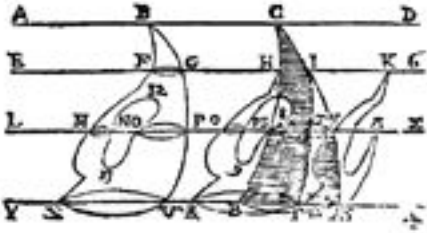


# BULLETIN

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Canadian Society for History  
and Philosophy of Mathematics

Société canadienne d'histoire et  
de philosophie des mathématiques

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## ABOUT THE SOCIETY

Founded in 1974, the Canadian Society for the History and Philosophy of Mathematics / Société canadienne d'histoire et philosophie des mathématiques (CSHPM/SCHPM) promotes research and teaching in the history and philosophy of mathematics. Officers of the Society are:

*President:* **Glen Van Brummelen**, Quest University, Squamish, BC V8B 0N8, CA, gvb@questu.ca

*Vice-President:* **Elaine Landry**, UC Davis, Davis, CA 95616, USA, emlandry@ucdavis.edu

*Secretary:* **Patricia Allaire**, 14818 60th Ave., Flushing, NY 11355, USA, PatAllaire@gmail.com

*Treasurer:* **Dirk Schlimm**, McGill University, Montréal, QC H3A 2T7, CA, dirk.schlimm@mcgill.ca

*Past President:* **Jean-Pierre Marquis**, Université de Montréal, Montréal, QC H3C 3J7, CA, jean-pierre.marquis@umontreal.ca

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The Society's Web Page ([www.cshpm.org](http://www.cshpm.org)) is maintained by **Michael Molinsky**, University of Maine at Farmington, Farmington, ME 04938, USA, michael.molinsky@maine.edu. The Proceedings of the Annual Meeting are edited by **Tom Archibald**, Simon Fraser University, Burnaby, BC, V5A 1S6, tarchi@math.sfu.ca. The Society's Archives are managed by **Michael Molinsky** (see above). **Tom Archibald** (see above) serves as CMS Liaison.

*New Members are most cordially welcome; please contact the Secretary.*

## From the President

For years now, the humanities have suffered an image problem. Every year, enrolments dwindle as students flood to STEM programs, or if they're uncertain about their technical skills, they drift into the life or social sciences. The feeling is that the humanities are a costly luxury: a degree in history or English is four years of self-indulgence and a one-way ticket to a McJob, a sure journey to irrelevance.

"Irrelevance" here hides a host of sins. Irrelevance toward what? Contributing to society? Getting a high-paying job? The hidden message is that you're relevant if your work supports an societal increase in physical comfort (better technology, easier access to consumer goods) or pushes the frontiers of knowledge, defined strictly as science in its early 21st-century incarnation. This is a narrow view that promotes leisure for its own sake as mere relaxation, and doesn't respect or even acknowledge changing perspectives.

As a society that promotes the union of the humanities with the "M" in STEM, the CSHPM is in a unique position to dispel these selfish notions. Our work shows us every day that STEM is not a monolith in progress like a steam roller toward some sort of utopia, but a reflection of human culture and values that images its time as much as any other endeavour. Our publications continually reveal that mathematics is not sterile and culture-free; that revelation, far from de-valuing the subject, allows it to be an integral part of the narrative of our species, one of the best jewels humans have discovered/invented. We, the CSHPM, show that mathematics is an activity more than worthy of our leisure time, an enrichment of life that many mathematicians of the past have known and practiced.

As I conclude my term as president, I'd like to urge us to continue to bring the humanities into mathematics, and mathematics into the humanities, both in our research and in our outreach. I'm greatly encouraged by the dialogue that Amy Ackerberg-Hastings and Hardy Grant have introduced to the mathematics community this month by the debut of our column in the Canadian Mathematical Society *Notes*, our recent and future collaborations with the Mathematical Association of America, and the increased public presence that the *Proceedings* will take in its new incarnation as a public (i.e., no longer members-only)

venue. These opportunities will not send this fall's philosophy and history enrolments through the roof, but today's research becomes tomorrow's foundation of knowledge, where attitudes can be shaped and dogmas softened. We are making a difference; let's keep the ball rolling.

*Glen Van Brummelen*

## Announcements

Congratulations to Judy Grabiner, who was awarded the MAA's 2014 Beckenbach Book Prize for *A Historian Looks Back: The Calculus as Algebra and Selected Writings*.

Glen Van Brummelen's *Heavenly Mathematics: The Forgotten Art of Spherical Trigonometry* received special mention from the nominating committee for the BSHM's 2013 Neumann Prize.

Antonella Cupillari's "Maria Gaetana Agnesi's Other Curves (More Than Just the Witch)" appeared in the February 2014 issue of *Mathematics Magazine*.

Michel Serfati has recently published an article and a book chapter: "Sur l'abstrait et le concret en mathématiques, et l'axiomatique, dans l'œuvre de Marshall Stone," *Notae Philosophicae Scientiae Formalis* 2, no. 2 (2013): 175–191; and "Mathematical and Philosophical Aspects," in *Perspectives on Theory of Controversies and the Ethics of Communication*, ed. D. Riesenfeld and G. Scarafle, vol. 2 of *Logic, Argumentation & Reasoning* (Springer, 2014), 69–80.

David Orenstein reports: History of mathematics is where you find it. On January 27, 2014 (p. 14), the weekly English edition of the Jewish newspaper *Forward* reviewed *A History in Sum: 150 Years of Mathematics at Harvard*, by Steve Nadis and Shing-Tung Yau. Appropriately, Benjamin Ivry, in his half-page review, focused on the active anti-semitism of George Birkhoff, department chair from 1912 to 1944.

Bob Rogers and Bud Boman announce that *How We Got from There to Here: A Story of Real Analysis*, an introductory textbook presented in conversational style and through the lens of history, is available for free download from the SUNY Open Textbook Project, [opensuny.org/omp/index.php/SUNYOpenTextbooks](http://opensuny.org/omp/index.php/SUNYOpenTextbooks).

In early 2014, Springer released *Handbook on the History of Mathematics Education*, a massive volume edited by Alexander Karp and Gert Schubring. Contributors include Jens Høyrup, Ubiratan D'Ambrosio, Joseph W. Dauben, Karen Hunger Parshall, Leo Rogers, Jeremy Kilpatrick, Yibao Xu, Evelyne Barbin, David L. Roberts, and Amy Ackerberg-Hastings.

Princeton University Press will publish *Taming the Unknown: A History of Algebra from Antiquity to the Early Twentieth Century*, by Victor J. Katz and Karen Parshall, in June 2014.

Elaine Landry and Dean Rickles are editing a new book series on issues in the philosophy of mathematics and physics for Pickering & Chatto Publishers. Titles in this series will cover a range of exciting themes, including the applicability of mathematics; mathematical modelling; category theory; the nature of mathematical proofs; computability; climate physics; econophysics; quantum information; quantum gravity; time machines; singularities; and emergence. To submit a proposal, see [www.pickeringchatto.com/publish/send-us-a-proposal](http://www.pickeringchatto.com/publish/send-us-a-proposal).

**HOM SIGMAA News:** David Pengelley graciously allowed us to link to his amazing resource material for using original sources in the classroom. See [historyofmathematics.org](http://historyofmathematics.org). HOM SIGMAA will sponsor two contributed paper sessions at the 2015 JMM in San Antonio: "Ethnomathematics: A Tribute to Marcia Ascher," organized by Ximena Catepillan, Janet Beery, and Amy Shell-Gellasch; and "Original Sources and Archives in the Classroom," organized by Dominic Klyve and Amy Shell-Gellasch. Submission of abstracts will open in late summer.

Volume 4, issue 1 (January 2014) of the *Journal of Humanistic Mathematics* is now available at [scholarship.claremont.edu/jhm/](http://scholarship.claremont.edu/jhm/). This issue includes an article by Patricia Kenschaft.

Speakers on the 2013–2014 schedule for the Philadelphia Area Seminar on the History of Mathematics (PASHoM) included: Peggy Kidwell (NMAH) on September 19; David Zitarelli (Temple) on October 10; David Leep (Kentucky) on November 21; Amy Ackerberg-Hastings (NMAH) on December 12; Nicholas Scoville (Ursinus) on January 23; Paul Wolfson (West Chester) on February 20; Fred Rickey (USMA) on March 20; and Shelley Costa (Swarth-

more et al.) on April 24.

On October 5–6, 2013, Dan Curtin and Danny Otero organized a Special Session on the History of Mathematics and Its Use in Teaching at the American Mathematical Society Southeastern Section Meeting at the University of Louisville (KY). Speakers included: Jeffrey Oaks, “Medieval Arithmetical Problem Solving: Algebra, False Position Etc.”; Richard Pulskamp and Daniel Otero, “The *Ludus Regularis* of Wibold”; Colin McKinney, “The Tradition of Diagrams in Manuscripts of Eutocius”; Donald Sokol, “Plimpton 322: Triangular Numbers in Base 60 and N Squared”; Chris Christensen, “Facing New Problems”; Daniel Curtin, “Jan De Witt (1625–72) and the Beginnings of Modern Analytic Geometry”; Adam Parker, “‘New’ Techniques from Primary Sources in Ordinary Differential Equations”; Nicholas Scoville, “Topology and Its History are Connected Under the Classroom Topology”; Alejandro Garciadiego, “Mathemorphosis, a New Approach to the Teaching of Mathematics”; Diana White, “Incorporating Popular Books into the Teaching of the History of Mathematics”; Kathleen Clark, “The Contributions of a History and Philosophy of Mathematics Course on Undergraduate Students’ Mathematical Thinking.”

The Frederick V. Pohle Colloquium on the History of Mathematics, hosted by the department of Mathematics & Computer Science at Adelphi University, presented the following speakers this year: Fred Rickey (USMA), “The Cyphering Books of George Washington” on November 6; Jeff Suzuki (CUNY-Brooklyn), “The Changing Nature of College Algebra: Lessons From the Nineteenth Century” on March 5; Lee Stemkoski (Adelphi), “Leonhard Euler’s Work in Number Theory and the *Commentationes Arithmeticae* on April 2; Nick Scoville (Ursinus), “Topology and its History: Must there be a Separation?” on May 7.

Tom Archibald and Greg Lavers organized a session on History and Philosophy of Mathematics at the Canadian Mathematical Society Winter Meeting in Ottawa, December 6–9. Speakers included: Duncan Melville, “Dividing to rule: Precision mathematical instruments in mid-18th century England”; Jemma Lorenat, “Julius Plücker’s ‘Freude an der Gestalt’”; Laura Turner, “Analytic representation and generality in analysis”; Mariya Boyko, “Mathematics Curriculum Reform in the USSR (1960s, 1970s) and

Pedagogical Innovations of Professor Kolmogorov”; Tom Archibald, “Visual Representation in the Theory of Algebraic Functions and their Integrals in the late 19th Century”; Craig Fraser, “Infinitesimals in Eighteenth-Century Calculus: The Background to Cauchy’s Analysis”; Dirk Schlimm, “Non-Euclidean geometry and geometrical content”; Jean-Pierre Marquis, “Models in pure mathematics: nature and function”; and Eduardo Noble De la Torre, “Alan Turing on the Foundations of Mathematics.” Also, Alexander Karp gave a plenary address on “Mathematicians and pre-college mathematics education: Thinking about productive involvement.”

The ORESME (Ohio River Early Sources in Mathematical Exposition) met February 7–8 at Northern Kentucky University to read two 1854 papers by Bernhard Riemann: “Über die Darstellbarkeit einer Function durch eine trigonometrische Reihe,” (On the representation of a function by a trigonometric series); and “Über die Hypothesen, welche der Geometrie zu Grunde liegen,” (The hypotheses on which geometry is based).

The ARITHMOS Reading Group met February 8–9 at Western Connecticut State University to read selections by Dedekind contained in Hawking’s *God Created the Integers* and Ewald’s *Kant to Hilbert, Volume 2: A Source Book in the Foundations of Mathematics*. The next meeting will be June 7–8 and look at Peano’s “Principles of Arithmetic.” See [arithmos.org](http://arithmos.org).

Michel Serfati announces the second semester program for the annual seminar on Epistemology and History of Mathematical Ideas, held Wednesdays at 2:00 pm at the Institut Henri Poincaré in Paris: Michel Serfati (IREM), “La recherche des lois de la pensée, et le théorème de la division logique (1854)” on March 12; Brigitte Grugeon-Allys (ESPE, etc.), “Référence épistémologique et régulation de l’enseignement en algèbre élémentaire in fin de scolarité obligatoire” on March 26; Michel Serfati (IREM), “Le symbolisme de l’indéterminé – et de la lettre – de Viète à Leibniz et Russell” on April 9; Pierre Lochak (CNRS & IM de Jussieu), “Quelques remarques sur un geste physico mathématique: la monodromie” on May 14; Gabriel Catren (SPHERE, etc.), “Sur la théorie des connexions de Cartan et sa pertinence par rapport à la physique de l’espace-temps” on May 21; and Liliane Alfonsi (Paris Sud), “La Théorie des équations al-

gébriques chez Bézout: Nouvelle approche, nouveaux outils” on May 28.

The Archimedes Palimpsest is on display at the Huntington Library, Art Collections, and Botanical Gardens in San Marino, CA, March 15–June 22 in an exhibit titled “Lost and Found: The Secrets of Archimedes” and organized by the Walters Art Museum in Baltimore.

BSHM and the James Clerk Maxwell Society celebrated the 400th anniversary of the publication of John Napier’s *Mirifici Logarithmorum Canonis Descriptio* in Edinburgh on April 4.

A workshop on “[C. S.] Peirce and His Students” was held in Tallinn on April 21, during the 2nd Applying Peirce Conference. Ahti-Veikko Pietarinen gave the invited talk, and organizers were Jean-Marie Chevalier and Amirouche Moktefi.

Toke Knudsen and Gary Towsley organized a special session on History of Mathematics in the Classroom for the Spring Meeting of the MAA Seaway Section in Buffalo, NY, April 25–26.

The 7th Smoky Mountain Undergraduate Conference on the History of Mathematics (SMURCHOM VII) was held April 26 at the North Carolina Center for the Advancement of Teaching. Caroline Ehrhardt (Paris) gave the keynote address.

On May 1, the 6th Annual Greater Toronto Area Symposium on History, Philosophy, and Social Studies of Science, Technology, and Medicine will be held in Ryerson’s historic Oakham House. Speakers include: Sarah Symons (McMaster), “Recent developments in the study of ancient Egyptian diagonal star tables”; Craig Fraser (Toronto), “John Charles Fields (1863–1932) as a Public Advocate of Canadian Mathematics and Science”; Robert Disalle (Western), “Relativity before Einstein”; Tara Abraham (Guelph), “Rebel Genius? Warren McCulloch, autobiography, and American Cybernetics”; and John Shiga (Ryerson), “Listening in the Dark: Sonar and the Politics of Underwater Sound.”

The European Academic Heritage Network UNIVERSEUM will hold its 15th annual meeting in Hamburg, June 12–14. The theme, “Enhancing University Heritage-Based Research,” explores interactions between research conducted at universities and cultural heritage of universities and other locales.

Leo Corry, Michael N. Fried, and Victor Katz are organizing a Special Session on History of Mathematics for the Second Joint International Meeting between the AMS and the Israel Mathematical Union in Tel Aviv, June 16–19. See [http://www.ams.org/meetings/international/2202\\_program.html](http://www.ams.org/meetings/international/2202_program.html).

The 17th Annual Legacy of R. L. Moore Conference, co-sponsored by the Educational Advancement Foundation and the MAA, will be held in Denver, CO, June 19–21.

The Seventh European University on History and Epistemology in Mathematics Education, sponsored by HPM, will be held in Copenhagen, July 14–18.

The 2014 meeting of the Euler Society will be held at St. Edward’s University in Austin, TX, July 21–23. See [www.eulersociety.org](http://www.eulersociety.org).

General contributed paper sessions on History or Philosophy of Mathematics will be held during MAA MathFest in Portland, OR, August 6–9. Invited lectures include “The Founding of Pi Mu Epsilon 100 Years Ago” by Jack Graver (Syracuse) and “Fibonacci and the First Personal Computing Revolution” by Keith Devlin (Stanford).

The International Congress of Women Mathematicians will take place in Seoul, August 12–14.

Women’s Worlds Congress, the 12th International Interdisciplinary Conference on Women, will take place in Hyderabad, India, August 17–22.

“Science as Profession,” the 26th International Baltic Conference in the History of Science, will be held August 21–22 in Helsinki.

The 6th International Conference of the European Society for the History of Science will be held September 4–6 in Lisbon.

The 3rd International Conference on History and Education of Modern Mathematics will be held in Hangzhou, China, September 20–25.

The 13th Midwest History of Mathematics Conference will be held at Wabash College in Crawfordsville, IN, October 10–11.

The 3rd Annual Fields Medal Symposium will take place November 17–20 in Toronto and honour 2010 Fields Medallist Cédric Villani. The theme is “The many facets of entropy: Kinetic Theory, Optimal

Transport, Geometry.”

The UC Irvine Department of Anthropology announces a new degree, Master of Arts in Social Sciences with a Concentration in Medicine, Science, and Technology Studies. This one-year interdisciplinary program trains students to respond to the rapidly changing impact of medicine and technology on societies around the world. See [www.anthropology.uci.edu](http://www.anthropology.uci.edu).

The Corning Museum of Glass appointed Dr. Marvin Bolt, vice president for collections at the Adler Planetarium and Astronomy Museum and a noted historian of telescopes, as its first curator of science and technology. He assumed his role in November 2013 and is responsible for managing the Museum’s science and technology collection, exhibitry and programming. As curator of science and technology, Bolt will enhance the Corning Museum’s science and technology-based collections and exhibits; refine its science interpretation for a diverse audience, from schoolchildren to working scientists; develop new scientifically focused educational programs; and increase accessibility to the Museum’s scientific research and collections through digital channels. The museum is in the Finger Lakes region of New York.

## Annual General Meeting CFHSS

On March 28 the Federation for the Humanities and Social Sciences held its annual meeting at the Faculty Club of McGill University. The program covered topics from MOOCs to the future of the Ph.D. What was most directly relevant to our society was a session on the future of Congress. This session began with a summary of the present state of Congress. Congress is now over 80 years old and although it is still often called ‘The Learned’, it has not officially been called ‘The Meeting of the Learned Societies’ since 1997. 40% of participants are students, and only 5–8% are from outside of Canada. CSHPM certainly brings up the number of international participants.

The discussion then turned to problems with Congress. One problem is the lack of interdisciplinary involvement. People tend to attend only their own society’s events. This is largely due to the absence of any centralized searchable schedule of events. There is a com-

mitment to address these problems. Another common complaint is with the fee structure. This last one is a difficult problem to resolve since societies have fees ranging from \$20 to \$400.

In the question period, one of the central topics was childcare. This has been available at Congress (for a fee) for years now and will continue to be. One of the main problems faced by organizers is that few participants are aware of this possibility and so few make use of it.

*Greg Lavers*

## Beginning of the Society

*2014 marks the 40th anniversary of CSHPM’s first official meeting. One of the oldest surviving documents related to the founding, the letter described below, appears elsewhere in this issue. This article appeared in the first issue of the newsletter that preceded the Bulletin, on February 8, 1978.*

The idea of having a Canadian Society for the History and Philosophy of Mathematics began with Ken May. In 1973, he wrote letters to several colleagues in the history of mathematics to ask them what they thought of this idea. Their response was encouraging.

As a result, May suggested that those people interested in the history of mathematics should meet at the 1973 Learned Societies’ meeting at Queens University in Kingston, Ontario. A small but enthusiastic group did meet at Kingston, chaired by Charles Jones, in Ken May’s absence. The group decided to create a society, and to organize an official meeting for the 1974 Learned Societies’ meeting. The group elected Charles Jones as organizational chairman and also as program chairman for the 1974 meeting.

During the second half of 1973 and the first half of 1974, Jones planned for the June 1974 meeting, to be held in Toronto. He arranged for a[n] invited session, sponsored jointly with the Canadian Society for the History and Philosophy of Science, and for a session of contributed papers. With Tom Settle, he drafted by-laws for the society.

The Toronto meeting was well-attended. The invited session took place in the morning. Professors J.L. Berggren, S. Drake, and H.S.M. Coxeter spoke. In

the afternoon, a number of contributed papers were presented. That evening the organizational meeting took place, and the Society officially came into being. The by-laws were adopted and signed by the 12 charter members. *Historia Mathematica* was adopted as the journal of the Society.

Officers were then elected. The charter officers were:  
President: C. V. Jones  
Vice President: T. Settle  
Secretary-Treasurer: J.L. Berggren

## Off the Shelf: Very Short Introductions

*Very Short Introductions* Series, Oxford: Oxford University Press, 1995–.

- *Bertrand Russell: A Very Short Introduction*, by A. C. Grayling, 1996, 2002, 147 pp.
- *The History of Mathematics: A Very Short Introduction*, by Jacqueline Stedall, 2012, 116 pp.
- *Symmetry: A Very Short Introduction*, by Ian Stewart, 2013, 144 pp.
- *The History of Astronomy: A Very Short introduction*, by Michael A. Hoskins, 2003, 123 pp.

Oxford University Press's *A Very Short Introduction* (VSI) series should be familiar to many readers of our CSHPM *Bulletin*. Some of you may even be counted among its 300+ authors. If you aren't familiar with it, you should be.

Begun in 1995, VSI incorporates the jewel-like epitomes of Oxford's *Past Masters* series. Unlike the *Que sais-je?* series of the Presses universitaires de France (PUF) (see the May 2013 *Bulletin*) with its 4,000 volumes, all in a standard 128 pages, VSI fluctuates between 100 and 175 pages, though in a standard small page format.

Just like the *Que sais-je?* series, the VSIs are scholarly introductions, at an undergraduate level, by authorities on the subject. For example, the University of Toronto's Stillman Drake, a world authority on Galileo, wrote *Galileo: A Very Short Introduction*, an exquisite distillation of the life and works.

This review will look closely at one VSI for the philosophy of mathematics and another for history of mathematics; the one a biography, the other an overview of the field. It will then glance quickly at VSIs for topics in mathematics and a related field, ending with a listing of further titles of interest in the series.

### A Biography in Philosophy of Mathematics

A. C. Grayling, Master of New College of the Humanities and Supernumerary Fellow at St. Anne's College, Oxford, combines a succinct biography of Bertrand Russell with explications of Russell's efforts in philosophy of mathematics, philosophy of mind and of science, and political and social activism. As opposed to a typical *Que sais-je?* there are ample illustrations, many drawn from the Bertrand Russell Archive at McMaster University.

Russell's radical and aristocratic parents died young, leaving him in the care of his paternal grandparents. A major epiphany occurred when his older brother Frank introduced the 11-year-old Bertrand to geometry, which became "a dazzling first love." The young Russell was dismayed that he was expected to just accept Euclid's axioms "but the doubt . . . determin[ed] the course of his subsequent work on the foundations of mathematics."

In October 1890 he entered Oxford University, reading mathematics for three years and then philosophy, especially German idealism, for one year. A fellowship allowed him to travel to Berlin with his new American wife, Alys Smith. Russell published *German Social Democracy* (1891) even before his Fellowship dissertation, *An Essay on the Foundations of Geometry* (1892). We see here the two poles of his life's work, intellectual and social engagement.

Oxford philosopher G. E. Moore persuaded Russell to abandon philosophical idealism. In July 1900 he encountered the Italian logician Giuseppe Peano at the International Congress of Philosophy in Paris. This encounter inspired Russell's *The Principles of Mathematics* (1903), but when Russell went on to elaborate its technical details in what was to become *Principia Mathematica*, he hit a major roadblock. This was the well-known paradox of whether a class is a member of itself as exemplified by "the class of all those classes which are not members of themselves."

This bleak quandary was overcome in *Principia Mathematica* by supplementary axioms required to prove certain theorems from purely logical axioms:

- 1) Infinity: “There are infinite collections in the world.”
- 2) Choice: “[F]or every set of disjoint non-empty sets there is a set which shares exactly one member with each of the sets.”
- 3) Reducibility: Here Grayling gives no explicit formulation. The essence is that there are different types of classes at a hierarchy of generality where the rules for one type don’t necessarily apply to another type. Thus the class of birds in Toronto’s High Park is of a different order than the class of all classes.

Alas, it turns out that “logicism is unfeasible. Gödel showed that in any formal system adequate for number theory there is an irreducible formula.” Despite this impasse the monumental *Principles of Mathematics* and *Principia Mathematica* were incredibly rich in “significant ‘spin-offs’ for logic and philosophy.”

In his public life, Russell was well-known for his opposition to British participation in World War I, his support for freedom in love and marriage, early opposition to Bolshevik rule, early and absolute commitment to nuclear disarmament, and a firm condemnation of the American war in Vietnam.

### **Outlining the Field: History of Mathematics**

In 1918, in *Mysticism and Logic*, Bertrand Russell said “Mathematics may be defined as the subject in which we never know what we’re talking about, nor whether what we are saying is true.” Where Grayling introduced us to this giant, Jacqueline Stedall, Senior Research Fellow in History of Mathematics, Mathematical Institute, Oxford, surveys an entire field in the short compass of her VSI. *The History of Mathematics* could be more accurately called *The Historiography of Mathematics*. While a short summary of the highlights of mathematical developments could be of interest to those outside the field, Stedall’s take on our methodology gives an overview of the discipline and its motivations and something to bite into if we disagree.

Her starting point is Andrew Wiles’ 1993 proof of Fermat’s Last Theorem, demonstrating the theory’s wide-ranging connections and how this case demol-

ishes so many of the myths of mathematical discovery. Who was Pierre de Fermat and how did he connect with his mathematical community? Since the theorem exemplifies Diophantine Equations, who was Diophantus and what was his mathematical legacy?

Ancient Greek mathematics leads to the examination of other mathematical cultures (Egypt, Mesopotamia, China) and an effort to determine what mathematics meant in these contexts. For example, since the Sumerians and Babylonians had different terms for the same quantity (from our point of view) in different contexts, such as volumes of grain as opposed to areas of farmland, were these metrologies separate disciplines?

Mathematics is not just the work of the professional practitioners of the mathematical arts but teachers and students also engage in it. Mathematics instruction began in the ancient world with copying the vocabulary for measuring the capacity of boats and the length of reed measuring rods, continuing with lists of sexagesimal inverses and multiplication tables. Stedall also looked closely at mathematics instruction at the Greenrow Academy, founded 1780, in northwest England. In the John Hersee collection of English and Welsh mathematical copy books (1704–1907) are five mathematical workbooks by Robert Smith from his studies at Greenrow dating from 1832 and 1833 and totaling 1,700 pages.

Stedall is an expert on Thomas Harriot (1560–1621), who had a full and productive mathematical research career under aristocratic patronage. He focused on navigation and astronomy and studied the French mathematician Viète. Yet, “Harriot published none of his findings, with a secure private income, he had neither to prove himself or earn a living. Nor did he teach, though he did discuss his ideas within his own circle of friends.”

By contrast, Henry Briggs (1577–1630) “followed a university career, lecturing at Cambridge first in medicine, later in mathematics, before he moved to [London’s] Gresham College in 1597 [as] the first Gresham professor of geometry [and] also became the first Savilian professor of geometry” from 1617 to 1630. Interested, like Harriot, in problems of navigation, Briggs pursued astronomy through eclipses and published *Arithmetica logarithmica* (1624) in praise of “the wonderful invention of logarithms.”



Stedall's final chapter is explicitly "The evolving historiography of mathematics." She starts with John Leland in the 1550s recording "facts ... about authors, dates, and texts, but without any analysis of what these texts contained." The first edition of Jean-Étienne Montucla's *Histoire des mathématiques* came out in 1758. With the 19th century came the flood of scholarly editions and translations of ancient and medieval texts, "such as the first English rendering of the *Arithmetica* of Diophantus ... by Thomas Heath in 1885 [and] Charles Louis Karpinski's of al-Khwārizmi's *Al-jabr* ... in 1915." Unfortunately, some of these works were overtranslated, not just from Greek or Arabic into English, but from period arithmetic or rhetorical algebra into modern abstract forms. In addition to contextualising sources, recent historians of mathematics examine the social, cultural and political aspects of mathematical developments.

Stedall also addresses the history of non-elite mathematics, reflecting the discipline's increasing sensitivity to questions about class, gender and ethnicity. This widening view is facilitated by the growing availability of source material, often electronically. My current research project is greatly facilitated by the free download of all the *Proceedings* of the International Congresses of Mathematics.

### Framing a Mathematical Topic

Russell declared that "mathematics, rightly viewed, possesses not only truth, but supreme beauty—a beauty cold and austere, like that of sculpture." (*Philosophical Essays*, 1910) Much of this beauty comes from mathematics' abounding symmetries. Ian Stewart, Emeritus Professor of Mathematics at Britain's Warwick University, first looks at *Symmetry* in the world around us: bicycle wheels, ocean waves, the rock-paper-scissors game, and the proof of the *pons asinorum*. Stewart gives the definition: "A symmetry of some mathematical structure is a transformation of that structure of a specified kind that leaves specified properties of that structure unchanged."

He quickly moves into group theory, focusing on cyclic, dihedral, orthogonal and permutation groups and relating them to symmetries of Euclidean 2-Space and 3-Space. One chapter looks at such basic group properties as isomorphism, subgroups and normal groups. Group theory can illuminate popular games like Sudoku and Rubik's Cube.

### Outlining a Related Field

In giving us his overview of the *History of Astronomy*, Michael A. Hoskins, previously Head of History and Philosophy of Science at Cambridge and now Emeritus Fellow of St. Edmund's College, Cambridge, summarises the key events in its development, emphasizing the central received story.

This means starting with an ancient astronomy that culminates in Ptolemy's *Almagest*, which is transmitted to the Latin West by medieval Islamic civilisation. The Copernican-Newtonian revolution is at the centre of the story, followed by the working out of the implications of the Law of Universal Gravitation in the 18th and 19th centuries. The book is illustrated by many period images.

### Other Titles of Interest

If these Very Short Introductions interest you, the following titles in the series may also be tempting: Timothy Gowers, *Mathematics*; Peter M. Higgins, *Numbers*; John Haigh, *Probability*; David J. Hand, *Statistics*; Fred Piper and Sean Murphy, *Cryptography*; and Guido Caldarelli and Michele Catanzaro, *Networks*.

*David Orenstein*

## 2014 CSHPM/SCHPM Meeting Programme

The Annual Meeting of the Canadian Society for History and Philosophy of Mathematics will be held at Brock University in St. Catharines, Ontario, 25–27 May 2014. Except for the one-hour May Lecture, presentations are 20 minutes, with 5 minutes for discussion and 5 minutes of set-up before the next talk. Most sessions will be in the Fireplace Lounge of the Earp Residence. The first parallel session on Sunday will meet in Student Lounge 100 of the Earp Residence. The parallel sessions on Tuesday will meet in East Academic 305 and 307. Many thanks to the program organizers, Larry D'Antonio, Chris Baltus, and Glen Van Brummelen, and the local organizer, David Bellhouse.

### Sunday, May 25

**9:00** PRESIDENT'S WELCOME (Glen Van Brummelen)

**GENERAL SESSION I: BIOGRAPHY** (Presider: Larry D’Antonio)

**9:15** V. Frederick Rickey (USMA), Theodore J. Crackel (Papers of George Washington), and Joel Silverberg (Roger Williams): “Reassembling Humpty Dumpty Again: Putting George Washington’s Cyphering Books Back Together Again”

**9:45** Craig Fraser (Toronto): “J. C. Fields as a Public Advocate of Mathematics and Science”

**10:15** COFFEE BREAK

**PARALLEL SESSION II-A: PHILOSOPHY** (Presider: Jean-Pierre Marquis)

**10:30** Parzhad Torfehnezhad (Montréal): “Carnap’s Analysis of Probability versus Subjective and Frequentist Interpretations”

**11:00** Emerson Doyle (Western Ontario): “Understanding Carnap’s Mathematical Conventionalism”

**PARALLEL SESSION II-B: USEFUL MATHEMATICS** (Presider: Glen Van Brummelen)

**10:30** Christopher Baltus (SUNY Oswego): “Is mathematics to be useful? The case of de la Hire, Fontenelle, and the epicycloid”

**11:00** Nicolas Fillion (Simon Fraser) and David Bellhouse (Western Ontario): “Discovering the concept of minimax solution: Montmort, Waldegrave and Bernoulli”

**11:30** Ed Cohen (Ottawa): “Babylonian and Athenian Calendars”

**12:00** LUNCH BREAK & CSHPM EXECUTIVE COUNCIL MEETING

**SPECIAL SESSION III: EARLY SCIENTIFIC COMPUTATION** (Presider: Maria Zack)

**14:00** Joel Silverberg (Roger Williams): “The Rise of ‘the Mathematics’. The invention and popularization of Plain Scales, Gunter’s Scales, and Sectors: Putting Mathematics in the Hands of Practitioners”

**14:30** Amy Ackerberg-Hastings (UMUC): “Early Modern Computation on Sectors”

**15:00** Larry D’Antonio (Ramapo): “Computing the Ellipticity of the Earth”

**15:30** COFFEE BREAK

**GENERAL SESSION IV: PHILOSOPHY** (Presider: Greg Lavers)

**15:45** Jean-Pierre Marquis (Montréal): “The purity of mathematics: a not so clean history”

**16:15** Dirk Schlimm (McGill): “Forms of reasoning and geometric content”

**16:45** Elaine Landry (Cal-Davis): “Plato was *not* a Mathematical Platonist”

**17:15** Robert Thomas (Manitoba): “The judicial analogy for mathematical publication”

**17:00–19:00** CFHSS PRESIDENT’S RECEPTION

**Monday, May 26**

**GENERAL SESSION V: APPLICATIONS OF MATHEMATICS** (Presider: Amy Ackerberg-Hastings)

**9:15** Maria Zack (Point Loma Nazarene): “Rebuilding Mathematically: A Study of Lisbon and London”

**9:45** Tom Archibald (Simon Fraser): “Textbooks, Lectures, and the Mathematical Canon: Applied Mathematics in Britain in the early 20th Century”

**10:15** COFFEE BREAK

**GENERAL SESSION VI: LOGIC AND CRYPTOGRAPHY** (Presider: Craig Fraser)

**10:30** Deborah Bennett (New Jersey City): “Venn-Euler-Leibniz Diagrams”

**11:00** Chuck Rocca (Western Connecticut): “Cryptomenysis: The Cryptology of John Falconer”

**11:30** Francine Abeles (Kean): “The Influence of Arthur Cayley and Alfred Kempe on Charles Peirce’s Diagrammatic Logic”

**12:00** CSHPM ANNUAL GENERAL MEETING (LUNCH PROVIDED)

**14:00** THE KENNETH O. MAY LECTURE, by Michael Williams (Calgary): “John Napier, his life and work”

**SPECIAL SESSION VII: EARLY SCIENTIFIC COMPUTATION** (Presider: Christopher Baltus)

**15:15** Glen Van Brummelen (Quest): “Trigonometry, Before and After Logarithms”

**15:45** David Bellhouse (Western Ontario): “Analysis

of the Errors in Napier's 1614 Logarithm Tables"

### **GENERAL SESSION VIII: MATHEMATICS IN SITU** (Presider: David Bellhouse)

**16:15** David Orenstein (Toronto): "History and Philosophy of Mathematics at the International Mathematical Congress, Toronto 1924, in Context"

**16:45** Eduardo Noble (Montréal): "Some historical remarks on the Analytical Society of Cambridge"

**17:15** Charlotte Simmons (Central Oklahoma): "'Göttingen is Here': The Courant Institute and American Mathematics"

**Tuesday, May 27**

### **PARALLEL SESSION IX-A: PHILOSOPHY AND CONCEPTS OF MATHEMATICS** (Presider: Dirk Schlimm)

**9:15** Nicholas Ray (Waterloo): "Frege and Neo-Logicism"

**9:45** Gregory Lavers (Concordia): "Gödel and mathematics as the syntax of language"

**10:15** COFFEE BREAK

**10:30** Bruce J. Petrie (Toronto): "The Geometric and Algebraic Classification Rules of the Transcendental in Early Modern Mathematics"

**11:00** George H. Rousseau (Leicester): "Some More History of the Quadratic Reciprocity Law"

**11:30** CLOSING REMARKS

### **PARALLEL SESSION IX-B: MATHEMATICAL TOPICS** (Presider: Chuck Rocca)

**9:15** Roger Godard (Royal Military College): "Émile Borel and Henri Lesbesgue: HPM"

**9:45** Sylvia M. Nickerson (Toronto): "Mathematics for the World: Publishing Mathematics and the International Book Trade, Macmillan and Co., 1870–1910"

**10:15** COFFEE BREAK

**10:30** Jean-Philippe Villeneuve (Cégep de Rimouski): "The Hidden Properties of the Real Numbers in the Development of the Integral in the 19th Century"

**11:00** Mariya Boyko (Toronto): "Mathematics Curriculum Reform in the USSR (1960s, 1970s) and Pedagogical Innovations of Professor Kolmogorov"

**11:30** CLOSING REMARKS

## **CSHPM in CMS *Notes***

Our Society's President, Glen Van Brummelen, recently negotiated with the Canadian Mathematical Society (CMS) an agreement under which the CSHPM would supply to the *CMS Notes* a regular column devoted to the exposition of current scholarship and perspectives in our subject's history and philosophy. The intention is that our Society will be credited explicitly as the source of the columns and that all the contributions will come from our members.

This is clearly a splendid opportunity to put our passions and achievements before the wider mathematical community, and so the editors take pleasure in inviting contributions. Columns can cover your own scholarly work or work familiar to you in other spheres; they can focus (perhaps not *too* narrowly!) on single themes or offer broad surveys. Obviously, they can assume a readership sophisticated in mathematics but not necessarily alert to historical and philosophical issues—on the face of it, an audience that should be fun to write for. Submissions in French and in English are welcome; they should not run more than about 1,200 words, including references. Word, pdf and tex are all acceptable formats.

The column debuted in the March/April 2014 issue of the *Notes*, on pages 6–7. To see it, visit [cms.math.ca/notes/](http://cms.math.ca/notes/). Long-time member and past CSHPM president Tom Archibald wrote the first installment, discussing medieval and Renaissance algebra. To submit a short but meaningful historical or philosophical episode relevant to practicing mathematicians, ask questions, or make suggestions, contact the editors, Amy Ackerberg-Hastings, [aackerbe@verizon.net](mailto:aackerbe@verizon.net), and Hardy Grant, [hardygrant@yahoo.com](mailto:hardygrant@yahoo.com). This is a great chance to "show the flag," so thanks in advance!

*Hardy Grant*

## **2014 Meeting Local Information**

Although I live about a two-hour drive away from St. Catharines, Ontario, I am the local arrangements person for our meeting at Brock University. To get to St. Catharines, I refer you to the travel page at the Congress' website, [congress2014.ca/plan-your-trip/travel](http://congress2014.ca/plan-your-trip/travel). For the rest of what I am writ-

ing, I thought I would pass on some “local” knowledge, mostly from my own experience.

St. Catharines is home to the St. Catharines Museum located at Lock 3 on the Welland Canal. The canal is the part of the Great Lakes St. Lawrence Seaway system that connects Lake Ontario to Lake Erie, bypassing Niagara Falls. The museum has information on the canal. During the Congress, the museum also has a display about the War of 1812. The whole Niagara area, and as far north as Toronto, was central to much of the action on land during the conflict (that officially ended in December 1814, with that one last battle at New Orleans in January 1815, won by the Americans).

If you have a car, I recommend a drive to Niagara-on-the-Lake (about half an hour). This is an historic town with many buildings and houses that date to the mid-nineteenth century or earlier. There is also excellent (but pricey) shopping on the main street of the town. I recommend parking about two blocks from the main street (free parking) and walking into the centre of town. For those interested in theatre, the town hosts the highly acclaimed Shaw Festival featuring plays of George Bernard Shaw and plays written during his era. For those who are not fans of Shaw, on the boards this year are *Cabaret* and *The Philadelphia Story*. I go to the festival nearly every year and enjoy it tremendously.

If you are in War of 1812 mode, you can visit Fort George in Niagara-on-the-Lake, a reconstruction of the British fort with soldiers in period dress. Farther down the parkway is Laura Secord’s Homestead, now a museum (she warned the British troops about invading American troops), the site of the Battle of Queenston Heights (the British won) and the Brock Memorial (dedicated to General Sir Isaac Brock who died in the battle), and the site of the Battle of Chippewa (the Americans won).

Continuing with the car, I also recommend driving down the Niagara Parkway to the town of Queenston and on to Niagara Falls. It is a very pretty drive. Just outside Niagara Falls are the Botanical Gardens and the Butterfly Conservatory. Both are well worth a visit. To access the falls, it is best to park at the Botanical Gardens and take a bus into the town (it comes every 10 or 15 minutes). There is a walkway by the river where you can get magnificent views of both

the American Falls and the Horseshoe Falls. Near the Horseshoe Falls you can take a boat ride (*Maid of the Mist*) on the river up to the falls; or, you can stay on land and go to a platform at the base of the Horseshoe Falls or follow a tunnel behind the falls to get an idea of the sheer volume of water that goes over the falls.

Returning to the War of 1812, Niagara Falls is also the site of the Battle of Lundy’s Lane (the British won). For the gamblers, there is a casino in Niagara Falls (very few win). Away from the riverfront, Niagara Falls is very touristy (and not to my taste)—places such as waxworks museums, including a Madame Tussauds. Oscar Wilde must have been visiting this part of town when he wrote disparagingly:

The Niagara Falls is simply a vast amount of water going the wrong way over some unnecessary rocks; the sight of that waterfall must be one of the earliest and keenest disappointments in American married life.

Or maybe he was just on the wrong side of the river. The view from the Canadian side is really spectacular.

The Niagara area is famous for its wine. Many of Canada’s best wines, which have won international awards, are from this region. As you drive from St. Catharines into Niagara-on-the-Lake or on the Parkway, you will pass several wineries, many of which have tours and wine tastings.

Enjoy the meetings, but also enjoy the local surroundings, cuisine, and culture while you are there.

*David Bellhouse*

## Quotations in Context

“Mathematics is the language with which God has written the universe.”

Unlike my previous column, where I argued a quotation may be misattributed to Galileo (see the May 2013 edition of the *Bulletin*), the sentence above unquestionably does have its original source in his works. However, even considering the changes necessary when translating from Italian to English, it would be more accurate to describe it as a paraphrase rather than an actual quotation of Galileo. The “quotation”

has appeared (with slightly varied wordings) in numerous publications over the last fifty years, and the oldest example I've found is at the conclusion of the 1959 classic Disney animation *Donald in Mathmagic Land*, where it is shown as "Mathematics is the alphabet with which God has written the universe."

The original source material is from Galileo's *Il Saggiatore*, published in 1623, which was written in response to the work *Libra astronomica ac philosophica*, published in 1619 by the Jesuit scholar Orazio Grassi under the pseudonym "Lothario Sarsio Sigensano." Galileo addressed his remarks directly to "Sarsi," even though he stated early in *Il Saggiatore* that he knew full well that this was not the author's true name. The material related to the subject of this column appeared when Galileo attacked the author's adherence to the theories and work of Tycho Brahe.

Below is the original Italian text from *Il Saggiatore*, followed by an English translation of the passage from *Discoveries and Opinions of Galileo* by Stillman Drake, published in 1957:

Parmi oltre à ciò di scorgere nel Sarsi ferma credenza, che nel filosofare sia necessario appoggiarsi all'opinioni di qualche celebre Autore, si che la mente nostra, quando non si maritasse col discorso d'vn'altro, ne dovesse in tutto rimanere sterile, ed infeconda; e sorse stima, che la Filosofia sia un libro, e una fantasia d'un uomo, come l'Iliade, e l'Orlando furioso, libri ne quali la meno importante cosa è, che quello che vi è scritto, sia vero. S. Sarsi la cosa non istà così.

La Filosofia è scritta in questo grandissimo libro, che continuamente ci stà aperto innanzi à gli occhi (io dico l'universo) ma non si può intendere se prima non s'impara à intender la lingua, e conoscere i caratteri nei quali è scritto. Egli è scritto in lingua matematica, e i caratteri son triangoli, cerchi, & altre figure Geometriche, senza i quali mezi è impossibile à intenderne umanamente parola; senza questi è un aggirarsi vanamente per un'oscuro laberinto.

In Sarsi I seem to discern the firm belief that in philosophizing one must support oneself upon the opinion of some celebrated author, as if our minds ought to remain completely sterile and barren unless wedded to the reasoning

of some other person. Possibly he thinks that philosophy is a book of fiction by some writer, like the Iliad or Orlando Furioso, productions in which the least important thing is whether what is written there is true. Well, Sarsi, that is not how matters stand.

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it; without these, one wanders about in a dark labyrinth.

Mike Molinsky

## Call for Papers: *Logica Universalis*

We invite submissions for a special issue of *Logica Universalis*, a peer-reviewed journal, on the topic: Modern Logic 1850–1950, East and West.

This issue honors Irving Anellis (1946–2012), founder of the journal *Modern Logic* (subsequently, *The Review of Modern Logic*), whose more than 140 articles, books, and edited works span the entire history of modern logic.

Topics for the special issue include but are not limited to:

1. Mathematical logic: proof theory and meta-mathematics, applications of logic to mathematical structures.
2. Work of Bertrand Russell in set theory and logic, and of Charles Sanders Peirce in algebra and algebraic logic.
3. History of proof theory, especially with respect to the Loewenheim-Skolem Theorem and Herbrand's Fundamental Theorem; logic trees; natural deduction.
4. History of logic and mathematics in the Soviet Union and Russia.

Extended versions of work previously published in conference proceedings can be submitted, but authors should make it clear how their submission improves upon the conference publication.

Papers should be submitted by email as a .pdf attachment by 31 May 2014 to both guest editors: Francine F. Abeles, [fabeles@kean.edu](mailto:fabeles@kean.edu), and Mark E. Fuller, [mark.fuller@wwc.edu](mailto:mark.fuller@wwc.edu).

Instructions for authors to prepare the final version of the accepted paper are on the journal's web page at: [www.birkhauser-science.com/LU](http://www.birkhauser-science.com/LU).

## Editorial Board for *Convergence*

As summer approaches, the editors of *Convergence*, the Mathematical Association of America (MAA) online journal on the history of mathematics and its use in teaching, hope that CSHPM members will consider preparing and submitting for publication:

- articles about the history of mathematics with attention to opportunities for use in grades 8–16 mathematics classrooms;
- translations of original sources that students might enjoy; and/or
- classroom activities, lessons, or projects.

Now would be an excellent time to do so because we have recently expanded our editorial staff! Please do not hesitate to discuss your ideas with *Convergence* editor Janet Beery, [janet\\_beery@redlands.edu](mailto:janet_beery@redlands.edu), or with any of the associate editors listed below. For submission details, please click on “Guidelines for *Convergence* Authors” at the journal's website, [www.maa.org/publications/periodicals/convergence](http://www.maa.org/publications/periodicals/convergence).

### MAA *Convergence* 2014–2015 Editorial Board

Janet Beery, Editor  
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Frank Swetz, *Convergence* Founding Editor  
The Pennsylvania State University

## The Future of the *Proceedings*

At our annual meeting at Brock University next month, the Council will be bringing forward a motion to convert the *Proceedings* of our annual meeting from a photocopied, members-only volume to a formal publication.

We sought, and received, feedback from the membership through a call in the *Bulletin* last fall. Both within the Council and within the membership, opinions were split between the route of an open-source publication and going with an academic publisher. Two factors became clear through our discussions: first, that the world of academic publishing is going through major transitions at the moment, and no one can say with any certainty what the landscape will look like even a couple of years from now. Second, we were unable to find an editorial team that was willing to take on the task in an open-source environment.

Thus, Council has decided to proceed with a temporary motion to work with an academic publisher for the next three years, at which point the debate will be re-opened. I am thrilled to announce that Maria Zack and Elaine Landry have volunteered to be the editorial team through this three-year period. Their experience and expertise in both the history and philosophy of mathematics will serve us very well. I'd also

like to thank Tom Archibald profusely for his service as editor over the past few years; his high scholarly standards and diligence have led to excellent and attractive *Proceedings*.

*Glen Van Brummelen*

## 2013 Financial Statements

The following financial statements cover the period 1/1/2013 through 12/31/2013.

	\$ Can.
<b>Income</b>	
dues/subscriptions	11,310.47
<b>TOTAL</b>	<b>11,310.47</b>
<b>Expenses</b>	
Keynote speaker	2,113.98
<i>Historia Mathematica</i>	2,904.12
<i>Philosophia Mathematica</i>	2,232.68
Postage, office expenses, Bulletin	440.99
BSHM Recipr. Memb., 10–11	2,314.03
Bank fees	26.47
<b>TOTAL</b>	<b>10,032.27</b>
<b>NET</b>	<b>1,278.20</b>
Bank balance, 12/31/13	38,538.62
TD Mortgage Corp. GIC (matures 09/16/16)	4,109.42
TD Mortgage Corp. (matures 3/26/17)	4,182.10
<b>TOTAL</b>	<b>46,830.14</b>

### Comments:

Because the Society has 2 accounts, one in US dollars, we keep two different accounting systems. At the request of the editors, we have combined the numbers for these accounts. The numbers given are in Canadian dollars. A conversion factor of 1.06 has been used to convert American dollars into Canadian ones.

The first GIC fund earns interest at 1,60% and matures 16 September, 2016; the second has a 1,40% rate and matures 26 March 2017. Overall, the Society's assets increased \$2,161.87 over last year.

As in 2012, there has been a shift from our US funds to our funds in Canadian Dollars, due to the fact that the membership contributions that we collected via

PayPal can only be transferred to our Canadian Dollar bank account. The use of the online paying method increased in this year: PayPal was used by 90 out of 126 paying members, i.e. 71%, compared to 52% in 2012.

In 2013 the SSHRC Conference grant was not awarded, so we could not support travel to the annual meeting for our members. However, we solicited \$723 in donations for "Student Travel Reimbursement." This amount made up the bulk of the \$750 that was awarded as the *CSHPM Student Prize* for the best student paper presented at the Annual Meeting (paid out in 2014).

*Dirk Schlimm*

## From the Archives: Origins

On July 12, 1972, Kenneth O. May sent out a letter to try to determine the level of interest in forming a new society dedicated to the history and philosophy of mathematics. Unfortunately, no copy of that original letter appears in our Society archives (although we do have at least a few of the replies that he received in response to it). The letter transcribed below, sent out the following year, appears to be the first formal announcement of the decision to create the CSHPM/SCHPM. See as well "The Beginning of the Society" elsewhere in this issue.

UNIVERSITY OF TORONTO

TORONTO M5S 1A1 CANADA

Department of Mathematics 23 February 1973

Dear Colleagues:

Considerable discussion and correspondence over the last several months indicates interest in forming a Canadian society for the history and philosophy of mathematics. It appears that such an organization appeals to many mathematicians, historians, and philosophers.

The following proposals represent a consensus [*sic*] of those involved so far.

The organization might be called the Canadian Society for the History and Philosophy of Mathematics /

Société Canadienne d'Histoire et de Philosophie des Mathématiques.

The organization should be informal, should not compete with existing organizations, and should not involve significant additional expense for the members. It should take advantage of the new journal HISTORIA MATHEMATICA and of its newsletter Notae de HISTORIA MATHEMATICA.

To implement the points in the previous paragraph, dues should be nil for paid-up members of the Canadian Society

for the Study of the History and Philosophy of Science / Société Canadienne d'Histoire et de Philosophie des Sciences, and for subscribers to HISTORIA MATHEMATICA. For others, the dues should be the same as for the CSSHPS/SCHPS – \$5 at present. Members would receive the newsletter whether or not they subscribed to HISTORIA MATHEMATICA.

The organization might hold meetings in conjunction with those of related organizations rather than organizing its own separate meetings.

An appropriate occasion for founding the organization appears to be the June 8-10, 1973, meeting of the CSSHPS/SCHPS, which is part of the Learned Societies sessions, at Queen's University, Kingston, Ontario. An organizational meeting is scheduled for June 9, 1-2 p.m. (room to be announced).

Those who wish to give papers on the history or philosophy of mathematics should do so as part of the CSSHPS/SCHPS meetings and should send their titles and abstracts immediately to the chairman of the programme committee, Professor G. R. Patterson, Faculty of Pharmacy, University of Toronto, Toronto, Ontario, M5S 1A1.

If you would like to become a charter member of the new organization, please send the form below to the undersigned, who is acting as a temporary center of communications.

At the meeting in Kingston, I hope that we will be able to draw up a constitution and found the organization. If you have any proposals or suggestions which you wish to make, and if you are going to be unable to present them in person, please send them to me.

Sincerely yours,

Kenneth O. May

Professor of Mathematics

.....  
Prof. K. O. May, Dept. Mathematics, Univ. Toronto, Toronto, Ontario, M5S 1A1:

I should like to be a charter member of the Canadian Society for the History and Philosophy of Mathematics / Société Canadienne d'Histoire et de Philosophie des Mathématiques....

I hope to attend the Kingston meeting....

(If the organization is formed, you will be billed for dues, if you are not already a member of CSSHPS/SCHPS or a subscriber to HISTORIA MATHEMATICA.)

Name:

Address:

Comments:

.....  
The Kingston meeting took place in June 1973, as planned. The aims and intentions of the society laid out in May's letter were approved, as was the suggested title of the new society (with the minor change of dropping the word "the" from the title). Charles V. Jones was elected the temporary organizational chairman by acclamation, and plans were set in motion to write a constitution for the new society, which would be approved the following year.

### **Xu Yibao (1965–2013)**

Xu Yibao was born at Poyang, Jiangxi Province, on December 10, 1965. He was hospitalized on Sunday, November 3, 2013, after suffering a massive cerebral hemorrhage, a stroke for which he was treated immediately at the Robert Wood Johnson Hospital at Rutgers University in New Brunswick, New Jersey, but from which he never recovered. He died on Thursday, November 7, 48 years of age. He is survived by his wife, Delia Yongxian Yu, and his two sons, Jonathan Xu and Alex Xu Yu. Having majored in mathematics as an undergraduate, Xu Yibao went on to study the history of Chinese mathematics from 1988 through



June of 1991 at Inner Mongolia Normal University with one of the world's leading masters of the subject, Professor Li Di.

After receiving his Master of Science degree in July 1991, he worked as an editor at the Editorial Office of Local History of Jiangxi Province. In August 1995, he was admitted to the PhD Program in History at the Graduate School and University Center of the City University of New York, from which he was awarded a doctorate in 2005 for the thesis, "Concepts of Infinity in Chinese Mathematics."

Meanwhile, he had already joined the faculty of the Department of Mathematics at Borough of Manhattan Community College of the City University of New York, where he was successively promoted from the ranks of adjunct lecturer to Assistant, then Associate, and last year, to Full Professor. He was subsequently granted tenure, which was to have taken effect in September 2014. Yibao was also active as a member of his local school board. As a service to his community in Plainsboro, New Jersey, he was elected a member of the West Windsor-Plainsboro Regional School District School Board, for which he served on the Finance Committee and as the Board of Education Liaison to Plainsboro's Planning Board.

A dedicated scholar, among Professor Xu's most recent publications are "Bertrand Russell and the Introduction of Mathematical Logic in China," *History and Philosophy of Logic* 24, no. 3 (2003): 181–196; "The First Chinese Translation of the Last Nine Books of Euclid's Elements and its Source," *Historia Mathematica* 32, no. 1 (2005): 4–32; and "Dialectics of Numbers: Marxism, Maoism, and the Calculus of Infinitesimals," in *Mr. Science and Chairman Mao's Cultural Revolution*, Nancy Wei and Darryl E. Brock, eds. (Lanham, MD: Lexington Books, 2013), 165–196. Xu Yibao was also a member of the American Mathematical Society, the Mathematical Association of America, and the History of Science Society. He also served as Secretary of the Americas Section of the International Study Group on Relations between History and Pedagogy of Mathematics (HPM).

Over the past five years he had collaborated with Professor Joseph W. Dauben to produce an English translation of the most noted mathematical work of ancient China, the *Jiu zhang suan shu* (Nine Chapters on the Art of Mathematics). This work is based



Figure 1: Xu Yibao (1965-2013)

upon a new collation of the ancient text and commentaries on the Nine Chapters by the leading authority on this subject in China, Guo Shuchun, a member of the Institute for History of Natural Science of the Chinese Academy of Sciences in Beijing. The work has just appeared in three volumes, as part of the Library of Chinese Classics published by Liaoning Education Press in Shenyang, Liaoning Province, China (2013).

## 2013 May Prizes Awarded

The Kenneth O. May Prize is awarded every four years to a historian or historians in recognition of distinguished contributions to the history of mathematics. This award honors the memory of Kenneth O. May, mathematician and historian of mathematics, who was instrumental in creating a unified international community of historians of mathematics through his tireless efforts in founding in 1971 the International Commission for the History of Mathematics and in 1974 the ICHM's journal, *Historia Mathematica*. Ken May was also the founder of the CSHPM/SCHPM in 1974. The Prize is administered by the International Commission for the History of Mathematics and

awarded on the occasion of the International Congress for History of Science, Technology and Medicine, held every four years. The ICHM is a member commission of the International Union for History and Philosophy of Science and Technology and the International Union of Mathematics.

Since 1989, 12 scholars have received the Prize; see [www.unizar.es/ichm/mayprize.htm](http://www.unizar.es/ichm/mayprize.htm). Recipients also receive the May Medal, a bronze medallion cast from a design created by the Canadian sculptor Salius Jaskus. In July 2013, at the 24th ICHSTM, Craig Fraser, chair of the ICHM, presented the 2013 May Prizes to Menso Folkerts and Jens Høyrup.

Menso Folkerts (b. 1943) is a German historian of mathematics and retired professor at Ludwig-Maximilians-Universität in Munich. He has made extensive contributions to the history of medieval and early modern mathematics and has also written on other areas of the history of mathematics. Folkerts has played a major role in making primary historical sources available for study to scholars, particularly through the *Jordanus* catalogue. Started by Folkerts within the Munich Department for the History of Science, and since 1997 a joint initiative with the Berlin Max Planck Institute for the History of Science, *Jordanus* is now an open access on-line catalogue listing more than 13,000 mathematical and scientific manuscripts in Latin and Western European vernacular languages produced between the years 500 and 1500 (but also including numerous entries from later centuries). See [archimedes.mpiwg-berlin.mpg.de/iccsm.html](http://archimedes.mpiwg-berlin.mpg.de/iccsm.html). Folkerts's second major contribution to making primary sources available to historians of science is a database of Gauss's correspondence cataloguing more than 7,600 letters—also available as an on-line catalogue.

Folkerts has served as an executive officer of the International Commission for the History of Mathematics, on the Board of Trustees of the Deutsche Museum, and as President of the German Society for the History of Medicine, Science and Technology. He has edited or helped to edit over 12 scholarly journals and book series, including *Boethius* and *Algorismus*. His distinguished service to the community and influential scholarship has been acknowledged with membership in the International Academy for the History of Science (since 1981, corresponding member, and 1986, ef-

fective member); the Leopoldina Academy (Deutsche Akademie für Naturforscher, since 1989); the Saxonian Academy of Science (corresponding member since 1998); and the Bavarian Academy of Science (since 1999).

Jens Høyrup (b. 1943) is a Danish historian of mathematical science and a retired professor at Roskilde University. He has worked on several different parts of the history of mathematics but is best known for his pioneering contributions, including employing discourse analysis, to the study of Babylonian mathematics from the period 1800–1500 BC. His major work on this subject is the book *Lengths, Widths, Surfaces: A Portrait of Old Babylonian Algebra and Its Kin* (Springer, 2002).

Høyrup is a member of the International Academy of the History of Science, an associate editor of *Historia Mathematica* and member of the editorial board of *Revue d'Histoire des Mathématiques*. He is a regular reviewer for several journals and publishers in the history of mathematics. He has published approximately thirteen books as author or co-author, about sixty articles in journals, about forty articles in conference proceedings and other books, and several contributions in encyclopaedic works.

For the full citations that accompanied the awarding of the May Prize to Professors Folkerts and Høyrup see Craig Fraser, "Awarding of the May Prizes for 2013," *Historia Mathematica* 40 (2013):353–356.

The next Kenneth O. May Medal and Prize will be awarded in 2017 at the 25th International Congress of History of Science, Technology and Medicine in Rio de Janeiro.

*Craig Fraser*

## 2014 CSHPM Nominating Committee Report

The nominating committee (comprising Tom Archibald, Fred Rickey, and Antonella Cupillari) has contacted the following people who agree to stand for the positions below. It is the recommendation of this committee that the following people should stand for election:

**President:** Elaine Landry, University of California,

Davis

**Vice-President:** Dirk Schlimm, McGill University  
**Secretary:** Patricia Allaire, Queensborough Community College, CUNY

**Treasurer:** David Bellhouse, University of Western Ontario

**Council:**

Craig Fraser, University of Toronto  
Jean-Pierre Marquis, Université de Montréal  
Karen Parshall, University of Virginia  
Joel Silverberg, Roger Williams University

We thank the candidates for their willingness to serve the Society. Terms are two years and thus run from the 2014 AGM to the 2016 AGM. The other executive positions (Past President, various editors, Webmaster, Archivist, CMS Liaison) do not require elections.

On April 1, the Secretary distributed ballots electronically to those members with an email address, along with instructions for voting online. For those who prefer to vote by postal mail or hand delivery, a paper copy of the ballot is included with this *Bulletin*. The Secretary must receive ballots before the AGM begins on Monday, May 26.

Respectfully submitted,  
*Tom Archibald*

## New Members

*Congratulations to the following new members who have joined the Society since our last Bulletin. We look forward to your contributions.*

Eugene Boman  
Penn State University  
Harrisburg, PA  
USA

Bradley Dart  
London, ON  
Canada

Meighan Dillon  
Roswell, GA  
USA

Graham Eaton  
Lewes  
UK

Bjorn Roger Hoff  
Aalesund  
More & Romsdal  
Norway

Joe Mailhot  
St. Martin's University  
Lacey, WA  
USA

Roger Petry  
University of Regina  
Regina, SK  
Canada

## From the Editor

I am looking forward to seeing many of you at Brock later this month. You will find the meeting programme as well as a ballot for our biennial elections in this issue. As I write this in early April, those of us who have been researching potential publishers for the *Proceedings* are also working out the details for the formal proposal we plan to bring to the AGM. This is an important discussion that you will not want to miss; if you have questions or concerns before the meeting, please contact the *Bulletin* editors or Glen, as we have been the main points of contact for the background research.

Additionally, Mike Molinsky and I have been digging through the archives for historical items to share as we mark the Society's 40th anniversary. We have a few things besides the documents reprinted in this issue to share with you in November, but I am also happy to receive any memories or memorabilia that you would like to contribute. These can be from the Society's beginning in the 1970s or any point in its history. For instance, I have thought about collecting recollections of members' first encounters with the Society (a la the ongoing column on "how I came to love the history of math" that ran several years ago), but I will have to start recruiting submissions if there are no volunteers.

I would like to thank the History of Science Society *Newsletter* for the text of Xu Yibao's obituary. While he never attended a CSHPM meeting, many of us knew him through the Joint Math Meetings and other venues. His cheerful smile is greatly missed.

The *Bulletin* reaches your hands or computer screen due to the continued efforts of Eisso Atzema, Layout Editor; Maria Zack, Production Editor; Pat Alaire, Secretary; and Mike Molinsky, Webmaster. I am thankful also for our officers, Councillors, and the volunteers who keep the Society's other functions operating smoothly. The next submission deadline for the *Bulletin* is 1 October 2014. As always, the editors seek news items of interest to historians and philosophers of mathematics, reports on conferences attended, and personal and professional announcements. We also welcome suggestions for memorials, book and web reviews, and informative or thought-provoking column-style articles. Plain text and LaTeX files are easiest for the editors to deal with, but we can convert Word documents as well. Submissions may be sent to [aackerbe@verizon.net](mailto:aackerbe@verizon.net).

*Amy Ackerberg-Hastings*

## About the Bulletin

The *Bulletin* is published each May and November by a team of 3 volunteers: Content Editor Amy Ackerberg-Hastings ([aackerbe@verizon.net](mailto:aackerbe@verizon.net)), Layout Editor Eisso Atzema ([atzema@math.umaine.edu](mailto:atzema@math.umaine.edu)), and Production Editor Maria Zack ([Maria-Zack@pointloma.edu](mailto:Maria-Zack@pointloma.edu)). Material without a byline or other attribution has been written by the editors. Les pages sont chaleureusement ouvertes aux textes soumis en français. Comments and suggestions are welcome and can be directed to any of the editors; submissions should be sent to Amy Ackerberg-Hastings at the above email address, or by postal mail to 5908 Halsey Road, Rockville, MD 20851, USA.



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