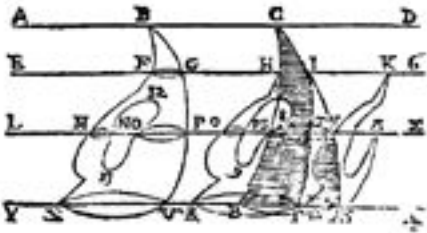


BULLETIN

CSHPM

SCHPM

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Canadian Society for History
and Philosophy of Mathematics

Société canadienne d'histoire et
de philosophie des mathématiques

ISSN 0835-5924

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

Vice-President: **Maria Zack**, Point Loma Nazarene University, San Diego, CA 92106, USA, MariaZack@pointloma.edu

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

Treasurer: **Gregory Lavers**, Concordia University, Montreal, QC H3G 1M8, CA, Greg.Lavers@concordia.ca

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

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Joel Silverberg, 31 Sheldon Street, Providence, RI 02906, USA, joel.silverberg@alumni.brown.edu

Volunteer Positions

The Society's Web Page (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 **Maria Zack** and **Dirk Schlimm** (see above). The Society's Archives are managed by **Eisso Atzema**, University of Maine, Orono, ME 04469, eisso.atzema@maine.edu. **Hardy Grant**, hardygrant@yahoo.com, and **Amy Ackerman-Hastings**, aackerbe@verizon.net, edit the CSHPM Notes column for *Notes* of the Canadian Mathematical Society. **Maritza Branker**, Niagara University, Lewiston, NY 14109, mbranker@niagara.edu, serves as CMS Liaison.

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

President's Message

We're slowly coming to the close of another very successful year for the CSHPM. The highlight for me was our annual meeting, held at Ryerson University in Toronto in conjunction with the Congress of the Humanities and Social Sciences on May 28–30. If I counted correctly, we had 40 exciting talks covering a wide range of topics and time periods. From Sunday morning to Tuesday afternoon we had ten different sessions, including five parallel sessions. The two special sessions on "History of 18th century mathematics" were organized by Rob Bradley and Pat Allaire, and they nicely framed the 2017 Kenneth O. May lecture given by William Dunham, who presented us with a fun and engaging talk on "A tale of two series." The program also included two sessions that were organized jointly with the Canadian Philosophical Association on "New perspectives on logic in the nineteenth century, from Kant to Russell," organized by Sandra Lapointe and Greg Lavers. The organization of the general program was in the able hands of Eisso Atzema, and Craig Fraser was in charge of the local organization. I thank all participants, session chairs, and organizers for bringing together this wonderful event.

Our next meeting will be held June 4–6, 2018, in Montreal—just between some festival and the Formula 1 Grand Prix. We will meet at the Université du Québec à Montréal in conjunction with the annual meeting of the Canadian Philosophical Association. The Kenneth O. May lecture will be given by Emily Grosholz. Eisso Atzema will organize again the general programme, Jean-Pierre Marquis will lead the local organizing committee, and the special session on "History of philosophy of mathematics" will be organized by me. I am looking forward to seeing many of you next summer in Montreal!

Because the elections of our new officers are held in even-numbered years, there has been little change at the helm of the CSHPM. After accomplishing the Herculean task of organizing our archive, Mike Molinsky decided to step down and Eisso Atzema has accepted to take over the position of Archivist. Many thanks to

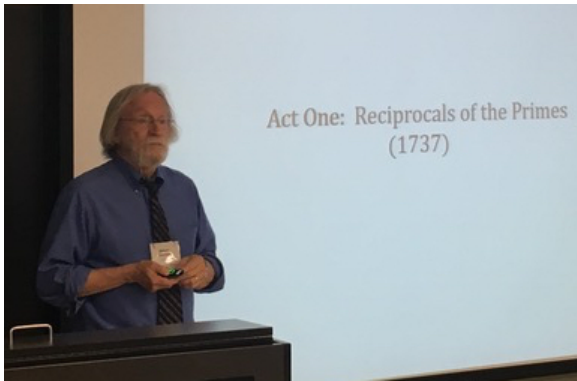


Figure 1: William Dunham

Mike for this important work! I am also very happy that Mike will continue his great service as our Webmaster. For the 2018 elections a Nomination Committee comprising Chris Baltus, Dan Curtin, and Larry D'Antonio has been formed. If you have a nomination in mind, please contact one of the members.

With regard to our outreach activities, I am happy to report that the free *PhilMath-Archive* was officially launched in May 2017. This is a preprint server aimed at promoting communication in the field of philosophy of mathematics by the rapid dissemination of new works. Our Past-President Elaine Landry has been instrumental in initiating this project and getting it off the ground. Please, take some time to have a look at it and to submit your preprints, at <http://philsci-archive.pitt.edu/philmath.html>.

Our other ongoing projects continue to go energetically. Amy Ackerberg-Hastings and Hardy Grant have been editing the “CSHPM Notes” column devoted to history and philosophy of mathematics, written by our members, in *CMS Notes* with great success. The latest one, “Learning Mesopotamian Mathematics,” by Duncan J. Melville, just appeared. These contributions are accessible online at <http://cms.math.ca/notes>.

As in previous years, Maria Zack has been the driving force behind the timely and successful publication of *Proceedings* of our annual meetings. The volume from the 2016 meeting in Calgary, which includes the paper “Bolzano against Kant’s Pure Intuition” by Paul McEldowney, the recipient of the CSHPM Award for best student paper, is currently in the last stages of production and should hit the shelves shortly. Finally, in early December there will be a session on the history of mathematics at the CMS Winter meeting in Waterloo, ON, organized by our CMS Liaison, Mar-

itza Branker. Many thanks to Elaine, Amy, Hardy, Maria, and Maritza for all their fantastic work!

As you can see, the CSHPM train continues to roll fast and strong!

Dirk Schlimm

Announcements

David Bellhouse has been named an Honorary Member of the Statistical Society of Canada. This award is intended to honor an individual who has made exceptional contributions to the development of the statistical sciences in Canada and whose work has had a major impact in this country. The citation to his award reads, “To David R. Bellhouse, for his many contributions to survey sampling and to the history of probability and statistics; for his excellence in training and mentoring; for his academic leadership; and for his dedication to the profession.”

As a Canadian sesquicentennial project, David has also been digitizing the 1827 cyphering book of Sir John A. Macdonald, Canada’s first prime minister at Confederation in 1867. See www.stats.uwo.ca/faculty/bellhouse/macdonald/john_a_macdonald_math_notebook.htm.

Congratulations to Dan Curtin on his retirement from Western Kentucky University, which became official during our 2017 meeting at Ryerson University.

Tom Drucker has been appointed to the Jewish Studies Advisory Council at Princeton University.

In spring 2017, Lee Stemkoski received the Adelphi University College of Arts and Sciences Excellence in Teaching Award, and Toke Knudsen was awarded the SUNY-wide Chancellor’s Award for Excellence in Scholarship. Ron Callinger’s book *Leonhard Euler: Mathematical Genius in the Enlightenment* (Princeton, 2015) was chosen by *CHOICE* as one of its Outstanding Academic Titles for 2016.

Bernard Hodgson will receive the 2017 CMS Excellence in Teaching award at the CMS Winter Meeting in Waterloo in December. Besides enthusiastically developing courses and mentoring students at Université Laval, he was Secretary General of ICMI from 1999 to 2009.

The International Union of History and Philosophy of Science and Technology (IUHPST) announced that Theodore Arabatzis of Athens won its first essay prize, for “What’s in it for the historian of science? Reflec-

tions on the value of philosophy of science for history of science.” He presented the contents at the 25th International Congress of History of Science and Technology in Rio de Janeiro, July 23–29. For more information, see the Inter-Division Commissions/Joint Commission page of iuhps.net.

Sara J. Schechner will receive the 2018 LeRoy E. Doggett Prize for Historical Astronomy. She is David P. Wheatland Curator of the Collection of Historical Scientific Instruments at Harvard and will deliver the plenary lecture at the 231st meeting of the American Astronomical Society in January 2018 at National Harbor, MD.

Carol Mead, long-time archivist at the American Archives of Mathematics, has been named Head of Archives and Manuscripts at the Dolph Briscoe Center for American History, University of Texas at Austin.

Peace to the memory of Robert S. Cohen (1923–2017), who died on June 19. He was known for his work on Marin Mersenne’s philosophy, among other activities at Boston University’s Centre for Philosophy and History of Science. An obituary appears at www.bu.edu/cphs/about/robert-cohen/.

Jean-Pierre Kahan (1926–2017) passed away on June 21. He was ICMI president from 1983 to 1990 and central to many other ICMI activities and studies, in addition to his research in harmonic analysis and probability.

Transforming Instruction in Undergraduate Mathematics via Primary Historical Sources (TRIUMPHS), a NSF-funded effort dedicated to teaching mathematics from primary historical sources, now offers instructors a selection of 23 full-length Primary Source Projects (PSPs) and 17 shorter “mini-PSPs.” Site testing continues. See webpages.ursinus.edu/nscoville/TRIUMPHS.html.

Bram Roosen of Brepols announces the publication of *Correspondence of Luigi Cremona (1830–1903)*, ed. G. Israël, 2 vol. It includes ca 1,000 letters, conserved in the Department of Mathematics, “Sapienza”, University of Rome. The edition is volume 97 in the series *De Diversis Artibus. Collection of Studies from the International Academy of the History of Science*. See bit.ly/2tbxi5X.

Oxford University Press has released *A Portable Cosmos: Revealing the Antikythera Mechanism, Scientific Wonder of the Ancient World* by Alexander Jones (2017).

Matt DeVos and Deborah A. Kent have published *Game Theory: A Playful Introduction* in the AMS Student Mathematical Library series.

Paul Halpern has published *The Quantum Labyrinth: How Richard Feynman and John Wheeler Revolutionized Time and Reality* with Basic Books (2017). In 2016, Springer issued *Historiography of Mathematics in the 19th and 20th Centuries* (part of the series *Trends in the History of Science*), edited by Volker R. Remmert, Martina Schneider, and Henrik Kragh Sørensen. Gert Schubring published “Searches for the origins of the epistemological concept of model in mathematics” in *Archive for History of Exact Sciences* 71, no. 3 (2017): 245–278. The University of Chicago Press published *Science in the Archives: Pasts, Presents, Futures*, edited by Lorraine Daston (2017).

The Whipple Museum of the History of Science is extremely proud to publish as a free E-book Anita McConnell’s 1997 research monograph, *A Survey of the Networks Bringing a Knowledge of Optical Glass-Working to the London Trade, 1500–1800*. See the Explore Collections/Astronomy section of www.sites.hps.cam.ac.uk/whipple/. UCL Press has made Michael Boulter’s *Bloomsbury Scientists: Science and Art in the Wake of Darwin* available as an open access book, goo.gl/Gevke8. Rounded Globe Publishers offers a number of books in many fields as free downloads. Works on history and philosophy of science are mainly found under the Moral Science link at roundedglobe.com/.

The Oughtred Society announces the publication of an English translation of the biography of Curt Herzstark, inventor of the Curta Calculator. See www.oughtred.org.

NCTM acquired The Math Forum in 2015 when it lost its relationship with Drexel University. Unfortunately, financial difficulties led the NCTM Board of Directors to ask The Math Forum staff to relocate to Virginia. The staff elected not to do so, and The Math Forum will close January 1, 2018. Some archival content will be retained on nctm.org.

The American Mathematical Society has acquired the Mathematical Association of America’s book publishing program. Stephen Kennedy has moved to AMS with the program. MAA members will continue to receive a 25% discount on MAA Press books.

Three papers were named winners in HOM SIGMAA’s

annual student contest: Nathan Otten (UMKC), “Huygens and *The Value of all Chances in Games of Fortune*”; Johan Gaebler (Harvard), “Traditionalism: 1894 to 1925”; and Amanda Akin (Lee), “To Infinity and Beyond: A Historical Journey on Contemplating the Infinite.” All three may be read on the HOM SIG-MAA and *MAA Convergence* websites.

BSHM News: The 2017 AGM and Gresham College Lecture were held on October 25. Upcoming meetings include: “From Games to Game Theory” at Birmingham and Midlands Institute on December 9 and “Reading Euclid in the early modern world” at All Souls College, Oxford, on December 14–15.

FedCan News: Gabriel Miller began a five-year term as Executive Director on May 1. The 2017 Congress was the largest ever, with over 10,000 in attendance, and included a visit from the Honourable Kirsty Duncan, Minister of Science. Miller posted an op-ed, “Canada needs to confront the causes of a post-truth world,” coordinating with a Big Thinking panel, “Expertise in a post-truth era: How to be a trusted advisor in a low-trust world,” at the 9th Canadian Science Policy Conference on November 2. A webinar on assessing impacts in the HSS was held October 26. For more information and recordings, see www.ideas-idees.ca/. An open workshop on “London 1600–1800: Communities of Natural Knowledge and Artificial Practice” was held at the Science Museum June 16–17. See metsci.wordpress.com.

“New Perspectives on Science and Religion in Society” was held June 29–July 1 at Newman University, UK. The Writing History seminar, on the pleasures and challenges of writing history for a wider public, began holding monthly meetings at New York University at noon on September 15. See writinghistoryseminar.com.

The workshop “Mathematics and Mechanics in the Newtonian Age: historical and philosophical questions” was held September 18–20 at the University of Sevilla Institute of Mathematics. See geomat1216.wordpress.com/.

Ludmilla Jordanova delivered the inaugural Museums and Galleries History Group annual lecture, “Museums, Galleries and the Power of Portraits,” at the University of London, September 21.

ORESME and the Midwest History of Mathematics Conference held a joint meeting at Wabash College

in Crawfordsville, IN, September 29–30. Rob Bradley gave the keynote lecture on Jean le Rond d’Alembert, who was also the focus of the ORESME readings. Other CSHPMers on the program included Danny Otero, Janet Heine Barnett, Duncan J. Melville, and Larry D’Antonio.

The exhibition, *L’Universo ad orologeria: L’Astrario di Giovanni Dondi a Pavia*, brings Dondi’s 14th-century complex planetary clock back to life and will be on view at the Musei Civici del Castello Visconteo in Pavia from October 7 to December 23. Lectures and tours will be offered throughout the exhibition. A video about the exhibition is available at www.museicivici.pavia.it/.

University of Maryland University College hosted *Cyber at the Crossroads*, a one-day symposium on the past, present, and future of the security of the US cyber infrastructure, on October 10.

Michel Serfati announces the first 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), “Symbolisme mathématique et pensée arborescente” on 11 October; Catherine Goldstein (CNRS), “Combinatoire et langage au 17e siècle, d’après la thèse d’Ernest Coumet” on 15 November; Michel Henry (IREM), “Aux origines de la loi des grands nombres, l’apport historique de Jacques Bernoulli” on 29 November; Michel Serfati (IREM), “Les compass cartésiens, une figure de pensée mathématique. Une étude épistémologique” on 6 December; Claude Merker (IREM), “Les traités de Pascal sur la Roulette” on 17 January; Jean Lassegue (EHESS), “Ernst Cassirer, philosophe des sciences et sémioticien” on 24 January; and Liliane Alfonsi (Paris Sud), “La diffusion des mathématiques au XVIIIe dans les manuels d’enseignement: Du ‘pourquoi?’ au ‘comment?’” on 7 February.

The Interdivisional Teaching Commission held its 2nd International Summer School for History and Philosophy of Sciences, Technology and Education at Lille University, Oct. 11–12. See summerschoollille2017.historyofscience.it/en/.

Lancaster University and the Royal Institution of Great Britain are offering a free 4-week MOOC on “Humphry Davy: Laughing gas, literature and the lamp,” starting October 30 through the FutureLearn consortium. See www.futurelearn.com/courses/

humphry-davy.

The 2017 Novembertagung on the History of Mathematics was held November 2–4 in Brussels with the theme “Tools for research in mathematics, history and philosophy.” GDR 3398 followed that meeting with an Instructional Conference in Marseilles, November 6–10, with the theme “Mathématiques en circulation et en mutation: textes et théories dans le temps et dans l’espace.” See fconferences.cirm-math.fr/1758.html.

The National Alliance for Doctoral Studies in the Mathematical Sciences brought together 200 undergraduates interested in applying to graduate school for the 2017 Field of Dreams Conference in St. Louis, MO, November 3–5.

The 3rd International Conference on the History of Meteorological Science and Technology was held in Beijing, November 6–7.

The International Society for Design and Development in Education met in Berkeley, CA, November 6–9. The organization also offers a US\$5,000 prize for excellence in design for education in science or mathematics. See www.isdde.org/isdde/index.htm.

A doctoral course on Inquiry in Mathematics and Science: The Interplay of Didactical and Epistemological Perspectives will be held in Copenhagen, November 6–10. For more information, see the Course Overview section of www.ind.ku.dk/english/.

The History of Science Society met November 9–12 in Toronto. History and philosophy of mathematics on the program included the sessions, “Virtual Realities: Libraries and 19th-Century Science and Mathematics in Britain and Its Empire,” “Works and Networks in pre-Copernican Astronomy,” and “Virtual Realities: Libraries and 19th-century Science and Mathematics in Britain and its Empire.” The following individual papers were also given: Jean-Olivier Richard, “Enjoyable Geometry: Père Castel’s Pedagogical Flair and Legacy”; Elena Serrano, “Medical Arithmetic in Late 18th-century Spain: Gender, Paper Tools, and Social Ideals”; Allan Olley, “Wallace Eckert and Pure and Applied Science at IBM”; Bo An, “Pseudo-universals: Philology, Sinology, and Machine Translation”; David Theodore, “The Digital Prison: Computing the Carceral State, ca 1970”; Christine von Oertzen, “At-home Census Compilation: Paper, Data, and Technologies of Orderliness”; Corinna Schlombs, “Productivity in Transatlantic Re-

lations: A Statistical Measure between the Bureau of Labor Statistics and the Marshall Plan”; Jon Freeman, “Some Overlooked Mathematical Issues in the 1905 Paper on Special Relativity”; Jennifer Thivierge, “Processing an Upgrade: Grace Hopper and Beatrice Worsley’s Activism for Women in Computing, 1945–1972”; Jason Grier, “British Navigation as Science and Practice, 1673–1761”; Ralph Kingston, “Seeing Like a Circumnavigator: Early Nineteenth Century French Ships of Discovery as Centers of Calculation”; Nicholas Jacobson, “Quantifying Religious Difference: A Thirteenth-century Mathematical Treatise on the Borders between Arabic Medicine and Latin Moral Philosophy”; and Scott Walter, “Mathematics and the Wireless World.” Deborah Wood presented the poster, “Mathematical Conversion: Christianity, Science, and the State in the 17th-century Jesuit Mission to China.” 2014 CSHPM Student Award winner Sylvia Nickerson spoke on “A Seat at the Table: Publishers, Periodicals, and the Agendas of Science and Religion,” and David Orenstein presented “Compare and Contrast: The Context and Impact of Canadian International Geological (1913, 1972) and Mathematical (1924, 1974) Congresses.”

Silke Ackermann, Director of the Museum of the History of Science at Oxford, will deliver the Fifth Turner Memorial Lecture, “In the Service of Religion? ‘Science in the Islamic World’ in the Museum,” at the In & Out Club in London at 5:30 pm, November 20. For more information, see www.scientificinstrumentsociety.org/.

The 5th International STEM in Education Conference will be hosted by the Queensland University of Technology in Brisbane, November 21–23. See stem-in-ed2018.com.au.

A one-day conference on The History of Women in Engineering in the UK will be held at IET Savoy Place in London on November 27. The Women’s Engineering Society will be celebrating its centennial in 2019.

The Ancient & Medieval Sciences working group at the Center for the History of Science, Technology, and Medicine in Philadelphia meets the second Thursday of each month at 6:00 pm and is focusing on astronomical instruments during the Fall 2017 semester. Online participation is available. The next meeting is December 14. See www.chstm.org/content/ancient-and-medieval-sciences.

epiSTEME 7, the 7th International Conference to Re-

view Research on Science, Technology and Mathematics Education, will be held January 5–8, 2018, in Mumbai. One of the four strands of the meeting is “Historical, philosophical and socio-cultural studies of STM: implications for education.” Deborah Lowenberg Ball is one of the keynote speakers. See episteme7.hbcse.tifr.res.in/.

BSSH will host a Postgraduate Conference at the University of Manchester on April 4–6. Abstracts and applications for travel support were due November 6, 2017. See chstmphdblog.wordpress.com/bshspg2018.

INDRUM 2018, on the teaching and learning of mathematical topics at undergraduate and graduate levels, will be held April 5–7 at the University of Agder, Norway. See indrum2018.sciencesconf.org.

Harvard and Boston Universities will host a symposium on Grappling with the Futures: Insights from Philosophy, History, and Science, Technology and Society, April 29–30. Peter Galison is one of the organizers. See millennium-project.org.

The 8th ICMI-East Asia Regional Conference on Mathematics Education will be held May 7–11 in Taipei. See earcome8.math.ntnu.edu.tw/.

A conference on Learning by the Book: Manuals and Handbooks in the History of Knowledge will be held at Princeton University, June 7–10.

The 10th International Conference on the Theory and Application of Diagrams will take place in Edinburgh, June 18–22. See www.diagrams-conference.org/2018/.

The 12 international congress of the International Society for the History of Philosophy of Science (HOPOS) will be held in Groningen, The Netherlands, July 9–12. Submission deadline is December 1, 2017. See www.hopos2018.nl. Greg Lavers and Audrey Yap are on the program committee. Before February 1, HOPOS is seeking proposals from academic institutions to host the 2020 meeting; see hopos.org/conferences.html.

The International Congress on Mathematical Physics will be held in North America for the first time in 35 years, July 23–28 in Montreal. The Young Researchers Symposium will precede it on July 20–21. See icmp2018.org/en/welcome.

The Society for Social Studies of Science will meet in Sydney, August 29–September 1. See www.4sonline.org/item/4s_sydney_18_announced.

The Fourth Asian History, Philosophy and Science Teaching Conference will be held in Hualien, Taiwan, November 21–23, 2018. Michael R. Matthews is co-organizing, m.matthews@unsw.edu.au.

Preparations have already begun for ICME-14 in Shanghai, July 12–19, 2020.

His Holiness Pope Francis approved the issue of a stamp by the Vatican Philatelic Office to honor Maria Gaetana Agnesi on the occasion of the 300th anniversary of her birth, May 16, 2018. To encourage the Italian government to also issue an Agnesi stamp, contact Angelo Di Stasi, angelo.distasi@mise.gov.it.

A special issue of *Education Sciences* on Dispelling Myths about Mathematics solicits submissions by February 28, 2018. See www.mdpi.com/journal/education/special_issues.

Notes and Records of the Royal Society welcomes research articles, notes, and news in all areas of the history of science, technology, and medicine. See rsnr.royalsocietypublishing.org.

Research in Mathematics Education seeks three editors to work as a team from January 2018 to December 2021. A cover letter and 3-page CV are due to Dr. Sue Gifford, S.Gifford@roehampton.ac.uk, by November 30.

The October HPS&ST Note is on the web at www.hpsst.com. The Resources section of the new HPS&ST website offers a variety of items, including notes and slides from education sessions at the Rio DHST Congress in July 2017.

The Spring 2017 issue of *Science Museum Group Journal*, on the theme of Sound and Vision, may be read at journal.sciencemuseum.org.uk.

The July 2017 issue of *Journal of Humanistic Mathematics* may be read at scholarship.claremont.edu/jhm/.

Plato Journal offers free access to its entire run from 2001 to the present. See impactum.uc.pt/pt-pt/revista?id=107851&sec=5.

Volume 23 (2017) of *Medieval Encounters* was devoted to Astrolabes in Medieval Cultures, with extended papers from a 2014 conference at the University of London.

The Programming Historian, managed by an international team of humanists, offers free tutorials on digital methods, tools, and techniques, such as Geographical Information Systems and Zotero. The site val-

ues peer review, open source, and open access. See programminghistorian.org/.

The Scientific Instrument Commission's new website is now live: scientific-instrument-commission.org. SIC will hold a symposium September 3–7, 2018, in the Netherlands and will meet in 2021 with the IUHPST Congress, which may be in Australia, New Zealand, or the Czech Republic.

The international committee of ICOM for university museums and collections (UMAC) has just completed a significant update of its Worldwide Database of University Museums and Collections (initially developed in 2001), university-museums-and-collections.net. Those involved with university museums and collections are invited to add their repository to the database.

The Database of Scientific Illustrators 1450–1950, containing 11,650 entries, is available at www.uni-stuttgart.de/hi/gnt/dsi.

Videos and lectures from the University of Pittsburgh Center for Philosophy of Science can be found on its YouTube channel, www.youtube.com/channel/UCrRp47ZMXD7NX03a9Gyh2sg. The Center's website is www.pitt.edu/~pittcntr.

Elsevier's Publishing Campus offers webinars and on-line lectures, including "Gender Bias in Academic Publishing" and "10 Tips for Writing a Truly Terrible Review." See www.publishingcampus.elsevier.com/.

The Smithsonian Libraries Dibner Library has put together a new research guide for the history of science and technology, library.si.edu/libraries/dibner-library-history-science-and-technology.

National History Day offers a variety of resources and webinars on historical research that are aimed at school students but can be adapted to undergraduates. See nhd.org.

James P. Howard, II (JHU APL) and John F. Beyers (UMUC) are editing a volume on Teaching and Learning Mathematics Online, aiming to develop a set of standard practices and to provide a handbook for a variety of situations encountered in distance learning. CRC Press expects to issue the book in 2019.

Budapest Semesters in Mathematics Education accepts applications from undergraduates and recent graduates on a rolling basis. See bsmeducation.com/.

Linda Hall Library Fellowship applications are due

January 16. A new offering is the 80/20 Fellowship for pre-doctoral students who would like to spend 80% of their time researching the collections and 20% of their time curating an exhibition. See www.lindahall.org/fellowships/.

The University of Florida Center for Latin American Studies offers Library Travel Research Grants for Spring and Summer 2018. Application deadline is February 16. See www.latam.ufl.edu/outreach/library-travel-grants/. Some of the collection is digitized at www.dloc.com.

The XIX Universeum Network Meeting (on university museums and collections) may offer student travel grants in the first quarter of 2018 for its conference in June. Monitor universeum.it/meetings.html.

The Adler Planetarium is now a member of the Consortium for the History of Science, Technology, and Medicine, which means that researchers can apply for CHSTM fellowships to work in the Adler collections. See <https://www.chstm.org/>. Also, the Webster Photographs Collection will be added to adlerplanetarium.org/collections.

The deadline for applications for the AMS Congressional Fellowship is February 15.

Royal Museums Greenwich offers short-term student internships. See www.rmg.co.uk/discover/researchers/opportunities-events.

Dominic Klyve has been elected as the next editor of the MAA's *College Mathematics Journal*. His term as editor-elect begins on January 1. Jason Douma is one of the members of the inaugural MAA Congress, the society's new form of governance, which elected Dominic. Also at the 2017 MathFest, Deborah Kent and David Muraki received a Paul R. Halmos—Lester R. Ford Award for their article, "A Geometric Solution of a Cubic by Omar Khayyam (...) in Which Colored Diagrams Are Used Instead of Letters for the Greater Ease of Learners," *American Mathematical Monthly* 123, no. 2 (February 2016): 149–160, and Viktor Blåsjö received a George Pólya Award for "How to Find the Logarithm of Any Number Using Nothing But a Piece of String," *College Mathematics Journal* 47, no. 2 (March 2016): 95–100.

MathPath, directed by Stephen B. Maurer and at which a number of CSHPMers have served as faculty, received one of 17 Epsilon grants for summer mathematics programs in 2017. For a description of MathPath, see our November 2006 issue.

Michael J. Barany (Princeton) received an honorable mention from the IUHPST's Division of History of Science and Technology for his dissertation, "Distributions in Postwar Mathematics." Margaret H. Hamilton and Rear Admiral Grace Hopper were awarded the Presidential Medal of Freedom in November 2016.

The History of Science Society is sponsoring three sessions at the American Historical Association conference in Washington, DC, January 4-7: "Animals in the Early Modern Atlantic World," "Anatomy and the Construction of Identity," and "The Emergence of Racial Modernities in the Global South." This is the first time in several years that the dates of AHA's annual meeting and JMM are not in conflict.

Bruce Hunt will deliver the 2018 George Sarton Memorial Lecture in the History and Philosophy of Science, "Imperial Science: Victorian Cable Telegraphy and the Making of 'Maxwell's Equations,'" at the annual meeting of the American Association for the Advancement of Science in Austin, TX, on February 17 at 12:00 pm. Sessions on "The Impact of Sputnik on Science, Technology, and the Public in the United States" and "Instruments of Science and Diplomacy: The Importance of International Research Organizations" are also on the program. The next British Society for the History of Science Postgraduate Conference will take place at the Centre for the History of Science, Technology and Medicine (CHSTM), University of Manchester, on April 4-6. Abstracts from postgraduate students on any aspect of the history of science are welcome by November 6, and travel funds are available. See chstmphdblog.wordpress.com/events/bshspg2018/.

The National Maritime Museum in Greenwich is hosting a history of navigation conference on May 24-25, on the theme, "Navigation, heroism, history." Abstracts are due December 15, 2017. See www.rmg.co.uk/content/history-navigation-conference-2018-call-papers.

Iowa State University received an NEH grant for the production of a conference volume organized by contributors to The Cambridge History of Philosophy of the Scientific Revolution, *Revolutions in the History of Early Modern Philosophy and Science*.

The Dibner Library of the History of Science and Technology in the National Museum of American History is seeking financial donors to "adopt" rare books in the collection to fund urgently-needed repairs, including

seven volumes of the first edition of Denis Diderot's *Encyclopédie*. The library is also hoping to purchase several early modern mathematics books to build the collections. See library.si.edu/donate/adopt-a-book.

Peter Alfeld has made available his Slide Rule Explorer, a java code that, upon entry of a mathematical expression, will tell users whether and how to evaluate that expression on a slide rule. See www.math.utah.edu/~pa/sliderules/SRE.html.

The latest doctoral dissertations in the histories of science, technology, and medicine have been uploaded to www.hsls.pitt.edu/histmed/dissertations.

The Robert H. Smith International Center for Jefferson Studies at Monticello offers short-term fellowships of \$2-3,000 which may also be used at the University of Virginia. Application deadlines are April 1 and November 1. See www.monticello.org/site/research-and-collections/fellowships.

Annual Executive Council Meeting CSHPM/SCHPM

The meeting of the Executive Council of CSHPM/SCHPM took place at Ryerson University, Toronto, ON, on May 28, 2017. The following members were present: Amy Ackerberg-Hastings, Patricia Allaire, Eisso Atzema, Craig Fraser, Greg Lavers, Michael Molinsky, Dirk Schlimm, Joel Silverberg, and Maria Zack. Dirk Schlimm, President, called the meeting to order at 12:40 pm.

The agenda for the meeting was approved, and minutes from the 2016 Executive Council Meeting were accepted as printed in the November 2016 *Bulletin*.

Treasurer's Report: Greg Laver presented a report for fiscal 2016 (the fiscal year is the same as the calendar year). The 2016 statements were published in the May 2017 *Bulletin*. Greg pointed out that he did not renew the maturing GIC investments in order to keep sufficient cash available. Can\$13,000 of our funds are tied up in PayPal. A discussion followed on this matter.

According to PayPal, Canada Revenue Agency is requiring certain documentation from CSHPM before funds can be released. Because of our unique status, we do not have such documentation.

We will appeal to the Federation for assistance, but, ultimately, we may need to register as a non-profit



Figure 2: Dirk Schlimm

organization. There are costs involved, and we may need to file an annual tax return.

Dirk and Greg will give this issue immediate attention. We would like to be able to resume using PayPal for membership payments and journal renewals, which will begin in November or December. [See the PayPal Update elsewhere in this *Bulletin*.]

Secretary’s Report: Patricia Allaire presented comparative membership data for 2016 and 2017:

	2016	2017
Total Members	160	154
Members By Address or Organization		
Can	39	41
US	92	100
Other	10	21
BSHM	19	13
CSHPS	4	5
Complimentary	0	0
Members By Status		
Active	98	96
Retiree	42	43

Student	12	10
Developing Nations	4	4
Student Associate	0	3
Unknown	4	6
Members by Pay Method		
Online	97	100
Snail Mail	26	30
Reciprocal Members	23	19
Complimentary	1	6
New Members	13	26
Reciprocal Memberships		
To BSHM	49	51
To CSHPS	26	27
Journal Subscriptions		
<i>Historia</i> (paper)	58	57
<i>Historia</i> (electronic)	5	4
<i>Philosophia</i>	24	25
<i>Proceedings</i>		
Federation	1	1
Hardcover	8	10
Paperback	24	16
Electronic	10	6
<i>Bulletin</i>		
Paper	48	44
Donations		
No. Donors	17	20
Amount	\$541.00	\$862.50

Pat pointed out that there is some overlap of members in the “by address or organization category” and that the status of reciprocal members from CSHPS and BSHM is not known. 44 paper *Bulletins* were mailed, 38 to current members, 1 to the Federation, and 5 to those from whom payment was anticipated. The number of members paying by snail mail is a bit higher than it should be because of the problem with PayPal; for several months, no one has been able to pay using PayPal. She noted that the number of donations has increased and that the total amount donated is exceptionally high because there were two very generous donations.

***Bulletin* Editor’s Report:** Amy Ackerberg-Hastings reported that publication went smoothly in the past year. She thanked the co-editors, Eisso Atzema and Maria Zack; the Secretary, Pat Allaire; the Webmaster, Mike Molinsky; and all of the 2016 contributors. All 3 editors are willing to continue in their positions. She reminded the Council that, since we explored alternatives to our home-grown *Proceedings* in 2013, we

have been considering making changes to the format of the *Bulletin*. Amy finally formally solicited feedback from members in late 2016, and all respondents said that the current form of the *Bulletin* serves their needs. So, the editors plan to continue with the status quo for the foreseeable future. She has talked with Mike about possibly posting announcements for immediate distribution on the Society's Facebook and Twitter pages, although she had not pursued this further.

Amy reported some difficulty with getting (both CSHPM and non-CSHPM) reviewers to finish writing about the books that have been sent to them. The *Bulletin* is still running about two reviews per year and really only has space for about four a year, so at present, this is not a huge problem. We debuted one new column in May 2017 (Models of Mathematics), occasionally run Off the Shelf (reviews of older/classic books), and benefit from Mike's amazing dependability with Quotations in Context. Amy is seeing nice growth in submissions of meeting reports and is always pleased to receive more. Additionally, professional and personal news, photographs, and contributions to our column series, or proposals for short articles of interest to historians and philosophers of mathematics are welcome. If you wonder whether she has heard a news item, please feel welcome to go ahead and send it to aackerbe@verizon.net. Feedback is also always welcome.

CSHPM Notes Editor's Report: On behalf of co-editor Hardy Grant, Amy Ackerberg-Hastings reported that the CSHPM Notes column ran in all six issues of *CMS Notes* for the first time in 2016. In all, 18 columns with 13 different authors (one of which is actually a pair of co-authors) have been published, including the 2013 and 2014 winners of the CSHPM Student Award. Three people have written two columns, and one person has contributed three times. Amy and Hardy have made improvements at increasing the frequency of philosophical topics, so the overall distribution is about 3 columns on history for every one column on philosophy. They are having success at getting people to consider or accept our invitations to write a column (about half the time they propose a subject and half the time the authors choose their topics), but it is not as easy to get people to finish submissions. They have one item in reserve for emergencies and another that will be finished as soon as some external issues are worked out, but they are looking for com-

pleted columns to meet deadlines in July, August, and October 2017. (They do have some potential commitments for early 2018.) The liaison at CMS continues to turn over about once a year, but each new person seems quickly to get up to speed on producing the *Notes*. Hardy and Amy are willing to continue editing the column.

Column articles are to be about 1,200 words and include a brief biographical note. They should appeal to a wide audience, including both researchers and educators.

Proceedings Editor's Report: Maria Zack reported that Birkhäuser/Springer Verlag has renewed our contract for another three years, covering the 2017, 2018, and 2019 *Proceedings*. They have been very pleased with the quality of the content. The 2016 volume, with 14 papers, has gone into production in India. The speed of the printing depends on how quickly that team makes it through the typesetting and revision process (the timing has been variable). Maria noted that the production of the *Proceedings* is a community effort, so she offered many thanks to co-editors Elaine Landry and Dirk Schlimm and to the 20 people who have served as referees over the last few years.

She planned to institute a slightly more aggressive submission schedule beginning with the 2017 *Proceedings*. Because of the nature of faculty life, she regularly receives requests for extensions at each stage (writing, refereeing and revision), which slows the overall production process down. The calendar for 2017 is as follows:

- June 15, 2017: Notice of intent to write a paper due
- September 1, 2017: Paper due
- September 5, 2017: All papers to referees
- November 1, 2017: Referee reports due to Maria
- November 5, 2017: Notice of acceptance/rejection; All papers that need revisions returned to author
- January 15, 2017: Revisions due from authors (this allows winter break to be used)
- January 20, 2017: Production process in India begins (publication usually takes 8–12 weeks)

CSHPM Student Award: Maria Zack reported that three submissions were received for the 2016 prize. Karen Parshall and Tom Drucker will read these papers and, along with Maria, make the final determination. The award for 2017 will remain at \$1,000.

Webmaster's Report: Mike Molinsky reported that he has continued to maintain and update the society website and email listservs. In response to a suggestion, he will change the web page to make the links to our Facebook and Twitter accounts more obvious.

Archivist's Report: Mike Molinsky has completed the conversion of the CSHPM Archives to contain both electronic and paper copies of most documents. He shared a detailed account of the process, records that were not feasible to digitize for various reasons, etc., with the Council via email. Mike also created an inventory with very brief descriptions of all documents in the Archives. He had expressed a willingness to step down from his position, and Eisso Atzema agreed to take over as Archivist. Since both are located in Maine, they will transfer the boxes over the summer.

Phil Math Preprint Archive: Via email, Elaine Landry announced the launch of the PhilMath-Archive. See the announcement published elsewhere in this *Bulletin*. The site accommodates material in the pre-peer review stage, allowing authors to solicit feedback from readers. Dirk is currently serving as the CSHPM liaison, but he would be glad to step down if someone else was interested in the position.

SCIAMVS Journal: Dirk reminded the Council that editor Nathan Sidoli had inquired whether we would be interested in offering our members the opportunity to subscribe to *SCIAMVS*, which deals with ancient and medieval sources, at a reduced rate. The Council asked for more information, and Nathan responded:

1. *SCIAMVS* will refer to our collaboration as an association, printing CSHPM's name on the final page of the journal, above the subscription material, in a section called "Associated Societies".
2. Subscription rates and information will be posted online in a section on associated societies, sciamvs.org/order.html.
3. CSHPM members will receive a 10% discount for the current volume and 5% for previous volumes. An additional 10% concessionary rate (for retired, student, unwaged, "developing" country, etc., members) will be offered.
4. CSHPM is to send a list of members' subscriptions, along with the collected fees, on an annual basis; *SCIAMVS* will then mail the journal directly to subscribers.

5. *SCIAMVS* will send the Executive Council a short (1–2 pages) editorial report annually.

The Council agreed to accept the offer.

Future Meetings: In 2018, Congress will be in Regina, which is not convenient for a significant number of our members. Other possibilities are that we meet with CMS in Fredericton, NB, or jointly with CPA (Canadian Philosophical Association). After discussion, it was decided that we will meet with CPA. Their meeting will be at UQAM in Montreal, June 7–10 [later changed to June 4–7]. Sandra LaPointe is the contact person for CPA. CSHPM will need a liaison and session chairs. To be considered: Special Session topic and May speaker. CSHPM is interested in inviting CSHPM to participate as well.

In 2019, Congress will be at the University of British Columbia in Vancouver, June 1–7.

CMS Liaison: Maritza Branker reported via email that we had a successful session at the Winter CMS meeting in Niagara Falls in December 2016, and we are scheduled for a full session on December 9, 2017 at the upcoming Winter CMS meeting in Waterloo, Ontario.

2018 Election: Three members for the nominating committee will be selected at the AGM tomorrow.

Other Business: Dirk expressed thanks to the Council, editors, and conference organizers.

The meeting was adjourned at 1:55 pm.

Patricia Allaire, Secretary

Book Review: Algebra in Context

Algebra in Context: Introductory Algebra from Origins to Applications, by Amy Shell-Gellasch and J. B. Thoo. Baltimore: John Hopkins University Press, 2015. 552 pp. ISBN 978-1-4214-1728-8. US\$99.50.

History of mathematics textbooks can often fall into one of two extremes. Those aimed at general audiences may highly emphasize the history and only talk about mathematics in broadest terms, with little actual demonstration of calculation and methods. Other works that do delve deeply into the mathematics are frequently aimed at students who already pos-

CALL FOR PAPERS / DEMANDE D'EXPOSÉS

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

**Annual Meeting / Colloque annuel
Université du Québec à Montréal (UQAM)
June 4-6, 2018 / 4 juin – 6 juin 2018**

**Special Session / Séance Spéciale
History of Philosophy of Mathematics**

**Kenneth May Lecturer / Conférence Kenneth May
Dr. Emily Grosholz, Pennsylvania State University, State College, PA**

The CSHPM will be holding its 2018 Annual Meeting at UQAM in conjunction with the 2018 CPA Meeting. The meeting will be held Monday through Wednesday, June 4-6, 2018.

Members are invited to present papers on any subject relating to the history of mathematics, its use in the teaching of mathematics, the philosophy of mathematics, or a related topic. Talks in either English or French are welcome, as are presentations about work in progress. Graduate students are especially welcome to present their work. All graduate students who present are eligible for the CSHPM Student Award.

Please send your title and abstract (200 words or less) in Word, (non-scanned) PDF, or in the body of an email by February 1, 2018 to:

GENERAL SESSION / SÉANCE GÉNÉRALE:

Eisso Atzema
Department of Mathematics & Statistics
University of Maine
Orono, ME 04469, United States
eiiso.atzema@maine.edu

La SCHPM organise son colloque annuel de 2018 à UQAM, en association avec le colloque annuel de l'ACP. Le colloque aura lieu du lundi 4 juin au mercredi 6 juin 2018.

Les membres sont invités à faire une présentation sur n'importe quel sujet de l'histoire des mathématiques, son utilisation dans l'enseignement des mathématiques, de la philosophie des mathématiques, ou tout autre sujet connexe. Des présentations en anglais ou en français sont bienvenues, comme le sont les présentations sur des travaux en cours. Les doctorants, en particulier, sont invités à présenter leurs recherches. Tout doctorant qui fait une présentation est admissible au Prix des Étudiants de la SCHPM.

Veillez envoyer le titre de votre exposé, ainsi qu'un bref résumé de 200 mots ou moins en format Word, PDF (non-scanné) ou à l'intérieur d'un courriel avant le 1 février 2018 à:

SPECIAL SESSION/SÉANCE SPÉCIALE:

Dirk Schlimm
Department of Philosophy
McGill University
Montreal, QC H3A 2T7, Canada
dirk.schlimm@mcgill.ca

sess a very strong background in mathematics, including calculus. This new textbook, *Algebra in Context*, falls between these two extremes, with an emphasis on understanding mathematical concepts and algorithms aimed at students with a much more basic mathematical background.

The book does assume that readers possess a basic grounding in algebra, including simplifying algebraic expressions, solving linear equations in one variable, or graphing linear equations in two variables; however, some of these basic concepts are also reviewed in the text itself as needed; see, for example, section 19.1, “Review of Linear Equations.” Even functional notation such as $f(x) = y$ is often briefly explained in the text or in a footnote when it arises (such as on page 461).

At the same time, it should be noted that the material does make much higher assumptions about the student’s facility with computation, attention span, and careful observation of detail. Many of the historical methods that are examined in the text (for example, Cardano’s solution algorithms to cubic equations in Chapter 21) are much more intricate and require far more steps than the problems students would be likely to encounter in a typical first-year college mathematics course, and careful observation and focus are needed to follow along through some of the most complicated examples. This level of complexity is a good thing and will certainly provide students with a much stronger mathematical understanding and fluency, but weaker students may need additional support and guidance to succeed given these expectations.

Certainly one of the most immediately visible differences between this text and a more traditional algebra textbook, or even many history-of-mathematics works aimed at a general audience, is that scholarly sources for all historical information and translations are carefully and meticulously provided throughout the text. The authors also occasionally note where there is disagreement among sources (for example, in the discussion of the origins of the base 60 numeral system in Mesopotamia on page 15), and in those cases each scholar’s views are presented impartially.

The text, which contains significantly more information than could be covered in a single semester, is divided into four parts. Part I covers the basic concept of a place-value system, as well as number systems from Babylonia, Egypt, Rome, China, North Amer-

ica, India and the Middle East. Part II (the shortest of the four sections) covers a variety of historical algorithms for the basic arithmetic operations: addition, subtraction, multiplication, division, and approximating square roots. Set theory, logic, rational and irrational numbers, and basic number theory are the topics covered in Part III. Part IV, which takes up the final half of the textbook, moves on into algebra: solving linear, quadratic and cubic equations, as well as topics such as factoring polynomials, solving proportions by the “rule of three,” and the development of logarithms. While most of the chapters in each part incorporate historical methods throughout the material, there are a few chapters (for example, Chapters 14 and 16 on Sets and Logic) where only a brief summary of the history is provided and the topics are then presented using modern notations and terminology.

Problems in the text are organized in three separate ways. Small sets of “Now You Try” exercises are spread throughout each chapter, and these questions provide a straightforward assessment of the most recent topic or method. Solutions to “Now You Try” problems are not provided in the text, and these sets of problems tend to be relatively small, but instructors using the text should have little difficulty creating similar problems for students who need additional practice.

The second type of problem, “Think About It” questions, are also located throughout each chapter, but are much more challenging and generally test the student’s deeper understanding of concepts. While the “Now You Try” problems test the student’s ability to replicate a given method, the “Think About It” questions tend to instead explore why a given method works or how it could be generalized. In the majority of cases, the answers to “Think About It” questions are woven into the following material (sometimes a few pages later, but often immediately after the question was posed).

Additional exercises are grouped in a chapter at the end of each of the four parts. A small number of the exercises are roughly equivalent to the “Now You Try” problems, in the sense of being straightforward applications of methods and algorithms already covered; however, most require far more originality and problem-solving on the part of the student, building on the material from the text but requiring the student to apply that knowledge in new ways. The problems

also vary significantly in terms of the amount of time and computation required: for example, Ex. 7.23 on pages 79–80 has students explore a transcription of the entire Plimpton 322 tablet, identifying patterns and errors among the entries.

Exercises that can only be completed by additional research outside the text itself are indicated with an asterisk, and like the other exercises vary greatly in terms of complexity. Some can be answered after less than a minute on the Internet, such as *Ex. 13.28 on page 139: “Leonardo of Pisa is also known as Fibonacci. What does Fibonacci mean?” Other starred exercises could easily be the topics of major research papers, or even entire books:

- *Ex. 7.48 (page 81) — Write about Archimedes and some of his mathematical achievements.
- *Ex. 7.86 (page 84) — What are the mathematical philosophies of intuitionism and empiricism?
- *Ex. 13.21 (page 138) — Write about Euclid’s *Elements* and its significance to modern mathematics.
- *Ex. 18.74 (page 262) — Give an account of Fermat’s last theorem up to its proof by Andrew Wiles in 1995.

Throughout the text, I was very impressed by the clarity of explanations and the extreme care taken to make sure each step of lengthy methods were coherent and well motivated. I believe that the historical organization and presentation of the topics in most cases will promote a far deeper and more intuitive understanding of the material than the more common presentation in modern algebra textbooks. That being said, there were a few topics in the textbook where the inclusion of historical material seems to do little or nothing to promote student’s understanding of concepts. To give one example, on pages 227–237, several propositions from Book VII of Euclid’s *Elements* that present algorithms for calculating the greatest common factor and the least common multiple of two numbers are carefully explained. In each case, the reader is carefully led through the geometric arguments, step by step, and also presented with a detailed example with numbers to illustrate the process, but in both cases the geometric argument from the *Elements* really doesn’t provide any greater understanding of why or how the method works. The authors themselves seem to recognize this, saying on page 228, “If nothing else, the above should give you an appreciation of the relative

simplicity and efficiency of our modern algebraic notation,” and on page 230, “You may have found Euclid’s algorithm as it is stated in the *Elements* not so easy to follow” (quite an understatement).

When presenting translations of historical material, the text almost always retains the exact notations that appear in each source from which the translation was drawn. This decision makes sense, given that the text was designed to promote independent research by the students, who may need to go to those same sources for additional examples and information, and who also should be prepared to find even more varied notations in other sources they examine. Nonetheless, the lack of uniformity of notations used in the text was occasionally confusing. For instance, in most of the book, when base 60 numerals are written using base 10 symbols, spaces are left between place values and a semicolon is used as the separatrix between whole numbers and fractions (for example, 1 13 48; 7); however, in Example 19.8 on page 278, a problem is drawn from a source that instead uses the semicolon to separate all place values (that is, 1; 13; 48; 7). Another minor example of this appears on page 440, where two different translations of problems from Liu Hui’s commentary on the work *Jiu zhang suan shu* (*Nine Chapters on the Mathematical Art*) are shown: in the first example, the commentary is in boldface type, while the second source reversed this and used boldface for the original text. In fairness, the authors do usually explicitly address any changes or variations in notation right before they appear.

Given the public outrage that has been expressed over slavery word problems being assigned to students in recent years, it should be noted that there is one problem involving slavery in the text. On page 444, a problem from the twelfth-century Indian work *Līlāvati* by Bhāskara II demonstrates the inverse rule of three by using the price of a female slave at age sixteen to calculate the slave’s value at age twenty. In a footnote, the authors correctly point out that any attempt to review historical documents may expose students to “practices that today we would find to be unacceptable,” and they state that it is important to consider the “time and place in which they occurred.” This represents only a single, isolated example, and no exercises or “Now You Try” problems involving slavery are assigned to students, but instructors who plan to cover the material in this section may want to dedicate class time for discussion of these issues. (On a

personal note, I also really wish the footnote contained stronger language condemning the immoral practice of slavery, since “unacceptable” to me sounds more like a description of running in the halls or wearing white after Labor Day.)

The book was clearly written with extreme care, and for such a large first edition, it contains relatively few typographical errors. Most of the typos I did find were minor misspellings (for example, on page 259, “Eulcid” instead of “Euclid”), but a few of the errors appear in mathematical explanations and could be more confusing for students. For instance, in Example 6.1 on page 61, the final place value of 3.14159 is given as 9×10^{-6} rather than 9×10^{-5} , and in Example 20.12 on page 331, the equation $x^2 + 10x = 39$ is rewritten as $x^2 + x - 39 = 0$, dropping the coefficient of x (which does reappear in the following steps of the example). There was also one place where functional notation had been reversed: on page 466, $2,223,901.1263596 = \mathcal{L}(15,033,221)$ should actually have been $\mathcal{L}(2,223,901.1263596) = 15,033,221$.

The book’s preface suggests that this text could be used for a history of mathematics course (particularly one for education majors with no calculus prerequisites), a general education class including quantitative literacy or the study of other cultures, or even potentially at the high school level. In my own case, I fully expect to make frequent use of the text as a resource for material to incorporate in my current classes, including mathematical content courses for elementary school teachers.

Mike Molinsky

Joint AMS/MAA Meetings in San Diego

A number of events in history and philosophy of mathematics have been planned for the Joint Mathematics Meetings, to be held in San Diego, California, January 10–13, 2018. More information can be found on the MAA or AMS websites: www.maa.org or www.ams.org.

Wednesday, January 10

- 8:00–10:50: AMS Special Session on History of Mathematics, I, organized by Sloan Despeaux,

Jemma Lorenat, Clemency Montelle, Daniel Otero, and Adrian Rice.

- 10:05–10:55: AMS Invited Address, “The Navier-Stokes, Euler and Related Equations,” by Edriss S. Titi.
- 14:15–18:05: AMS Special Session on History of Mathematics, II.
- 18:00–19:50: HOM SIGMAA Reception, Business Meeting, and Guest Lecture, “The history of Chinese mathematics: 60th anniversary of the founding of the IHNS (CAS), Beijing,” by Joseph W. Dauben.

Thursday, January 11

- 8:00–12:00: MAA Session on Humanistic Mathematics, organized by Gizem Karaali and Eric Marland.
- 13:00–15:50: AMS Special Session on History of Mathematics, III.
- 14:35–15:55: MAA Workshop on Writing Pedagogical and Expository Papers, organized by Janet Beery, Matt Boelkins, Susan Jane Colley, Joanna Ellis-Monaghan, Brian Hopkins, Michael Jones, Gizem Karaali, Marjorie Senechal, and Brigitte Servatius.
- 13:00–15:00: MAA Minicourse on Teaching Undergraduate Mathematics via Primary Source Projects, I, presented by Diana White, Janet Barnett, Kathy Clark, Dominic Klyve, Jerry Lodder, and Danny Otero, and sponsored by HOM SIGMAA. (NOTE: You must pre-register for this course.)
- 17:30–19:05: POM SIGMAA Reception, Business Meeting, and Guest Lecture, “Towards a philosophy of mathematics informed by the sciences of the mind,” by Rafael Núñez.

Friday, January 12

- 8:00–10:50: AMS Special Session on History of Mathematics, IV
- 8:00–10:55: POM SIGMAA Session on Philosophy of Mathematics as Actually Practiced, organized by Sally Cockburn, Thomas Drucker, and Bonnie Gold.
- 9:00–10:30: AMS Panel on Historical Chief Editors of the *Notices*, organized by Frank Morgan.
- 13:00–15:50: MAA Invited Paper Session on Polyhedra, Commemorating Magnus J. Wenninger, organized by Vincent Matsko.

- 13:00–18:00: MAA Session on Good Math from Bad: Crackpots, Cranks, and Progress, organized by Elizabeth T. Brown and Samuel R. Kaplan.

Saturday, January 13

- 8:00–11:45: AMS Special Session on Alternative Proofs in Mathematical Practice, organized by John W. Dawson, Jr.
- 9:00–9:50: AMS Retiring Presidential Address, “The Concept of Holonomy—Its History and Recent Developments,” by Robert L. Bryant.
- 13:00–15:00: MAA Minicourse on Teaching Undergraduate Mathematics via Primary Source Projects, II

At press time, an MAA General Contributed Paper Session on the History or Philosophy of Mathematics, organized by Tim Comar and James Reid, was planned but not yet scheduled.

Uta Merzbach (1933–2014)

Uta C. Merzbach, curator emeritus of mathematics at the Smithsonian’s National Museum of American History (NMAH), died suddenly on June 27, 2017, of a heart attack at her home in Georgetown, Texas. She was born in Berlin, Germany, on February 9, 1933, the daughter of Margarete K. and Ludwig H. Merzbach. Uta and her parents were deported from Berlin to the concentration camp at Terezin (Theresienstadt) on April 8, 1943, where they remained until it was liberated on May 9, 1945. She would celebrate V-E Day for the rest of her life. After time at a displaced persons camp in Deggendorf in Bavaria, the family arrived in New York as refugees on May 23, 1946, and later settled in Georgetown. Merzbach’s parents both had doctorates from the university in Berlin and both had academic careers, her father mainly at Southwestern University in Georgetown.

During two years in high school in Brownwood, Texas, Merzbach took special pleasure in playing trumpet in the marching band. She then studied at Daniel Baker College of Southwestern University and went on to the University of Texas at Austin, where she earned a BA in 1952 and an MA in mathematics in January 1954, shortly before she turned twenty-one. She taught for a short time at Radford School for Girls

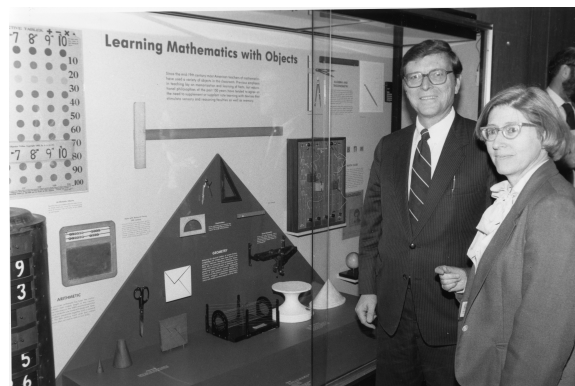


Figure 3: Uta Merzbach with Museum visitor, 1986

in El Paso, Texas, before entering Radcliffe Graduate School (Harvard would not admit women to its Graduate School of Arts and Sciences until 1962). She received a PhD in mathematics and the history of science from Harvard in 1965, with I. Bernard Cohen and Garrett Birkhoff directing her dissertation, “Quantity to Structure: Development of Modern Algebraic Concepts from Leibniz to Dedekind” (1964). From 1960 to 1966, much of the time she was a graduate student, she assisted Garrett Birkhoff in editing the 1973 *A Source Book in Classical Analysis*. Birkhoff described Merzbach’s contributions in the Preface: “She drafted translations of most of the selections used, provided historical introductions to them, and collaborated in revising the material.” From 1964 until her retirement in early 1988 she tended the mathematics and computer collections at NMAH (known as the National Museum of History and Technology from 1964 to 1980).

Merzbach was the Smithsonian’s first curator of mathematical instruments, hired at a time when the nation placed great emphasis on improving math and science education. She relished collecting objects, driving across the country and traveling the globe to find objects for the museum. The collections she acquired are international in scope, with a primary emphasis on objects made and used in the United States. They range in date from an 11th-century astrolabe made in Muslim Spain to early microcomputers. Manufacturers such as IBM and Apple; schools like Harvard, MIT, Wesleyan, UCLA, and the University of Michigan; government agencies; and numerous private individuals provided materials, usually as donations. Merzbach used some of these acquisitions in exhibits on topics ranging from ancient mathematics to elec-

tronic computing to mathematical paintings to mathematics education. In addition to her path-breaking work collecting and displaying mathematical objects, she made pioneering contributions to the compilation of oral histories for the history of computing, the use of computer interactives on the museum floor, and the effort to track museum objects with computerized databases.

Merzbach also published on the history of mathematics and of science. Some of this work related to objects at the museum and was quite outside the usual bounds of the history of mathematics. With her colleague, the historian of medicine Audrey B. Davis, she wrote *Early Auditory Studies: Activities in the Psychology Laboratories of American Universities* (1975). This was an account of psychological apparatus used in the US, particularly around 1900. The following year, as part of an exhibit plan, she published a study of devices used in education in that country, from slates to computer-aided instruction. She also wrote *Georg Scheutz and the First Printing Calculator* (1977), an account of a Swedish difference engine purchased for use by mid-19th-century American astronomers. Not wishing to neglect earlier objects, she encouraged Sharon Gibbs and George Saliba's preparation of a catalog of Smithsonian astrolabes.

Merzbach also studied and published on topics more commonly seen as part of the history of mathematics. Her papers include "An early version of Gauss's *Disquisitiones Arithmeticae*" in *Mathematical Perspectives: Essays on Mathematics and its Historical Development*, edited by Joseph W. Dauben (1981) and "Idolatry, automorphic functions, and conceptual change: reflections on the historiography of nineteenth-century mathematics" in *Transformation and Tradition in the Sciences: Essays in Honor of I. Bernard Cohen* (1984). Others are *Carl Friedrich Gauss: A Bibliography* (1984), "The Study of the History of Mathematics in America: A Centennial Sketch" in the three-volume *A Century of Mathematics in America* (1988–89) that she assisted in editing, and major revisions of the popular *A History of Mathematics* by Carl B. Boyer (1989, 1991 and 2011). She also encouraged others to study the history of mathematics by arranging conferences at the Smithsonian and then at Southwestern University that featured detailed examination of important mathematical texts. She participated actively in the American Mathematical Society, particularly the celebration of its Cen-

tennial in 1988. Her mentoring efforts bore fruit in such publications as Judy Green and Jeanne LaDuke's volume *Pioneering Women in American Mathematics: The Pre-1940s PhD's* (2009). She retired in 1988 to assist a long-time friend in Essex, Massachusetts. She continued her research in her retirement years, including work on her long-awaited intellectual biography of the 19th-century German mathematician Peter Gustav Lejeune Dirichlet. At the time of her death, Merzbach was in the final stages of completing that biography.

Merzbach was a short woman of enormous will and strong intelligence. When I began working for her in 1984, she had straight steel-gray hair, thick glasses through which she saw much, and a winning smile. Though firm in her judgments, she loved to study and display objects, to plan new ways of doing things, and to assist those she deemed competent.

For help in preparation of this document, I thank Judy Green and Jeanne LaDuke.

Peggy Aldrich Kidwell

AGM of CSHPM/SCHPM

The Annual General Meeting of the Canadian Society for History and Philosophy of Mathematics took place at Ryerson University, Toronto, ON, on May 29, 2017. The meeting was called to order at 12:20 pm by Dirk Schlimm, President, with 32 members in attendance.

Agenda for the General Meeting

1. Approval of agenda
 2. Approval of minutes of 2016 AGM
 3. Treasurer's report
 4. Possible incorporation as a non-profit organization
 5. Secretary's report
 6. *Bulletin* Editor's report
 7. CSHPM Notes Editor's report
 8. *Proceedings* Editor's report
 9. 2016 CSHPM Student Award
 10. Webmaster's report
 11. Archivist's report
 12. Phil Math Preprint Archive
 13. *SCIAMVS* Journal
 14. Future Meetings
 15. Nominating committee
 16. Thanks from the President
1. The agenda for the general meeting was approved.
 2. Minutes from the 2016 AGM were accepted as

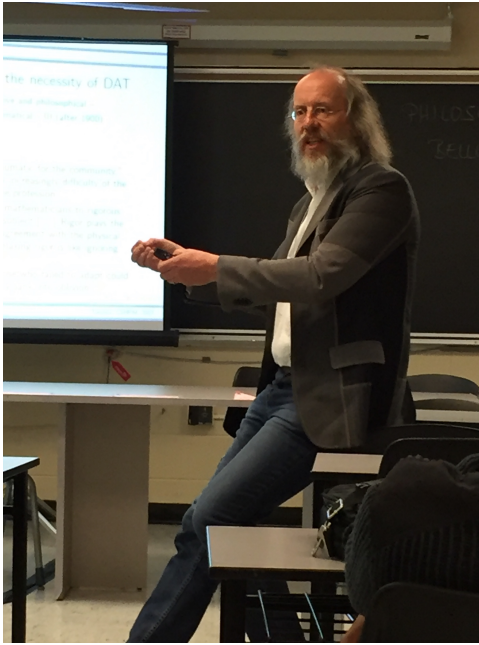


Figure 4: Bernd Buldt

printed in the November 2016 *Bulletin*.

3. Greg Lavers presented the reports described in the Executive Council meeting minutes. He pointed out that income and expenses are approximately equal.

4. It appears that we will need to register with Canada Revenue Agency as a non-profit organization in order to continue to use PayPal and in order to access the funds (\$13,000) that are tied up by PayPal. A discussion followed:

- A member asked whether costs would be involved. Greg responded that there is the cost of registering at both the federal and provincial level (approximately \$200 each). In addition, we may have to file a tax return each year.
- Another member asked whether using PayPal from the US was a viable alternative. We investigated this option a number of years ago, and the requirements would be similar. The cost to register in the US is higher.
- All agreed that it is important that we attend to this registration immediately so that PayPal will be up and running by membership and journal renewal time.

5. Patricia Allaire presented comparative membership data for 2016 and 2017. (Please refer to the CSHPM Executive Council Minutes in this issue of the *Bulletin*

for the data.) She thanked the many members who included a donation when they renewed membership.

6. Amy Ackerberg-Hastings requested submissions to the *Bulletin*. She will use Facebook and Twitter for time-sensitive announcements. She is having some issues with getting book reviews returned to her in a timely manner. Publishers also sometimes send her too many unsolicited books for review, and she has requested that they discontinue doing so and instead check with her first. A member said he was finding the two-column format difficult to read in the electronic *Bulletin* when he uses a mobile device. Amy and Eisso will look into the issue.

7. Amy Ackerberg-Hastings, on behalf of co-editor Hardy Grant, noted that the CSHPM Notes column ran in all six issues of *CMS Notes* for the first time in 2016. The ratio of history to philosophy topics is about 3:1. All articles may be seen on our website.

Amy encouraged members to submit articles. They should be about 1,200 words and include a brief biographical note. Articles should appeal to a wide audience, including both researchers and educators. Examples of suggested subjects are the state of scholarship in your area, a snippet of your research, methodology and practice, and examples of integrating history or philosophy into teaching.

Tom Drucker suggested that it would be excellent to write on some philosophical idea aimed at non-philosophers.

8. Maria Zack announced the submission schedule for the 2017 *Proceedings* that appears in the Executive Council minutes. She said that referees are needed for both history and philosophy papers. In response to questions, Maria replied that we agreed to sell at least 30 volumes to our members; however, Birkhäuser makes its profit by the sale of articles, not from the sale of the volumes.

9. Maria Zack announced that there are three contenders for the 2016 CSHPM Student Award. Karen Parshall, Tom Drucker, and Maria will serve as judges. The award for 2017 will remain at \$1,000.

10. Mike Molinsky continues to maintain and update the society website and email listservs. He has made the links on our webpage to our Facebook and Twitter accounts more prominent. Feedback is always welcome.

11. Mike Molinsky described the status of the CSHPM



Figure 5: Rob Bradley and Fred Rickey

Archives and announced Eisso Atzema as his successor. Members suggested that we should consider whether material in the archives should be made more available. To date, the only requests Mike has received are for articles from previous issues of the *Proceedings*. Tom Drucker suggested that we have more photos to include in the archives, e.g., group photos at our meetings.

12. Dirk repeated Elaine Landry’s announcement of the launch of the PhilMath-Archive, along with his willingness to continue as the CSHPM liaison or to step down if another volunteer is available.

13. Dirk announced the possibility of discounts for *SCIAMVS*, which the Council agreed could be of interest to our members. (More details are in the minutes of the Executive Council meeting.)

14. Next year, we will meet with CPA (Canadian Philosophical Association) at UQAM in Montreal. Their meeting is June 7–10 [subsequently changed to June 4–7]; we will meet for 3 of those 4 days. Dirk asked that we consider a special session topic and a May speaker that is related to philosophy.

In 2019, Congress will be at UBC in Vancouver, June 1–7. Other possibilities for us are to meet with CMS (location TBA) or MAA (Cincinnati, OH).

15. A Nominating Committee for the 2018 election was recruited from the meeting attendees: Chris Baltus, Dan Curtin, and Larry D’Antonio.

16. Dirk expressed thanks to the Council, editors, and conference organizers. Craig Fraser invited attendees to an evening party at his home. Roger Godard is giving away his old *Proceedings*. Tom Drucker praised Dirk’s column in the May 2017 *Bulletin*.

The meeting was adjourned at 1:15 pm.

Patricia Allaire, Secretary

Quotations in Context

“Thank God that number theory is unsullied by any application.”

The quotation above is commonly attributed to Leonard Dickson, whose works include the three-volume series, *History of the Theory of Numbers*, published in 1919–23. While the quotation does not appear in any published works written directly by Dickson, there do exist contemporary accounts that associate the quotation with him.

The attribution seems to trace back to the article “Graduate Student at Chicago in the Twenties,” which appeared in the April 1976 issue of *The American Mathematical Monthly*, pages 243–248; a reprint can be found in volume 2 of the 1989 *A Century of Mathematics in America*, available on the AMS website. The author, William L. Duren, Jr. (1905–2008), held a wide variety of faculty and administrative positions in his career, including serving as the very first Program Director in Mathematics at the National Science Foundation in 1952–53 and as MAA President in 1955–56. Duren did his graduate work at the University of Chicago, completing his Ph.D. in 1930, and the article provides a short history of the program as well as many details of his experiences with the students and faculty there.

Dickson was one of the faculty at the University of Chicago and Duren mentions taking his course in number theory. On page 244 of the article, the quotation of this column appears as part of a description of Dickson’s personality and teaching:

He was an indefatigable worker and in public a great showman, with the flair of a rough and ready Texan. An enduring bit in the legend is his blurt: “Thank God that number theory is unsullied by any application.” He liked to repeat it himself as well as his account of his and his wife’s honeymoon, which he said was a success, except that he got only two papers written.

The phrasing here is very curious: note that Duren says that the quotation was a “bit in the legend” and

that Dickson “liked to repeat it himself.” One possible interpretation of the phrasing is that the quotation was originally invented and attributed to Dickson by some other source, and then Dickson simply liked the story so much that he continued to repeat it, but this might be reading too much into Duren’s choice of words.

I have found one example of a very similar quotation that is not attributed to Dickson, in the April 1892 issue of *The Journal of the Royal Asiatic Society of Great Britain and Ireland*. On page 397, the following sentence appears in the introduction to a notice written by Hartwig Hirschfeld for the book *A Memoir on the Coefficients of Numbers* by Brajendranath Seal:

It is said that the German mathematician Kronecker, at a scientific gathering in Berlin, proposed the health of *The Theory of Numbers*, the only branch of mathematics, perhaps of human learning, as yet unsullied by a practical application.

Unfortunately, it is unclear whether the entire statement is being attributed to Leopold Kronecker, or if the assertion that number theory is “as yet unsullied” was the book reviewer’s personal assessment. In either case, although this article does not entirely predate Dickson (who would have been eighteen at the time), it does offer a possible alternative source for the origin of the quotation.

Bonus Quotation in Context (at no extra charge): The vague mention of a scientific gathering in Berlin might be a reference to the 1886 Berlin Conference of Natural Scientists. According to a 1892 obituary of Kronecker by Heinrich Weber, it was at this conference that Kronecker made the famous statement, “Die ganzen Zahlen hat der liebe Gott gemacht, alles andere ist Menschenwerk,” or “God made the integers, all else is the work of man.”

Mike Molinsky

MAA Convergence Resources

Founded in 2004 by well-known mathematics historians and educators Victor Katz and Frank Swetz, *MAA Convergence* is both an online journal on the history of mathematics and its use in teaching and an ever-expanding collection of online resources to help its readers teach mathematics using its history. This



Figure 6: Janet Barnett with students

freely available publication of the Mathematical Association of America brings you a variety of interesting articles and teaching tools. We highlight here some of our newest articles and resources for use in your classroom.

In “A Series of Mini-projects from **TR**ansforming **I**nstruction in **U**ndergraduate **M**athematics via **P**rimarily **H**istorical **S**ources,” the TRIUMPHS team introduces the first two of a collection of mini-Primary Source Projects (mini-PSPs) for use in college mathematics classrooms:

- “The Derivatives of the Sine and Cosine Functions,” by Dominic Klyve, is a classroom assignment in which Calculus I students learn how Leonhard Euler (1707–1783) obtained these derivatives via differentials.
- “Why be so Critical? Nineteenth Century Mathematics and the Origins of Analysis,” by Janet Barnett, motivates the formalization of analysis for introductory analysis students. The photo shows Janet working with students at a TRIUMPHS Site Tester Workshop in Denver, Colorado, in September 2016.

In “Illustrating *The Nine Chapters on the Mathematical Art*: Their Use in a College Mathematics History Classroom,” author Joel Haack shares how he used his experiences on an MAA Mathematical Study Tour to China to enrich his teaching. The photo of an intended user of the *Nine Chapters*, a civil servant from the Sui Dynasty (581–618), was taken in the National Museum of China during Joel’s 2006 trip.

“Moses ibn Tibbon’s Hebrew Translation of al-Hassar’s *Kitab al Bayan*,” by Jeremy I. Pfeffer (Hebrew Uni-



Figure 7: Sui Dynasty sculpture

iversity of Jerusalem), features the arithmetic of fractions as you’ve (possibly) never seen it before and considers the influence of al-Hassar’s 12th-century work throughout the Mediterranean region. See fractions in the context of problem-solving using the method of double false position in the Arabic manuscript *Kitab al-nuzah* in “Mathematical Treasure: The Method of Scales in ibn al-Ha’im’s *Book of Delights*,” by Randy Schwartz and Frank Swetz, which includes the diagram shown here. Besides “Impacts of a Unique Course on the History of Mathematics in the Islamic World,” author Nuh Aydin shares his motivation for developing such a course, its structure and content, and its community service component.

In “Analysis and Translation of Raffaele Rubini’s 1857 ‘Application of the Theory of Determinants: Note’,” Salvatore Petrilli and Nicole Smolenski argue that Rubini’s work was a salvo for the ‘Analytics’ in their struggle against the ‘Synthetics’ in 19th-century Naples.

In “Mathematical Treasures at the Linda Hall Library,” Cynthia Huffman continues to highlight the mathematics collections available at this rare book library in Kansas City, Missouri. Her newest images are

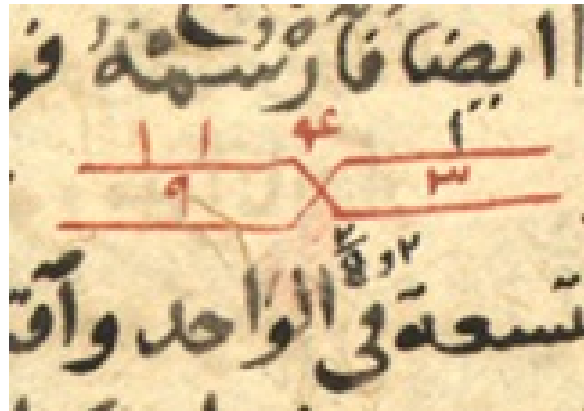


Figure 8: Method of scales diagram

of mathematics books by Galileo, Cavalieri, L’Hôpital, and Bishop Berkeley. Our “Index to Mathematical Treasures” includes hundreds of images for use in your classroom from dozens of libraries and sources.

Join us at the Convergence of mathematics, history, and teaching site, www.maa.org/press/periodicals/convergence for all of these articles and more!

Janet Beery

***PM* Now Online-Only**

Series three of *Philosophia Mathematica* has now completed twenty-five years as the Society’s philosophical journal. This does not compare with the nearly forty-five years of its historical journal *Historia Mathematica*, of course. *HM*’s head start in association with the Society is opposite to *PM*’s overall head start. Begun in Chicago in 1964, *PM* was published by its founding editor, Joong Fang, until its second series ended in 1991. [*Editor’s note*: See also Robert’s memorial for Fang in our November 2010 issue.] He told me that Ken May consulted him about the title ‘*HM*’ when he was preparing to launch it in the 1970s. I was amused to learn that May’s solution of the usual Canadian linguistic problem by using a Latin title was done in conscious imitation of Fang’s title, chosen for quite different (and unknown) reasons. I don’t think that I had even heard of *PM* when I solved the same problem earlier in the seventies with the name ‘*Utilitas Mathematica*’ for the new applied-mathematics journal published at the Computer Science Department of the University of Manitoba. (It’s now in South Africa with language problems of its own.)

One big thing has happened to *PM* in its twenty-five years with the Society. Oxford University Press (OUP) has now published thirteen volumes in print and online, the latter being something that I could not do as its previous publisher. And now a second big thing is happening. Because almost no one—neither persons nor institutions—is prepared to pay extra for print copies of the journal, printing it has become an expensive frill. This unwillingness to pay for print reflects several facts. Libraries don't want to store back issues. The online publication is the official record and publication date. Readers prefer to access material online. Material comes online as it is accepted, much more quickly than it can be assembled and printed. (A fairly extreme—for *PM*—example of this is a paper by Dirk Schlimm that appeared online (through academic.oup.com/philmat/advance-articles) on 18 September 2014 but appears in the last print issue of 2017.) The number of copies printed is declining.

As a result of all this, OUP has decided that from 2018 *PM* will be an online-only journal. Society subscriptions have been both online and print up to the present year, but from next year will unavoidably be only online. Just as this *Bulletin* was going to press they announced to the Treasurer but not to me that there would be no personal subscriptions either. I have just made some attempt to explain the first decision; neither have I heard nor can I make up an explanation for the second. They say personal subscriptions can too easily be abused. While I can explain the first change, I regret it, being old and print-oriented, but OUP owns the journal and will be trying to persuade other societies that own journals such as *Mind* and the *British Journal for Philosophy of Science*, published by OUP, to abandon print too. This is so obviously the future that we are plainly moving with the times. Whether a journal without subscribers is the wave of the future, even for *PM*, remains to be seen.

Because OUP is so large and distinguished a publisher, most academic members will have electronic access to *PM* through an institutional library. Many institutions subscribe to an Oxford package of journals, which may include *PM*. If *PM* is unavailable to any such member, the relevant library can be persuaded to have it added to what it subscribes to at a small fraction of the single-journal subscription rate.

Robert Thomas

PayPal Update

During the summer of 2017, Treasurer Greg Lavers worked diligently to determine the paperwork needed for PayPal to recognize CSHPM as a not-for-profit organization. (See the AGM and Executive Council minutes in this issue for information on CSHPM's temporary loss of ability to withdraw funds from its PayPal account.) He has now submitted the required documentation (a utility bill and bank statement) and successfully transferred US\$13,000 into the CSHPM bank accounts. Webmaster Mike Molinsky has also ensured that the membership form on the website is working correctly, so all should be ready for members to submit their 2018 renewals. Membership letters will arrive from Secretary Patricia Allaire via email and also accompany the print copies of this *Bulletin*. Thanks to our officers and volunteers for sorting out these issues!

Book Review: Rebel Genius

Rebel Genius: Warren S. McCulloch's Transdisciplinary Life in Science, by Tara H. Abraham. MIT Press, 2016, 320 pp. ISBN 978-0-262-03509-5. £32.95, US\$40.00.

Warren Sturgis McCulloch (1898–1969) was a prominent figure in American neurophysiology and neuropsychiatry from the 1930s to the 1960s. Although not himself a mathematician, he advocated a quantitative mathematical approach to human biology. He is best known for a paper he published in 1943 with Wallace H. Pitts (then barely out of his teens) developing a theoretical model of the nervous system using the logical notion of a neural network. This paper influenced John Von Neumann and played a role in the creation of theoretical computer science, and it was also foundational for various strands of thought that eventually united under the broad rubric of cognitive science and artificial intelligence.

Tara Abraham is an historian of science at the University of Guelph in Canada. Her biography documents McCulloch's childhood and education and the successive stages of his career in science, as he went from neurophysiologist to neuropsychiatrist, then on to a promoter of cybernetics, and finally to a kind of engineer investigating the neurocircuitry of animal brains. She views McCulloch as someone who “self-fashioned” a succession of “performative identities.” In so doing

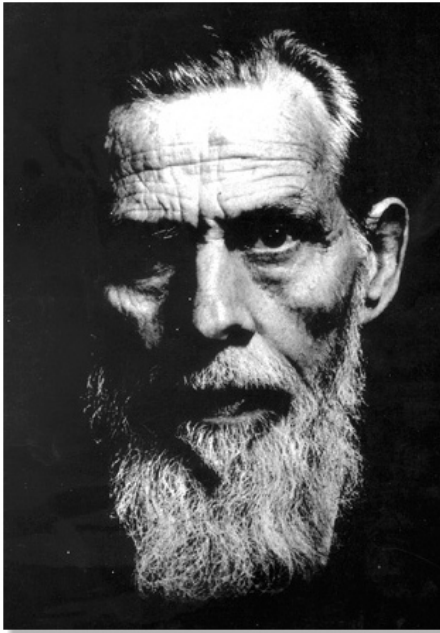


Figure 9: Warren Sturgis McCulloch (1898–1969)

he exhibited a new form of “transdisciplinarity” that brought together, at the middle of the century, disparate strands of research in science, medicine and philosophy. (The terms in quotes are ones that appear as interpretative constructs in recent biographical writings in the history of science.) Abraham’s book is the product of extensive research and is informed by the substantial historical and philosophical literature that exists on various facets of McCulloch’s scientific work. It is the most detailed and perceptive account of his life and scientific thought to date.

McCulloch grew up in Orange, New Jersey, the son of an estate manager of comfortable means. While an undergraduate major in philosophy and psychology at Yale University, he showed an interest in mathematics. His senior thesis in psychology focused on whether human subjects showed an esthetic preference for geometric figures such as rectangles that involved the golden section. (Figures that did so were said to display “dynamic symmetry.”) McCulloch continued this project in his Masters work at Columbia University and went on to Columbia’s medical school, becoming licensed as a physician in 1927. In the following years he carried out research in experimental neurology at Columbia and New York hospitals.

In 1934 McCulloch moved to Yale and began a series of researches with Dusser de Barenne on the functional

organization of the cerebral cortex of primate brains. In 1941 he moved to the Illinois Neuropsychiatric Institute where he assumed administrative duties overseeing a range of research programs. At INI his own work centered on convulsive therapies for treating major mental illnesses such as schizophrenia. He collaborated with the émigré Hungarian researcher Ladilas J. Meduna on metrazol therapy (involving induced convulsions), and he tried to explain the efficacy of this therapy in terms of carbohydrate metabolism. This form of treatment of mental illness anticipated the more widely used electroshock therapy that emerged in the 1950s. McCulloch and Meduna were firm adherents to a biological approach to psychiatry that was at odds with the then influential Freudian paradigm.

At Illinois McCulloch came into contact with Nicolas Rashevsky and his Committee on Mathematical Biology at the University of Chicago. During this period his scientific interests also took on a somewhat more abstract and philosophical character. McCulloch and his family (wife Rook and four children) assumed the role of mentor for younger researchers and their families and took under their wing the student Wallace Pitts. McCulloch and Pitts’ 1943 paper was published in Rahevesky’s *Bulletin of Mathematical Biophysics*. In the immediate post-war years McCulloch became involved in the cybernetics movement and served as chair of the famous Macy Conferences on Cybernetics from 1946 to 1951. In the latter year he moved to the Massachusetts Institute of Technology to carry out research on the brain circuitry of frogs and cats with his former Illinois colleagues Pitts and Jerry Lettvin.

McCulloch and his like-minded contemporaries saw in cybernetics a way of providing a naturalistic explanation of such notions as teleology and purpose. Before the war linguistics was the basis of philosophical conceptions of the unity of science, a fact expressed in the writings of philosophers such as Rudolf Carnap. After the war researchers turned to cybernetics as a unifying theme. Abraham summarizes the prevailing belief (p. 131): “Understanding purposeful systems in terms of negative feedback would result in greater understanding across disciplines.” During the later 1950s the cyberneticists with their emphasis on brain modeling and analog processes became somewhat isolated from what would become the mainstream of research in cognitive science. The latter relied on the metaphor of the computer-mind and employed information-processing mechanisms in their models. While the 1943 paper

on neural networks was arguably encompassed within such an approach, McCulloch's emphasis on brain physiology and experimental neurology was at odds with the developing direction of research.

In 1965 McCulloch published *Embodiments of Mind*, a collection of article reprints, lectures and miscellanea on various aspects of his work in science. Included was the essay, "What is a number, that a man may know it, and a man, that he may know a number," originally published in 1961 in the *Bulletin of Cybernetics*. McCulloch found it easy to define what number is, adopting the logicist conception (attributed to Bertrand Russell but in fact originating with Gottlob Frege) of a whole number as the set of all sets that can be put in one-to-one correspondence with a set containing the given number of elements. The major part of the essay was devoted to the title's second question, examining how humans come to know numbers, a question that McCulloch believed could ultimately be explained in terms of brain modeling and the logic of neural networks. One colleague at MIT remarked that McCulloch "looked and talked like God." He and Rook continued to play an active role in mentoring younger investigators, including taking them into their Cambridge home and the McCulloch family farm in Old Lyme, Connecticut. McCulloch's support of junior colleagues and his generosity towards them were acknowledged in the tributes to him following his death. Always of a somewhat expansive temperament, in the last decade or so of his life he began to think of himself as kind of a sage of science and an *éminence grise* to younger researchers.

From his student days until his death McCulloch dabbled in poetry, favoring the sonnet form, and he crafted a slim volume of poems that was published in limited edition in 1959. Abraham ends her biography with a poem McCulloch wrote in his last years, where he mused on his legacy:

*When I am dead let no man say
That, I had lived, I had done so and so:
For I was always on an unknown way
To mine own ends, the which they could not
know!*

Acknowledgment: I would like to thank Hardy Grant for comments on a penultimate draft of this review.

Craig Fraser

PhilMath-Archive Launched

PhilSci-Archive is pleased to announce the launch of the PhilMath-Archive, philsci-archive.pitt.edu/philmath.html, a preprint server specifically for the philosophy of mathematics. The PhilMath-Archive is offered as a free service to the philosophy of mathematics community. Like the PhilSci-Archive, its goal is to promote communication in the field by the rapid dissemination of new work. We aim to provide an accessible repository in which scholarly articles and monographs can find a permanent home. Works posted here can be linked to from across the web and freely viewed without the need for a user account.

PhilMath-Archive invites submissions in all areas of philosophy of mathematics, including general philosophy of mathematics, history of mathematics, history of philosophy of mathematics, history and philosophy of mathematics, philosophy of mathematical practice, philosophy and mathematics education, mathematical applicability, mathematical logic, and foundations of mathematics.

The PhilMath-Archive is sponsored by the International Association for the Philosophy of Mathematics (PMA), the Canadian Society for History and Philosophy of Mathematics (CSHPM), The British Society for the History of Mathematics (BSHM), the Association for the Philosophy of Mathematical Practice (APMP), and the Philosophy of Mathematics Special Interest Group, Mathematical Association of America (POMSIGMAA).

Elaine Landry

York University Computer Museum

In the May 2017 issue of the *Bulletin*, I noted that the York University Computer Museum (YUCoM), www.cse.yorku.ca/museum, was one of the resources for the history of mathematics available in Toronto. I visited with the museum's director, Zbigniew Stachniak (Electrical Engineering and Computer Science), this September 18 at both his office and the Museum in the Engineering Faculty's Lassonde Building. While learning about the museum's origin, purpose, operation and holdings, I was also treated to a delightful show and tell from the history of Canadian computing.

For instance, there's a very solid Burroughs mechanical calculator (ca 1920), manufactured in Windsor,

Ontario, and sporting beveled glass side panels to permit admiration of its guts. Or there's the desk-sized analogue computer EAI TR-48 (1961), donated by the Hamilton Airplane Museum and bearing the metal plate "(D. D. P.) [for Department of Defense Production] CANADIAN GOVERNMENT PROPERTY ...2." And the HP 65 (ca 1975), the first hand-held programmable calculator, whose programme storage was insertable magnetic strips. And also the front page of April 23, 1973, issue of the Danish newspaper *Politiken*, with its photo of an MCM 70 in an attache case, demonstrated by the Canadian electronics engineer Ted Edwards at APL Congress 73, then underway in Copenhagen.

Then I was shown that exact same "Executive Prototype" with its 32-character display and APL alphabetical and function keyboard. The numerical keyboard was missing, as was the cover for the magnetic cassette player where the programmes would be stored. This was part of the archive from Micro Computing Machines (MCM), which is at the heart of this computer museum.

In 2002, the MCM archives became available to Canadian history of computing scholars. But there wasn't any computer museum in Canada to take them. So, under Zbigniew's leadership it was decided to establish one at York as an academic resource to preserve the hardware, software and documentation as well as the knowledge about how to use them. Acquisitions have been steadily arriving as the museum's reputation grows, with about 100 Canadian companies currently. The emphasis is on Canadian computing, but some non-Canadian icons of computing are also represented.

Up to ten volunteers are helping out at any given time. One or two might be archiving and cataloging donations, while a couple of hardware engineers are constructing, reconstructing or emulating an object's original hardware. Some of Zbigniew's own computer science students might be recovering software from paper tapes or punch cards. There are usually some researchers who, for example, might be examining electronic bulletin board printouts from the late 1970s, collecting data on computer usage. Students taking special project courses also conduct research on the collections. Many visiting historians come from a variety of disciplines. And of course news media visit regularly, on the anniversaries of major computer hardware

developments.

Though YUCoM primarily operates as a scholarly resource, it also holds public activities. At York's Science and Engineering Days, visiting high school students get to play vintage video games. Displays are mounted around campus, such as *Personal Computing*, in the foyer of the Steacie Science Library. At YUCoM, the exhibition *IBM@York*, to commemorate both the centennial of IBM Canada and the semi-centennial of computing at York, opens in November 2017. The basis for this photographic exhibition is a collection of about 200,000 images on loan from IBM Canada, including a 1917 photo of the IBM Canada offices in Quebec City.

YUCoM is also preparing a major permanent interactive exhibition of its treasures for 2018. But more of this anon (in a projected second part of this article to appear in the May 2018 *Bulletin*), along with a more in-depth look at some of the special collections like IBM Canada, MCM, Ottawa's NABU Networks from the 1980s, or York computational chemist Huw Owen Pritchard's professional archive. Should you come to Toronto, why not take a look at YUCoM?

David Orenstein

CSHPM on Social Media

CSHPM content appears on two social media platforms: Facebook and Twitter. Links to each appear on the CSHPM home page; web users can also come across them at www.facebook.com/cshpmschpm and twitter.com/cshpmschpm, respectively. Posts on both pages can be viewed without having an account on the relevant platform. People who are signed in to Facebook can post material on that page, although at press time no one had ever done so. (One potential use is announcements from other societies that may be of interest to CSHPM members and visitors.) "Followers" of either page can share the announcements with their own social media audiences, potentially increasing the reach of CSHPM activities. Webmaster Mike Molinsky maintains the sites.

General Meeting HSSF

The 2017 Annual General Meeting of the General Assembly of the Federation for the Humanities and Social Sciences was held the Sunday evening of Congress (May 28). The General Assembly is made up of repre-

representatives from the Federation's member associations and institutions. It meets annually to receive annual reports and financial statements, sanction changes to the by-laws, approve applications from new members, and discuss topics of relevance to the humanities and social sciences community. A Nominating Committee identifies candidates for the Board of Directors; if additional candidates stand for positions during an open nominating period each January and February, then the General Assembly also votes for the Board of Directors.

As the delegates were served dinner, outgoing Federation president Stephen Toope reported that Ryerson was hosting the largest Congress ever. Representatives from the University of Regina extolled the attractions and preparations for the 2018 Congress, although I still concluded that our decision to meet with the Canadian Philosophical Association (CPA) is the right one for us.

The business meeting was held over dessert. Toope provided an update on Federation advocacy efforts, which included five policy papers; announced a memorial fund to honor feminist activist Wendy Robbins; and discussed an ongoing evaluation of services offered to Federation members. The staff were very happy with how the first webinar, on membership recruitment and retention, went and are entertaining future proposals, but they have decided to take a break from offering the annual conference in the fall in order to better tailor it to member needs. The Federation had accidentally lost its charitable status and was working to restore it. Delegates approved the 2016 financial statements and audit, and one new member was approved.

Guy Laforest of Laval accepted the gavel as the incoming president. We voted to destroy the ballots from the 2017 election (the records are retained), which is usual practice for the Federation. CPA's Sandra Lapointe is one of the new members of the Board of Directors. Laforest closed the business meeting by promising to continue to improve Congress and to celebrate interdisciplinary studies, while he asked members to help further the Federation's mission in these turbulent times. He took questions from the audience: the AGM will always be at Congress, but the day of the AGM is open for discussion; the Board wants to listen to members and so strongly encourages societies to register for the breakfast conversations held during

Congress; a working group continues to advocate with SSHRC for the restoration of graduate student travel funding.

Amy Ackerberg-Hastings

New Members

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

Amanda Aiken
White House, TN
USA

Bernd Buldt
Indiana University–Purdue University Fort Wayne
Fort Wayne, IN
USA

Eamon Darnell
Toronto, ON
Canada

Scott Edgar
St. Mary's University
Halifax, NS
Canada

Sepehr Ehsani
Toronto, ON
Canada

Nicolas Fillion
Simon Fraser University
Burnaby, BC
Canada

Johan Gaebler
Cambridge, MA
USA

M. Joshua Mozersky
Kingston, ON
Canada

Nathan Otten
Kansas City, MO
USA

Fillippos Papagiannopoulos
Western University
London, ON
Canada

Alessandro Selvitella
Hamilton, ON
Canada

Valerie Lynn Therrien
London, ON
Canada

Inna Tokar
Fort Lee, NJ
USA

Jai Chum Tsai
Kaohsiung City
Taiwan

From the Editor

Our November issue is always full of Society news and business. Thanks to Colin McKinney and Pat Allaire for submitting photos from our 2017 meeting. Since Ryerson, a number of developments have transpired in the planning for our 2018 gathering with the Canadian Philosophical Society. In case there are any ambiguities or contradictions in the rest of this issue, I will summarize the key data points here (with thanks to Dirk Schlimm for assembling the list):

Time: June 4–6, 2018

Place: Université du Québec à Montréal, Montreal

Special Session Topic: History of Philosophy of Mathematics

Kenneth May Lecturer: Emily Grosholz, Edwin Erle Sparks Professor of Philosophy, English, and African American Studies, Penn State University; her personal website, www.emilygrosholz.com/, provides a taste of her diverse talents and interests.

Special Session Organizer: Dirk Schlimm

General Session Organizer: Eisso Atzema

Local Organizer: Jean-Pierre Marquis

Please consider this your official invitation; the call for papers also appears elsewhere in this issue. The Council will be adding details to our website as they become available; you can also find information at www.acpcpa.ca/cpages/current. Be sure to thank CPA leaders and members for taking on the heavy lifting of working out the logistics for this conference.

The *Bulletin* reaches your hands or screen due to the continued efforts of Eisso Atzema, Layout Editor; Maria Zack, Production Editor; Pat Allaire, Secretary; and Mike Molinsky, Webmaster. Since Ryerson, Eisso, Maria, and I have also talked about the format of the *Bulletin* and intend to debut a single-column mobile-friendly version with this issue, in addition to our traditional two-column layout.

The next submission deadline for the *Bulletin* is 1 April 2018. As always, the editors seek news items of interest to historians and philosophers of mathematics, reports on conferences attended, and personal and professional announcements. Ongoing column series include Models of Mathematics (using unique or eye-catching clothing as an entrance point into a historical mathematician), Off the Shelf (revisiting classic or previously-read works in the history or philosophy of mathematics), and Mathematical Ephemera (sightings of oddities in the history and philosophy of mathematics). We also welcome suggestions for memorials, book and web reviews, and informative or thought-provoking column-style articles. Microsoft Word (please turn off its auto-formatting features such as “curly quotes”) and LaTeX data files (not compiled PDFs) are easiest for the editors to deal with. Submissions may be sent to 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), Layout Editor Eisso Atzema (eisso.atzema@maine.edu), and Production Editor Maria Zack (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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