more satisfactory foundation, it is not clear that an answer even exists. In the meantime, perhaps there is some chance of making category theory more appealing to nonphilosophers, as in the recent work of Eugenia Cheng [3], but it is too early to predict the extent to which her readership will increase the audience for philosophy talks. Similarly, as long as the philosophical view known as 'structuralism' remains of interest, category theory will continue to be relevant. Leo Corry's *Modern Algebra and the Rise of Mathematical Structures* [4] gives a historical background for the philosophical arguments.

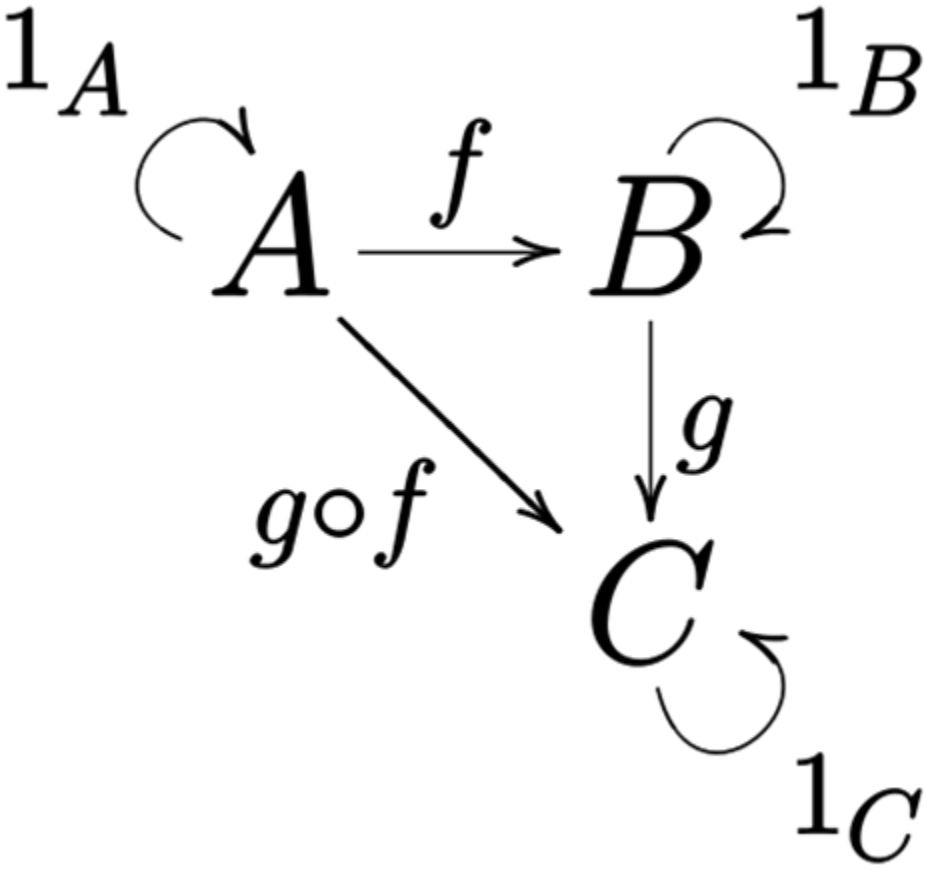


Figure 3. Diagram of a category by IkamusumeFan, CC BY-SA 4.0, Wikimedia Commons.

After all, there have been similar situations where there is not an obvious way to make a choice between two different approaches to an area. In the nineteenth century, the prolonged discussion of the merits of non-Euclidean geometry tended to involve the argument that Euclidean geometry was better for the mind. In the twentieth century, the conflict between constructability and Cohen's indiscernibles with respect to resolving the Continuum Hypothesis has not had a resolution. This outcome seems more typical of the resolution (or absence thereof) of philosophical arguments than of mathematical ones.

If we turn to examining biography, history again comes off as more appealing. It is possible to write dully about the life of a mathematician, but there are plenty of examples of the contrary, e.g., Siobhan Roberts's *Genius at Play* [8], which does not attempt to do justice to all the aspects of J.H. Conway's mathematics but which successfully lures readers into Conway's mind with examples of his approach to a variety of topics. The lives of mathematicians are parts of their subject's history.

In contrast, the lives of philosophers of mathematics are not themselves monuments of philosophy. Ever since Diogenes Laertius's *Lives and Opinions of Eminent Philosophers* was criticized as not even good history, let alone sound philosophy, there has been reluctance to turn to the life of a philosopher for revelation of the nature and value of his or her thought. A look at philosophical autobiography (e.g., that of W.V.O. Quine [7]) suggests that even a philosopher may not be able to tell a life story with philosophical content.

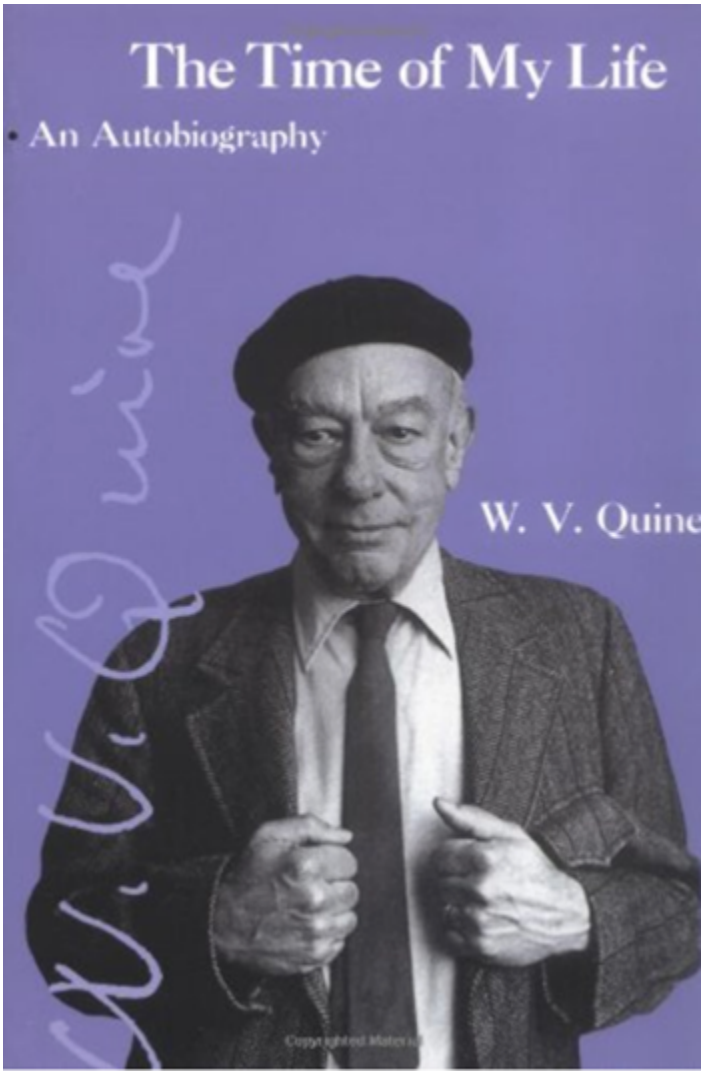


Figure 4. Quine's autobiography. MIT Press.

The deck seems stacked against the philosophers. Historians can tell good stories to interest audiences in what actually happened. Those historians can point to monuments of enduring value in the mathematics of the past. Historians can tell the lives of mathematicians like Gödel who displayed oddities in many situations. Philosophers do not have anything similar to offer.

Yet, for those attracted to the inherently challenging nature of the subject, philosophy offers intellectual rewards and professional opportunities. Particularly good news is that philosophers of mathematics in philosophy departments outnumber historians of mathematics in history departments. As a result, mathematicians with philosophical interests can usually readily secure places on the programs of philosophy meetings, even if the audiences turning out for such sessions during mathematics conferences remain relatively small in comparison to those in the rooms offering history presentations.

Thomas Drucker studied history of mathematics at Princeton under Michael S. Mahoney and at Toronto under Kenneth O. May. He has been Chair of the Philosophy of Mathematics Special Interest Group of the Mathematical Association of America. He retired from teaching at the University of Wisconsin–Whitewater in 2021.

References

[1] Bell, Eric Temple. (1937) *Men of Mathematics*. New York: Simon & Schuster.

[2] Burgess, John. (2005) *Fixing Frege*. Princeton: Princeton University Press.

[3] Cheng, Eugenia. (2022) *The Joy of Abstraction: An Exploration of Math, Category Theory, and Life*. Cambridge: Cambridge University Press.

[4] Corry, Leo. (2004) *Modern Algebra and the Rise of Mathematical Structures*. 2nd ed. Basel: Birkhäuser.

[5] Grattan-Guinness, Ivor. (2004) History or Heritage? An Important Distinction in Mathematics and for Mathematics Education. *The American Mathematical Monthly* 111(1), 1–12.

[6] Infeld, Leopold. (1948) *Whom the Gods Love: The Story of Evariste Galois*. New York and London: Whittlesey House.

[7] Quine, Willard Van Orman. (1985) *The Time of My Life: An Autobiography*. Cambridge: MIT Press.

[8] Roberts, Siobhan. (2015) *Genius at Play: The Curious Mind of John Conway*. New York: Bloomsbury.

[9] Rothman, Tony. (1989) Genius and Biographers: The Fictionalization of Evariste Galois. In *Science à la Mode: Physical Fashions and Fictions*, 148–194. Princeton: Princeton University Press.

NOTES de la SMC

Notes pédagogiques

Novembre 2022 (tome 54, no. 5)

An Invitation to Eventmath

Greg Stanton

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.

John McLoughlin, *University of New Brunswick (johngm@unb.ca)*

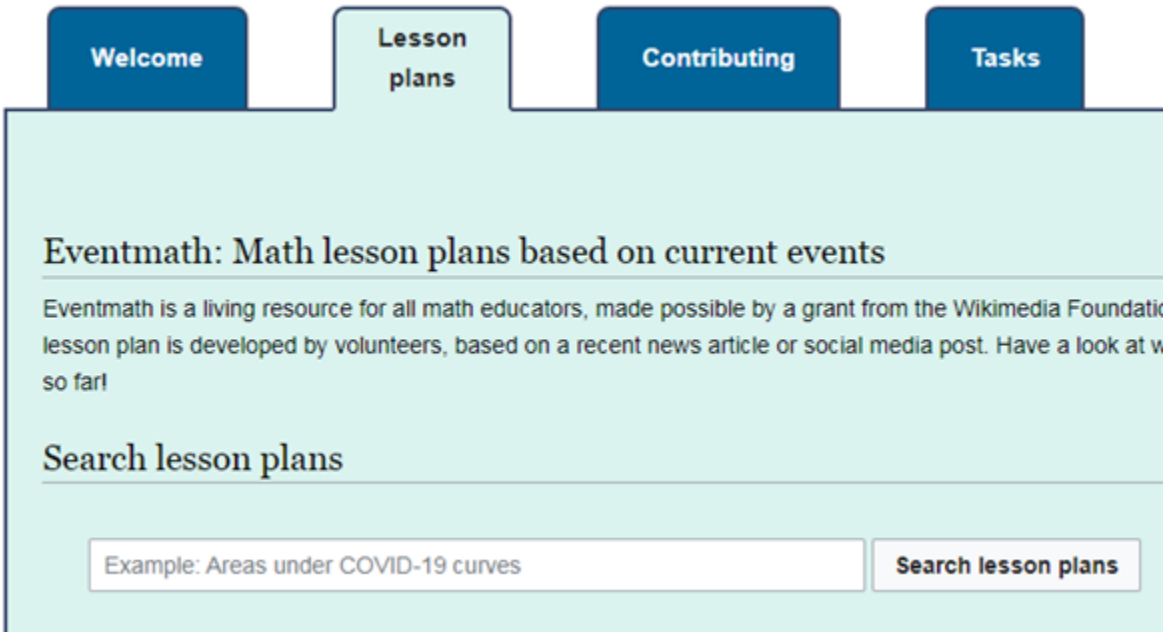
Kseniya Garaschuk, *University of Fraser Valley (kseniya.garaschuk@ufv.ca)*

> *"Mathematical literacy is an individual's capacity to reason mathematically and to formulate, employ, and interpret mathematics to solve problems in a variety of real-world contexts" (Programme for International Student Assessment, 2022).*
>
> *"Mathematical literacy involves more than executing procedures. It implies a knowledge base and the competence and confidence to apply this knowledge in the practical world" (Ontario Ministry of Education, 2020).*

1. What is Eventmath?

Eventmath is a new open-access wiki for math lesson plans based on current events. Each lesson plan is inspired by a news article, social media post, or video.

Eventmath is also a small but growing international community. Our aim is to help students wield math as a tool for understanding their world. We're building something big, and we want you to be a part of it!



2. Why is Eventmath necessary?

The need for Eventmath is based on three observations.

First, misinformation and disinformation are global threats. Canada is no exception: According to a research report from Evidence for Democracy, a non-partisan not-for-profit organization funded by the Government of Canada, "Misinformation and disinformation are ongoing threats to the health and safety of the Canadian public, as well as the basis of democracy" (Heer et al., 2021).

In early 2021, Evidence for Democracy surveyed 180 academics at Canadian institutions. The survey sample was drawn primarily from within their network, which is focused on evidence-based policy. They found wide consensus among respondents that the magnitude of misinformation would only increase in the future, and that addressing misinformation was part of their role as

academics.

Second, mathematical literacy is crucial to countering misinformation and disinformation. In 2020, a study out of Cambridge was published in *Royal Society Open Science*, based on data collected from at least 700 participants in each of five countries (Roozenbeek et al., 2020). The analysis showed that out of fourteen predictors–including variables such as age, education, and political ideology–the most consistent predictor of decreased susceptibility to misinformation about COVID-19 was performance on numeracy tasks. When asked about the finding for a story in *The Guardian*, coauthor Dr. Sander van der Linden replied that "it gives me hope that there's a solution out there" (Grover, 2020).

If Eventmath is to be a solution, we must start by recognizing that mathematics and mathematical literacy are distinct. As explained in the Cambridge study, "the construct of numeracy does not merely measure mathematical ability but captures the ability of individuals to understand and use quantitative information more broadly." Accordingly, the researchers assessed numeracy with questions placed in a real-world context. Here is a typical question, which was borrowed from an earlier study (Schwartz, MD, MS et al., 1997):

"In the BIG BUCKS LOTTERY, the chance of winning a $10 prize is 1%. What is your best guess about how many people would win a $10 prize if 1,000 people each buy a single ticket to BIG BUCKS? ____ person(s) out of 1,000."

Although the Cambridge researchers assessed only basic numeracy skills, they also demonstrated the value of advanced quantitative skills in combating misinformation. After all, they had a large data set with many variables; without higher-level concepts such as multiple linear regression, they would not have discovered the special role played by numeracy. So, for the purposes of Eventmath, it's convenient to include both basic skills and advanced skills under the umbrella of mathematical literacy.

But can Eventmath help us teach advanced skills? It can. That's because scientific research is often covered in the media, whether it's in a *tweetorial* on Twitter (Gero et al., 2021) or in the science section of a news publication. For example, the Cambridge study cited above was covered by a story in *The Guardian*. Using that story as a jumping-off point, an Eventmath lesson plan could ask students to locate the original research. Since the data were all made publicly available, students could even be asked to reproduce the results on their own!

Third, media sources provide special opportunities for building mathematical literacy. To be clear, mathematical literacy demands that students not only solve problems within an authentic context, but also that they identify problems worth solving, and that they make a habit of doing so. Let's consider how teaching from media sources addresses each of these requirements. A media source encountered in everyday life is, ipso facto, authentic. And as Watson (2004) noted, "rarely does an article actually state a 'problem' in the form students would expect from their experience with text books [*sic*]. There is hence the opportunity for problem posing as well as problem solving." Lastly, media sources "provide a venue for continued practice" (Madison, 2014). Practice is key to habit formation.

To build the necessary habits, the general theory of habit formation suggests that students must repeatedly engage in mathematical thinking "in the presence of a cue or set of cues (i.e., context) so that cue-behavior associations may develop" (Gardner & Rebar, 2019). The media sources are the cues that students will continually encounter outside of the classroom. We need more longitudinal studies to evaluate this line of reasoning, but the limited evidence available so far is encouraging (Madison, 2014).

The difficulty, as Ceesay (2011) puts it, is that "assembling a cornucopia of interesting articles can be a daunting task." Current attempts at addressing this difficulty are based around textbooks and static websites. Unfortunately, textbooks are expensive, they quickly become outdated, and they're limited in scope and depth. Existing web resources are scarce and they lack robust feedback mechanisms.

The imperative is clear: we must develop accessible teaching materials based on authentic media sources. Math educators are already present in nearly every school, at every level; they are well positioned to teach mathematical literacy at scale. With the right resources, they can help students combat misinformation in their own lives.

3. Who makes Eventmath?

Nonprofit organization

Wiki for education

Wikiversity project

Let's start with Wikipedia. The online encyclopedia is one of the five or ten most trafficked websites in the world (Semrush, 2022; SimilarWeb, 2022). It's volunteer driven, free of charge, free of ads, and a tremendous source of information when used wisely. In fact, media literacy experts say it's often fact checkers' first stop (McGrew et al., 2017).

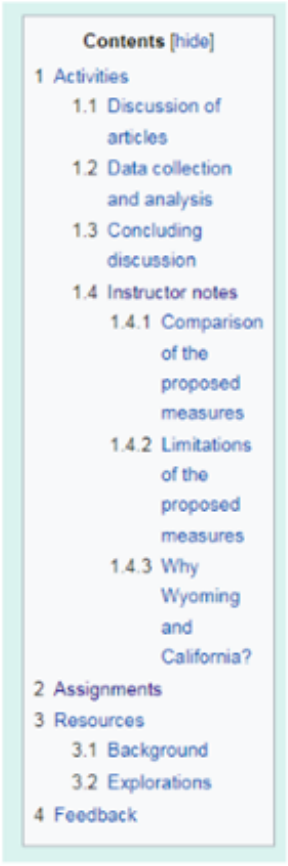
This is all possible because of the Wikimedia Foundation, which is the nonprofit charitable organization that hosts Wikipedia, as well as other projects such as Wikiversity. Wikiversity runs on the same software as Wikipedia, but instead of encyclopedia articles, it hosts learning and teaching resources. Actually, if you already have a Wikipedia account, then that account is good on Wikiversity too.

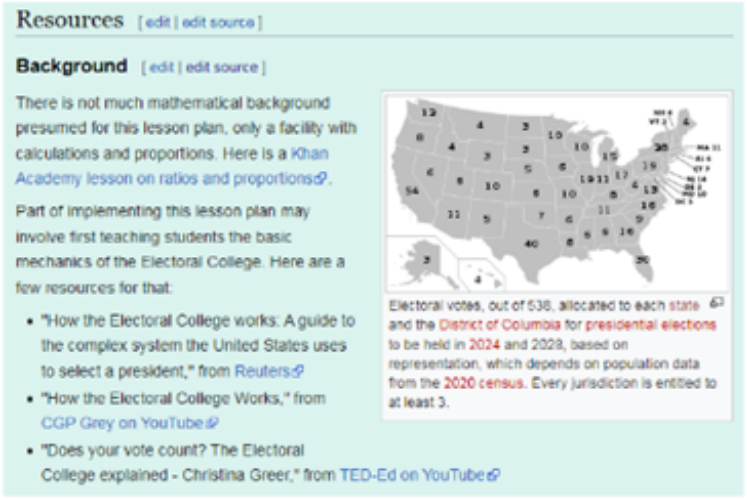
Eventmath is situated within Wikiversity, thanks to a grant from the Wikimedia Foundation. So, Eventmath is built on solid ground, and it's ready to scale. That scaling will happen because of a community of mission-oriented educators and researchers. In short, *you* make Eventmath.

4. What's in an Eventmath lesson plan?

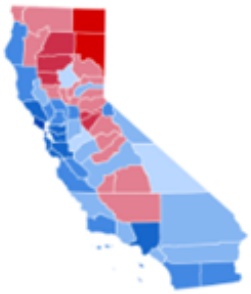
Lesson plans range from bite-sized warm-up quizzes to detailed notes for full class periods.

To facilitate browsing, each lesson plan features an overview box at the top, listing vital information such as assumed knowledge, estimated class time, and a link to the media source. If the source contains misinformation, the lesson plan will include a mathematical refutation, but plenty of reliable sources also make for good lesson plans. Below the overview box, there are suggested sections for activities, assignments, and resources.



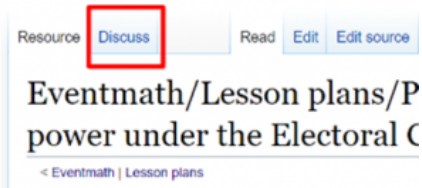


Decimal notation	Scientific notation
2	2×10^{0}
300	3×10^{2}
4321.768	4.321768×10^{3}
−53000	-5.3×10^{4}
6720000000	6.72×10^{9}
0.2	2×10^{-1}
987	9.87×10^{2}
0.00000000751	7.51×10^{-9}



Last, but certainly not least, is a feature that's only possible on an interactive website: an endorsement button. This provides a quality signal for those wishing to choose a lesson plan, since it allows educators to leave comments based on classroom experience.

But, this isn't Amazon. Not only are the products free, but also users can make them better! Every lesson plan comes with an attached discussion page. So, instead of leaving a negative review, educators are encouraged to leave constructive feedback, or to be bold and improve the lesson plan themselves.



5. What topics does Eventmath cover?

- **Math types:** Arithmetic, Algebra, Geometry, Calculus, Probability, Statistics…
- **Event types:** Business, Culture, Economics, Education, Government, Health, Science…

The categories may be construed broadly. For example, applications of differential equations may be placed in the calculus category. Other categories can easily be added, however advanced they may be.

To illustrate the power of the platform, links to ten lesson plans from the community are provided below. You, dear reader, can make one of them better right now!

- Dimensional analysis, shipping, and an impossible weight limit
- Comparing streaming service pay rates to artists
- Proportions and voting power under the Electoral College
- White House chart exaggerates economic growth
- Simpson's Paradox in COVID vaccine efficacy data
- California and New York cannot actually decide the popular vote
- Estimating the cost of preventing climate breakdown
- Medium versus large pizzas

- Using inclusion-exclusion to understand COVID reinfection
- Second derivatives and economic inflation

"Dimensional analysis, shipping, and an impossible weight limit" is almost sure to blow your mind! It was developed by a participant at an Eventmath workshop.

"Comparing streaming service pay rates to artists" is also worth pointing out, and not just because students love it. This lesson plan is based on a tweet from an artist with nearly a million followers on Twitter, and she retweeted the lesson plan when it was shared on Twitter. The moral? Misinformation can spread, but so can quantitative literacy.

6. What are the use cases for Eventmath?

There are more possibilities than limitations. You may find some inspiration below.

- **Projects:** Anyone can select a single lesson plan for a student project, without having to purchase a whole book.
- **Supplements:** We can create pages with curated lists of daily warm-ups, to supplement courses on traditional math subjects at any level.
- **Full Curricula**
  - **Quantitative literacy:** We can create pages with curated lists of links to lesson plans that comprise curricula for semester-long courses on quantitative literacy.
  - **Journalism:** We can build a course on quantitative methods for journalists, such as COMM-260 at American University. For example, lesson plans can ask students to find errors in published stories, in line with the model statistics course proposed by Martin (2017). Does your institution have such a course? If not, why? It's critical that we don't forget about the supply side of the information market (Ranney et al., 2008; Harrison, 2020).
  - **Education:** Pre-service teachers can publish a lesson plan as part of their coursework, and during practicum, they can implement it!

7. How does Eventmath help educators?

How about a holiday metaphor? 'Tis the season, after all. Eventmath is essentially a cookie exchange! If each educator brings just one educational treat to this party, we can all leave with a tin full of goodies.

Whatever the season, Eventmath is designed to make things easy.

Easy to find:

The site itself already takes the top spot in a Google search for "math lesson plans based on current events." Within Eventmath, educators can use filters to search for lesson plans at the intersection of multiple categories (e.g. calculus, government, 45-60 minutes). And they can browse a self-updating directory organized by categories relevant to them.

Easy to use:

All lesson plans are fully open access.

Easy to share:

Like any webpage, the lesson plans are easy to share through social media, email, or a personal website. If you've started a lesson plan yourself, you could share it to find collaborators, or to invite others to use and possibly endorse it. Or, you can download a PDF version for printing. Since it's a wiki, you can link to your history of contributions as well.

Easy to cite:

If you've polished a lesson plan to your liking and want to link to that particular version, you can do that easily; you can even generate a citation for it in your preferred format, by clicking "Cite this page."

8. How can I contribute to Eventmath?

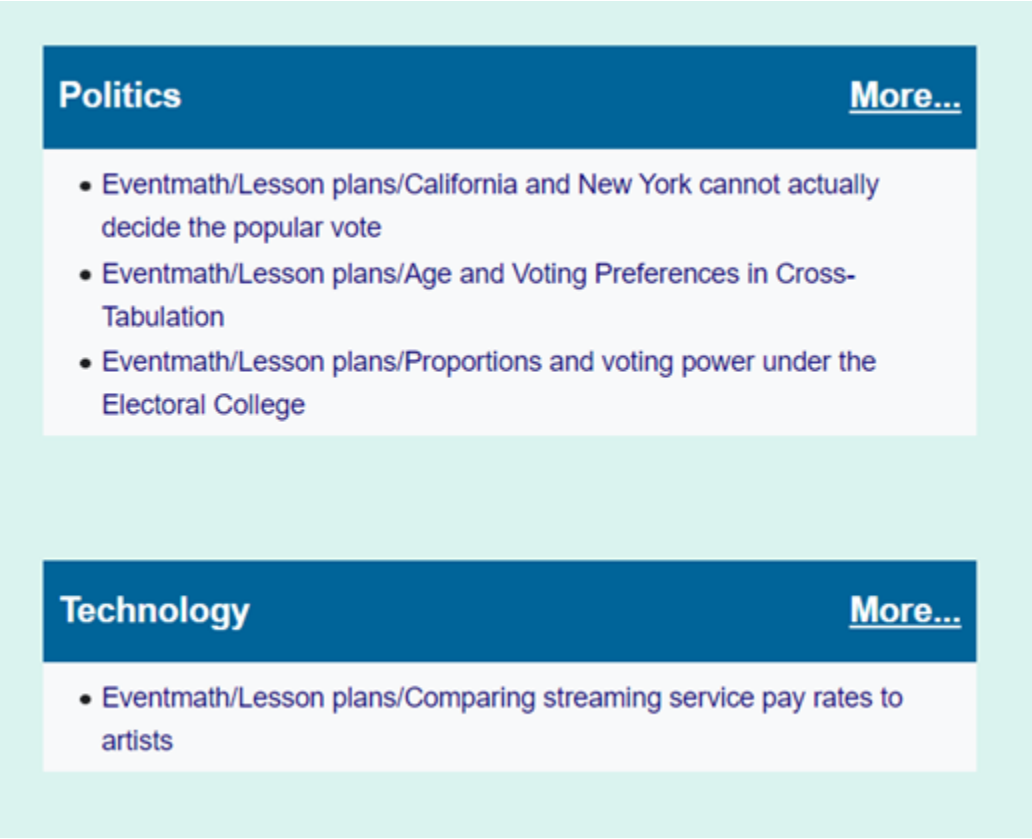
There are a variety of small ways to make a big impact. On the Eventmath site, these are continually organized in a prominent Tasks page.

For example, let's imagine you have a rough idea for a lesson plan, but you're short on time. If you have a possible title and a media source, then that's enough! You can click "Create lesson plan" to publish your idea. When you do, a link to the page you created will automatically appear in a directory of drafts on the Tasks page, under categories you select. Then, other educators will be able to build on your idea.

There are many other valuable ways to participate. Here are a few:

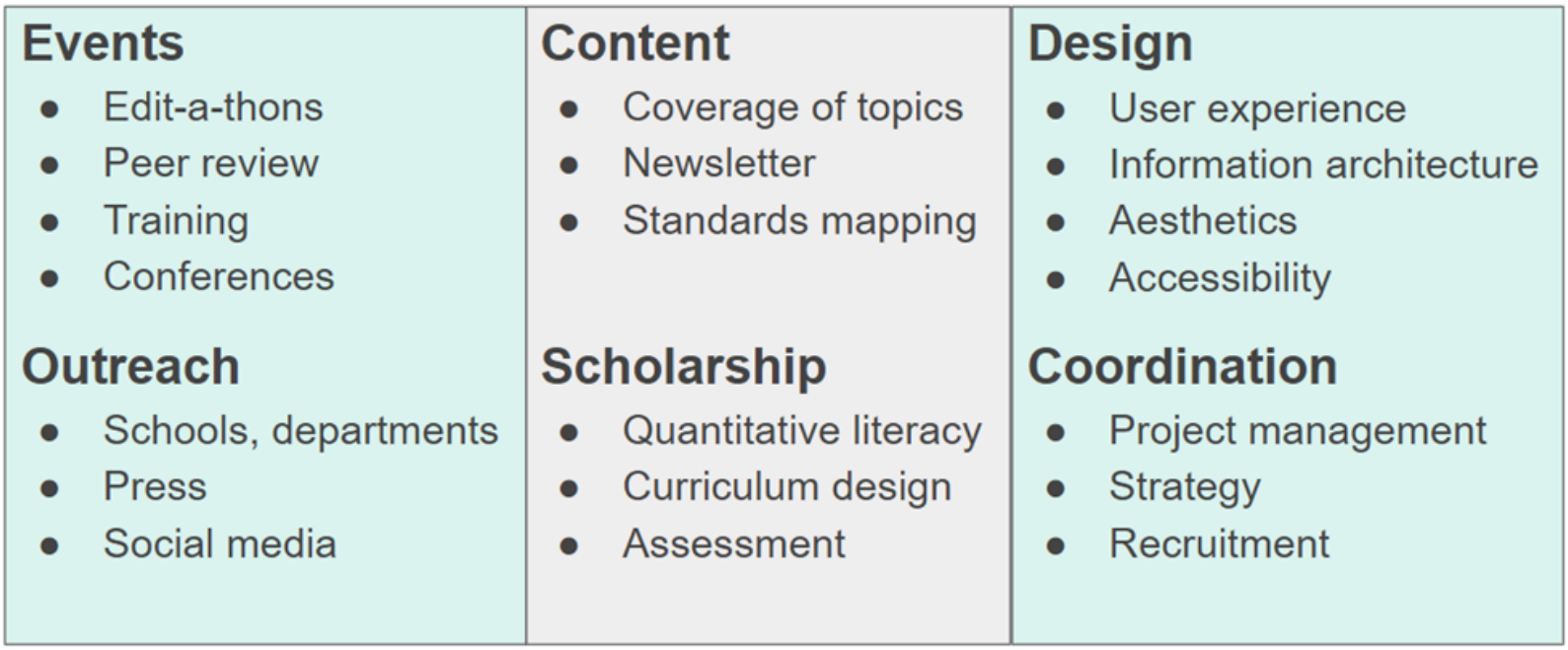
- Use lesson plans in the classroom
- Add feedback or endorse lesson plans based on classroom experience
- Share lesson plans on social media with the hashtag #Eventmath
- Share Eventmath with colleagues
- Link to Eventmath (linking from any site helps with discovery and search)
- Provide peer review of lesson plans

However you participate, you're welcome to create a short profile for yourself or your organization on the Eventmath Participants page. This helps others to see a role for themselves within the project! Speaking of roles…



9. What opportunities does Eventmath offer?

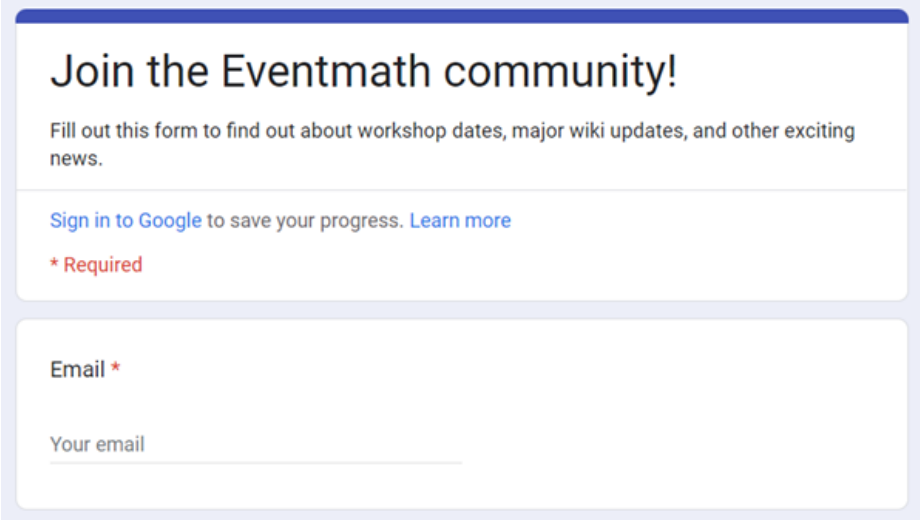
According to Wikimedia's Leadership Development Working Group, "Leaders are considered a key success factor for any project" ("Leadership," 2022). If you'd like to help pioneer Eventmath, there are opportunities for leadership in a range of areas.



The current focus is developing a community and a critical mass of content, as defined in our original grant proposal. Going forward, we expect to shape leadership roles as a community. If you're interested, please reach out!

10. How can I stay updated about Eventmath?

To find out about workshop dates, major updates, and other exciting news, you can fill out our community form!



Acknowledgments

I thank Dr. Brendan W. Sullivan (Emmanuel College Boston) for creating Eventmath with me, Marissa Maldonado for creating the stunning Eventmath logo, and both Dr. Guy Vandegrift (Wright State University) and Dave Braunschweig (Harper College) for assisting with Eventmath on Wikiversity. I thank First-Year Math & Stats in Canada, the National Numeracy Network, the Special Interest Group of the Mathematical Association of America on Quantitative Literacy, and the members of those groups for many thoughtful discussions, and for helping us promote the workshops that led to most of the existing lesson plans. I thank everyone who created the lesson plans, as well as community members who provided feedback by filling out online forms and participating in meetups and conference talks. I thank the Wikimedia Foundation for grant support and guidance.

References

Ceesay, T. P. (2011). Teaching Statistics Using the News Media. *Section on Statistical Education – JSM 2011*. http://www.statlit.org/pdf/2011Ceesay-JSM.pdf

Gardner, B., & Rebar, A. L. (2019). Habit Formation and Behavior Change. *Oxford Research Encyclopedia of Psychology*. https://doi.org/10.1093/acrefore/9780190236557.013.129

Gero, K. I., Liu, V., Huang, S., Lee, J., & Chilton, L. B. (2021). What Makes Tweetorials Tick: How Experts Communicate Complex Topics on Twitter. *Proceedings of the ACM on Human-Computer Interaction*, *5*(CSCW2), 1-26. https://dl.acm.org/doi/abs/10.1145/3479566

Grover, N. (2020, October 13). Poor numerical literacy linked to greater susceptibility to Covid-19 fake news | Coronavirus. *The Guardian*. https://www.theguardian.com/world/2020/oct/14/poor-numerical-literacy-linked-to-greater-susceptibility-to-covid-19-fake-news

Harrison, S. (2020, November). *A Study Into the Value Placed on Numeracy as Symbolic Capital Within the Journalistic Field*. https://researchonline.ljmu.ac.uk/id/eprint/14006/1/2020Harrisonphd.pdf

Heer, T., Heath, C., Girling, K., & Bugg, E. (2021, May). *Misinformation in Canada: Research and Policy Options*. Evidence for Democracy. https://evidencefordemocracy.ca/sites/default/files/reports/misinformation-in-canada-evidence-for-democracy-report_.pdf

Leadership Development Working Group/Purpose and Structure. (2022, June 24). *Meta, discussion about Wikimedia projects*. Retrieved 07:52, October 24, 2022 from https://meta.wikimedia.org/w/index.php?title=Leadership_Development_Working_Group/Purpose_and_Structure&oldid=23444564

Madison, B. L. (2014). How Does One Design or Evaluate a Course in Quantitative Reasoning? *Numeracy*, *7*(2). https://dx.doi.org/10.5038/1936-4660.7.2.3

Martin, J. D. (2017). A Census of Statistics Requirements at U.S. Journalism Programs and a Model for a "Statistics for Journalism" Course. *Journalism & Mass Communication Educator*, *72*(4), 461-479. https://doi.org/10.1177/1077695816679054

McGrew, S., Ortega, T., Breakstone, J., & Wineburg, S. (2017). The Challenge That's Bigger Than Fake News: Civic Reasoning in a Social Media Environment. In *American Educator* (Issue Fall 2017). https://files.eric.ed.gov/fulltext/EJ1156387.pdf

Ontario Ministry of Education. (2020). *Mathematical Literacy*. https://www.dcp.edu.gov.on.ca/en/program-planning/cross-curricular-and-integrated-learning/mathematical-literacy

Programme for International Student Assessment. (2022). *PISA 2022: Mathematics Framework*. Organisation for Economic Co-operation and Development. https://pisa2022-maths.oecd.org/ca/index.html

Ranney, M., Rinne, L., Yarnall, L., Munnich, E., Miratrix, L., & Schank, P. (2008, June). Designing and Assessing Numeracy Training for Journalists: Toward Improving Quantitative Reasoning Among Media Consumers. In *Kanselaar, G., Jonker, V., Kirschner, P. A., & Prins, F. J. (Eds.), International Perspectives in the Learning Sciences: Cre8ing a learning world.* Proceedings of the Eighth International Conference for the Learning Sciences – ICLS 2008, Volumes 2 (pp. 246-253). Utrecht, The Netherlands: International Society of the Learning Sciences. https://repository.isls.org//handle/1/3159

Roozenbeek, J., Schneider, C. R., Dryhurst, S., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., & van der Linden, S. (2020, October 14). Susceptibility to misinformation about COVID-19 around the world. *Royal Society Open Science*, *7*(10). https://doi.org/10.1098/rsos.201199

Schwartz, MD, MS, L. M., Woloshin, MD, MS, S., Black, MD, W. C., & Gilbert Welch, MD, MPH, H. (1997, December 1). *The Role of Numeracy in Understanding the Benefit of Screening Mammography | Annals of Internal Medicine*. ACP Journals. Retrieved October 19, 2022, from https://www.acpjournals.org/doi/abs/10.7326/0003-4819-127-11-199712010-00003

Semrush. (2022). *Top Websites ranking – Most Visited Websites in the world [September 2022]*. Semrush. Retrieved October 20, 2022, from https://www.semrush.com/website/top/

SimilarWeb. (2022). *Most Visited Websites – Top Websites Ranking for September 2022 | Similarweb*. SimilarWeb. Retrieved October 20, 2022, from https://www.similarweb.com/top-websites/

Watson, J. M. (2004). Quantitative Literacy in the Media: An Arena for Problem Solving. *The Australian Mathematics Teacher*, *60*(1), 34-40. https://search.informit.org/doi/10.3316/informit.184516035392985

. . .

Connect on Twitter: @HigherMathNotes

NOTES de la SMC

The Life of Primes in 37 Episodes

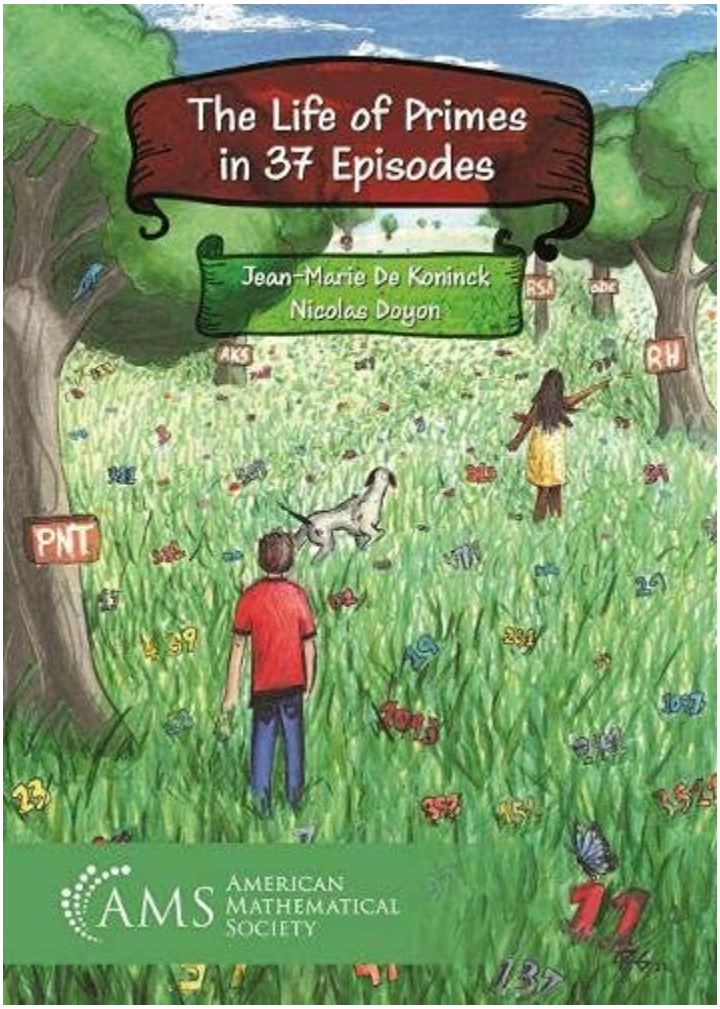
Comptes rendus

Novembre 2022 (tome 54, no. 5)

Karl Dilcher (Dalhousie University)

Book *Reviews bring interesting mathematical sciences and education publications drawn from across the entire spectrum of mathematics to the attention of the CMS readership. Comments, suggestions, and submissions are welcome.*

Karl Dilcher, *Dalhousie University (notes-reviews@cms.math.ca)*



The Life of Primes in 37 Episodes
by Jean-Marie De Koninck and Nicolas Doyon
American Mathematical Society, 2021
ISBN 978-1-4704-6489-9
Reviewed by Karl Dilcher

Numerous books on prime numbers have been published over the years, as a quick search of MathSciNet will show. These books range from expositions for the general reader (for instance, *The Music of the Primes* by Marcus du Sautoy) through higher-level expositions (e.g., Paulo Ribenboim's *The Little Book of Bigger Primes*) to more specialized graduate-level textbooks (e.g., *The Distribution of Prime Numbers*by Dimitris Koukoulopoulos) and numerous research monographs on special topics related to primes. There is even a graphic detective novel, *Prime Suspects*, by

Andrew and Jennifer Granville, published in 2019.The reader will have noticed that three of the names mentioned above are prominent Canadian number theorists. The book under review, *The Life of Primes in 37 Episodes*, was also written by well-known Canadian number theorists, Jean-Marie De Koninck and Nicolas Doyon of Laval University.

In their Preface, the authors recall a key idea from the movie *Contact* (based on Carl Sagan's novel), namely the universality of prime numbers and mathematics as a universal language. To explain the book's title, the authors then state the thought that once primes are defined, they begin a life of their own: "The mysteries surrounding primes begin multiplying just like living cells reproduce themselves, and there seems to be no end to it." This will explain the title of the book, and it may or may not be a coincidence that 37 is a prime.

The purpose of this book is best explained by further quoting from the Preface: "Many number theory books include the study of prime numbers. Most of them were written for teaching purposes, and others for the pleasure of the general public. […] So why another book on primes? Our monograph offers a somewhat different perspective. Besides covering some of the most important results regarding prime numbers, we present a range of problems number theorists are currently working on and the references that will allow the curious reader to further investigate some of these problems. Moreover, we selected topics related to primes that will appeal to those mathematicians who wish to enrich their general mathematical culture. We have also chosen to present the topics in a chronological order, as they have emerged throughout history.

"Although we do not claim to provide a thorough history of number theory, we do shed light on the humans who contributed to the life of primes. Indeed, history does help understand how mathematical results evolved over time. […] Indeed, theorems do not pop up suddenly. They are for the most part the final outcome of many attempts by various mathematicians. This is why in this book we also write about the people behind the results, mentioning their successes and sometimes their failures."

The character and contents of this book are also well described by the text on the back cover, which partly reads, "This monograph takes the reader on a journey through time, providing an accessible overview of the numerous prime number theory problems that mathematicians have been working on since Euclid. Topics are presented in chronological order as episodes. These include results on the distribution of primes, from the most elementary to the proof of the prime number theorem. The book also covers various primality tests and factorisation algorithms."

The book contains a brief (6-page) timeline, covering advances in the theory of prime numbers from the Sieve of Eratosthenes of around 300 BCE to results from 2018. Throughout the book there are also short biographies of the key players in the history of number theory, often accompanied by interesting anecdotes.

The book is organized along five general themes, which are further divided into a total of 37 "episodes". These themes are as follows:

1. Counting primes, the road to the prime number theorem.
2. Counting primes, beyond the prime number theorem.
3. Is it a prime?
4. Finding the prime factors of a given integer.
5. Making good use of the primes and moving forward.

I will just mention a few of the episodes as examples. Theme 1 begins with Euclid's proof of the infinitude of primes, as one would expect (*An Infinite Family*, Episode 1), and ends with an outline of an elementary proof of the prime number theorem (Episode 13). Theme 2 begins with *Sieve Methods* (Episode 14), and also contains *Small and Large Gaps Between Consecutive Primes* (Episode 17), which has gained particular prominence in recent years. As their titles indicate, Themes 3 and 4 contain the most important primality tests and factorisation methods in six, resp. seven episodes. The two episodes comprising Theme 5 are *Cryptography, From Julius Caesar to the RSA Cryptosystem* (Episode 36), and *The Present and Future Life of Primes* (Episode 37).

Each episode ends with a number of interesting problems, some of which are quite challenging. An appendix of over 50 pages contains hints, sketches, and solutions to selected problems. A final appendix lists some basic results from number theory, algebra and analysis; they may be helpful to the reader as quick reference.

This is a beautiful book, very well written and edited. It should appeal to number theorists as well as interested mathematicians in other fields. It is also a rich source of supplementary readings for any undergraduate or graduate course in number theory.

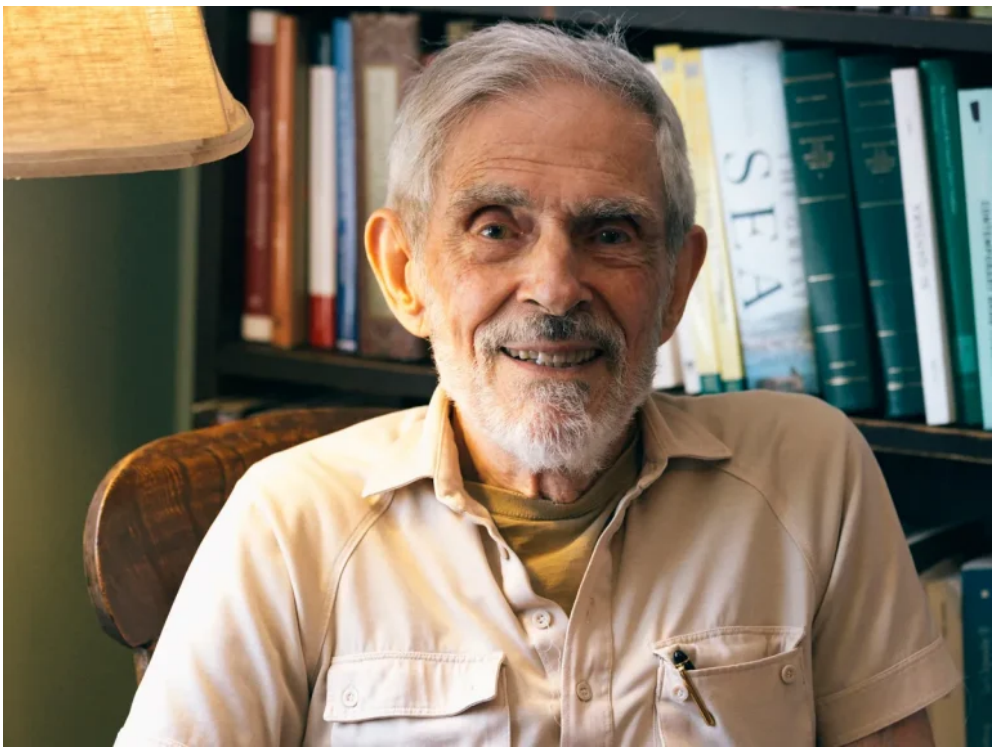
NOTES de la SMC

Activist U of T math professor Chandler Davis devoted himself to progressive causes

Notices nécrologiques

Novembre 2022 (tome 54, no. 5)

Peter Rosenthal



Chandler Davis, *Photo provided to the Globe and Mail courtesy of the family.*

Mathematician and activist Chandler Davis refused to answer questions in 1953 when called before the House Un-American Activities Committee (HUAC), which was investigating allegations of communist activity in the United States. Unlike most of the "uncooperative" witnesses, he invoked the First Amendment of the U.S. Constitution, which guarantees free speech, rather than using the Fifth Amendment's protection against self-incrimination.

Deeply committed to his beliefs, Professor Davis wanted to establish a precedent that HUAC had no right to question witnesses about their political affiliations. He knew that he risked being cited for contempt of Congress and jailed, but he wanted to raise awareness of the dangers of HUAC.

Prof. Davis was consequently fired from his job teaching mathematics at the University of Michigan.

On Dec. 3, 1959, the Supreme Court refused to hear his case and he surrendered to serve six months in prison.

He continued his research before, during and after his incarceration, and retained his sense of humour throughout. A footnote to a mathematics paper that he wrote while incarcerated reads: "Research supported in part by the Federal Prison System. Opinions expressed in this paper are the author's and are not necessarily those of the Bureau of Prisons."

During the years between his dismissal from Michigan and his imprisonment, he applied for many different positions but was consistently declined. It became apparent that he was blacklisted; the blacklisting continued even after he got out of jail in 1960.

In 1962, with support from the renowned Canadian mathematician H.S.M. Coxeter, Prof. Davis accepted a position as professor of mathematics at the University of Toronto. He lived in Canada for the following six decades, distinguishing himself as an unusually inspiring and principled man.

On Sept. 24, Prof. Davis died in Toronto at the age of 96 from a probable stroke.

Prof. Davis was a devoted husband, father and grandfather, a noted mathematician, an extremely dedicated political activist, an author of science fiction stories, a staunch feminist and a fine poet and composer. He never seemed defeated by or bitter about the obstacles he encountered. He worked tirelessly toward a more egalitarian world, participating in many progressive activities throughout his long life.

Horace Chandler Davis was born on Aug. 12, 1926, in Ithaca, N.Y., the eldest of five children of Marian R. Davis and Horace Bancroft Davis. His parents were economists whose political views were very left-wing. Like Chandler, his father was fired from his position at a university because he refused to answer questions asked by HUAC.

Chandler (also known as Chan) received his PhD in mathematics from Harvard University in 1950 prior to joining the University of Michigan's Department of Mathematics.

When he finally arrived at the University of Toronto, after being incarcerated and blacklisted in the United States, he flourished. He was an excellent teacher, supervised 15 doctoral theses and continued to make significant research contributions to mathematics.

"Chandler Davis was a very respected mathematician whose research included important contributions to linear algebra and to operator theory, two areas that I have also worked in," Dalhousie University professor emeritus Heydar Radjavi says. "His work is often cited and relied upon by researchers across the world."

Prof. Davis's teaching inspired many students to become mathematicians.

"I admired him greatly," writes James Arthur, University Professor and Mossman Chair at the University of Toronto who served a term as president of the American Mathematical Society. "His course in real and complex analysis, which I took as a third-year undergraduate at Toronto, was a transformative experience for me, and, I would say, for every other student in the course."

Prof. Davis was a left-wing radical who participated in a huge number of progressive causes, both on campus and off. One such initiative was co-founding the Faculty Reform Caucus (FRC), a group of progressive U of T professors who engaged in several forms of protest, including rallying support for striking teaching assistants and other workers.

"When former U.S. president George [H.W.] Bush was being awarded a U of T honorary degree," recalled U of T professor emeritus Richard Lee, "Chandler co-organized a protest where 18 FRC faculty, led by him and Ursula Franklin, stood up and ostentatiously walked out at a key moment in the ceremony."

Prof. Davis also opposed the Vietnam War and was chairman of the Toronto Anti-Draft Program. He was active in Science for Peace and often participated in the Toronto Vigil against the Occupation of the Territories. He regularly attended the Davis-Markert-Nickerson Lecture on Academic and Intellectual Freedom, established in the 1990s by the University of Michigan Faculty Senate in answer to the university's treatment of faculty who had been attacked by HUAC, including Prof. Davis himself.

Prof. Lee also recalls "Chandler's tireless efforts to support persecuted academics around the world; local, national, U.S.-based or overseas. He was a key link in an international network of protest and truth-telling; he brought many U of T colleagues on board."

Prof. Davis's last such effort took place about 11 weeks before his death. From his hospital bed, he co-organized and spoke at an online event in support of imprisoned dissident Russian mathematician Azat Miftakhov.

Prof. Davis began his talk, "It's a pleasure to welcome you to this panel in support of our young colleague Azat Miftakhov and other political prisoners; in support, in particular, of Russians courageously speaking out against the war, and, more generally, in support of freedom of conscience and peace. It means a lot to me to be opening this session because I have a special bond to Azat Miftakhov. I was a political prisoner myself, years ago, not in Russia but in the USA. I was not much older than he is now; like him I had a wife standing by me outside; and like him I tried to go ahead doing mathematics while in prison. It was hard, but not as hard as Azat's imprisonment, and it was only half a year."

He often raised political issues within the community of mathematicians. Many mathematicians resented such activities, arguing that it was wrong to "politicize" mathematics.

But he also had ardent supporters, including Mary Gray, Distinguished Professor of Mathematics and Statistics at American University, who in 1971 became the founding president of the Association for Women in Mathematics. She called Prof. Davis's death "a great loss."

"Many mathematicians came to recognize the inequities in the mathematics community reflecting those in the world abroad, but Chandler was one who worked to do something about it and understood that it is necessary to engage others," Prof. Gray said. "When women mathematicians came to understand that organizing was essential were the situation ever to improve, it was Chandler who joined and, in some cases, inspired the movement that led to the Association for Women in Mathematics."

As implied by Prof. Gray, Prof. Davis was a very staunch feminist. He and his wife, the distinguished historian Natalie Zemon Davis, agreed that their marriage would be based on gender equality. They shared the care of their three children, even during periods of their lives when they held professorships at universities on opposite sides of North America, he at Toronto and she at the University of California, Berkeley and then Princeton.

When Chan turned 65, he was mandatorily retired and became professor emeritus. That did not change his life very much. He still maintained his research, taught some courses, and supervised PhD students. He continued to serve as editor of the Mathematical Intelligencer, a scholarly journal.

In 2010, Josh Lukin compiled and edited *It Walks in Beauty*, a compilation of some of Chan's essays and stories. This book is in the Aqueduct Press series of Heirloom Books, which aims to bring back into print and preserve work that has helped make feminist science fiction what it is today.

"Chan retained his love of and interest in life right up to his last day," his son, Aaron Davis, said. "He thought about his passing and of the passing of ideas and creativity between the generations and he expressed these beautifully in his poetry and songs. He also spoke through his actions – by example."

His daughter Simone Davis recalls his insatiable curiosity about the world and all manner of natural phenomena, creative expressions and human struggles. "To me, the reason Chandler was so stalwart about supporting struggles for justice, freedom and equity was his love for the world," she said. "His political life, including when he found himself an outlier or offered a hand to outliers, was as brave as it was because he loved the hell out of this world, and was ready to stand up on the basis of that love. Others felt invited by him to do likewise, I've been learning since he's passed. I'm so grateful he was my father."

Prof. Davis leaves his wife, Natalie Zemon Davis; son, Aaron Davis; daughters, Hannah Davis Taieb and Simone Davis; four grandchildren and one great-grandchild; and his sisters, Mina Caulfield and Terry Davis.

*This article originally appeared in the Globe and Mail; online on 13 October, 2022 and in print on 15 October, 2022. It is reprinted with permission of the author.

NOTES de la SMC

In Memoriam: Alan Walter Kelm (3 mai 1964 – 30 septembre 2022)

Novembre 2022 (tome 54, no. 5)

C'est avec une profonde tristesse que la Société mathématique du Canada (SMC) partage la nouvelle du décès de notre collègue Alan Kelm, gestionnaire des services électroniques.

Alan est né à Regina et a grandi à Saskatoon. Il excellait en langues et est resté un linguiste amateur tout au long de sa vie, apprenant le grec, l'hébreu, le latin, l'allemand, le roumain, le polonais, le français et le russe. En 1984, il a déménagé à Ottawa pour obtenir son doctorat en mathématiques, où il a rencontré sa femme, Angie. Ils se sont mariés en 1992 et ont célébré leur 30e anniversaire le 29 août 2022. Alan a donné des cours universitaires pendant un certain temps avant de commencer sa carrière à la Société mathématique du Canada, dont il fait partie intégrante depuis près de trois décennies. Son travail inlassable et son dévouement nous ont aidés à grandir et à apprendre en tant qu'organisation. Alan connaissait par cœur les rouages de la SMC et on pouvait toujours compter sur lui pour aider (et enseigner) les nouveaux collègues.

Beaucoup le connaissaient comme le gestionnaire des services électroniques de la Société mathématique du Canada, mais il était bien plus que cela pour le personnel du bureau exécutif. Alan faisait partie de notre famille, était un collègue et un ami très cher. Il manquera profondément à tous ceux qui ont eu le plaisir de travailler avec lui et de le connaître.

Les collègues d'Alan ont souhaité partager leurs bons souvenirs de lui :

Alan was the heart of the CMS. His intelligence, compassion, and mentorship fostered a positive working environment. He was a wonderful colleague and a dear friend to many of us. We are deeply saddened by this loss and will miss him greatly. He adored his family, and to them I wish to extend my deepest sympathies. – Termeh Kousha, Executive Director

We are profoundly saddened by the loss of our dear friend and colleague. Alan had been a pillar for the CMS for well over two decades, steadfastly working with dedication to manage our electronic systems and support our other operations. We will miss him deeply. To his beloved family we extend our most heartfelt condolences. – David Pike, President

I had the pleasure of working with Alan for 19 years. He was one of the most caring and gentle people I know. It was comforting to know he was there to help whenever needed. I appreciated Alan's dedication, attention to detail and sage advise. Alan will be dearly missed. – Yvette Roberts, Finance and Operations Manager

Alan Kelm was an extremely dedicated member of the CMS Executive Office for over 25 years. He made many contributions to the significant growth of the CMS over this time, particularly as Manager of the CMS Electronic Services. He was always there to go above and beyond in so many ways. He will be greatly missed as a colleague and as a dear friend of the Society. – Graham Wright, Former Executive Director

I knew Alan since he was a graduate student at the University of Ottawa. I had the pleasure to teach in parallel with him on many occasions. I got to know how much he was loved and respected by students and colleagues alike. He always had a solution for any problem and faced every challenge with a reassuring smile. I also worked with him on many projects for the CMS and got to appreciate his deep devotion for the CMS and for what it represents. Alan passing is a big loss for his family, the CMS and the Canadian mathematical community. Rest in peace my friend. – Joseph Khoury, Math Camps Committee Chair

There are no words to express the sorrow on Alan's passing. I worked with him for almost 14 years and during that time he was always so helpful and knowledgeable while being professional and friendly. Alan was a kind soul, and he will be solely missed by all who had the pleasure of working with him. Rest in peace Alan. – Denise Charron

Alan was always a joy to work with and had such a calming quiet presence. He knew everything about the CMS and could recall people he worked with decades prior and always had something nice to say about every one of them. He could recall every minute detail about a project and often came up with questions that nobody else would ever have thought of. Alan never left a detail to chance and put so much thought into every email and project he worked on. Everyone can recall the very long emails from Alan where he wrote every piece of information you would need. He was caring and always offered praise and acknowledgments when someone was working hard on a particular project. He always made me feel like what I did mattered and would always be sure to check on my well-being when working longer than usual hours. It was clear that he cared. Alan loved the CMS and put his everything into supporting the CMS. He was more than an employee, he was a real piece of the CMS and a great force behind all the CMS initiatives over the last 30 years whether it was a meeting you attended, or a competition you wrote, Alan was behind them all. He will be greatly missed by the entire CMS community. – Sarah Watson

Bien qu'Alan ne soit plus parmi nous, il vivra à travers le merveilleux héritage qu'il a créé et dans la mémoire de tous ceux qui ont eu le plaisir de le connaître.

Appel à propositions de Sessions en matière d'éducation : Réunion d'été 2023

Réunions de la SMC Novembre 2022 (tome 54, no. 5)

La Société mathématique du Canada (SMC) sollicite des propositions de **sessions en matière d'éducation** pour la Réunion d'été 2023 de la SMC qui aura lieu à Ottawa du 2 au 5 juin 2023.

Cette année, les propositions de sessions en matière d'éducation seront sélectionnées par le Comité des sessions en matière d'éducation de la réunion de la SMC, qui établira également le calendrier des sessions acceptées, en communication avec leurs coorganisateurs.

Chaque proposition doit suivre les directives indiquées dans l'appel à sessions scientifiques. En outre, les organisateurs sont priés de préciser la structure de leur session (par exemple, un exposé de 20 minutes suivi de 5 minutes de questions-réponses et de 5 minutes de transition, ou un panel, ou une session/un atelier interactif, etc.)

Conformément aux propositions de sessions scientifiques, il y aura deux tours de soumission. Les propositions soumises avant **le mercredi 14 décembre 2022** seront prises en compte lors du premier tour, avec des réponses début janvier. La date limite pour le deuxième tour sera le 28 février 2023.

Envoyez vos propositions de sessions en matière d'éducation (et vos questions) à :

Andie Burazin a.burazin@utoronto.ca

Avec Monica Nevins mnevins@uottawa.ca , Aaron Tikuisis Aaron.Tikuisis@uottawa.ca , et le bureau de la SMC: meetings@cms.math.ca en copie conforme.

Appel de Sessions scientifiques : Réunion d'été de la SMC 2023

Réunions de la SMC Novembre 2022 (tome 54, no. 5)

Appel de Sessions scientifiques

La Société mathématique du Canada (SMC) lance un appel de propositions de sessions pour la Réunion d'été 2023 de la SMC qui se tiendra à Ottawa du 2 au 5 juin 2023.

- Les sessions sont programmées en blocs de 2,5 heures, et auront lieu du **3 au 5 juin 2023**. Les sessions scientifiques comprennent généralement entre 10 et 20 exposés de 30 minutes chacun, mais des exposés d'une heure sont possibles.
- Conformément au mandat de la SMC de proposer des conférences accessibles et accueillantes pour tous les groupes, la diversité parmi les organisateurs et les conférenciers est fortement encouragée. Afin de soutenir les organisateurs dans leur important travail et dans leurs efforts en faveur de l'inclusion et de la diversité, la SMC organisera un **appel à résumés ouvert** pour toutes les sessions, et demande aux organisateurs de prendre en compte toutes les soumissions de résumés éligibles pour leur session.
- La diversité comprend les sujets d'intérêt, les étapes de la carrière, l'emplacement 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 des minorités visibles/groupes racialisés et les membres des communautés LGBTQ2+.
- Il y aura un appel à propositions distinct pour les **sessions d'éducation**.

Les propositions doivent comprendre :

1. Les noms, affiliations et coordonnées des co-organisateurs de la session. Les chercheurs en début de carrière sont encouragés à proposer des sessions.
2. Un titre et une brève description du sujet et de l'objectif de la session. Cela peut inclure un bref aperçu du sujet. Incluez un résumé de deux à trois phrases qui sera affiché sur le site Web à l'intention des conférenciers potentiels.
3. Le nombre de blocs de 2,5 heures prévus, avec une liste de conférenciers possibles.

Les propositions seront sélectionnées par le comité d'organisation scientifique, dans la limite de l'espace disponible en salle de classe, avec une priorité pour les sessions qui montrent l'intention d'inclure un mélange de chercheurs seniors et juniors, de rendre certaines parties de leur session accessibles aux étudiants diplômés, et d'inclure des orateurs de groupes sous-représentés désignés.

Dates limites :

Il y aura deux tours de soumissions. Les propositions soumises avant le **mercredi 14 décembre 2022** aux directeurs scientifiques avec le bureau de la SMC en copie conforme seront considérées dans le premier tour, avec des réponses début janvier. La date limite pour le deuxième tour sera le 28 février 2023.

Monica Nevins mnevins@uottawa.ca

Aaron Tikuisis Aaron.Tikuisis@uottawa.ca

Bureau de la SMC: meetings@cms.math.ca

Prix de doctorat Blair-Spearman de la SMC

Appel de candidatures

Novembre 2022 (tome 54, no. 5)

Prix de doctorat Blair-Spearman de la SMC

Le Prix de doctorat Blair-Spearman de la SMC récompense le travail exceptionnel d'un.e étudiant.e au doctorat.

Nous acceptons actuellement les mises en candidature pour le prix 2023. Date limite : 31 janvier

Le prix sera décerné à une personne qui aura reçu son diplôme de troisième cycle d'une université canadienne l'année précédant sa mise en candidature (entre le 1er janvier et le 31 décembre) et dont les résultats pour l'ensemble des études supérieures seront jugés les meilleurs. La dissertation constituera le principal critère de sélection (impact des résultats, créativité, qualité de l'exposition, etc.), mais ne sera pas le seul aspect évalué. On tiendra également compte des publications de l'étudiant.e, de son engagement dans la vie étudiante et de ses autres réalisations.

Les mises en candidature qui ne seront pas choisies dans leur première compétition seront considérées pour une deuxième année (sans possibilité de mise à jour du dossier), et seront révisées par le Comité de sélection du prix de doctorat l'an prochain.

Candidatures

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 candidat.e.s exceptionnel.le.s sans distinction de race, de genre, d'appartenance ethnique ou d'orientation sexuelle.

Les candidats doivent être nommés par leur université; la personne qui propose un.e candidat.e doit se charger de regrouper les documents décrits dans les paragraphes suivants et de faire parvenir la candidature à l'adresse ci-dessous. La date limite pour recevoir la candidature est indiqué ci-dessus.

Le dossier sera constitué des documents suivants :

- Un curriculum vitae rédigé par l'étudiant
- Un résumé du travail du candidat d'au plus dix pages, rédigé par l'étudiant, où celui-ci décrira brièvement sa thèse et en expliquera l'importance, et énumérera toutes ses autres réalisations pendant ses études de doctorat.
- Trois lettres de recommandation, dont une du directeur de thèse et une d'un examinateur de l'extérieur (une copie de son rapport serait aussi acceptable). Le comité n'acceptera pas plus de trois lettres de recommandation.

Veuillez faire parvenir tous les documents par voie électronique, de préférence en format PDF, **avant la date limite** à **prixdoc@smc.math.ca**.