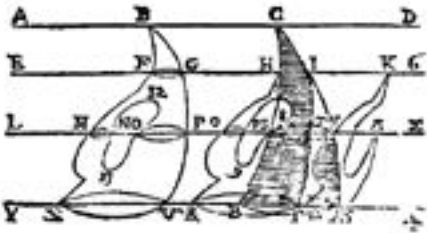


BULLETIN

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

Vice-President: **Craig Fraser**, University of Toronto, Toronto, ON M5S 1K7, CAN, craig.fraser@utoronto.ca

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

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

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

Members of Council

Elaine Landry, UC Davis, Davis, CA 95616, USA, emlandry@ucdavis.edu

Duncan Melville, St Lawrence University, Canton, NY 13617, USA, dmelville@stlawu.edu

Andrew Perry, Springfield College, Springfield, MA 01109, USA, aperry@springfieldcollege.edu

Richard Zach, University of Calgary, Calgary, AB T2N 1N4, CAN, rzach@ucalgary.ca

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, USA, eisso.atzema@maine.edu. **Hardy Grant**, hardygrant@yahoo.com, and **Amy Ackerberg-Hastings**, aackerbe@verizon.net, edit the CSHPM Notes column for *Notes* of the Canadian Mathematical Society. **Maritza Branker**, Niagara University, Lewiston, NY 14109, USA, mbranker@niagara.edu, serves as CMS Liaison.

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

President's Message

As I write this, I am in a room at a convention center with 13,000 other people and a DJ playing very loud music that I don't recognize to "energize" the room before Lin-Manuel Miranda comes up to speak. No, I am not at a dance party, but rather a technology conference. Because of my role at my university in driving major technology projects, I attend this conference every year. I learn a great deal, though not from Lin or Jerry Seinfeld (who spoke earlier), but by the end I am exhausted from all of the people and noise. This is not anything like a math conference!

The last couple of days have caused me to reflect on how much I enjoy our annual CSHPM/CSHPS meetings and the community that comes together at those conferences to share scholarship, friendship, and food. I hope that many of you will be able to come to our annual meeting hosted by the BSHM in St Andrews, Scotland, this July. This meeting is being organized jointly by the BSHM, CSHPM, and HOMSIGMAA and it should be very interesting. Our colleagues in the BSHM have arranged opportunities to do a history walk in the town of St Andrews and to view some special items in St Andrews's University Library collection. I plan on taking advantage of both. You will find further details elsewhere in the *Bulletin* but just as a quick reminder, *your abstracts are due on November 30*.

After some discussion last year, it became clear that having our annual volume labeled as a "Proceedings" was causing some difficulty for people seeking promotion and tenure because their relevant committees didn't recognize that something called proceedings could be refereed. So, starting with the 2018 volume, what was formerly known as Proceedings will now be called "Research in the History and Philosophy of Mathematics," CSHPM Volume [year]. That means that there is also a bit more latitude with what goes into the volume, so if you cannot attend the meeting in St Andrews but would like to submit a paper to be refereed for possible inclusion in the 2020 volume, please let me know.

Maria Zack (mzack@pointloma.edu)

Announcements

As promised in the meeting minutes in this issue, the listserv for CSHPM Announcements has moved to Google Groups. The new address is *cshpm-announcement-group@maine.edu*. All members may send announcements of interest to CSHPM members; messages are moderated before they are distributed.

Aurélien Jarry won the 2018 CSHPM Student Award for his paper, “L’equivalence duale de catégories: a third way of analogy?” In the announcement, the selection committee praised all four applicants: “Congratulations also go to all who applied; your work was excellent and will be appearing in the soon-to-be-published volume.”

At MAA MathFest, Bill Dunham received a 2019 Carl B. Allendoerfer Award, honoring authors of expository articles published in *Mathematics Magazine*, for “The Early (and Peculiar) History of the Möbius Function,” 91, no. 2 (March 2018): 83–91. The other Allendoerfer Award presented this year was also for an article on history of mathematics: “Pietro Mengoli’s 1650 Proof that the Harmonic Series Diverges,” by Jordan Bell and Viktor Blåsjö, 91, no. 5 (December 2018): 341–347.

John Thoo received a Certificate of Meritorious Service from the MAA’s Golden Section (northern California and Nevada).

On the merits of his book, *Leases for Lives: The Emergence of Actuarial Science in Eighteenth Century England*, as well as his biography of Abraham De Moivre and other contributions, David Bellhouse has been made Honorary Fellow of the Institute and Faculty of Actuaries of the United Kingdom. The full 20 September 2019 notice of the award is at www.actuaries.org.uk/ under News and Insights.

Christopher Baltus retired from SUNY Oswego in June.

Mariya Boyko successfully defended her dissertation, “Soviet Mathematics Curriculum Reforms (1958–1985): Redefining the Purpose of Mathematics Education,” at the Institute for the History and Philosophy of Science and Technology, University of Toronto, on September 13. Her supervisor was Craig Fraser. Other members of the advisory committee were Chen-Pang Yeang (for whose accommodation the defense was scheduled at 9:00 am EDT, since he participated from Taipei) and Alexei Kolevnikov of UBC.



Figure 1: Craig and Mariya after defense

Math through the Ages, by William P. Berlinghoff and Fernando Q. Gouvêa, has always existed in two versions. The expanded version, with questions and project suggestions, is now published by AMS under its “MAA Press” imprint. The non-expanded version, which used to be published by Oxtan House, is now a Dover book. It contains the same text as the textbook version, but not any of the questions and project suggestions. The Dover price is even lower than the previous one!

Robert S.D. Thomas’s article, “Beauty Is Not All There Is to Aesthetics in Mathematics,” was selected for Princeton University Press’s *The Best Writing on Mathematics 2018*. Other history and philosophy of mathematics in the volume includes “Wigner’s ‘Unreasonable Effectiveness’ in Context,” by José Ferreirós; “Written in Stone: The World’s First Trigonometry Revealed in an Ancient Babylonian Tablet,” by Daniel Mansfield and N. J. Wildberger; “Quidrivium: The Structure of Mathematics as Described in Isidor of Seville’s *Etymologies*,” by Isabel M. Serrano, Lucy H. Odom, and Bogdan D. Suceavă; and “The World War II Origins of Mathematics Awareness,” by Michael J. Barany. See also Chris Arney’s “Learning and Teaching Interdisciplinary Modeling.”

Dirk Schlimm and Richard Zach, with Steve Adoway, provided editorial assistance for *Rudolf Carnap: Early Writings*, volume 1 of *The Collected Works of*

Rudolf Carnap, edited by A. W. Carus, Michael Friedman, Wolfgang Kienzler, Alan Richardson, and Sven Schlotter, and available from Oxford University Press. Translations and original texts are provided on facing pages. This volume presents the first ever English translation of Carnap's pre-*Aufbau*, pre-Vienna publications, including his dissertation *Der Raum*.

At the 2019 North American Annual Meeting of the Association for Symbolic Logic, held at the Graduate Center of the City University of New York (CUNY), May 20–23, two members of the CSHPM/SCHPM delivered papers. Jean-Pierre Marquis gave an invited lecture titled “Designing foundations for abstract structuralism: from Bourbaki to FOLDS”; Francine F. Abeles gave a talk titled, “Mechanical proof methods in the work of Charles L. Dodgson and Christine Ladd-Franklin.”

The ORESME Reading Group met 4–5 October at Xavier University to read and discuss Euler's 1755 *Institutiones Calculi Differentialis* from Blanton's 2000 English translation. For information on future meetings, contact Danny Otero, otero@xavier.edu or Dan Curtin, curtin@nku.edu.

Robin Wilson (Open) was awarded the Stanton Medal from the Institute of Combinatorics and Its Applications for significant lifetime contributions to promoting the discipline of combinatorics and graph theory with researchers, students, and the general public.

Nerida Ellerton and Ken Clements are returning to Toowoomba, Queensland, Australia, to open the Australian Education Heritage Museum. Colleagues are invited to conduct research in their extensive cyphering book and textbook collections. Contact: AEHMuseum@gmail.com.

The Canadian Philosophical Association has issued a call for papers at the 2020 Congress, 1–4 June, Western University. Student travel grants are available. Symposium proposals are due 3 November, and abstract submissions are due 12 January. See www.acpcpa.ca.

HOM SIGMAA News: The SIGMAA is sponsoring a contributed paper session, “A History of Mathematics in the United States and Canada: A Session in Honor of Math Historian David Zitarelli,” at the 2020 JMM. It awarded its first classroom grant to Erik Tou, for two sets of wooden Napier's Bones. Amanda Nethington (UMKC) won the 2019 Student Writing Contest for her paper, “Achieving Philosophical Per-

fection: Omar Khayyam's Successful Replacement of Euclid's Parallel Postulate.”

The 2020 Student Paper Contest in the History of Mathematics is now open. Direct submissions to Amy Shell-Gellasch, ashellge@emich.edu by 31 March 2020.

Peace to the memory of Pam Crawford (1955–2019) of Jacksonville University, a longtime judge of the Student Writing Contest and 2018 recipient of the Florida Section's Award for Distinguished Service.

MAA News: More than 30 past volumes of *MAA Notes* are now available as a benefit to MAA members. Check the Member Library link on the left side of the member profile page.

BSHM News: New books from members include: *The Mathematical World of Charles L. Dodgson*, edited by Robin Wilson and Amirouche Moktefi (Oxford); *Gunpowder and Geometry: The Life of Charles Hutton, Pit Boy, Mathematician, and Scientific Rebel* by Benjamin Wardhaugh (William Collins); *From Servant to Queen: A Journey through Victorian Mathematics* by John Heard (Cambridge); *The History of Mathematics: A Source-Based Approach*, vol. 1, by June Barrow-Green, Jeremy Gray, and Robin Wilson (AMS/MAA); *Isaac Newton* by Robin Wilson and Raymond Flood (Pitkin).

Recent meetings include: Maynooth Conference on the History of Mathematics, 1–2 August; History of Mathematics and Flight on 12 September; Stokes200 Symposium, 15–18 September; the annual Gresham Lecture, Mathematical Expeditions, on 23 October; and Savilian Professors of Geometry: The First 400 Years on 23 November. Distribution problems with the *British Journal for the History of Mathematics* have been resolved.

The Society has launched a Biennial Taylor and Francis Early Career Research Prize of £1000 for an unpublished essay by an early career researcher. Submissions are due 31 December.

Additional Publications

The July 2019 issue of the *Journal of Humanistic Mathematics* is available at scholarship.claremont.edu/jhm/.

Nuh Aydin and Lakhdar Hammoudi have completed the first (arithmetic) volume of translation and commentary for *Al-Kashi's Miftah al-Hisab* with Birkhäuser.

For Springer, K. Ramasubramanian, Takao Hayashi, and Clemency Montelle edited *Bhāskara-prabhā*, a collection of papers commemorating the 900th birth anniversary of this Indian mathematician and astronomer.

Special Issue 55 of *Studia Leibnitiana* is Maria Seidl, *Pierre Gassendi und die Probleme des Empirismus*. See www.steiner-verlag.de/.

The Legacy of Felix Klein, one of the Proceedings volumes from ICME-13, is available open-access from Springer. See www.springer.com/gp/book/9783319993850.

Donald Saff, *From Celestial to Terrestrial Timekeeping: Clockmaking in the Bond Family [of Harvard]*, is now available from the Antiquarian Horological Society.

The Springer book series *Mathematics, Culture and the Arts* seeks book proposals, editors, and authors. Visit www.springer.com/series/13129 to contact the editors.

Colm Mulcahy has added an entry for Tipperary to his Annals of Irish Maths blog in an ongoing effort to discuss mathematical people associated with each county of Ireland. See <http://www.mathsireland.ie/blog>.

The October *HPS&ST Newsletter* is online, www.hpsst.com/hpsst-newsletter.html. The publication has a new look and format, and it has gone back to an earlier name from the previous *HPS&ST Note*. A third assistant editor is sought to oversee outreach and publicity.

The History of Science Society has set up a webpage to highlight and encourage digital scholarship. See its statement on the topic at digital.hssonline.org.

The Friends of the National Library of France are building a bibliographic database of major works in the history of science. To contribute an entry, visit sciences.amisbnf.org.

Volunteers are invited to join the crowdsourced transcribing of Humphry Davy's notebooks on Zooniverse.

The Science Museum, London, opened a new gallery, "Science City 1550–1800," on 12 September. Newton's *Principia*, *Opticks*, and reflecting telescope are among the artifacts on display.

The Museum of the History of Science in Oxford changed its name to the History of Science Museum. Its new URL is hsm.ox.ac.uk.

AMS/MAA has published the children's (ages 8–13) activity book, *Women Who Count: Honoring African American Women Mathematicians*, by Shelly M. Jones.

"Women Untold," a half-hour documentary by Lawrence Technological University students about three women of color who made STEM contributions, including mathematician Evelyn Boyd Granville, is on YouTube, www.youtube.com/watch?v=T5196ZW9s-g. The October 2019 issue of *Smithsonian Magazine* profiled Margaret Rossiter and her three landmark volumes, *Women Scientists in America*. See smithsonianmag.com.

Other Meetings

John McCleary gave a plenary talk, "The Oberwolfach archives and topology," at the 2019 Union College Mathematics Conference, 13–15 September. Kim Plofker organized a session on history of mathematics.

The Sixth International Conference on the History of Mathematics Education (ICHME-6) was held 16–20 September at CIRM in Marseille, France.

HISTELCON 2019, on historic computers, was held 18–19 September at Strathclyde University, Glasgow.

A workshop on the history of formal methods in computing was held 11 October at Alfabega Porto Congress Centre, Porto, Portugal.

Paris IREM, SELLF, and the SPHERE laboratory held two days of study in homage to Michel Serfati at the Institut Henri Poincaré. On October 16 Sébastien Maronne spoke on "Les compass cartésiens" and Claire Schwartz gave a talk on "Leibniz et la modernité mathématique." Talks on October 30 included Sigmund Probst and Regina Stuber, "Questions et problèmes concernant la nouvelle édition des Cogitationes privatae de Descartes dans l'édition de Leibniz: un rapport intermédiaire," and David Crippa, "Autour de Leibniz et la notion de transcendance mathématique." The second day ended with a roundtable discussion led by Simon Decaens, Catherine Goldstein, and David Rabouin.

A conference celebrating the 70th anniversary of the seminar on history of mathematics at Institut Henri Poincaré, "Résultats et problèmes en histoire des sciences mathématiques," was held October 18. Speakers on the program included Christine Proust, "Comment une approche émiqque des texts mathématiques en transform l'interprétation.

Les notions de nombre, quantité et opération vues de Mésopotamie”; Jeanne Peiffer, “La fabrique du panthéon mathématique de l’époque newtonienne”; Jean Mawhin, “Le problème historiographique des fondements du calcul différentiel et intégral: l’analyse mathématique en Belgique autour de 1850 à travers la querelle des ‘infinicoles’ et des ‘infinivores’”; and Umberto Bottazzini, “Étudier Ulisse Dini: entre mathématiques et vie politique.” The day closed with a roundtable participated in by Jenny Boucard, Maarten Bullynck, Caroline Ehrhardt, Laurent Rollet, and Sabine Rommevaux-Tani.

ARTEFACTS XXIV was hosted by National Museums Scotland in Edinburgh, 20–22 October.

The 30th Novembertagung on the History and Philosophy of Mathematics was 31 October–2 November in Strasbourg, France. The theme was “Mathematical Cultures, Values and Norms.”

The 2019 Fields Medal Symposium, 4–7 November, honors 2014 Fields Medallist Artur Ávila. Check Activities at www.fields.utoronto.ca for program details.

A Symposium in Honor of Julia Robinson’s 100th Birthday will take place at the Mathematical Sciences Research Institute (MSRI), Berkeley, on 9 December. The meeting is free and open to the public, but the organizers ask for advance registration at www.msri.org/workshops/955.

A conference on “The Mathematical Book Trade in the Early Modern World” will be held at All Souls College, Oxford, 19–20 December.

The 26th International Congress of History of Science and Technology will be in Prague 23–29 July 2021. Session proposals are due by 30 April 2020. See www.ichst2021.org.

Funding Opportunities

The Association of Iranian Studies announces the new Parviz Shahriari Book Award for the History of Mathematics, Science, and Technology in Iran and the Persianate world. Titles published since 2015, including critical editions and translations (to English or Persian) and treating Islamic/Islamicate or Persianate mathematics, are eligible. See associationforiranianstudies.org/.

The Consortium for History of Science, Technology, and Medicine offers a variety of fellowships at its member institutions across the United States.

Applications are accepted every six months; the next deadline is 16 December. See www.chstm.org/fellowships/chstm-fellowships.

The William L. Clements Library at the University of Michigan is accepting applications for 2020 research fellowships until 15 January. Visit clements.umich.edu/ and look under Using the Library.

The Warburg Library at the University of London, which has a strength in medieval and Renaissance history of science and philosophy, offers travel grants of £1,000. Applications are due 5 August 2020. See the Research tab at warburg.sas.ac.uk.

One of the 2019 American Council of Learned Societies/Mellon Dissertation Completion Fellows is David E. Dunning (Princeton), whose project is “Writing the Rules of Reason: Notations in Mathematical Logic, 1847–1937.” Applications for future fellowships are due each October. See www.acls.org/programs/dcf/.

Joel Silverberg (1946–2019)

After fighting lymphoma for just over a year, long-time member Joel Silverberg passed away on August 11. He was born in Rockville Centre, NY, on July 8, 1946, but he mainly grew up in Bangor, ME. He graduated from Bangor High in 1964, serving in the school’s ROTC unit and playing clarinet and saxophone in the band. Joel went on to earn four degrees from Brown University: Music (AB), Electrical Engineering (ScB and MSc), and Bioengineering and Biomedical Engineering (PhD, 1976). He also earned a postdoctoral certificate from the Institute for Retraining in Computer Science. He taught at Vassar College, Boston University, Brown University, and Roger Williams University. He found time to remain involved in music, starting an early music group, participating in a chamber choir, and serving as a church organist. Joel was proud of his Jewish heritage and devoted to his wife, Tish; daughter, Sarah; and Pembroke Welsh Corgi, Taffy. (Thanks to the family, whose lovely obituary on the Sugarman Sinai Memorial Chapel area of www.dignitymemorial.com I have shamelessly mined for information.)

Joel also loved the outdoors (he shared his home state with the original L.L. Bean store, after all!), particularly birding and sailing. The latter passion stimulated his interest in the mathematics of navigation, mathematics education, and mathematical instru-



Figure 2: 2005 AGM Dinner

ments, which helped lead him to the 2003 CSHPM AGM in Halifax. He published in our *Proceedings* most years from then on, and he also became a regular attendee of the ARITHMOS reading group. He and Glen Van Brummelen teamed up for the fabulous mini-course, “Heavenly mathematics: The forgotten art of spherical trigonometry,” at the 2013 JMM in San Diego. Over the past several years, Joel and Fred Rickey have been consulting on the mathematics and surveying-related material in the papers of George Washington, which are being edited by the University of Virginia Press.

The overlap in our research interests—and the fact that Joel was a kind and friendly man—meant that we quickly became acquainted and engaged in numerous lively conversations about American secondary and higher education, although we did not always agree in our interpretations of the past. He was also a fount of knowledge about a wide variety of astronomical and navigational instruments. Our shared appreciation for mischief instigated the “Models of Mathematics” column that debuted in the May 2017 *Bulletin*, and Joel was a fellow traveler in the search for cheap food, so that several of my memories of him are set in hole-in-the-wall Chinese restaurants.

The photo accompanying this memorial, supplied by Tom Drucker, attests that we pursued a higher level of cuisine at least once, at the 2005 joint meeting with CMS in Waterloo. Depicted at an establishment named Rude Native are: (left front) David DeVidi, Amirouche Moktefi, Fran Abeles, Ed Sandifer, (right back) Larry D’Antonio, unidentified, Joel Silverberg, Ernest Abeles, and Chris Baltus. Duncan Melville is barely visible behind Ed S., I am not sure who is on Joel’s right, and I am cut off on Chris’s left. I expect I will reflexively try to email Joel and pick his brain about material culture for quite a while, and I wish

we’d had a chance to compare “notes” after I started taking organ lessons in 2017.

Amy Ackerberg-Hastings

AMS Central Section in Madison

At the AMS Fall Central Sectional Meeting at the University of Wisconsin–Madison, 14–15 September 2019, Tom Drucker and Dan Sloughter organized a special session on Recent Work in the Philosophy of Mathematics, and Brit Shields, Emily Hamilton, and Rebecca Vinsonhaler organized a special session on Relations Between the History and Pedagogy of Mathematics. The latter session served as the 2019 meeting of the Americas Section of the International Study Group on the Relations between History and Pedagogy of Mathematics. For information on future meetings, email Rebecca Vinsonhaler, rebecca.vinsonhaler@gmail.com and ask to be added to the mailing list.

The philosophy session featured hour-long slots for presentations and discussions. Speakers on the program were: Pieranna Garavaso (Univ. Minnesota Morris), “Three Main Themes in the Philosophy of Mathematics: Mathematical Objects, our Knowledge of them and the Reference of Mathematical Symbols”; Bernd Buldt (Purdue Univ. Fort Wayne), “Why we are Platonists”; Michael Liston (UW–Milwaukee), “Indispensability Arguments in Philosophy of Mathematics: their Scope and Limits”; Geoffrey Hellman (Univ. Minnesota Twin Cities), “Modal-Structural Mathematics and a Height-Potentialist View of Set Theory”; Graham Priest (Graduate Center, CUNY), “Gödel’s Theorem and Paraconsistency”; Wilfried Sieg (Carnegie Mellon), “Proofs as objects”; Patricia A. Blanchette (Notre Dame), “Frege and What Philosophy of Mathematics Can(not) Do”; Curtis Franks (Notre Dame), “Some questions for the philosophy of mathematics”; Timothy Bays (Notre Dame), “Model Theory and the Philosophy of Mathematics”; Roy T. Cook (Univ. Minnesota Twin Cities), “Neologicist Foundations for Mathematics”; and Benjamin Joseph Elkins (Independent Scholar), “Felix Hausdorff’s Raumproblem in present day English”.

Speakers in the history and pedagogy session included: Daniel E. Otero (Xavier), “‘In Which They Reveal to Us Only the Best of Their Thoughts’: on teaching mathematics through primary historical sources”; Janet Heine Barnett (CSU–Pueblo), “‘An

entirely new phenomenon presents itself here ...': Teaching and learning number theory via primary historical sources"; Kathleen Clark (Florida State), "Benefits, obstacles, and transgressions, oh my! Examining the potential of primary sources to promote transgressive actions"; Patricia Baggett (New Mexico State), "A Course in the History of Mathematics Education"; Eugene Boman (Penn State Harrisburg), "Calculus in Historical Context"; Malgorzata Marciniak (LaGuardia CC, CUNY), "The influence of historical remarks and creative assignments on student projects in Differential Equations"; Theodora Dryer (AI Now Institute, NYU), "Mapping the History of Algorithmic Drought Management and Resistance"; Laura Turner (Monmouth), "Relationships between axiomatics and pedagogy in E. V. Huntington's work"; Peggy Kidwell (NMAH, read by Brit Shields), "Relations between the History and the Pedagogy of Mathematics in the United States: The Case of Leslie Leland Locke, Historian, Teacher and Collector"; David Lindsay Roberts (Prince George's CC), "A Tale of Two Textbooks"; Amy Ackerberg-Hastings (Independent Scholar), "Mathematics in Astronomy at Harvard College Before 1839"; Donald Sokol (Independent Scholar), "Plimpton 322: Rosetta Stone—A Summary"; Colin McKinney (Wabash), "Archimedes' *On Spirals*"; Emily Hamilton (UMass Amherst), "Mathematics Education and the History of Policy"; Deepak Basyal (UW-Milwaukee), "Mathematical verses in Nepali"; Nerida Ellerton (Illinois State), "Major Influences on U.S. School Mathematics in the Nineteenth Century"; and McKenzie Clements (Illinois State), "The Influence of Mathematicians on School Mathematics, 1673–1973". The group also enjoyed Saturday dinner together on the lakeside plaza outside UW's student center.

From the Archives: CSHPM Officers

These lists were reconstructed from previous Newsletters/Bulletins and meeting minutes. The editors welcome corrections.

President

1974–1975 Charles V. Jones
 1975–1977 Viktors Linis
 1977–1979 J. L. Berggren
 1979–1981 Gilbert de B. Robinson
 1982–1983 Wesley Stevens

1983–1986 Edward J. Barbeau
 1986–1987 M. Walker
 1987–1988 Louis Charbonneau
 1988–1990 J. L. Berggren
 1990–1992 Craig Fraser
 1994–1996 Tom Archibald
 1996–1998 Robert Thomas
 1998–2000 Jim Tattersall
 2000–2002 Glen Van Brummelen
 2002–2004 J. L. Berggren
 2004–2006 Robert Bradley
 2006–2008 Alexander Jones
 2008–2010 Duncan J. Melville
 2010–2012 Jean-Pierre Marquis
 2012–2014 Glen Van Brummelen
 2014–2016 Elaine Landry
 2016–2018 Dirk Schlimm
 2018–2020 Maria Zack

Vice-President

1974–1975 Tom Settle
 1975–1979 Gilbert de B. Robinson
 1976–1979 Norman T. Gridgeman
 1979–1980 H. Lehman
 1983–1985 M. Walker
 1986–1988 J. L. Berggren
 1988–1990 Craig Fraser
 1990–1992 Tom Archibald
 1996–1998 Jim Tattersall
 1998–2000 Jacques Lefebvre
 2000–2002 J. L. Berggren
 2002–2004 Robert Bradley
 2004–2006 Alexander Jones
 2006–2008 Duncan J. Melville
 2008–2010 Jean-Pierre Marquis
 2010–2012 Glen Van Brummelen
 2012–2014 Elaine Landry
 2014–2016 Dirk Schlimm
 2016–2018 Maria Zack
 2018–2020 Craig Fraser

Secretary-Treasurer

1974 J. L. Berggren
 1975–1976 Charles V. Jones
 1977 Kenneth O. May
 1978 Philip Enros (Treasurer), Charles V. Jones (Secretary)
 1979–1980 Philip Enros
 1983–1987 Louis Charbonneau
 1987–1992 M. A. Malik

1994–2000 Glen Van Brummelen

(In 2000 members agreed that henceforth these offices would be separated.)

Secretary

2000–2020 Patricia Allaire

Treasurer

2000–2002 Robert Thomas

2002–2004 Roger Godard

2004–2006 David Bellhouse

2006–2010 Nathan Sidoli

2010–2014 Dirk Schlimm

2014–2016 David Bellhouse

2016–2020 Gregory Lavers

2020 Call for Papers

In 2020 the British Society for the History of Mathematics and CSHPM, in conjunction with the History of Mathematics Special Interest Group of the MAA, will hold their seventh joint meeting. The conference will be held Monday through Wednesday, 6–8 July 2020, at University of St Andrews, Scotland. Its tri-fold theme, **People, Places, Practices**, is intended to showcase a broad range of approaches to the history and philosophy of mathematics:

- “People” allows discussion of the cultural roles of mathematical biography, the historiographical and technical challenges of writing mathematical biography, as well as more straightforward biographical approaches.
- “Places” provides for the influence of location, geographical, spatial, conceptual or cultural, on mathematics and mathematicians.
- “Practices” encompasses the ways in which mathematicians and mathematical practitioners work or have worked, along with the materials, devices, and ideas used.

The Programme Committee invites submissions for short presentations (20 minutes for the talk, 10 minutes for questions), or for symposia or workshops (60 or 90 minutes in length), on topics related to any aspect of the main theme of the conference. Topics from any historical period or geographical focus are welcome. Other session formats are encouraged; if you would like to propose one, please contact Isobel Falconer, ijf3@st-andrews.ac.uk.

Please submit abstracts of up to 500 words (individual papers) or 1000 words (for symposia or

workshops) by **30 November**, at easychair.org/conferences/?conf=bshmcshpm2020. Creation of a log-in will be required. Individual paper abstracts should include a short biography of the speaker. Symposia/workshop abstracts should give brief details of the chair and presenters, their topics, and what the symposium/workshop as a whole will contribute to the conference.

Decisions on papers should be reached by 15 January 2020. Early-bird conference registration will close on 31 March 2020. For more on the conference and its location, see the article on Meeting Information elsewhere in this *Bulletin*.

History of Recreational Mathematics

The BSHM held a one-day conference on the History of Recreational Mathematics at Birkbeck College in London on Saturday, 18 May 2019. David Singmaster led off the proceedings with a talk on “The 17 camels and the 13 camels,” where an inheritance of 17 camels is to be divided into $1/2$, $1/3$, and $1/9$. He surveyed the murky origins and largely fictitious background to this and related problems. Next, Albrecht Heefer discussed “*Récréations Mathématiques* (1624): History and influence,” an anonymous volume published at the Jesuit university of Pont-à-Mousson, considering its origins and authorship and showing how it spawned a large literature on recreational mathematics. It also led Diderot and D’Alembert to consider epistemological layers of recreational mathematics by knowledge. After a coffee break, Mark Bolitho turned to origami with a presentation on “Unfolding possibilities; Origami and Mathematics,” demonstrating various geometric properties obtained by carefully folding squares of paper, including getting the audience to trisect an angle.

Following a lunch break sampling the wares of central London, the audience reconvened to hear Katie Chicot give an update on the status of Maths-WorldUK—A National Mathematics Discovery Centre. Sufficient resources have been gathered for a traveling exhibition, and discussions are under way towards a permanent home. Chicot seeded the room with a variety of discovery toys and puzzles for the audience to experiment with and provide feedback on which ones seemed more successful, and why. Next,

Andrew Bowler took us on a tour of Latin and magic squares from Euler onwards with “Euler’s Officers, MOLS and a little bit of magic!” Closing out the day, Robin Wilson gave an entertaining presentation of a selection of puzzles from “Lewis Carroll’s Recreational Mathematics.”

Duncan Melville

Help Wanted

The Society is looking for two ongoing volunteers: Webmaster and *Bulletin* Content Editor.

The responsibilities of the webmaster include hosting and maintaining the CSHPM website (www.cshpm.org), updating the online membership form each year, moderating the Council and Announcement list-servs, creating the online ballot for biennial elections, and supervising the CSHPM Facebook and Twitter accounts. For more information or to volunteer, contact Mike Molinsky, michael.molinsky@maine.edu.

The responsibilities of the content editor include collecting reports from Council members and announcements, columns, memorials, meeting reports, book reviews, and other contributions from CSHPM members and friends. The items are lightly copy-edited and given some LaTeX formatting twice a year, when they are sent to the Layout Editor. For more information or to volunteer, contact Amy Ackerberg-Hastings, aackerbe@verizon.net.

MAA Convergence Update

Since 2004, *MAA Convergence* has been 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. Its high-quality scholarship and classroom resources have appeared thanks to the leadership of three well-known mathematics historians and educators, founding editors Victor Katz and Frank Swetz and their decade-long successor Janet Beery. In spring 2019, the journal celebrated its “sweet sixteenth” year of online publication with profiles of its previous editors, a brief history of *Convergence*, and Swetz’s new essay on the justifications for using history to teach mathematics, “Do We Teach Too Much Mathematics...?”

Two recent articles combine research in history of mathematics with classroom activities. First, Robert

E. Bradley and Salvatore J. Petrilli, Jr., completed their latest translation from François-Joseph Servois’ publications, his 1817 “Memoir on Quadratures,” which contributed to a debate on numerical integration techniques among the mathematicians Christian Kramp (1760–1826), Joseph-Diez Gergonne (1771–1859), and Joseph-Balthazard Bérard (1763–ca 1844). The translators also guide readers through Servois’ paper and suggest several student exercises for a numerical analysis course.

Second, in “To Simplify, or Not To Simplify? A Lesson from Medieval Iraq,” authors Valerio De Angelis and Jeffrey A. Oaks present an example for which leaving a fraction in non-simplified form suggests a curious rule for computing cube roots.

In the ongoing “Series of Mini-projects from **TR**ansforming **I**nstruction in **U**ndergraduate **M**athematics via **P**rietary **H**istorical **S**ources,” the TRIUMPHS team has added three more mini-Primary Source Projects (mini-PSPs) in the second half of 2019:

- “The Cantor Set Before Cantor: A Mini-Primary Source Project for Analysis and Topology Students,” by Nicholas A. Scoville.
- “Euler’s Calculation of the Sum of the Reciprocals of the Squares: A Mini-Primary Source Project for Calculus II Students,” by Kenneth M Monks.
- “Completing the Square: From the Roots of Algebra, A Mini-Primary Source Project for Students of Algebra and Their Teachers,” by Daniel E. Otero.

Watch for new projects in this series in *Convergence*! Additionally, Erik R. Tou added “The Logical Ideas” to his series on Math Origins. *Convergence*’s ever-growing “**Index to Mathematical Treasures**” (with a new sub-index for mathematical objects) includes hundreds of images for use in your classroom from dozens of libraries and archives. Our chief “treasure hunter” is *Convergence* founding editor Frank Swetz. See all of these articles and more at www.maa.org/press/periodicals/convergence.

Interested in contributing? We’d love to hear from you at our new email address, convergence@maa.org! *Convergence* publishes expository articles on the history of topics in the grades 8–16 mathematics curriculum; translations of primary sources; classroom activities, projects, or modules for using history to teach mathematics; and classroom testimonials after applications of such activities, projects, or modules.

Guidelines for Authors may be found on the journal's website.

Janet Barnett & Amy Ackerberg-Hastings

2020 Meeting Information

CSHPM will meet jointly with BSHM at the University of St Andrews, Scotland, 6–8 July. See the call for papers elsewhere in this issue; abstracts are due 30 November. The general theme is “People, Places, Practices,” and plenary speakers include Serafina Cuomo, Valeria Giardino, Brendan Larvor, Colm Mulcahy, Karen Parshall, Edmund Robertson, and Robin Wilson. An Education Strand, or workshop, aimed at those teaching the 15+ age group will run on 6–7 July, and the Eleventh Conference on Mathematical Cultures and Practices will be held 8–10 July. Members of the Programme Committee include Maria Zack, Dirk Schlimm, Amy Shell-Gellasch, Mark McCartney, and Isobel Falconer.

Early registration is open from now until 31 March. Regular registration will end 30 June. Rates for BSHM, CSHPM, and HOM SIGMAA members are £70 (early)/£90 (regular); for non-members £90 (early)/£110 (regular); and for students and primary/secondary teachers (with documentation) £20 (early)/£30 (regular). On-campus accommodation is available at a 10% discount.

Besides being the alma mater of John Playfair, St Andrews boasts numerous other significant events in the histories of Scottish science and higher education. The town's castle and cathedral are also open for tours and add Scotland's religious and political histories to the list of educational opportunities. St Andrews is of course also a haven for golf enthusiasts, and the Content Editor's family will be monitoring local football schedules.

For more information on the conference and venue, see www.mcs.st-andrews.ac.uk/bshm-cshpm/.

TRIUMPHS Webinar Series

Over the past four years, the NSF-funded **TR**ansforming **I**nstruction in **U**ndergraduate **M**athematics via **P**rimarily **H**istorical **S**ources (TRIUMPHS) project has developed nearly 70 “Primary Source Projects” (PSPs) for teaching topics from across the entire undergraduate mathematics curriculum, and supported

their implementation by over 100 instructors across the US who have served as PSP site testers.

TRIUMPHS projects offer instructors a unique and powerful set of classroom-ready materials that bring the historical development of mathematics into the classroom as an alternative to lectures based on a standard textbook treatment. Relying on a guided-reading approach developed with prior funding from the NSF, PSP design includes three basic elements:

- select excerpts from relevant primary source(s);
- secondary commentary that illuminates the historical context and mathematical significance of these excerpts; and
- a series of tasks that guides student efforts to interpret, analyze, and apply the mathematical ideas raised in the primary source excerpts.

In Fall 2018 the TRIUMPHS team launched a webinar series as a means of providing implementation support and building community among instructors who were interested in this approach to teaching and learning. Each webinar consists of a 15–20 minute presentation by the author of a specific PSP, followed by time for questions and discussion of the project and issues related to its implementation.

Recordings of several past webinars are available on the TRIUMPHS website, blogs.ursinus.edu/triumphs/, under Webinars. Here, we provide descriptions of these recorded webinars and their associated PSPs. PDFs for the PSPs are available on the website under Student Projects.

“A Genetic Context for Understanding the Trigonometric Functions,” by Danny Otero, is designed for use by students in a Trigonometry or Precalculus course, and it aims to provide a context for study of this subject. The project is also ideal for use in a History of Mathematics course, as it takes a sweeping thematic perspective on a particular topic. For instance, it addresses the questions: What is trigonometry? Where did it come from? What are its main ideas? The project provides an overview of the genesis of modern trigonometry through six brief vignettes: measurement of angles through Babylonian numeration; a reconstruction of Hipparchus' table of chords; Ptolemy's solution of a simple problem in mathematical astronomy; Sanskrit verse by Varahamihira that contains a “code” for building a table of sines; al-Biruni's work with measuring shadows; and an early

comprehensive account of trigonometry in the West by Regiomontanus.

“Seeing and Understanding Data,” by Charlotte Bolch and Beverly Wood, focuses on fostering student appreciation for the power of data displays as they have evolved from hand-drawn sketches to dynamic web apps. Students are given the opportunity to explore the evolution of statistical graphs and visual displays across time from William Playfair’s graphs to the interactive display on Gapminder as well as to think critically about how data are displayed and interpreted.

In “Babylonian Numeration,” by Dominic Klyve, rather than being taught a different system of numeration, students working through this project discover one for themselves. They are given an accurate recreation of a cuneiform tablet from Nippur with no initial introduction to Babylonian numerals. Unknown to the students, the table contains some simple mathematics—a list of the first 13 integers and their squares. Their challenge is threefold: to deduce how the numerals represent values, to work out the mathematics on the tablet, and to decide how to write “72”. A small optional extension of the project asks students to compare the good and bad traits of several numeration systems.

Additionally, a webinar titled “Summer Tour of TRIUMPHS PSPs” introduces a subset of the TRIUMPHS PSP collection and gives enough description of each to help participants decide which they want to use during the 2019–2020 academic year. The session also contains some information about how to become an official TRIUMPHS site tester.

The webinar series continued in Fall 2019 with the following presentations: “The Closure Operation as the Foundation of Topology,” by Nick Scoville; “Euler’s Calculation of the Sum of the Reciprocals of the Squares,” by Ken Monks; “Greatest Common Divisor: Algorithm and Proof,” by Mary Flagg; and “Completing the Square: From the Roots of Algebra,” by Danny Otero. All recordings should be available on the website by the time the CSHPM *Bulletin* goes to press.

Janet Barnett, Danny Otero, and Dominic Klyve



Figure 3: Greg Lavers

CSHPM/SCHPM Executive Council Meeting

The meeting of the Executive Council of CSHPM/SCHPM took place at the University of British Columbia, Vancouver, BC, on June 3, 2019. The following members were present: Amy Ackerberg-Hastings, Patricia Allaire, Eisso Atzema, Craig Fraser, Greg Lavers, Duncan Melville, Mike Molinsky, Andrew Perry, Dirk Schlimm, and Maria Zack. Maria Zack, President, called the meeting to order at 12:30 pm.

The agenda for the meeting was approved, and minutes from the 2018 Executive Council Meeting were accepted as printed in the November 2018 *Bulletin*.

Treasurer’s Report: Greg Lavers presented a report for fiscal year 2018. The 2018 statements were published in the May 2019 *Bulletin*. Greg noted that we are catching up on some payments this year and that we had additional expenses in 2018 because we met separately from HSSFC Congress.

Secretary’s Report: Patricia Allaire presented comparative membership data for 2018 and 2019:

	2018	2019
Total Members	153	140
Members By Address or Organization		
Can	37	42
US	93	78

Other	23	19
BSHM	17	15
CSHPS	5	6
Complimentary	0	0
Members By Status		
Active	67	70
Retiree	49	43
Student	5	8
Developing Nations	5	3
Student Associate	3	1
Unknown	0	15
Members by Pay Method		
Online	110	101
Snail Mail	18	17
Reciprocal Members	22	21
Complimentary	3	1
New Members	16	13
Reciprocal Memberships		
To BSHM	54	44
To CSHPS	28	20
Journal Subscriptions		
<i>Historia</i> (paper)	53	46
<i>Historia</i> (electronic)	8	6
<i>Philosophia</i>	25	12
<i>SCIAMVS</i>	8	8
Proceedings		
Federation	1	1
Hardcover	11	8
Paperback	20	15
Electronic	11	7
Bulletin		
Paper	42	34
Donations		
No. Donors	16	16
Amount	\$843.00	\$873.50

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 BSHM is not known. 34 paper *Bulletins* were mailed, 28 to current members, 1 to the Federation, and 1 to the winner of the HOM SIGMAA essay contest. She also noted that there have been several additional payments since this report was prepared and that the total amount donated increased this year.

Bulletin Editor’s Report: Amy Ackerberg-Hastings apologized that the May 2019 issue appeared a bit behind the timetable to which members have be-

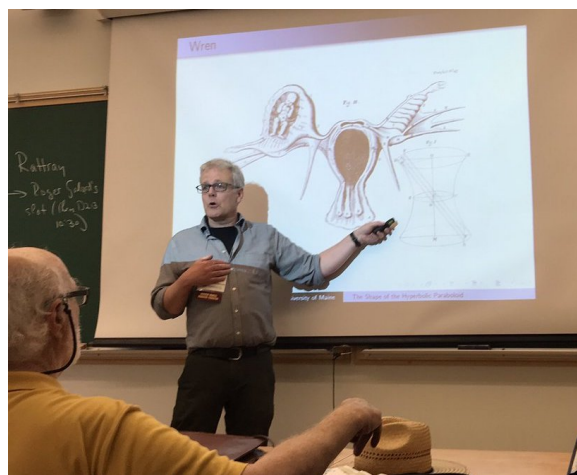


Figure 4: Eisso Atzema

come accustomed. She thanked the co-editors, Eisso Atzema and Maria Zack; the Secretary, Pat Allaire; the Webmaster, Mike Molinsky; and all of the 2018 contributors. She explained that each issue is available online only to members until the next issue is published, at which time the Webmaster moves it to the public Archives section of the website.

As always, the *Bulletin* also seeks submissions for upcoming issues. Members are asked to send reports on conferences attended, professional and personal news, announcements of events or publications of interest to historians and philosophers of mathematics, photographs, and the like to aackerbe@verizon.net at any time. Please also contact Amy if you are interested in contributing to our ongoing column series (Models of Mathematics, Off the Shelf, and Mathematical Ephemera) or want to volunteer for a book or web review or request that a book be reviewed. Submissions are closed each April 1 and October 1 to prepare the two issues of the year.

All three editors are willing to continue. However, given her increased responsibilities with *MAA Convergence*, Amy is interested in training a member over the next several months to take over the Content Editor position in 2020. Anyone considering assuming that role is invited to contact her for more information.

CSHPM Notes Editor’s Report: On behalf of co-editor Hardy Grant, Amy Ackerberg-Hastings reported that, despite staffing upheaval, they continue to have a good working relationship with the CMS staff liaison. The editors submitted CSHPM Notes

columns for all six issues in 2018. They were especially pleased to work with a graduate student author in 2018, as well as the co-winners of the 2017 Student Prize (published March/April 2019), and are continuing to recruit younger scholars and philosophers. Of the 30 columns completed to date, 23 are by historians and 7 came from philosophers. Amy and Hardy continue to have a policy that authors be members of CSHPM. Several authors have made commitments for upcoming columns, but since life intervenes relatively often, the editors are always looking for additional columns that could appear soon or further on. The editors are happy to discuss topic ideas and upcoming deadlines with interested members and are willing to continue editing the column.

Proceedings Editor's Report: Maria Zack reported that the 2018 *Proceedings* are in production at Springer. Our relationship with Birkhauser/Springer continues to be a productive one. The 2019 volume is the last one on our current contract. Maria will begin negotiations with them about the next contract later in the year. The 2019 *Proceedings* will have a September 15 deadline for papers.

CSHPM Student Award: Maria Zack reported that Aurélien Jarry won the 2018 contest for his paper, "L'équivalence duale de catégories: a third way of analogy?" Four excellent papers contended for the award. For 2019 there will be an award of CAD500 to the winner of the student paper contest and six grants of CAD250 each to partially reimburse expenses of graduate or undergraduate students who present papers at our annual meeting. Forms have been distributed to the students. Student participants will be encouraged to complete the forms and to return them to Greg while at Congress. Dirk suggested that we explore ways to advertise the travel stipends. Maria needs readers for the 2019 paper submissions.

Webmaster's Report: Mike Molinsky reported that while our society listservs have been hosted by the University of Maine at Farmington since 2007, he received a warning this spring that our listserv support will be ending at some point in the future (a specific date was not provided). The best free alternative appears to be Google Groups, which would actually be more flexible and provide more options than our current listservs. The easiest way to make the change would be to host both groups in Mike's "maine.edu" Google account. Because his account is

associated with a university, there should be no advertising in the listserv messages. Although the groups would be hosted in his account, people other than Mike could be given management authority, and the ownership of the groups could eventually be transferred to another Google account as needed. He set up a Council Google Group for testing purposes before the annual meeting. Assuming that no problems arise and that the Executive Council approves the use of Google Groups for our mailing lists, we can transfer the Announcement list over to a Google Group later in the summer.

Mike also noted that when he became the society's webmaster in 2005, he had extensive technical resources available to him through his job as well as a reasonably current knowledge of web programming; however, in the intervening years those resources have largely disappeared and his knowledge base has become significantly outdated. For these reasons, it is time to start searching for the next webmaster. Mike is not expecting to be replaced instantly, but ideally within the next year or so someone in the Society who is in a better technical position will be able to take over. If no Society members have the necessary resources, another alternative would be to hire a professional web hosting service, although that expense might be significant.

Archivist's Report: Eisso Atzema reported that he added a copy of the 2017 *Proceedings* to the Archives. There were no other additions or requests for information.

Phil Math Preprint Archive: Elaine Landry reported by email that the PhilMath-Archive section of PhilSci Archive continues to grow. Over the past year, more than 80 preprints were submitted. She said operations are smooth, with minimal moderation required. Of 5 papers for which moderations were considered, only two were rejected and only one required discussion.

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. Submissions to PhilMath-Archive, philsci-archive.pitt.edu/

philmath.html, should be made via PhilSci-Archive; instructions can be found here: philsciarchive.pitt.edu/help/.

SCIAMVS Journal: Maria presented the publication's 2018 annual report, submitted by Nathan Sidoli. It is printed elsewhere in this *Bulletin*.

CMS Liaison: No report was received from Maritza Branker.

Future Meetings: The 2020 meeting will be a joint meeting with BSHM at St Andrews in Scotland, July 6–8. BSHM will handle arrangements, and Maria and Dirk will be liaisons. It was noted that CSHPM needs to be sure that philosophers are included among the speakers. Locations for Congress and for the CMS Summer Meeting in 2021 are not yet determined.

Nominating Committee: A Nominating Committee will be formed for the 2020 election.

Other Business: A check for 300CAD was sent to the Canadian Undergraduate Mathematics Conference. This expense was approved by an email vote of the Council.

Greg suggested that we consider changing the title of the *Proceedings* volumes so as to downplay the “proceedings” aspect and make it more professionally valuable to the contributors. Craig circulated a discussion-document for a proposal for a special CSHPM session on primary historical sources in learning and teaching of the history of mathematics, and in learning and teaching mathematics itself. Given that the St Andrews meeting in 2020 will be organized in a different way, he suggested that we might consider this proposal for 2021 or beyond, or for an independent conference or workshop sometime. The meeting was adjourned at 1:40 pm.

Patricia Allaire, Secretary

Off the Shelf: *World of Mathematics*

The World of Mathematics, edited by James R. Newman. 4 vol. New York: Simon and Schuster, 1956, 2537 pp. Reprinted by George Allen & Unwin in 1960, by Pan Books in 1980, by Redmond Tempus in 1988, and by Dover in 2000, where each volume remains available for US\$19.95. Used book sellers on Amazon offer the original set for as little as US\$16.49, or one can read complete scans for free on archive.org.

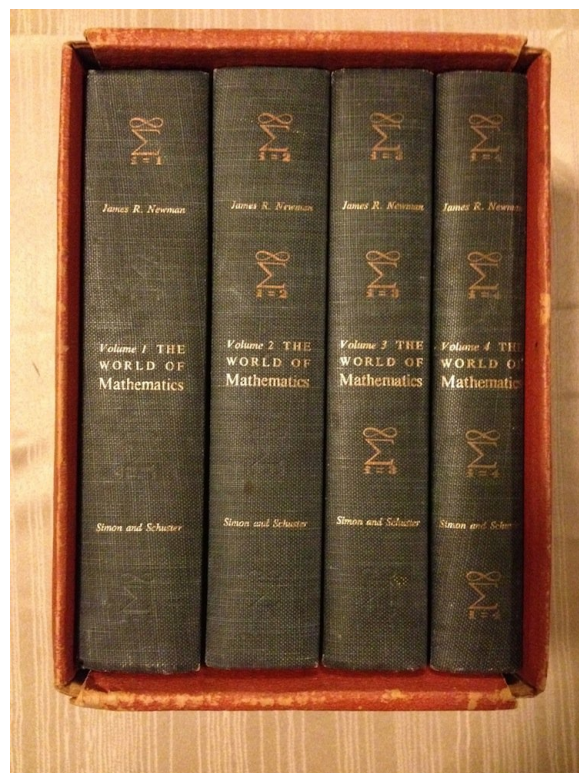


Figure 5: World of Mathematics

James Roy Newman (1907–1966) was a lawyer-turned-mathematician who identified and coined “googol” with Edward Kasner, worked in several capacities for the US government, and served on *Scientific American*’s editorial board. In 1940, he set out to compile “a small library of the literature of mathematics,” which he expected to take two years. The resulting *World of Mathematics* appeared more than 15 years later and contained 133 selections by and about mathematicians, divided into 26 categories. Some of the articles are taken from landmark primary sources, some are more obscure primary sources that explain landmark results for general readers, some are by historians who were prominent in the early 20th century, and some are essays aimed at popular audiences that are probably completely unknown in 2019.

My copy is a used boxed set of the first edition, presented by my doctoral committee after my dissertation defense in May 2000. Finishing my degree at Iowa State University while living in the Maryland suburbs was a draining experience, so despite being well aware of the set’s fame, I brought the gift home, placed it on a shelf, occasionally thought guiltily about it, and eventually decided to write a

column about it so that I would finally read it. I was immediately struck by the amount of labor that must have gone into locating the selections and the multiple epigraphs placed at the top of almost every article in the days of physical card catalogs. On the other hand, having this variety of information available in one place must have felt like a treat to readers, few of whom likely had access to academic libraries.

As a material object, the set looks like a mid-20th-century publication in aspects such as its design, layout, and typefaces. The box has a piece of paper glued around three sides that might have served as a dust jacket, had the text fit in one volume. The writing style is of its time; for instance, readers and the whole population of mathematicians are referred to as “he” and “men”. The only female creator of mathematics mentioned in the text is James Gregory’s mother, Joan. As one might expect, the portrait of mathematics that emerges from the content is Western-centric. The topics covered encompass both general, timeless subject areas such as “arithmetic, numbers, and the art of counting” and oddly narrow concerns that were possibly specific to the 1950s. For example, Polya’s *How to Solve It* got its own category, a mere eleven years after its publication. Other categories are multidisciplinary in ways that subsequently went out of fashion until resurging in the 21st century—“mathematics in literature”, “mathematics and music”, “mathematics in warfare”—or that would be surprising to hear mathematicians talk about today—“mathematics and social science”, “mathematics of the good”, “mathematics as a culture clue”.

Many familiar names run through the text, including Archimedes, Recorde, Kepler, Descartes, Newton, Berkeley, Gauss, Cayley, Sylvester, Ramanujan, Whitehead, and Russell in the “historical and biographical” section. Similarly, Newman reprinted accounts from well-known historical writers—such as Herbert Westren Turnbull, W. W. Rouse Ball, and E. T. Bell—and reproduced standard primary sources, including *The Sand Reckoner* and Euler’s paper on the seven bridges of Königsberg. On the other hand, George David Birkhoff’s essays on aesthetics and ethics and George Bernard Shaw’s rumination on gambling and insurance were among the primary sources whose existence surprised me. In addition to provoking thoughts about ebbs and flows in the relationship between mathematics and culture, Newman’s broad conception of mathematics pointed

up incongruities in current-day practice of history of mathematics. For example, mathematics historians frequently continue to explore the work on applications by the Bernoullis and their contemporaries that appears briefly in “mathematics and the physical world”, but later topics in that part of the set—namely, the discovery of Neptune and research on X-rays—are now left to historians of astronomy and of physics.

One specialty area that receives almost no attention from Newman is the history of mathematics education. Since he also showed little interest in Euclidean geometry except as a motivator of non-Euclidean geometries and of foundational studies, I found little in *World of Mathematics* that related to my own research interests. The closest connection might be a chapter on “calculating prodigies” that Newman reprinted from Rouse Ball’s *Mathematical Recreations and Essays*. One of the featured characters is Zerah Colburn (1804–1840), an American who apparently was not related to textbook author Warren Colburn but whose ability to multiply, divide, and factor large numbers emerged at age six. His father took him on the road to perform; it is possible that John Farrar was one of the Harvard professors who met him in the winter of 1810–1811. Colburn returned home as an adult to become a Methodist minister and to teach languages at Dartmouth, his father having spent all his earnings before he died in 1824. Rouse Ball was the last of several 19th-century authors to write about Colburn, although the lightning calculator has been covered in a number of blogs since Paul Collins resurrected his memory in a 2007 *New Scientist* article.

Despite the existence of works from the past quarter-century such as *Companion Encyclopedia of the History and Philosophy of the Mathematical Sciences* and *Landmark Writings in Western Mathematics*, both edited by Ivor Grattan-Guinness and prepared by large teams of contributors, it is difficult to imagine a publisher accepting a project like *World of Mathematics* today. Similarly, even though printed primary source readers are available for classroom use and large numbers of primary sources have been digitized by a variety of organizations, I am not aware of any attempts to post a collection of primary sources, secondary sources, and commentaries online. Indeed, my own experiences with teaching courses in which all readings were “open educational resources” and with trying to assemble comprehensive, repre-

sentative, and thoughtfully-excerpted sets of primary sources from the free/open-access areas of the internet suggest we remain pretty far from ideals in quantity and quality.

Thus, although some of the interpretations are incomplete or outdated and prospective readers should be cautioned to notice omissions in coverage, the set still has a role to play in a market where popular books on the history of mathematics tend either to be narrowly focused (David Foster Wallace's *Everything and More*; the various histories of zero or π) or to feature brief yet sweeping text alongside lavish illustrations (Clifford A. Pickover's *The Math Book*; *Mathematics: An Illustrated History of Numbers*, edited by Tom Jackson). *World of Mathematics* can yet be recommended to readers whose tastes run to longer essays and excerpts or to a broad range of topics and interdisciplinary explorations. One might also be inspired to task students with the intellectual exercise of listing the categories or selections they would include in a survey of mathematics. It has likely always been the case that most readers dipped into selections relevant to their current interests and questions rather than tackled all four volumes as a summer reading project. Even though it took me 19 years to get around to utilizing the gift, my major professor made a choice that will last a lifetime.

Amy Ackerberg-Hastings

Quotations in Context

“Algebra is but written geometry and geometry is
but figured algebra.”

The French author Hippolyte Stupuy (1830–1900) wrote a wide variety of works in the arts and philosophy over his career. In 1879 he published *Oeuvres Philosophiques de Sophie Germain*, which included Stupuy's new biography of Sophie Germain (1776–1831) and a selection of Germain's correspondence, including letters to and from Cauchy, Fourier, Gauss, Legendre, and Poisson.

The volume also included two other works by Germain. The first, *Considérations générales sur l'état des sciences et des lettres*, was initially published in 1833, a few years after her death. The work presented a comparison of the arts and humanities with the sciences and mathematics, arguing that the subjects had more in common than might be thought.

The final work included in the volume was a previ-

ously unpublished manuscript, *Pensées diverses*. As the name suggests, this manuscript contained a wide variety of thoughts on many different topics, including history, philosophy, science and mathematics. Germain talked about some broad subjects in very abstract terms, as well as offering specific comments on individuals such as Tycho Brahe, Euler, Galileo, Kepler, Newton, Lagrange and Laplace. Germain appears to have held an idealized view of some of these individuals; for example, on page 258, she described Isaac Newton as “modest,” a characterization very different from some modern depictions of Newton:

En parlant de Newton qui fut solitaire et modeste, qui ne chercha point à paraître, qui fit de grandes choses avec simplicité, il faut être simple comme lui, comme la nature qu'il a suivie. Cette simplicité qui le caractérise est la grandeur que son écrivain doit emprunter de lui.

While some of the topics are discussed in lengthy paragraphs over several pages, others are presented merely as a single short sentence. The topic quotation of this column is one of the latter, an isolated observation that appeared in the middle of page 264:

L'algèbre n'est qu'une géométrie écrite, la géométrie n'est qu'une algèbre figurée.

Mike Molinsky

Joint AMS/MAA Meetings in Denver

A number of events in history and philosophy of mathematics have been planned for the Joint Mathematics Meetings, to be held in Denver, Colorado, January 15–18, 2020. More information can be found on the MAA or AMS websites: www.maa.org or www.ams.org.

Wednesday, January 15

- 8:00–10:50: MAA Invited Paper Session on Creating Spaces for Mathematics, organized by Della Dumbaugh
- 9:00–10:20: MAA Workshop on Teaching Undergraduate Mathematics via Primary Source Projects, organized by Janet Barnett, Kathy

Clark, Dominic Klyve, Danny Otero, Nick Scoville, and Diana White.

- 18:00–19:55: HOM SIGMAA Reception, Business Meeting, and Guest Lecture, “The Historical Representation of Women in Mathematics,” by June Barrow-Green.

Thursday, January 16

- 8:00–11:40: AMS Special Session on Current Areas of Interest in the Mathematical Sciences of Medieval Islam, organized by Emelie A. Kenney, Mohammad Javaheri, and Mohammad K. Azarian.
- 9:00–9:50: MAA Invited Address, “Prospering Through Mathematics,” by Della Dumbaugh.

Friday, January 17

- 8:00–10:55: HOM SIGMAA Contributed Paper Session on A History of Mathematics in the United States and Canada: A Session in Honor of Math Historian David Zitarelli, organized by Amy Shell-Gellasch and Colin McKinney
- 13:00–18:00: AMS-MAA Special Session on History of Mathematics, I, organized by Jemma Lorenat, Sloan Despeaux, Daniel E. Otero, and Adrian Rice.
- 17:30–19:15: POM SIGMAA Reception, Business Meeting, and Guest Lecture, “Possible and Impossible Infinities,” by Michael Huemer.

Saturday, January 18

- 8:00–11:50: AMS-MAA Special Session on History of Mathematics, II.
- 8:00–11:55: POM SIGMAA Contributed Paper Session on Role of Explanation in Mathematical Proofs, organized by Jeff Beuchner, Sally Cockburn, and Kevin Iga.
- 13:00–18:00: AMS-MAA Special Session on History of Mathematics, III.

At press time, an MAA General Contributed Paper Session on the History or Philosophy of Mathematics, organized by Cathy Erbes, Holley Friedlander, and Steven McKay, was planned but not yet scheduled. A town hall with the AMS Executive Director, Catherine Roberts, about the future of JMM, will take place on Friday, 15:00–16:00.

Toke Knudsen

AGM of CSHPM/SCHPM

The Annual General Meeting of the Canadian Society for History and Philosophy of Mathematics took place at the University of British Columbia, Vancouver, BC, on June 3, 2019. The meeting was called to order at 12:30 pm by Maria Zack, President, with 21 members in attendance.

Agenda for the General Meeting

1. Approval of agenda
 2. Approval of minutes of 2018 AGM
 3. Treasurer’s report
 4. Secretary’s report
 5. *Bulletin* Editor’s report
 6. CSHPM Notes Editor’s report
 7. *Proceedings* Editor’s report
 8. CSHPM Student Award
 9. Webmaster’s report
 10. Archivist’s report
 11. Phil Math Preprint Archive report
 12. *SCIAMVS* report
 13. CMS Liaison report
 14. Future Meetings
 15. Nominating Committee
 16. Other business
 17. Thanks from the President
1. The agenda for the general meeting was approved.
 2. Minutes from the 2018 AGM were accepted as printed in the November 2018 *Bulletin*.
 3. Greg Lavers presented the reports described in the Executive Council meeting minutes. He noted that the Society still has a sizeable financial cushion. Craig Fraser asked if there might be worthwhile projects to which we could contribute from our surplus. Maria noted that we increased funding for the student prize and student travel subsidies.
 4. Patricia Allaire presented comparative membership data for 2018 and 2019. (Please refer to the CSHPM Executive Council Minutes in this issue of the *Bulletin* for the data.) Fernando Gouvêa asked about how the Society and our meetings are advertised.
 5. Amy Ackerberg-Hastings, on behalf of co-editors Eisso Atzema and Maria Zack, thanked all who had contributed to the *Bulletin*. She remarked that she has a book awaiting a reviewer and asked that anyone who has a book forthcoming advise her of that.
 6. Amy Ackerberg-Hastings, on behalf of co-editor

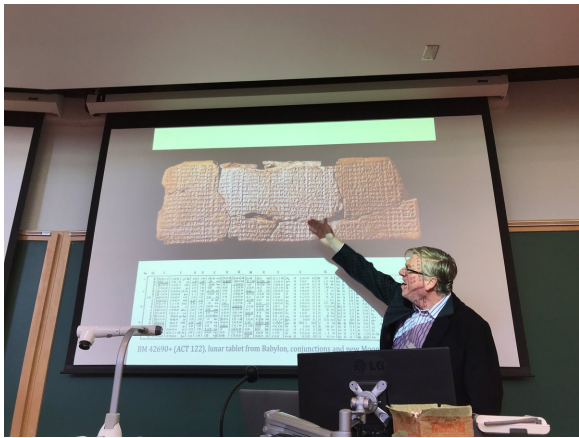


Figure 6: Alex Jones

Hardy Grant, noted that CSHPM has been contributing a column to *CMS Notes* for each issue. She and Hardy would like more contributions from graduate students and other young mathematicians and philosophers, and they aim for a 50-50 balance between history of mathematics and philosophy of mathematics. In response to a question from Inna Tokar, Amy replied that submissions should be about 1200 words, and the editors will take care of formatting. Submissions can be sent to either editor. Full information is on the CSHPM website.

7. Maria Zack reported that Greg suggested at the Executive Council meeting that we consider changing the title of the *Proceedings* volumes so as to downplay the “proceedings” aspect and make it more professionally valuable to the contributors. Maria will discuss this with Springer. She also announced that the deadline for submissions for the 2019 volume of *Proceedings* will be September 15.

8. Maria reported that four excellent papers were submitted last year. She needs readers for this year’s submissions. Dirk Schlimm suggested that we advertise the travel stipend more widely.

9. Mike Molinsky is moving the CSHPM Announcements listserv to Google Groups. He asked whether he should set it up so anyone can send messages to the list. Alex Jones recommended that the group be moderated to avoid arguments about matters of scholarship. Mike affirmed that the group will continue to be for announcements, not discussion. Bernd Buldt suggested that there should be two moderators. Mike is looking for someone to replace him as Webmaster. (See the Help Wanted requests for the Webmaster and



Figure 7: Molly Kao

the *Bulletin* Content Editor elsewhere in this issue.)

10. Eisso Atzema reported that he added a copy of the 2017 *Proceedings* to the Archives. There were no other additions or requests for information.

11. See the Executive Council Minutes for an update on the Phil Math Preprint Archive.

12. The 2018 annual report for *SCIAMVS* is printed elsewhere in this *Bulletin*. Alex Jones remarked that online indexing is needed. Fernando Gouvêa asked if the journal is on MathSciNet, and Dominic Klyve said that it is.

13. No report was received from the CMS Liaison. Duncan Melville inquired about our presence at the CMS Winter Meeting in December 2019. Amy said that Maritza Branker had some difficulty arranging for a CSHPM session last year.

14. The 2020 meeting will be a joint meeting with BSHM at St Andrews in Scotland, July 6–8. BSHM will handle arrangements, and Maria and Dirk will be liaisons. It was noted that CSHPM needs to work to see that philosophers are included among the speakers. Greg noted that there is a philosophy research group at St Andrews. There will be tours of special collections.

Locations for Congress and for CMS for 2021 are not yet determined.

15. Three people are required for a Nominating Committee for our elections in 2020. [Post-meeting, Dan



Figure 8: Brenda Davison

Curtin, Elaine Landry, and Chris Baltus agreed to serve on the committee.]

16. Maria stated that CSHPM made a donation of CAD300 to the Canadian Undergraduate Mathematics Conference.

17. Maria expressed thanks to the Council, editors, and conference organizers.

The meeting was adjourned at 1:20 pm.

Patricia Allaire, Secretary

***SCIAMVS* Annual Report**

The staff of *SCIAMVS: Sources and Commentaries in Exact Sciences* includes: **Chief Editor:** Nathan Sidoli; **Managing Editor:** Taro Mimura; **Editors:** Charles Burnett, Takao Hayashi, Takanori Kusuba, Nobuo Miura, Ken Saito, Takanori Suzuki, Ken'ichi Takahashi, Michio Yano; **Associate Editors:** Sonja Brentjes, Karine Chemla, Gregg De Young, Ryuji Hiraoka, Annick Horiuchi, Annette Imhausen, Alexander Jones, Michela Malpangotto, Clemency Montelle, Robert Morrison, Mohammad Muzaffari, Christine Proust, Jamil Ragep, Jacques Sesiano, and John Steele.

New Developments

The major development of 2018 has been the changes to the editorial board. Hideki Kawahara has retired, and we have been joined by Sonja Brentjes, Karine Chemla, Gregg De Young, Ryuji Hiraoka, Annette

Imhausen, Michela Malpangotto, Clemency Montelle, Robert Morrison, Mohammad Muzaffari, Christine Proust, and John Steele. These changes are announced in the editorial for the 2018 volume and will be effective and published on the website from January 2019.

Although we entered into an agreement of association with the Canadian Society for History and Philosophy of Mathematics (CSHPM) and the British Society for the History of Mathematics (BSHM), the new executive of the BSHM decided to withdraw from this. This is regrettable, but we have had success in attracting new subscriptions through our relationship with the CSHPM, which will be maintained. It would be useful if we could seek out other academic societies with which we can enter into similar agreements. (CSHPM collects *SCIAMVS* subscription fees from their members at the same time as their member fees, and we give their members a discount.)

Submissions and Papers

In 2018, we received only 4 new papers (down from 12 last year), but fortunately we still had a number of papers from last year in the production or review process. In volume 19 (2018), we published three papers submitted in 2017, and two submitted in 2018. This leaves us with two papers currently under review.

Subscriptions and Dissemination

In 2018, we had two new institutional subscriptions including all back issues (Canada and Germany). In the coming year, I will make another push to increase this, especially in areas whose libraries do not hold many copies of the journal: The Middle East, Africa, India, and Asia (excluding Japan). We have entered into a non-exclusive agreement with EBSCO Japan to disseminate the journal electronically to their client institutions. I hope that institutions abroad can also subscribe to the electronic version through this route. This agreement, however, does not prevent us from entering into other agreements, or from distributing the electronic version ourselves. For example, we have not given up on JSTOR, which declined to include the journal for technical reasons last year, but are making another approach. The databasing service Scopus, Elsevier, has decided to include volumes 12–18 (2011–2018), which have been transmitted to them but appear not yet to be included in the database. They assure me that once these volumes are input, they will consider including volumes 1–11 (2000–2010). The

application for Web of Science will take two more years, at the least, and since there seems to be no possibility of communicating with a human being on their side, it is unclear what is going on with this.

Issues and Concerns

We are still not financially self-sufficient through subscriptions alone. For the last couple of years, we have supplemented this by selling a few institutional subscriptions, including all back issues, but the numbers of such subscriptions that we sell each year has been going down. Hence, it is important that we increase the number of annual subscriptions, both institutional and individual. The agreement with the CSHPM has been fairly successful at generating new individual subscriptions. If we are able to enter into such agreements with other academic societies we can gain more exposure and more subscriptions. Our most reliable source of subscriptions, however, is still academic libraries, so it is important that we ask our colleagues to request such subscriptions at their home institutions.

Goals for 2019

We will continue to promote the journal among our colleagues and try to sell a few more institutional subscriptions, including all back issues, especially in geographical areas where there are few library holdings of the journal. We will continue to seek ways to increase our online and electronic exposure. If you know anyone who is doing critical editorial work on a source text in the pre-modern mathematical sciences, please encourage them to send it to *SCIAMVS*.

Nathan Sidoli

Sylvia M. Svitak (1939–2019)

Sylvia Svitak loved math and the history of math. She was a member of CSHPM long before I knew there was a CSHPM, attended almost every CSHPM Annual Meeting for close to 30 years, and served several terms on the Council. Sylvia had a great time at this year's meeting in Vancouver and was excited about an idea for further research that she picked up from one of the talks. She and I were to depart on a short cruise to Alaska the afternoon after CSHPM concluded. However, that morning (June 5), when I went to see if she was ready to check out of the UBC dorm, I found her unresponsive. She had died during the night.



Figure 9: Sylvia Svitak

Sylvia was born in Niagara Falls, NY, and earned a BS in chemistry at Niagara University. In the chem labs at Niagara, she met Joe, who would become her husband. After graduation, they moved to New York City, where Sylvia earned an MA in math from St John's University. She had developed a keen interest in psychology, but she said that she chose to do her graduate work in math because when she saw the power of mathematics informing the sciences, she wanted to know more about math so that she could know more about everything else. It would seem that the childhood accusation hurled at her of being "too curious" was in reality a flatteringly apt description.

Thirteen years later, while her three children were still very young, she began studies for a PhD at Adelphi University. It is said that her advisor Fred Pohle delayed his retirement for several years because, still "too curious," Sylvia repeatedly wanted to learn just a bit more, and do just a bit more research, and then write a bit more before submitting her dissertation. In 1987 she finally completed the 267 pages of "The Mathematical Foundations of Factor Analysis through a Study of the Primary Literature," which happily combined math, history and psychology, and Fred was at last able to plan his retirement!

While she was still engaged in this "bit more," Sylvia was hired at Queensborough Community College CUNY in September 1983. She was assigned to a vacant desk in my office, and on her first day, she introduced herself with her usual big smile; thus began a 36-year friendship. It was she who introduced me to Adelphi, which led to my long-postponed doctoral studies.

She became part of the Consortium for Foundation Mathematics and was a co-author of a series of textbooks designed to help students discover mathematical concepts through activities and applications. For Sylvia, proportional reasoning was the unifying concept in all the volumes of the series, from remedial arithmetic through intermediate algebra and trig.

Her interests were varied; she loved bowling in our senior league and was a grower and judge of gesneriads (the family to which African violets belong), as well as being a top-notch baker. When she retired from Queensborough in 2018, she was full of plans for continued research, travel, bowling lessons, an 80th birthday bash, more time with her children (Joseph, who also earned a PhD; Mary; and Ann) and her granddaughter (April), along with assorted projects of interest.

As she expressed it, “cleaning out my house” was at the top of her list of retirement projects, for Sylvia was a keeper. It was a standing joke among her friends that if you needed it, Sylvia had it somewhere in her house. Whatever one might seek, be it a chest of drawers for a student apartment, a vintage coat for a costume, an old typewriter for a theatre prop, a lap desk for a patient, Sylvia had it in her house and was more than happy to “lend” on the condition that it was never to be returned. She was still waiting for some theatre group to do Chekov so that she could find a home for the potbelly stove in her basement.

Sadly, she never got to see the Northern Lights, follow up on that research tip, get her bowling average above 140, have that birthday bash or clean out her house. But I like to think that when she departed, she was happy thinking about all those grand plans.

Patricia Allaire

New Members

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

John Bromback
[Address not provided]

Douglas Dailey
Front Royal, VA
USA

Connemara Doran
Potomac, MD

USA

Dominic Klyve
Central Washington University
Ellenberg, WA
USA

David Rattray
[Address not provided]

Caterina Vincentini
Slough
UK

From the Editor

As usual, the November issue is packed with reports from this year’s meeting in Vancouver and information about attending and participating in next year’s joint conference with BSHM And HOM SIGMAA. Thanks to Pat Allaire and Craig Fraser for the photos from our 2019 Annual Meeting. As many of you know, our gathering in Vancouver ended on a melancholic note with the loss of Sylvia Svitak. I will always appreciate the 24 years of laughs, “shop talk,” and advice I received from our friendship.

We realize that making the trip to St Andrews will be an investment in time and money, but we hope as many of you try to attend as possible. As the meeting minutes remind us, the Society offers \$250 grants to six students to defray their travel costs. The May 2019 issue pointed out that several of the Society’s volunteers have been serving for more than a decade. Two of those positions, Webmaster and *Bulletin* Content Editor, are currently available for someone new to take a turn at serving fellow members—although it is not necessary to stay quite as long! Both positions also in part offer the opportunity to help CSHPM become better known. For instance, the Facebook page that Mike Molinsky set up has nearly five times as many followers as we currently have members.

Our newsletter’s next submission deadline is 1 April 2020. The editors additionally seek news items of interest to historians and philosophers of mathematics and personal and professional announcements. We also welcome suggestions for memorials, reports on conferences relevant to historians and philosophers of mathematics, book and web reviews, and informative or thought-provoking column-style articles. Ongoing column series include Models of Mathematics (using unique or eye-catching clothing as an entrance point into a historical mathematician), Off the Shelf (re-

visiting 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).

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. We also prefer that image files be sent separately, rather than embedded into a Word or PDF document. Submissions may be sent to *aackerbe@verizon.net*. The *Bulletin* reaches your hands or screen due to the continued labors of Eisso Atzema, Layout Editor; Maria Zack, Production Editor; Pat Allaire, Secretary; and Mike Molinsky, Webmaster.

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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