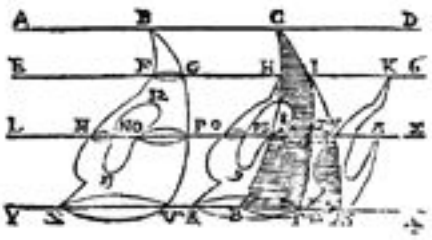
BULLETIN

CSHPM SCHPM



November/novembre 2015 Number/le numéro 57

WHAT'S INSIDE

Articles

Reports

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: **Elaine Landry**, UC Davis, Davis, CA 95616, USA, emlandry@ucdavis.edu
Vice-President: **Dirk Schlimm**, McGill University, Montréal, QC H3A 2T7, CA, dirk.schlimm@mcgill.ca
Secretary: **Patricia Allaire**, 14818 60th Ave., Flushing, NY 11355, USA, PatAllaire@gmail.com
Treasurer: **David Bellhouse**, University of Western Ontario, London, ON N6A 5B7, CA, bellhouse@stats.uwo.ca
Past President: **Glen Van Brummelen**, Quest University, Squamish, BC V8B 0N8, CA, gvb@questu.ca

Members of Council

Craig Fraser, University of Toronto, Toronto, ON M5S 2J7, CA, craig.fraser@utoronto.ca
Jean-Pierre Marquis, Université de Montréal, Montréal, QC H3C 3J7, CA, jean-pierre.marquis@umontreal.ca
Karen Hunger Parshall, University of Virginia, Charlottesville, VA 22904, USA, khp3k@eservices.virginia.edu
Joel Silverberg, Roger Williams University, Bristol, RI 02809, USA, joel.silverberg@alumni.brown.edu

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**, Point Loma Nazarene University, San Diego, CA 92106, USA, mzack@plnu.edu. The Society's Archives are managed by **Michael Molinsky** (see above). The position of CMS Liaison is vacant.

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

Figure 1: Aldo Antonelli

Announcements

Our condolences to President Elaine Landry, whose partner, Aldo Antonelli, passed away suddenly on October 11 while bicycling in Sacramento, CA. He, too, was a professor of philosophy at the University of California, Davis. The department described his work thusly:

"An expert in pure and applied logic, his research largely focused on issues in defeasible reasoning and non-monotonic logic. His more recent work in philosophy of logic was concerned with applications of generalized quantifier theory and abstraction principles to the foundations of arithmetic in the more general context of Fregean foundations, as well as making contributions to Frege scholarship."

Aldo and Elaine were also known for shaping the department through their intellectual emphases as well as by throwing delicious and collegial Italian dinners in their home. UC-Davis has established a fund to support graduate students working in logic and philosophy of logic. If you wish to contribute, please write checks to: UC Davis Foundation, marked "Aldo" and mail to: Chair, Department of Philosophy, One Shields Avenue, Davis, CA 95616, USA. The Executive Council has decided that CSHPM's 2016 Special Session will be dedicated to Aldo. Peace to his memory.

Peace to the memory of Beatriz Silva D'Ambrosio, daughter of Ubiratan and Maria José D'Ambrosio and mother of Rafaela and Gabriela, who died in September 2015. Bia was an accomplished professor who emphasized mathematics education and was active in ICMI. She was associated with the Universidade Estadual de Campinas, Universidade Estadual de Rio

Figure 2: Beatriz Silva D'Ambrosio

Claro, University of Delaware, University of Georgia, Indiana University Purdue University Indianapolis, and Miami University of Ohio. Her Miami colleagues wrote in remembrance: "Bia was an inspiration to many mathematics educators and students across the world. Beyond her incredible achievements as a scholar, Bia was remarkable for her humility, kindness, and boundless curiosity as a teacher and learner of mathematics and pedagogy. We have been exceptionally fortunate to have worked with Bia, and to call her our friend."

Congratulations to Janet Heine Barnett, 2015 recipieint of the MAA Rocky Mountain Section's Teaching Award. At the 2016 Joint Mathematics Meetings, Glen Van Brummelen will receive the MAA's Deborah and Franklin Tepper Haimo Award for distinguished college or university teaching of mathematics.

Congratulations to Sylvia Nickerson, winner of the 2014 CSHPM Student Prize. (See the meeting minutes in this issue.)

Pitzer College hosted a one-day History of Mathematics Conference on 24 October 2015 in honor of Judith Grabiner on the occasion of her retirement. Speakers included Joe Dauben, Jemma Lorenat, Karen Parshall, and Uta C. Merzbach. Best wishes to Judy on this next stage of her life and career!

John Dawson's *Why Prove It Again? Alternative Proofs in Mathematical Practice* was published in July by Birkhäuser. Birkhäuser has also published *L'Hôpital's Analyse des infiniments petits*, translated and edited by Rob Bradley, Sal Petrilli, and Ed Sandifer.

David Orenstein is a new executive member of Toronto's Riverdale Historical Society and will organize the Friday afternoon exursion when the Canadian Science and Technology Historical Association holds its biennial conference at York University on 6–8 November.

The *Seattle Times* reported on the $US1.5 million National Sciences Foundation grant awarded to Central Washington University, New Mexico State University, Colorado State University-Pueblo, University of Colorado Denver, Ursinus College in Pennsylvania, Xavier University in Ohio, and Florida State University to continue and add to the original sources modules started by David Pengelley at NMSU.[1]

Phil Math Preprint Archive Update: (See the 2015 Executive Council and AGM minutes.) PhilSci Archive has *generously* decided that they will provide the editorial manager services to us for *free*. Elaine Landry has agreed to do the filtering so that she can understand the task and then pass it along in a year or so (the task, from what she understands, amounts to filtering 1 paper a month which needs to be vetted as crank or not crank). She will email the cshpmannounce list once the Archive is online.

HOM SIGMAA News: HOM SIGMAA will sponsor two contributed paper sessions at the 2016 JMM in Seattle: "The Contributions of Minorities to Mathematics Throughout History," organized by Amy Shell-Gellasch and Lloyd Douglas; and "Incorporating the History of Mathematics into Developmental Math Courses," organized by Van Herd and Amy Shell-Gellasch. The guest lecture following the HOM SIGMAA reception on January 6 at the JMM will be given by Dr. James Evans, University of Puget Sound, on "The Antikythera Mechanism: A Masterpiece of Ancient Astronomy, Mechanics, and Mathematical Mod-

[1]For more information, see `http://www.seattletimes.com/education-lab/old-texts-inspire-new-thinking-about-teaching-math/`.

eling."

2014 winners of the HOM SIGMAA Student Paper Contest in the History of Mathematics included: First Place, Samuel Patterson (Missouri-Kansas City), "Bernard Bolzano, a Genius Unnoticed in his Time," and Briana Yankie (Lee), "Examining Disproved Mathematical Ideas through the Lens of Philosophy"; Second Place, Casey Taylor (Lee), "Development of Geometric Algebra," and Benjamin Buckner (Lee), "Abstraction and Rigor: The Development of the Concept of Area." The first-place papers appeared in *MAA Convergence*. This fall, HOM SIGMAA will hold elections for Chair and Electronic Resources Coordinator, both three-year terms on the executive committee.

BSHM News: MacTutor creators John O'Connor and Edmund Robertson received the London Mathematical Society's Hirst Prize. Edwin Reynolds (Oxford) won the 2014–2015 BSHM undergraduate essay prize for "To what extent were the contributions of Cauchy to the development of rigour in analysis influenced by those of Lagrange?" BSHM sponsored a plenary lecture at the LMS-EMS Mathematical Weekend in Birmingham, 18–20 September. The BSHM's AGM preceded Gresham College's celebration of the bicentenary of Ada Lovelace on 29 October. The Royal Society of Edinburgh hosted "A Celebration of Maxwell's Genius and Legacy" on 9 November. The Christmas meeting will be 5 December at the Birmingham and Midland Institute. Benjamin Wardhaugh is organizing a research symposium on Charles Hutton at Oxford on 17–18 December. On 9–10 April 2016, a tribute to Jackie Stedall will be held at Oxford. (See also the memorial in this issue of the *Bulletin*).

Della Dumbaugh and Joachim Schermer edited *Emil Artin and Beyond—Class Field Theory and* L*-Functions* as volume 9 in the Heritage of European Mathematics Series of the European Mathematical Society.

Papers and posters from Thematic Working Group 12, History in Mathematics Education, at the 9th Congress of European Research in Mathematics Education (4–8 February, Prague, Czech Republic) are available from `www.cerme9.org/products/wg12/`.

The Huntington Library held a conference on "Beyond the Copernican Revolution: New Narratives in Early Modern Science" on June 15.

The Fourth International Conference on the History of Mathematics Education was 23–26 September in Turin, Italy. See `e20.unito.it/ICHME4/`.

The Fall 2015 AMS Central Sectional Meeting, 2–4 October, included a special session on History of Mathematics organized by Steven Jordan. Speakers included: Amanda Steckly (with Marie Turano and Kathryn Pantell), Anne Leggett McDonald, Stephen M. Stigler, Yousuf Kerai (with Glen Van Brummelen and Taro Mimura), Glen Van Brummelen, Steven Hurder, Zalman Usiskin, Eli Maor, Ranjan Roy, Bruce Berndt, and Margaret Stawiska-Friedland (with Stanislaw Domoradzki).

Ken Clements delivered the Illinois State University College of Arts and Sciences Distinguished Lecture, "The Unlikely and Eclectic History of School Mathematics in North America," on October 13.

The 2015 Fields Medal Symposium, in honor of Stanislav Smirnov, was 19–22 October at the Fields Institute in Toronto. See `www.fields.utoronto.ca/programs/scientific/fieldsmedalsym/15-16/`.

Jim Tattersall and Shawn McMurran organized a special session on History and Philosophy of Mathematics for the Fall 2015 AMS Western Sectional Meeting at California State University-Fullerton on 25 October. Speakers included: Glen Van Brummelen, Elena Anne Corie Marchisotto, James T. Smith, Mits Kobayashi, Janet Beery, Judith Goodstein, Shirley Gray, Isabel Serrano (with Bogdan Suceava and Lucy Odom), Rebecca Lea Morris, Jesse Elliott, John Mumma, and Ambar Sengupta (with Sergio Albeverio).

The ORESME Reading Group will convene 16–17 October at Xavier University (Cincinnati) to read some of the work of Gottfried Leibniz on the calculus, partly in anticipation of marking the tercentenary of his 1716 death. Contact Danny Otero, *otero@xavier.edu*, or Dan Curtin, *curtin@nku.edu*.

PASHoM, the Philadelphia Area Seminar on the History of Mathematics, hosted the following speakers in fall 2015: Karen Parshall, "Axiomatization and the Emergence of American Research Agendas in Topology, 1900–1940," on 17 September; Robin Wilson, "A century of graph theory," on 5 October; John Bukowski, "Christian Huygens' later work on the hanging chain," on 19 November; and Tom Drucker, "Gödel, Turing and the movies," on 3 December.

Michel Serfati notes two interesting colloquia held in Brazil: Imbassaï, `gcfcf.com/br/pt/atividades/`, and Salvador, `gcfcf.com.br/pt/coloquios/` (philosophy of geometry, 5–9 October). He also 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), "Descartes et Schooten: vers les extensions algébriques des corps," on 18 November; Jim Ritter (Inst. Math. Jussieu), "Les mathématiques de l'Égypte ancienne," on 25 November; Jean-Pierre Kahane (Académie), "Regard sur Platon d'un matématicien non platonicien," on 9 December; Michel Serfati, "Symbolisme et invention en mathématiques. Le schéma de 'permanence - extension'," on 27 January; Axelle Hadjuk (École Estienne), "Écrire la mathématique," on 3 February; and Pierre Lochak (Inst. Math. Jussieu), "Quelques considérations historico-philosophiques sur la césure continu/discret," on 10 February.

The Forum for the History of the Mathematical Sciences (FoHoMS) again will hold a luncheon, sponsored by the Legacy of R. L. Moore Project, during the 2015 History of Science Society Annual Meeting in San Francisco, 19–22 November. History and philosophy of mathematics on the HSS program includes: a session on "Form and Formalism"; a session on "Back with a Flourish: Social and Epistemic Factors in the Postwar Renaissance of General Relativity"; a session on "The Materiality of Early Science"; a roundtable on "Writing Histories of Data"; the FoMoS session on "Re-periodizing the History of Mathematics"; and a session on "Historiography of Cultural Diversity in the History of Science". Individual talks of interest include: Raz Chen-Morris, "Refracting Llight, Projecting Shadows: the telescope and the transformation of Kepler's optics"; Aaron Wright, "Principles of Correspondence: What PAM Dirac's correspondence says about scientific communication"; Jason Rozumalski, "Mathematical qualities of boundary and the changing content and practice of English land law, 1520–1620"; Anja Sattelmacher, "Animated mathematics: Ludwig Muench's experimental cartoons"; Samuel Huneke, "Mathematics Education under the Nazis"; Clare Kim, "Sensing Theory and Crafting Proof: The History of a Twentieth-Century Mathematics Problem"; Andy Fiss, "Performing Trigonometry: Scientific Parody and Women's Mathematical Abilities in Late-Nineteenth-Century America"; Jemma Lorenat, "Jakob Steiner's Virtual Geometry"; Eunsoo Lee, "Euclid's *Elements* [as a diagrammatic notation system]"; Mathias Girel, "Peirce, Clifford, dispositions and scientific practice"; Gerardo Con Diaz, "The Math in the Machine: Spectrometry at Mobil Oil and the History of Software Patenting, 1961–1972"; Karine Chemla, "Comparisons in early historiographies of mathematics in ancient China"; and Ivahn Smadja, "History of mathematics between universalism and historicism: A historiographical approach to the crisis of the humanistic sciences in the twentieth century". See `hssonline.org/meetings/2015-hss-annual-meeting/`.

Elephant Delta 2015, the 10th Southern Hemisphere Conference on the Teaching and Learning of Undergraduate Mathematics and Statistics, 22–27 November in Port Elizabeth, South Africa, will feature a collaboration space for pitching projects in mathematics or statistics education for international collaborators. See `www.delta2015.co.za/`.

Tom Archibald has organized a special session on History and Philosophy of Mathematics for the CMS Winter Meeting in Montréal, 4–7 December. Speakers include: Tom Archibald, Mariya Boyko, Gwennaël Bricteux, Craig Fraser, Michael Hallett, Oran Magal, Jean-Pierre Marquis, Duncan Melville, Sylvia Nickerson, and Dirk Schlimm.

The Mathematics Institute and St Anne's College, Oxford, are organizing a one-day workshop for graduate students and early career researchers on "Texts and contexts: the cultural legacies of Ada Lovelace" on 8 December. The Institute is also hosting the Ada Lovelace 200 Symposium on 9–10 December for scholars in all disciplines. June Barrow-Green, Judy Grabiner, and Doron Swade are among the speakers on the program. See `blogs.bodleian.ox.ac.uk/adalovelace/symposium/`.

Royal Museums Greenwich and the Royal Institute of Navigation are holding a joint conference, "From Sea to Sky: the Evolution of Air Navigation from the Ocean and Beyond," 9–10 June 2016. Abstracts are due 6 November. See `www.rmg.co.uk/researchers/conferences-and-seminars/sea-to-sky`.

Leibniz's hometowns of Leipzig and Hannover are commemorating his tercentenary with a summer school for graduate students and postdocs, 7–16 July 2016. Applications for lodging, food, and some travel expenses are due 1 January. The week after the summer school, the big 10th International Leibniz-Kongress will be held in Hannover. See `www.leibniz2016.de/summerschool.html`.

The theme for HPM 2016, the meeting of the International Study Group on the Relations between History and Pedagogy of Mathematics, is "Mathematics in the

Mediterranean." This is a satellite meeting of ICME-13 that will be held 18–22 July in Montpellier, France. The program includes plenary lectures, panels, discussion groups, workshops, sessions for research reports, a poster session, and exhibitions of books and other didactical material. Abstracts were due by 31 October, with full papers due no later than 31 January 2016. To register or learn more about the conference, see hpm2016.sciencesconf.org/.

The submission deadline for Topic Study Group papers and posters at ICME-13 was extended to 15 October. The meeting will be 24–31 July 2016 in Hamburg, Germany. See icme13.org/home.

The International History, Philosophy, and Science Teaching Group will have its first regional conference 22–25 August 2016 in Flensburg, Germany, on "Science as Culture in the European Context: Historical, Philosophical, and Educational Perspectives." Abstracts are due 8 January. See ihpst.net/ and click on "Conferences".

The 7th International Conference of the European Society for the History of Science (ESHS) will be 22–24 September 2016 in Prague. The theme is "Science and power, Science as power." See www.7eshs2016.cz/.

Eisso Atzema reports that the first known printed copy of the *Specilla Circularia*, a 1656 minor work by Johannes Hudde on spherical lenses, was recently discovered bound with another work on optics. Christie's in London will auction the whole volume on December 1. Eisso co-published an edition of the two manuscript versions that were previously known.

The Mathematical Institute at Oxford has undertaken a series of posters on figures from Oxford's 800-year mathematical history, starting with G. H. Hardy and John Wallis. See www.maths.ox.ac.uk/about-us/history.

The application period for research travel grants and visiting research fellowships at the Bakken Library and Museum in Minneapolis starts in fall 2015, with a due date likely in March 2016. See www.thebakken.org/research/fellowships-and-grants.

For information on the student research intern program at Royal Museums Greenwich, which also has a spring deadline, see www.rmg.co.uk/researchers/fellowships-and-internships/intern-programme.

Small (up to £500) grants from the Scientific Instrument Society are due 1 March and 1 September. See www.sis.org.uk/grants/what-we-support.

The International Union of the History and Philosophy of Science and Technology invites submissions for the fourth Division of History of Science and Technology Prize for Young Scholars, to be presented in 2017. The award is given every four years to up to five young historians for outstanding doctoral dissertations completed within the previous four years. Recipients will also receive assistance with registration, travel, and accommodation expenses for the IUHPST Congress in Rio de Janeiro in August 2017. See hpdst.gr/youngscholarsprize. The Congress website is www.ichst2017.sbhc.org.br. Also, IUHPST's Commission on Women and Gender Studies in History of Science, Technology, and Medicine held a conference in Prague in June 2015. The group hopes to support a special session at the 2016 ESHS meeting (see above).

The editors of *Early Modern Women: An Interdisciplinary Journal* solicit abstracts of 300 words on women and science for the Forum section of volume 11, issue 1, to be published in October 2016. Email abstracts to *mlindemann@miami.edu* or *msuzuki@miami.edu*. Completed essays of 3,000–3,500 words are due 15 January 2016.

The editors of *Studies in History and Philosophy of Science* remind researchers that they are keen to receive excellent scholarship in history of science in its many forms, including work on the historiography of the sciences and the sciences in relation to gender, culture, society, and the arts. Elsevier also publishes journals on the history and philosophy of the modern physical sciences and the biological sciences. See www.journals.elsevier.com/studies-in-history-and-philosophy-of-science-part-a/.

The editors of the *International Journal for Studies in Mathematics Education* invite submissions in English and French, as well as in Portuguese or Spanish. See pgsskroton.com.br/seer//index.php/JIEEM.

The editors of the *Science Museum Group Journal* announce the open access publication of issue 4, including an article by Jim Bennett, and invite contributions for issues 5 and beyond. In 2016, the journal will launch an annual prize of £500 for excellence in academic writing. See journal.sciencemuseum.ac.uk/.

Unemployed postdocs may apply on an ongoing basis for free access to ScienceDirect via Elsevier and may apply for an extension, should they not find a position within six months. See Elsevier.com/

postdocfreeaccess.

Students in the Department of Mathematics at University College London are creating *Chalkdust*, chalkdustmagazine.com, a mathematics magazine that offers fun articles for coffee breaks, fiendishly hard puzzles, and relationship advice from dead mathematicians. Issue 2 contained a biography of John Nash, an interview with 2014 Fields Medalist Artur Avila, and a history column.

The Caribou Mathematics Contests for grade 3–12 students, which include a history component, have resumed for the 2015–2016 school year. See cariboutests.com.

Bryan Purcell has published a series of instructional books for the slide rule called "the Inquisitive Pioneer" that are highly recommended by members of the Oughtred Society. The manuals are available on Amazon.

Alberta to Host 3-Societies Meeting

This summer we had, in effect, a triple society meeting of Canadian, British and American historians and philosophers of mathematics in Washington, DC. Similarly, next June, historians of science from the three countries will be meeting in Edmonton at the University of Alberta. The three societies are the Canadian Society for the History and Philosophy of Science (CSHPS), the British Society for the History of Science (BSHS) and the History of Science Society (HSS).

I'm on the programme committee as a representative of CSHPS and am particularly interested in encouraging contributions from the mathematical side of the field and Canadian participation. The location should make it fairly convenient for those living in the western provinces or states.

For a more personal ambition, I hope to organise a session based on my research project of early Canadian international scientific congresses. It would be a comparative look at the various "Associations for the Advancement of Science".

I fondly remember the 1992 3-Societies meeting at the University of Toronto. These memories are regularly evoked when viewing the books I acquired at the silent auction, many from Stillman Drake's personal library. One is a heavily annotated copy of the paperback version of his 1957 *Discoveries and Opinions of Galileo*.

I'm looking forward to another opportunity for an excellent cross-fertilization of ideas and hope you can join in. The call for papers is as follows:

The eighth joint meeting of the British Society for the History of Science, the Canadian Society for the History and Philosophy of Science, and the History of Science Society will take place in Edmonton, Alberta, Canada, 22–25 June 2016. Previous successful meetings were in Philadelphia (2012), Oxford (2008), Halifax, Nova Scotia (2004), St Louis (2000), Edinburgh (1996), Toronto (1992), and Manchester (1988).

The theme of the meeting will be "Transitions." Although presenters are not confined to this theme, the Program Committee is seeking papers or sessions that reflect this theme and encourages participants to consider the broader scientific, scholarly and social implications associated with moments of scientific transition. Transitions might include such ideas as moving from one scientific meme to another, one locality to another or generational change.

The programme will include themed sessions, plenary lectures and panels. A typical presentation will be 20 minutes plus 10 minutes for questions, but special sessions such as round tables and panels will be accommodated.

The Programme Committee welcomes proposals for sessions or individual papers based around the conference theme from researchers at all stages of their careers. Participation is in no way limited to members of the three organising societies, but there will be a discount for members. Intending participants should also note that the usual HSS rules concerning presenting at successive conferences do not apply to this meeting.

The deadline for submitting a session or paper proposal is 4 December 2015. Full details of how to submit your session or abstract can be found at http://www.uab.ca/3societies.

David Orenstein

ICHME-4 in Turin

The Fourth International Conference on the History of Mathematics Education convened in Turin, Italy, on 23 September 2015. Some fifty delegates, mainly from Europe but also several from North and South America and as far away as New Zealand, gathered to discuss and debate the history of mathematics education.

The opening ceremonies took place in the Sala dei Mappamundi of the Accademia delle Scienze di Torino. The scene was auspicious for historians of mathematics —Lagrange had been one of the founding members of the Accademia. Gert Schubring opened the academic portion of the conference with a wide-ranging survey of mathematics teaching in the process of decolonization.

For the next three days, the conference venue was the Aula Magna dell'Università – Rettorato. Nearly all the papers focused on the period 1800–1950. Two exceptions were Veronica Gavagna's examination of Niccolò Tartaglia and his *General Trattato di numeri* and Luis Puig's introduction to Marco Aurel, a German who taught basic and commercial arithmetic in Valencia in the 16th century and authored the first Spanish textbook on algebra.

Several recurring themes pervaded the conference: (a) history of mathematics textbooks, (b) history of periodicals intended for mathematics teachers, (c) historical analysis of regional and national policies on mathematics instruction, and (d) historical episodes involving specific initiatives to introduce new mathematical curricula in various countries.

Guillaume Moussard gave an overview of the changing place of problems in nineteenth century French geometry textbooks, as well as the appearance of books of problems. Where are the problems placed in the textbook? What is their importance relative to the text? How are the problems sections organized? The changing role of textbooks in education is mirrored in the changing treatment of problems and mathematical exercises. Liliane Alfonsi analyzed prefaces to several 18th-century French textbooks, describing the changing emphasis from the why to the how of mathematics teaching. Following a similar theme, Andreas Christiansen discussed the function of the preface of a Norwegian arithmetic textbook.

Continuing the theme of textbooks, Miguel Picado analyzed the role of teacher training textbooks in introducing the metric system into Spain. Gregg De Young presented an overview of geometry textbooks in Farsi printed in Iran during the 19th century, focusing on the process of adapting modern mathematical ideas to traditional forms of presentation. Evelyne Barbin discussed the importance of Theordor Reye's textbook, *Geometrie der Lage*. Johan Prytz reported on his ongoing project to create a database of mathematics textbooks in Sweden over the past 200 years. Taking a more contemporary approach, Susan Monaghan focused on the politics of school textbook adoptions in Milwaukee during the last half of the 20th century, while Leo Rogers discussed the influence of mathematics education research on textbook production in Britain in the third quarter of the 20th century.

Hélène Gispert presented an overview of methodological issues that have arisen while constructing a database of journals for mathematics teachers, an effort intended to break the traditional focus on learned elites in mathematics and their production and to focus on the circulation of mathematical knowledge. More geographically-focused papers on aspects of mathematics in the periodical press were presented by Fulvia Furinghetti (Mathematics teaching journals in Italy), Jenneke Krüger (Mathematics Teacher Periodicals in the Netherlands), Chiara Pizzarelli (Mathematics in school periodicals in the Piedmont region), Antonio Oller (The problem section of *El Progresso Matemático*), and Flávia Soares (Mathematics in Rio de Janeiro periodicals).

Papers were presented on a wide variety of national themes. These ranged from Alexander Karp's analysis of the impact of the Russian National Subcommittee of the ICMI on Russian mathematics education to Erica Luciano's paper, "Mathematics and Race in Turin"; from Olivier Bruneau's overview, "Maths at Metz around 1800" to Eliana Manuel Pinho's description of the importance of Olivier string models for teaching descriptive geometry. The entire program can be viewed on the conference website: `e20.unito.it/ICHME4/`.

On Friday afternoon, the conference delegates were invited to tour a special exhibition on mathematics instruction at the Museo della Scuola e del Libro per l'Infanzia. Although some old mathematics textbooks were on display, the opportunity to see less academic material such as the cartoon series by Antonio Rubino, "Corriere dei Piccoli" and "Numeretta", as well as other forms of mathematical entertainments for children of a century ago, formed one of the highlights of the conference. Also on display were a selection of mathematical games and teaching devices for instilling mathematical concepts in students of yesteryear.

Following this visit, delegates could choose to visit either the Museo Egizio, reputed to be the second best collection of Egyptian artifacts in the world (after Cairo's Egyptian Museum), or the Museo del Cinema.

Although the Egyptian artifacts contain little explicitly connected to formal mathematics, one can find mathematical traces here and there, such as the papyrus plan of the tomb of Ramses IV, which includes measurements of various architectural features. Perhaps more endearing is the folding cubit measure from the grave goods of Kha, architect of the royal tombs. Pharaoh Amenhotep II rewarded Kha for his excellent work in constructing his tomb, giving him a cubit rule covered in gold leaf. Both cubit rules clearly reveal the relations between the metrical units—the cubit, the palm, the digit.

The next conference is planned for 2017 in the Netherlands.

Gregg De Young

Anellis Tombstone

A tombstone is being erected for Irving Anellis, a contributor in decades past to the proceedings of the Society. He is buried in Hillcrest Memorial Gardens, 1901 County Road 25-A, Leesburg, Florida 34748. The plate on the stone reads,

Irving Henry Anellis
31 October 1946–15 July 2013
Logician, Scholar, Friend

The last line refers to his many contributions to the history of logic and mathematics, especially to the connections between Russell, Frege, and Peirce, as well as the development of logic in Russia and the Soviet Union. The work to get the tombstone erected was spearheaded by Nathan Houser, Emeritus Professor of Philosophy and Senior Fellow in the Institute for American Thought at Indiana University–Purdue University Indianapolis. Those wishing to help defray the cost of the memorial are welcome to send a check to Dr. Houser at 1010 Navajo Trail S. Drive, Indianapolis, Indiana 46260-3557. Any contributions in excess of the cost of the tombstone will be passed along to the Institute for American Thought at IUPUI, to which Dr. Anellis left his library and papers.

Tom Drucker

AMS, EMS, SPM at Porto

The first Joint International Meeting of the American Mathematical Society, the European Mathematical Society (EMS), and the Sociedade Portuguesa de Matemática was held at the University of Porto in Porto, Portugal, June 10–13, 2015. Porto, birthplace of Henry the Navigator, is Portugal's second largest city, a UNESCO world heritage site, and the 2014 winner of the "Best Destination in Europe" Traveler's Choice award. A special session on the history and philosophy of mathematics was co-organized by Luís Saraiva (Universidade de Lisboa), June Barrow-Green (The Open University), Robin Wilson (London School of Economics), and Jim Tattersall (Providence College).

The special session met on three consecutive mornings. On the first day João Dominigues, Universidade do Minho, spoke on Cunha's calculus in its times; Fernando Figueiredo, Universidade de Coimbra, spoke on The enlightened Jesuit: Monteiro da Rocha (1734–1819) and the reformation of the University of Coimbra (1772); Helder Pinto, Center for Research & Development in Mathematics and Applications at Aveiro, spoke on the reasons behind the request of the mathematician Gomes Teixeira to be transferred to the Polytechnic Academy of Porto; Ana Martins, Centro Interuniversitário de História das Ciências e da Tecnologia, Universidade de Lisboa, spoke on Portuguese life assurance companies in the 19th century; Eliana Pinho, Faculdade de Arquitectura da Universidade do Porto, spoke on the teaching of descriptive geometry in Porto in the 19th century; and Luís Saraiva spoke on the participation of Portuguese mathematicians in the first Iberian Congress for the Progress of Science (1921–1923).

On the second day, Monica Blanco, Universitat Politècnica de Catalunya, spoke on Edmund Stone and the study of mathematical instruments, and in particular the use of the English sector in trigonometry; Maria Zack, Point Loma Nazarene University, spoke on Lisbon, London and the mathematics of materials; Rui Santos, Escola Superior de Tecnologia e Gestão, spoke on continuous probabilities, random points, Bernoulli's theorems, and geometric probability applications; Catarina Moto, Universidade do Minho, spoke on the concept of tangent line in the scientific work of Francisco Gomes; John Stillwell, University of San Francisco, spoke on historical exam-

ples of "Reverse Mathematics"; and Hardy Grant, York University, spoke on "Epistemic Cultures" and the history of mathematics.

On the final day of the session, Robin Wilson spoke on a century of graph theory; June Barrow-Green spoke on Olaus Henrici and his mathematical models; Jeremy Gray, The Open University, spoke on the Plateau problem, from Riemann and Schwarz to the first Fields Medal; Adrian Rice, Randolph-Macon College, spoke on the third man in the Hardy-Ramanujan collaboration; and Jim Tattersall spoke on Mary Cartwright and G.H. Hardy's Oxford seminars.

The meeting featured several invited addresses and an opening reception. The conference banquet was held at the Herança Magna, on the south bank of the Duoro River. The dinner featured local cuisine and an evening of cultural entertainment. One of the other highlights of the conference was an evening public lecture by Marcus du Sautoy, followed by a concert at the Casa da Musica.

Jim Tattersall

2016 Kenneth O. May Lecture: Jamie Tappenden

Professor Jamie Tappenden of the University of Michigan will be the May Lecturer at the 2016 annual meeting of the Canadian Society for History and Philosophy of Mathematics, which will be part of the HSSFC Congress at the University of Calgary, 29–31 May 2016. CSHPM members should receive registration information via email from the Federation in early 2016. The university will be celebrating its 50th birthday. The May Lecture is named after Kenneth O. May, one of the founders of the history of mathematics community in North America.

Professor Tappenden was an undergraduate at the University of Toronto and received his doctorate from Princeton University under the supervision of Saul Kripke. He held a Social Sciences and Humanities Research Council of Canada (SSHRC) Graduate Fellowship for the first half of his graduate career. After teaching at the University of Pittsburgh, University of California at Berkeley, and Harvard University, he joined the faculty of the University of Michigan in 1997. He was a visiting lecturer at Oslo University in 2009 and a visiting professor at the University of Paris VII – Denis Diderot in 2010. His research interests are in the historically informed philosophy of mathematics, with special attention to shared themes in Riemann's complex analysis/algebraic geometry and the mathematical foundations developed by Frege and Dedekind.

Figure 3: Jamie Tappenden

Members who are not yet familiar with Tappenden's work can get a preview during the plenary lectures at the upcoming Winter Meeting of the Canadian Mathematical Society, 4–7 December, in Montréal. His book, *Philosophy and the Origins of Contemporary Mathematics: Frege and his Mathematical Context*, is forthcoming. With Bill Seager and Achille Varzi, he co-edited supplementary volume 34 of the *Canadian Journal of Philosophy*, including his paper, "A Primer on Ernst Abbe for Frege Readers." He has also contributed to *A Companion to Frege's Grundgesetze* ("Infinitesimals, Magnitudes and Definition in Frege"), *The Oxford Handbook of Analytic Philosophy* ("The mathematical and logical background to analytic philosophy"); *The Architecture of Modern Mathematics: Essays in History and Philosophy* ("The Riemannian Background to Frege's Philosophy"); and *The Philosophy of Mathematical Practice* ("Mathematical Concepts and Definitions" and "Mathematical Concepts: Fruitfulness and Naturalness"). We look forward to welcoming him to the Special Session, "Logic and Mathematics in the 19th and 20th Centuries," in Calgary.

History of Mathematics in Japan

Traditional Japanese mathematics is called *wasan* (*wa* = Japanese, *san* = calculation). This word was first used after the Meiji Restoration (1868) when European mathematics, called *yosan* (*yo* = overseas), was introduced into Japan. Before that time, there were many mathematicians, called *wasan-ka* (*ka* = scholar), in Japan. Early Japanese historians of mathematics were discussed by Sasaki Chikara, "Japan," in *Writing the History of Mathematics: Its Historical Development*, ed. Joseph W. Dauben and Christoph J. Scriba (Basel: Birkhäuser, 2002). Here, I provide an overview of contemporary Japanese studies in the history of mathematics. A future note will discuss the role of television in the discipline.

1. Society

We have one society for the history of mathematics, founded in 1962 and called *Nihon Sugakushi Gakkai* (*Nihon* = Japan, *Sugakushi* = history of mathematics, *Gakkai* = society). There are over one hundred members. The society meets twice a year, in Tokyo and Osaka. Fewer than ten papers are usually read at each meeting. We also hold public lectures in order to publicize *wasan*. Sometimes we make an excursion to historically significant places related to *wasan*, which are tombs of famous *wasan-ka* or temples or shrines where we can see the *Sangaku* (mathematical boards hung at the entrance of temples or shrines). Many pictures of *Sangaku* are found on the website of Hitoshi KODERA, `www.wasan.jp`.

The society publishes a journal, *Sugakushi Kenkyu* (*Kenkyu* = study), four times a year, with 64 pages in each issue. It follows a journal called *Wasan Kenkyu*, which began in 1959 in mimeographed form. Almost all articles written in Japanese deal with the *wasan*, with some explaining the contexts of texts in modern notation. Journal issues also contain book reviews and information on academic meetings.

There are some societies related to the history of mathematics, such as the History of Science Society in Japan and the Japan Society of History of Mathematics Education. Also, there are other *wasan* institutes. First, Wasan Institute, `i-wasan.jp`, organizes some public lectures and has published the journal, *The Bulletin of Wasan Institute*, annually since 2000. The *Bulletin* contains some papers on the *wasan* in Japanese and some reprints of original *wasan* texts. The institute also publishes some *wasan* texts, including the *Jinkoki* (1627, with English translation), the most popular *wasan* text. Second, Yokkaichi University, a private university near Nagoya, has the SEKI KOWA Institute of Mathematics, `www.seki-kowa.org`. The head of the institute is Prof. Kenji UENO, and Prof. Tsukane OGAWA, one of the specialists on the study of Takakazu SEKI (1642–1708), is very active there. They organize public lectures, some on the history of mathematics, and support mathematics education.

2. Scholarly Meetings

We have other academic meetings on the history of mathematics. First, the meeting called *Sugakushi no kenkyu* (*no* = of/on) is funded by the Research Institute for Mathematical Sciences (RIMS) at Kyoto University, `www.kurims.kyoto-u.ac.jp/en/index.html`. Usually, we have this meeting once a year in summer, and over thirty scholars attend and read papers. Sometimes, overseas scholars, such as Roshdi Rashed from CNRS, join us. Some talks have been published on the RIMS website. In 2014, I organized this meeting and invited a famous Japanese historian of Cartography, Prof. Hiroshi KAWAMURA, to talk about his discovery of an important map made in the *Edo* period by a well-known mathematician, Takahiro TAKEBE, a disciple of SEKI.

Another annual meeting, on the history of modern European mathematics, is held at Tsudajuku University in Tokyo. The meeting publishes annual proceedings; most papers are in Japanese. Also, there are study groups, mainly local groups interested in *wasan*. Some publish newsletters or journals. Other study groups are privately organized. One example is the group of ten scholars brought together monthly in Kyoto by the famous mathematician Kenji UENO. Ueno's group is interested in comparative studies of mathematics between East and West. One of their recent products is the comparative study of Clavius' *Epitome arithmeticae* and its Chinese translation.

3. Books

The *wasan* has recently gained popularity in Japan for education. Many secondary teachers use *wasan* texts, especially the problems on the *Sangaku*. Therefore, many books on the *wasan* have been written in Japanese, and we can buy some of them at general bookstores. There are two famous historians of the *wasan*, both named Ken'ich SATO, although they use different Chinese written characters. The more promi-

nent Sato has published more than forty books on *wasan* and has been president of the History of Mathematics Society in Japan for a long time.

Besides popular books, we have scholarly work on the history of mathematics. A third Ken'ich SATO, a young, eminent professor of the Tokyo Electric University, studies the *wasan* and has discovered many unedited materials. One of his books focuses uniquely on the relationship between the *wasan* and Confucianism in the *Edo* period.

Chikara SASAKI, a professor of Beijing Institute and formerly of Tokyo University, is well-known for his study of Descartes' mathematics, including a 2003 volume in the Boston Studies in the Philosophy of Science series. A prolific scholar, his *History of Mathematics* (Tokyo: Iwanami, 2001, in Japanese) covers the entire world in 919 pages with 1,000 references. He is currently working on a history of Japanese mathematical thought.

Sasaki also edited the five-volume *Collected Works of Yoitsu KONDO*, a late historian of scientific thought in 17th-century Europe. Kondo studied the original texts of Torricelli, Galileo, and the like, and his research continues to provide insights. However, he never wrote in English, so unfortunately his name has not become familiar to the scholarly world outside Japan. That he is influential here is shown by the fact that his collected works went into a second edition.

Sasaki and Mr. MAKURASAKI are now editing the collected works of Yoshio MIKAMI, a famous historian of Japanese mathematics. Anglophones might still read his books, *The Development of Mathematics in China and Japan* (1913) and *A History of Japanese Mathematics* (with David Eugene Smith, 1914). Mikami wrote many papers on the history of the *wasan* that were published in local journals or newspapers which are now very difficult to get, so the edition of collected works is very welcome.

Another famous historian of modern mathematics is Hiroshi TAKASE, a professor of mathematics in Kyushu University. He has translated into Japanese many original texts from Gauss, Riemann, Legendre, Euler, and others. These are very exact translations, so very useful for scholars. I do not know of any other scholar who has translated so many mathematical texts of modern times. Takase is also famous for his research into modern mathematics, including books on Euler and Gauss, and his books on the important Japanese mathematicians, Kiyoshi OKA and Teiji TAKAGI. His many books on Takagi are especially valuable. Takase calls himself "a mathematical field worker," so he has interviewed many modern Japanese mathematicians to collect memories of Oka and visited many birthplaces of famous mathematicians. This makes his works very original and interesting to the public. However, it is difficult to translate his writing into foreign languages, because his style is like that of a poet. He has so many ardent readers in Japan that many large bookstores have specific corners just for his works.

Many years ago, the late Kokichi HARA treated the history of calculus from Kepler to Leibniz in a book of collected papers. This volume is now reborn as a handy paperback edition with my commentary, à la the *Reclam* series in Germany or an Oxford *Very Short Introduction*. The contents are very condensed, like Whiteside's famous paper, "Patterns," in the *Archives for the History of Exact Sciences*. I think this is one of the best surveys of European mathematics in the 17th century.

Japanese historians of mathematics are now translating all the works of Euclid (including music, astronomy, and the science of weight) from the original Greek and from Arabic and Latin commentary texts. Two of the projected five volumes have been published so far by the University of Tokyo Press. One of the main contributors is Ken SAITO, the professor of Osaka Prefecture University who is known around the world. I have written a general survey of the works and life of Euclid and will contribute to discussions of the commentary tradition surrounding Euclid's *Elements*.

There are also many translations of research in history of mathematics written in European languages, such as books by Boyer and Katz and the *Oxford Handbook of the History of Mathematics*. I am one of the main translators of the last two volumes. We are also editing a dictionary of the history of mathematics with leading foreign historians. Many more books on the history of mathematics could be mentioned, but space is limited.

4. Editing

Original texts are indispensable to historical study. European scholars usually can get access to libraries to read these texts. However, many primary sources are privately owned in Japan, which makes historical study more difficult. Edited texts and reprints are thus greatly welcome to Japanese scholars. I will mention

two of these series.

First, the publisher Kenshusha has published ten volumes (each in three parts) on early Japanese mathematics (*Selection of the* Wasan *Texts in the Early Edo Period*). Materials range from the *San'yoki* (Manual for arithmetical use) of the early 17th century to Seki's famous book, *Hatsubisanpo*. However, few commentaries or notes are included. Most of the texts have been changed into modern Japanese or Chinese characters, which is useful for beginners in the history of mathematics. We need some training to read original texts, because some of them have been written in old characters or handwritings. Kenshusha also publishes popular and scholarly books on the *wasan*.

Second, ten volumes of reprints of many *wasan* texts are forthcoming. Each volume will be over 500 pages of reprints without commentaries and will cost 50,000 yen (almost $US500), so libraries should purchase them. This series looks like a Chinese series, published in China, which also reprints many Chinese mathematical texts without explanation in series of five volumes.

5. University Courses

There are departments of the history of science offering Ph.D. degrees in some Japanese universities—including the University of Tokyo, Tokyo Institute of Techonology, Kobe University, and Kyoto University—but most of these professors are not historians of mathematics. Only a few universities have staff in the history of mathematics: Saito at Osaka Prefecture University, Takase at Kyushu University, and me at Kobe University.

Only the staff of Kobe University teach graduate courses in history of mathematics. Three students have earned the Ph.D. here: Tsunehiko NOMURA on Charles Babbage and his analytical engines, Kouji TSUKAMOTO on educational texts in physics in 18th-century England, and Tomoko SHIRAI on a French engineer in the *Meiji* period at Ikuno, near Kobe. I have had some visiting scholars from foreign countries; Albrecht Heffeer from Ghent and Marion Cousin from Lyon studied here, and Charles Burnett from the Warburg Institute and Wesley Stevens from Winnipeg gave talks here. Additionally, some other universities have undergraduate lectures on the history of mathematics as part of the liberal arts curriculum.

6. Magazines

Japan is one of the leading countries for printing and book publishing. Many magazines are sold in bookstores, even in small towns. Two of these magazines, published by private companies, deal with mathematics. These are *Sugaku-semina* (mathematical seminar) and *Gendai-Sugaku* (modern mathematics), both in Japanese and with some articles on the history of mathematics. They may be equivalent to the English-language *Mathematical Intelligencer*. Readers are usually high school teachers, university students, and lovers of mathematics, although professionals and university professors may read them as well. Recently, Takase has written on Legendre, and I am writing about Fibonacci and the Arabic mathematics. One of the main contributors to these magazines is Jun'ichi YAMASHITA. He has written many papers and stories on the history of mathematics for magazines and books. He is a pioneer of writers on the history of mathematics and is also a mathematics traveler: he visited many places in the history of mathematics in Europe, showing how to access the places. He has also translated many books on mathematics and the history of mathematics, including works about Alexander Grothendieck.

7. More Interesting Information on *Sangaku*

A *manju* or *monaka* is a popular traditional Japanese sweet cake with jam inside. A shop in Nara prefecture, next to Kyoto, sells a specific one that has a geometrical figure from the *Sangaku*.

If you have interest in the *Sangaku*, make sure to visit Isaniwa Shrine in Matsuyama on the island of Shikoku. Many beautifully colored *Sangaku* are there, whereas shrines or temples usually have one *Sangaku* at best. A picture brochure and a mini-*Sangaku* (15 cm by 10 cm) are sold in the souvenir shop for just $US5. Another lovely *Sangaku* is in a shrine at Sanda City, near my hometown of Kobe. Fewer than one thousand *Sangaku* survive throughout all of Japan.

Nobuo MIURA

Executive Council Meeting CSHPM/-SCHPM

The meeting of the Executive Council of CSHPM/-SCHPM took place at the Marriott Wardman Park, Washington, DC, on August 6, 2015. The following members were present: Amy Ackerberg-Hastings, Patricia Allaire, Eisso Atzema, Elaine Landry, Jean-Pierre Marquis, Michael Molinsky, Karen Parshall,

Joel Silverberg, Glen Van Brummelen, and Maria Zack. Elaine Landry, President, called the meeting to order at 12:00 pm.

The agenda for the meeting was approved, and minutes from the 2014 Executive Council Meeting were accepted as printed in the November 2014 *Bulletin*.

Treasurer's Report: Elaine Landry presented the 2014 financial statements on behalf of David Bellhouse. See the statements published in the May 2015 *Bulletin*.

Secretary's Report: Pat Allaire expressed thanks to Mike for facilitating the work of the Secretary.

Pat presented comparative membership data for 2014 and 2015 (as of May 21):

	2014	**2015**
Total Members	127	145
Members By Address or Organization		
Can	39	30
US	88	85
Other	8	18
BSHM	19	21
CSHPS	8	4
Complimentary	2	2
Members By Status		
Active	74	87
Retiree	42	42
Student	7	7
Developing Nation	2	3
Student Associate	1	2
MathFest Winner	1	N/A
Unknown	N/A	4
Members by Pay Method		
On-line	93	90
Snail mail	32	28
Reciprocal Members	N/A	25
Complimentary	2	2
New Members	13	11
Reciprocal Memberships		
To BSHM	49	51
To CSHPS	23	28
Journal Subscriptions		
Historia (paper)	61	62
Historia (electronic)	7	8
Philosophia	37	32
Proceedings		
Paid	34	N/A
Complimentary	29	N/A
Federation	1	1
Hardcover	N/A	7
Paperback	N/A	27
Electronic	N/A	17
Bulletin		
Paper	51	41
Donations		
No. Donors	24	18
Amount	\$779.00	\$634.00

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 is not known. 41 paper *Bulletins* were mailed, 36 to current members, 1 to the Federation, and 4 to those from whom payment was anticipated.

***Bulletin* Editor's Report:** Amy Ackerberg-Hastings thanked the co-editors, Eisso Atzema and Maria Zack; the Secretary, Pat Allaire; the Webmaster, Mike Molinsky; and all who contributed articles, reviews, or announcements. As always, she welcomes reports on meetings attended, professional and personal news items, photographs, and suggestions for regular columns or short articles of interest to historians and philosophers of mathematics. She is soliciting meeting reports from the winners of the CSHPM Student Award. Feedback is also always welcome. Contact Amy at *aackerbe@verizon.net*.

Amy also reported that, at the request of a member, she and Mike worked up a list of contacts for meeting announcements that can be provided to each year's program chair so that our meetings receive more publicity.

CSHPM Notes Editor's Report: Amy reported that, while the initiative to provide columns for the CMS *Notes* is not yet self-perpetuating, she and co-editor Hardy Grant are very pleased with the quality and variety of contributions to date. The editors thanked the 8 authors who prepared columns in 2014–2015: Tom Archibald, Craig Fraser, David Orenstein, Tom Drucker, Glen Van Brummelen, Amy Ackerberg-Hastings, Len Berggren, and Robert Thomas.

The editors maintain a list of possible authors, but volunteers and suggestions are always welcome. The general policy is that contributors should be CSHPM members, although the editors are contemplating departing from the policy in order to involve a few of

the young scholars (mostly American) doing interesting work. They have also encouraged winners of the CSHPM Student Award to write columns related to their award-winning papers. The working relationship with CMS's Communications and Special Projects Officer, Julie Bortolotti, has been excellent, and the editors frequently receive positive feedback from *Notes* editor Robert Dawson and CMS Executive Director Johan Rudnick.

***Proceedings* Editor's Report:** Maria Zack reported: a) Birkhäuser is finishing the typesetting of the first volume, and the authors will soon receive the proofs of their article for review. The draft cover of the volume as well as the table of contents was to be shared with the group at the AGM. b) Ben Levitt, our new editor from Birkhäuser, has been very good to work with. He was present at MathFest and had lunch with a small group of people who worked on the first volume. c) Maria and co-editor Elaine Landry have signed the contract with Birkhäuser for the 2015 *Proceedings*. d) Maria is working on revising the process for formatting and submitting papers. Ben Levitt was able to track down a TEX-template for a contributed paper volume. The updated instructions for preparing papers should be done by early October. Maria will be recruiting referees for this year's volume.

Elaine noted that this is the first official CSHPM Proceedings publication with Birkhäuser and thanked Maria Zack and Ben Levitt for making this a great success. People need to buy copies and encourage their libraries to buy copies or Birkhäuser e-book subscriptions, which will help to guarantee the continuation of the series.

Webmaster's and Archivist's Reports: Mike Molinsky reported that he has continued to maintain and update the society website and email listservs. As Archivist, he has continued to work on creating digital copies of all paper documents in the archives. He eventually hopes to create an inventory of archive materials. It was suggested that our CSHPM Notes column be added to the Archives.

2016 Meeting: Elaine announced that HSSFC has requested the names and contact details for our program chairs and local arrangement coordinator. In addition, we need to send our preferred meeting dates. In the past, we have met from Sunday to Tuesday, which would be May 29 to May 31 in 2016. HSSFC also needs the names of any association or organization that we will be meeting or partnering with at Congress, the dates for our call for papers, our official website URL, and our regular association website as well as any separate pages created specifically for the conference, joint conferences, and call for papers.

We will try to overlap for one day with CSHPS. Ideas for a theme for the special session were discussed. It was decided that the theme will be Logic and Mathematics in the 19th and 20th Centuries. Tom Drucker will organize the Special Session, and Eisso Atzema and Duncan Melville will organize the General Session. Elaine will ask Richard Zach to be the Local Arrangement Coordinator.

CSHPM Student Award: Elaine will notify the 2014 winner, Sylvia Marie Nickerson, "Mathematics for the World: Publishing Mathematics and the International Book Trade, Macmillan and Co."

Phil Math Preprint Archive: Elaine opened discussion on the following written report she had prepared:

"As you might recall, a few years back, I put forward the idea of starting a PhilMath Archive (much like the PhilSci Archive). I am very excited to report that the Board members of PhilSci Archive have agreed to sponsor this *for free* by hosting a PhilMath Archive on their site. If you are not familar with PhilSci Archive the link is `philsci-archive.pitt.edu`.This is a very active and fast-growing preprint site.

"They already have a section 'Mathematics' in their 'Specific Sciences' subject tree. There are about 200 preprints in it already. The idea is to develop a dedicated area for History and Philosophy of Mathematics. They will set up a distinct heading with whatever title we like, e.g. 'Philosophy of Mathematics.' It will live in the Subject Browse tree as a top-level heading. There would be some public statement that the section is 'Curated by ...' so the affiliation to us and other associations, societies, etc., is apparent. In addition, it will have subheadings that we would select, e.g. 'History', 'Applicability', and so on.

"Here is how John Norton describes the moderation of the PhilSci archive site:

> We moderate everything that goes into the archive. That is, our archive manager scans quickly to check that the paper is professional-level work and bounces back ones that are not. This is not refereeing. This is work that does

and should take only a few moments in each case. There are, from time to time, borderline cases. We get about one a month. The archive manager bumps that up to the full Board and we decide as a group. He will also check that the preprint really is a paper with all the normal apparatus in place (abstract, references, etc.) as opposed to rant; that it is not a journal typeset pdf, which would get us into trouble; and for other irregularities.

"So we need an archive manager or else we (by 'we' here I mean *all* the associations, societies that support PhilMath) need to pay the person that PhilSci Archive uses: they employ a graduate student at 1/4th-time graduate assistant rates. It is normally 5 hours per week.

"Finally, I mention two other facilities the Archive offers. They would be available to PhilMath as well :

- Conference and Volumes. They dedicate a heading in the conferences and volumes section to your conference. (`philsci-archive.pitt.edu/view/confandvol/`) Participants can post their preprints to the section (preprints of papers only; no Powerpoints). We then have a simple facility for creating a single pdf volume that contains all the papers. In the longer term, we are hoping that this will be used as an especially easy means for a conference to put out a 'conference volume.' See the PSA2014 section for a sample (`philsci-archive.pitt.edu/11134/`).
- Open Access Journals. They are starting a program of 'echoing' the content of open access journals. Two are up and there are more in the works (`philsci-archive.pitt.edu/journals.html`).

"Finally, I have agreed to become a member of the PhilSci Archive Board, to act as the PhilMath representative. I have emailed the representatives of the various philosophies of mathematics associations (CSHPM, BSHM, PMA, APMP, POMSIGMAA, HOMSIGMAA) to seek their support and provide a representative for a PhilMath editorial committee) So far I have the support of PMA, APMP, POMSIGMAA, (and BSHM)."

Elaine asked the following: a) Does CSHPM support the development of the PhilMath Archive site? b) If it does, then who will be the CSHPM representative to be a member of the PhilMath archive editorial board? c) Should we find our own Archives Manager or use the person PhilSci uses?

Nominating Committee: The terms of the present officers expire in 2016. See Article IV of our by-laws, `www.cshpm.org/about/bylaws.php`. After discussion, it was agreed that Elaine would approach Craig Fraser, Duncan Melville, Joel Silverberg, and Glen Van Brummelen, with the first three to agree comprising the 2016 Nominating Committee.

Future Meetings: HSSFC will be meeting in Toronto in 2017. Since this is a desirable location and our default is to meet with Congress, we will do so in 2017.

However, in 2018, Congress will be in Regina, which is not convenient for a significant number of our members. In view of this as well as the fact that we wish to foster our relationship with CMS, we will consider meeting with CMS as soon as we know their planned location.

Other Business: Elaine expressed thanks to the Council, Editors, and Conference Organizers.

The meeting was adjourned at 12:35 pm.

Patricia Allaire, Secretary

Joint AMS/MAA Meetings in Seattle

A number of events in history and philosophy of mathematics have been planned for the Joint Mathematics Meetings, to be held in Seattle, Washington, January 6–9, 2016. More information can be found on the MAA or AMS websites: `www.maa.org` or `www.ams.org`.

Wednesday, January 6

- 9:00–11:00: MAA Minicourse on Humanistic Mathematics, I, presented by Gizem Karaali and Eric Marland. (NOTE: You must pre-register for this course.)
- 14:15–18:05: AMS-MAA Special Session on the History of Mathematics, I, organized by Patti Hunter, Adrian Rice, Sloan Despeaux, and Deborah Kent.
- 17:30–19:20: HOM SIGMAA Business Meeting, Reception, and Guest Lecture, "The Antikythera Mechanism: A Masterpiece of Ancient Astronomy, Mechanics, and Mathematical Modeling," by James Evans.

Thursday, January 7

- 8:00–11:50, 13:00–15:50: AMS-MAA Special Session on the History of Mathematics, II and III. The afternoon session includes a panel discussion.
- 8:00–11:25: MAA Session on Using Philosophy to Teach Mathematics, organized by Carl Behrens and Dan Sloughter.
- 17:30–19:20: POM SIGMAA Reception, Business Meeting, and Guest Lecture by Bonnie Gold.

Friday, January 8

- 8:00–9:55: MAA Session on the Contributions of Minorities to Mathematics Throughout History, organized by Amy Shell-Gellasch and Lloyd Douglas.
- 9:00–11:00: MAA Minicourse on Humanistic Mathematics, II.
- 13:00–17:50: AMS-MAA Special Session on the History of Mathematics, IV.
- 14:30–15:50: Presentations by MAA Teaching Award Recipients.

Saturday, January 9

- 8:00–11:20, 13:00–16:40: AMS Special Session on Current Areas of Interest in the Mathematical Sciences of Medieval Islam, organized by Mohammad K. Azarian, Mohammad Javaheri, and Emelie A. Kenney.
- 8:00–11:35: MAA Session on Incorporating the History of Mathematics into Development Math Courses, organized by Van Herd and Amy Shell-Gellasch.
- 13:00–16:35: MAA Session on Addressing the Needs of Mathematics and Computer Science Majors in Discrete Mathematics Courses, includes talks by David Pengelley and Jerry Lodder about the original sources modules funded by NSF.

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

Visit *Convergence*

MAA Convergence is both an online journal for the history of mathematics and its use in teaching and an ever-expanding collection of online resources to help readers teach mathematics using its history.[2] Founded in 2004 by well-known mathematics historians and educators Victor Katz and Frank Swetz, *Convergence* 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.

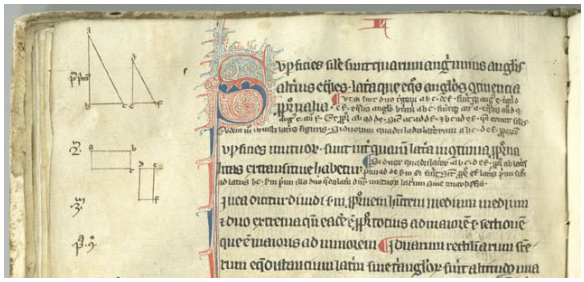


Figure 4: *Elements of Geometry*, ca 1294.

In "Euclid21: Euclid's *Elements* for the 21st Century," Eugene Boman and his student team introduce a dynamic, interactive version of the ca 300 BCE geometry text organized via its logical structure. Instructors might also combine a study of connections between propositions with illustrations from the "Mathematical Treasures" section of the journal, including a European manuscript handwritten on vellum ca 1294 CE. The beginning of Proposition 1 from Book VI, defining similar rectilinear figures, is shown.

Another cross-pollination opportunity for topics such as Euclid's "windmill" proof of the Pythagorean Theorem is offered by Susan M. Hawes and Sid Kolpas's "Oliver Byrne: The Matisse of Mathematics." This article also stands alone for use in teaching. It is the most complete biography of Byrne to date; shares photos from Kolpas's copy of Byrne's 1847 *Euclid's Elements*, a marvel of Victorian printing and Pestalozzian pedagogy; and describes ideas for using Byrne's color-coded text in the classroom.

See how your students can design and build armillary spheres, astrolabes, quadrants, sextants, and sundials using such modern technology as 3D printers in "Bridging the Gap Between Theory and Practice: Astronomical Instruments," by Toke Knudsen. One of his students at SUNY Oneonta built the sundial pictured here in the university's Ancient Mathematical Astronomy course.

Existing resources for teaching mathematics through its history are also expanded and improved. "Problems

[2]See `www.maa.org/press/periodicals/convergence`

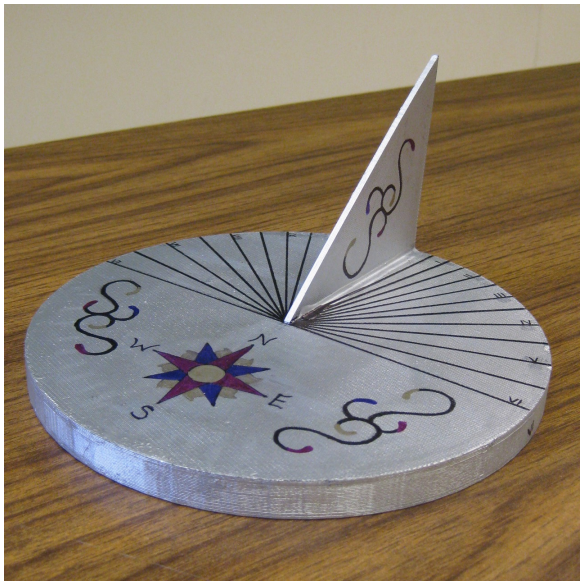


Figure 5: Student-built sundial.

for *Journey Through Genius: The Great Theorems of Mathematics*" celebrates the popular book's 25th year in print with downloadable problem sets for each chapter by author William Dunham himself. *Convergence*'s chief treasure-hunter, Frank Swetz, showcases the ongoing and on-growing collection of hundreds of images of historical texts, manuscripts, and objects in "Pantas's Cabinet of Mathematical Wonders: Images and the History of Mathematics." An index for the collection is accessed by clicking on "Images for Classroom Use" in the *Convergence* menu. Amy Ackerberg-Hastings and Amy Shell-Gellasch introduce 27 digitized collections of mathematical objects from the Smithsonian's National Museum of American History and suggest uses for students of all ages in "Online Museum Collections in the Mathematics Classroom."

Other examples of historical research articles with discussions of classroom applications include Dan Curtin's "Jan Hudde's Second Letter: On Maxima and Minima," which contains a translation of the letter and explanation of Hudde's pre-calculus optimization methods—including an early quotient rule—and David Zitarelli's "Alan Turing in America," which focuses on the important projects in logic and computing that Turing worked on during two visits to the U.S. (*Ed. note:* See also Jonathan Seldin's review of *Alan Turing: The Enigma* in this issue.)

Please join us at the *Convergence* of mathematics, history, and teaching! (The website is easier to reach than

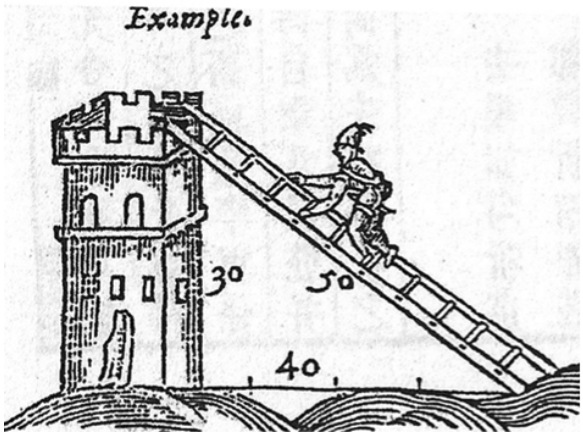


Figure 6: *Pathway to Knowledge*, 1551.

the tower approached by the fellow depicted by the application of the Pythagorean Theorem given in Robert Recorde's 1551 *Pathway to Knowledge*!)

Janet Beery

2015 CSHPM/SCHPM Meeting Programme

The Annual Meeting of the Canadian Society for History and Philosophy of Mathematics was held at the Marriott Wardman Park, Washington, DC, 5–8 August 2015. It was a joint meeting with the British Society for the History of Mathematics and the History of Mathematics and Philosophy of Mathematics Special Interest Groups of the Mathematical Association of America, during the MAA's summer meeting, MathFest. This MathFest celebrated the centennial of the December 1915 founding of the MAA; in addition to the CSHPM-related events, attendees were able to enjoy numerous special lectures, sessions on the history of the MAA, social events, musical and dramatic entertainments, a historical display in the book exhibit, and a special exhibit at the Smithsonian's National Museum of American History on MAA founding members. MathFest 2015 was the MAA's biggest summer meeting to date, with over 2,500 registrants.

The talks of the CSHPM-BSHM-HOM SIGMAA-POM SIGMAA joint meeting were treated as Themed Contributed Paper Sessions on the MAA program. Maria Zack led a committee of Jean-Pierre Marquis, Tom Drucker, Robin Wilson, and June Barrow-Green, with input from several others, to organize the ses-

sions. Special sessions paid memorial tribute to Jackie Stedall and Ivor Grattan-Guinness, honored May Lecturer Karen Parshall, and explored aspects of the philosophy of mathematics and mathematical communities. Seventy papers were on the program, making this conference one of the largest CSHPM meetings ever. It was CSHPM's second collaboration with MathFest, following the successful meeting in Hartford, CT, in 2013.

Wednesday, August 5

GENERAL SESSION 1A (Presider: Amy Ackerberg-Hastings)

10:30 Amy Shell-Gellasch: "Ellipsographs: Drawing Ellipses and the Devices in the Smithsonian Collection"

11:00 Peggy Aldrich Kidwell: "Engaging Minds – Charter Members of the MAA and the Material Culture of American Mathematics"

11:30 Florence Fasanelli: "The History of Mathematics in Washington, DC"

GENERAL SESSION 1B (Presider: Danny Otero)

10:30 Cathleen O'Neil: "Eisenhower, the Binomial Theorem, and the $64,000 Question"

11:00 S. Roberts: "John Horton Conway: Certainly a Piece of History"

11:30 Eileen Donoghue: "A Pair of Early MAA Presidents = A Pair of Mathematics Historians: Florian Cajori and David Eugene Smith"

GENERAL SESSION 1C (Presider: Jim Tattersall)

13:00 Charles Lindsey: "Doing Arithmetic in Medieval Europe"

13:30 Travis D. Williams: "Imagination and Reading the Third Dimension in Early Modern Geometry"

14:00 Christopher Baltus: "The Arc Rampant in 1673: an Early Episode in the History of Projective Geometry"

14:30 Andrew Leahy: "William Brouncker's Rectification of the Semi-Cubical Parabola"

GENERAL SESSION 1D (Presider: Dan Sloughter)

13:30 Ann Luppi von Mehren: "Inspiration for Elementary Mathematics Descriptions from a 'Heritage' Reading (in the sense of Grattan-Guinness) of 'On the Nonexistent' by Gorgias"

14:00 Thomas Q. Sibley: "Going to the Source"

14:30 Cynthia J. Huffman and Scott V. Thuong: "Rope Geometry of Ancient India in the Classroom"

15:00 Steven J. Tedford: "Getting to the Root of the Problem"

15:30 Abraham Ayebo: "Reenactment of the Calculus Controversy: Newton vs. Leibniz"

SESSION 1E: THE MATHEMATICS OF EULER (Presider: Robin Wilson)

15:30 Dominic Klyve and Olivia Hirschey: "Euler and Phonetics: the Untold Story of the Mathematics of Language"

16:00 Ronald Calinger: "Leonhard Euler: the Final Decade, 1773 to October 1783"

16:30 BREAK

17:00 Rob Bradley: "Euler on L'Hôpital's *Analyse*"

17:30 Andrew Martin and J. Martin: "Euler's Other Constant"

Thursday, August 6

SESSION 1F: SPECIAL SESSION IN MEMORY OF JACKIE STEDALL (Presider: Rob Bradley)

8:30 June Barrow-Green: "Sylvester's Amphigenious Surface"

9:00 Janet Beery: "Jackie Stedall and the Mathematics of Thomas Harriot"

9:30 Rosanna Cretney: "The Construction of Map Projections in the Works of Lambert and Euler"

10:00 Christopher Hollings: "Soviet Views of Early (English) Algebra"

10:30 Steve Russ and Kateřina Triflajová: "Bolzano's Measurable Numbers: Are They Real?"

11:00 Robin Wilson: "The BSHM 1971–2015"

11:30 CSHPM EXECUTIVE COUNCIL MEETING

GENERAL SESSION 1G (Presider: Jean-Pierre Marquis)

13:00 Richard DeCesare: "Robert Patterson: American Revolutionary Mathematician"

13:30 Maria Zack: "Lisbon: Mathematics, Engineering and Planning in the Eighteenth Century"

14:00 Alejandro R. Garciadiego: "Vera on the Foundations of Mathematics"

GENERAL SESSION 1H (Presider: Sloan Despeaux)

13:00 Michiyo Nakane: "Yoshikatsu Sugiura: A Good Japanese Friend of Paul Dirac"

13:30 J. Nicolas and Jonathan Sondow: "Ramanujan, Robin, Highly Composite Numbers, and the Riemann Hypothesis"

14:00 Matthew Haines: "A Visit to the Vatican Library"

SESSION 1J: SPECIAL SESSION ON PHI-

LOSOPHY OF MATHEMATICS (Presiders: Bonnie Gold and Dan Sloughter)

14:30 Elaine Landry: "Mathematical Structuralism and Mathematical Applicability"
15:00 Jean-Pierre Marquis: "Designing Mathematics: The Role of Axioms"
15:30 BREAK
16:00 Carl Behrens: "How Does the Mind Construct/Discover Mathematical Propositions?"
16:30 Jeff Buechner (delivered by Tom Drucker): "What is an Adequate Epistemology for Mathematics?"
17:00 THE POM SIGMAA LECTURE, by John Burgess: "What Are Mathematical Objects, and Who Cares?" (introduction: Thomas Drucker)

Friday, August 7

SESSION 1K: SPECIAL SESSION ON MATHEMATICAL COMMUNITIES (Presider: Fred Rickey)

8:00 Diana White and Brandy Wiegers: "A Partial History of Math Circles"
8:30 Janet Heine Barnett: "An American Postulate Theorist: Edward V. Huntington"
9:00 Lawrence D'Antonio: "Commbating the 'legion of half-wits': the Contentious Mathematicians of the Paris Academy of Sciences"
9:30 Jane Wess: "The Mathematics in 'Mathematical Instruments': The Case of the Royal Geographical Society, London, in the Mid to Late Nineteenth Century"
10:00 Amy Ackerberg-Hastings: "Did American Professors Form a Mathematical Community in the Early 19th Century?"
10:30 THE KENNETH O. MAY LECTURE (and MAA Centennial Lecture #5), by Karen Parshall: "'We Are Evidently on the Verge of Important Steps Forward': The American Mathematical Community, 1915–1950" (introduction: Victor Katz; presider: Adrian Rice)
12:30 CSHPM ANNUAL GENERAL MEETING

SESSION 1M: SPECIAL SESSION IN HONOR OF KAREN PARSHALL (Presiders: Sloan Despeaux and Adrian Rice)

14:00 Della Dumbaugh: "Leonard Dickson's Other Doctoral Student from 1928"
14:30 Patti Hunter: "Spreading the Wealth: The Ford Foundation and Eugene Northrop's Advancement of Mathematics and Science at Home and Abroad"
15:00 Deborah Kent: "The *Annals of Mathematics*: From the Fringes of Civilization to the University of Virginia, 1873–1883"
15:30 David Zitarelli: "Karen Parshall and a Course on the History of Mathematics in America"
16:00 Joseph W. Dauben: "Fuzzy Logic and Contemporary American Mathematics: A Cautionary Tale"
16:30 Brittany Shields: "American Mathematics Beyond the Iron Curtain: The US-Soviet Interacademy Exchange Program"
17:00 HOM SIGMAA Reception in Honor of Karen Parshall (Presider: Danny Otero)

Saturday, August 8

GEN. SESSION 1N (Presider: Larry D'Antonio)

8:30 Michael Molinsky: "Some Original Sources for Modern Tales of Thales"
9:00 Patricia Baggett and Andrzej Ehrenfeucht: "A Prehistory of Arithmetic"
9:30 Gregg De Young: "Adelard's Euclid and the Arabic Transmission Attributed to al-Hajjāj"
10:00 Valerie Allen: "Al-Khwarizmi, Anselm, and the Algebra of Atonement"
10:30 Duncan J. Melville: "Approaches to Computation in Third Millennium Mesopotamia"
11:00 BREAK
11:30 Steve DiDomenico and L. Newman: "The Quest for Digital Preservation: Will Part of Math History Be Gone Forever?"

GEN. SESSION 1P (Presider: Amy Shell-Gellasch)

8:30 Roger Godard: "Finding the Roots of Non-Linear Equations: History and Robustness"
9:00 Isobel Falconer: "J. D. Forbes and the Development of Curve Plotting"
9:30 Gavin Hitchcock: "'Remarkable Similarities': A Dialogue Between De Morgan & Boole"
10:00 Francine F. Abeles: "Clifford, Sylvester, and Peirce on the Development of the Algebra of Relations, 1875–1885"
10:30 S. Martin: "Polygonal Numbers from Fermat to Cauchy"
11:00 Troy Goodsell: "Orson Pratt: A Self Taught Mathematician on the American Western Frontier"
11:30 Ezra (Bud) Brown: "Five Families Around a Well: A New Look at an Ancient Problem"

SESSION 1Q: SPECIAL SESSION IN MEMORY OF IVOR GRATTAN-GUINNESS (Presiders: Karen Parshall and June Barrow-Green)

13:00 Joseph W. Dauben: "Ivor Grattan-Guinness (1941–2014) and his Contributions to the History of

Analysis, Set Theory, and Applied Mathematics"
13:30 Roger Cooke: "Grattan-Guinness's Work on Classical Mechanics"
14:00 John Dawson: "Ivor Grattan-Guinness's Legacy to History and Philosophy of Logic"
14:30 Albert C. Lewis: "'Another big book': Ivor Grattan-Guinness as Editor and Organizer"
15:00 Adrian Rice: "'Same time next week?': Ivor Grattan-Guinness as a Ph.D. Advisor"
GEN. SESSION 1R (Presider: Duncan Melville)
15:30 Joel Haack and T. Hall: "Humanistic Reflections on *Mathematics Magazine* Problem 1951 and a Solution"
16:00 Alexander Kleiner: "The Interplay of 'Hard' and 'Soft' Analysis in the History of Summability Theory: Preliminary Report"
16:30 Howard Emmens: "The Life and Letters of William Burnside"
17:00 James Parson: "Prehistory of the Outer Automorphism of S_6"

Annotating the History of Mathematical Notation

It is not news that mathematics texts of yore are being digitized at an astounding pace. The first-blush utility of these digitized texts was for reading and reference. That is, the digital version of a text was taken to be functionally equivalent to the book itself and thus served to save you a trip to the library. As the number of digitized texts grew, however, a wholly new and unique utility was discovered: text search within and across the digital versions. Here is a story about another new and unique use of digitized texts.

In late 2012, while exploring old history of mathematics texts in the basement of Harvard's Widener Library, I came across a copy of the 1935 PhD dissertation of Sister Mary Leontius Schulte. The dissertation, "Additions in Arithmetic, 1483–1700, to the Sources of Cajori's *History of Mathematical Notations* and Tropfke's *Geschichte Der Elementar-Mathematik*," was written under the guidance of Louis C. Karpinski at the University of Michigan.

An instructor at the College of Saint Teresa in Winona, Minnesota, Sister Leontius had begun her graduate work at the University of Michigan in the summer session of 1928. Taking summer courses for the next three years, she completed her master's degree in September 1931. She returned to the University of Michigan as a full-time student during the 1932–1934 academic years to finish her course work for a Ph.D. in mathematics.

The first sentence of the dissertation describes the task that Karpinski had set for Sister Leontius: "It will be the purpose of the present study, after pointing out that the standard works on arithmetical notations are demonstrably incomplete, to supplement these works with the results of further research, particularly among the arithmetics of the sixteenth and seventeenth centuries." That's challenging! Cajori and Tropfke are lions in the history of mathematics and the two works in the title of the dissertation are the canonical references for the history of mathematical notation.

In the event, Sister Leontius surveyed 101 15th- and 16th-century mathematical texts, found primarily in the considerable holdings at the University of Michigan but also in the George Arthur Plimpton and David Eugene Smith collections in the Rare Book and Manuscript Library at Columbia University. The resulting manuscript is typewritten and many of the notations discussed are, as would be expected, hand-inked. Turning the pages down in the basement, I began to wonder how many of the 101 books had been digitized so that one could see the notations under discussion *in situ*.

Arriving back home, I was surprised to be able to purchase a copy of the dissertation from a book seller, Redins Antikvariat, in Alunda, Sweden. How the dissertation got to Sweden will forever be a mystery to me. A little Googling of the bibliography quickly showed that many of the 101 books had indeed been digitized. One could turn to the very page examined by Sister Leontius and see in the original context the arithmetic notations she described and hand-inked into her dissertation. The copyright of the dissertation was held by the Sisters of St. Francis of Rochester, so I wrote Sister Marilyn Geiger, the president of the order, for permission to reprint Sister Leontius' dissertation. Permission was kindly granted.

Two and one-half years after its rediscovery in the basement of Widener, Docent Press published a book containing Sister Leontius' dissertation. The book is titled *Writing the History of Mathematical Notation: 1483–1700*. In addition to the dissertation, the book includes a contemporary review of early mathematical notation

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
University of Calgary/ L'université de Calgary
May 29-31, 2016 / 29- 31 mai 2016

Special Session / Séance Spéciale
Mathematics and Logic in the 19th and 20thCentury /
Mathématiques et Logique au 19ième et 20ième Siècle

Kenneth May Lecturer / Conférence Kenneth May
Dr. Jamie Tappenden, Department of Philosophy, University of Michigan

The CSHPM will be holding its 2016 Annual Meeting at the University of Calgary in conjunction with the 2016 Congress of the Humanities and Social Sciences. The meeting will be held Sunday through Tuesday, May 29-31, 2016.

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. Graduate students who present are eligible for the CSHPM Student Award.

Please send your title and abstract (200 words or less) in Word or in the body of an email by February 1, 2016 to:

SPECIAL SESSION / SÉANCE SPÉCIALE:

Thomas Drucker
Department of Mathematics
University of Wisconsin-Whitewater
Whitewater, WI 53190-1790
druckert@uww.edu

La SCHPM organisera son colloque annuel de 2016 à l'Université de Calgary, au sein du Congrès des sciences humaines et sociales 2016. Le colloque aura lieu du dimanche 29 mai au mardi 31 mai 2016.

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. Les présentations en anglais ou en français sont bienvenues. Les doctorants qui font une présentation sont admissibles au Prix des Étudiants de la SCHPM.

Veuillez envoyer le titre de votre exposé, ainsi qu'un bref résumé de 200 mots ou moins en format Word ou à l'intérieur d'un courriel avant le 1 fevrier 2016 à:

GENERAL SESSION / SÉANCE GÉNÉRALE:

Eisso Atzema
Department of Mathematics & Statistics
University of Maine
Orono, ME 04469
atzema@math.umaine.edu

by Albrecht Heeffer of the Sarton Centre for History of Science at Ghent University, a personal reminiscence of Sister Leontius by the archivist of the Sisters of St. Francis, Sister Mary Lonan Reilly, and, with the kind permission of the American Mathematical Society, a biography of Sister Leontius that appeared in *Pioneering Women in American Mathematics: The Pre-1940 PhD's*, by Judy Green and Jeanne LaDuke.

The purpose of this little note, however, is to call out the contribution of Doug Furman, a professor of mathematics at SUNY Ulster, to the book. After noting that some of the books that Sister Leontius had examined had been digitized and were available on the web, I got to musing about the possibility of replacing each of Sister Leontius' hand-inked symbols with a clip from the original work. [1] Not only would this show the symbol as it originally appeared, but it would also surface its surrounding context. To this end, I enlisted Doug's help to track down a digital edition of each of Sister Leontius' 101 titles and to find the notation described by Sister therein. As a consequence of Doug's diligent and persistent efforts, the book contains 339 clips from digitized mathematics books in place of the hand-inked drawings in the original manuscript.

The take-away here does not concern the book *per se*, although I'll admit I'm rather delighted by it and certainly grateful to Doug and Albrecht for their efforts. For the purpose of this note, the take-away is that pursuit of a bibliographic sample of historic mathematics texts revealed that all of them, in one edition or another, were available on the Web. The inclusion of clips from primary sources in writing the history of mathematics can and, in my opinion, should become the rule rather than the exception. In the vernacular, this way of contextualizing the history of mathematics need no longer be neglected.

Endnote

1. A clip is taken to be a figure cut ("clipped") out of a digital image. In the case at hand, the digital image is of a page in a digitized mathematical text and the clip is of a mathematical symbol on the page together with its associated use context.

Scott Guthery

Statistical Independence

On a recent visit to Montreal I went for a walk and early morning coffee and croissant at La Croissanterie Figaro, an Outremont café straight out of the Parisian Belle Époque. To add to my pleasure, I read a forceful example of mathematics in the public square in the day's paper: "Une bombe idéologique", by François Cardinal, in the 20 March 2015 *La Presse*.[3]

The leading candidate for the leadership of the Parti Québecois, Pierre Karl Peladeau, had just declared that time was working against the party's cause of Quebec independence. The low birth rate, coupled with the steady flow of immigration, meant that the cause was losing roughly one riding per year. (A "riding" is a Canadian electoral district at either the provincial or federal level. The French term that Peladeau would have used is "comté".)

Apart from the xenophobia of Peladeau's comments, Cardinal wondered about the validity of the concern. "Once in Montreal do new arrivals blend into the host society? Do they adopt the language of the majority? Do they speak French at home? At work?" He noted that, unfortunately, we'll never know, because Prime Minister Stephen Harper cancelled the compulsory long form census in 2010. As a result the participation rate plummeted from 95% in 2006 to 69% in 2011, "a significant drop that invalidated the sampling method, undermined the reliability of the data and distorted the socioeconomic data on a regional, municipal and local scale."

Cardinal interviewed Richard Shearmur of McGill University's School of Urban Planning: "There are some studies that just can't be done anymore. . . . The fact of having undermined national statistics fundamentally changes the nature of public debate, which now lends itself to all sorts of assertions and ideologically-based decisions. . . . A hundred years ago you weren't obliged to answer the census. . . . [When] the questionnaire was made compulsory and sampling methods were improved . . . decisions started to be based on diagnostic statistics accepted by a consensus. . . . Today, we've returned . . . to another era."

Cardinal concluded, "The cancellation of the long form census forces us to have extremely violent debates

[3] See `http://www.lapresse.ca/debats/chroniques/francois-cardinal/201503/20/01-4853927-une-bombe-ideologique.php`.

without being able to clarify them with reliable statistics. The data will always be suspected of reflecting sample bias . . . or ideology."

It's sad that such retrogression in the scientific status of Statistics Canada had to serve as the occasion for sharing the important mathematical concept of statistical reliability with the general public.

[All quotations are my translations from the French original.]

David Orenstein

AGM of CSHPM/SCHPM

The Annual General Meeting of the Canadian Society for History and Philosophy of Mathematics took place at the Marriott Wardman Park, Washington, DC, on August 7, 2015. The meeting was called to order at 11:30 am by Elaine Landry, President, with 22 members in attendance.

Agenda for the General Meeting

1. Approval of agenda
2. Approval of minutes of 2014 AGM
3. Treasurer's report
4. Secretary's report
5. Webmaster's and Archivist's reports
6. *Proceedings* Editor's report
7. *Bulletin* Editor's report
8. CSHPM Notes Editor's report
9. Future Meetings
10. CSHPM Award
11. Phil Math Preprint Archive
12. Other business
13. Nominating Committee
14. Thanks from the President

1. The agenda for the general meeting was approved.

2. Minutes from the 2014 AGM were accepted as printed in the November 2014 *Bulletin*.

3. Elaine Landry presented the Treasurer's report for David Bellhouse. See the 2014 financial statements in the May 2015 *Bulletin*. In response to member questions, Elaine explained that it is necessary that a portion of our surplus remain liquid, and we need to have both US and Canadian dollar funds because we have to make some of our payments in each currency.

4. Patricia Allaire expressed her thanks to Mike Molinsky for facilitating the work of the Secretary. She presented comparative membership data for 2014 and 2015. (Please refer to the CSHPM Executive Council Minutes in this issue of the *Bulletin* for the data.) Contrary to the trend in many other professional organizations, our membership numbers increased slightly for 2014. Roger Godard expressed concern about how we need to attract new Canadian members.

5. Mike Molinsky has continued to maintain and update the society website and email listservs. He will be working on adding the *CMS Notes* columns to the website, noting that the author retains the copyright. Meanwhile, our webpage will include links to the issues with our columns. Elaine noted that these columns increase our profile with the Canadian mathematics community.

Mike stated that his ultimate goal as Archivist is to have all material in the Archives fully digitalized.

6. Maria Zack shared the draft cover as well as the table of contents for the 2014 *Proceedings*, which will be coming out in the late fall. The spelling of "St. Catharines" will be corrected on the printed volume. Maria expressed thanks to the referees.

Maria reminded authors that they must get appropriate permission for any images that they wish to have included with their papers in the *Proceedings*. Preferred method of submission is TeX. Deadline for submission will be December 1.

In response to a member's question, Maria stated that the limit on the number of pages depends on the number of papers submitted. The contract with Birkhäuser calls for a maximum of 300 pages for the 2015 volume.

Rob Bradley made a motion to formally thank Maria for her work on the new *Proceedings*. The motion was seconded and passed.

7. Amy Ackerberg-Hastings repeated the information from the *Bulletin* Editor's report in the Executive Council minutes.

8. Amy Ackerberg-Hastings repeated the information from the CSHPM Notes Editor's report in the Executive Council minutes. Preferred method of submission is Microsoft Word.

9. In 2016, we will meet in conjunction with HSSFC Congress 2016 in Calgary, probably from May 29 to 31. The theme for the Special Session will be Logic and Mathematics in the 19th and 20th Centuries with Tom Drucker as organizer. Eisso Atzema and Duncan Melville will organize the General Session.

With regard to future meetings, Elaine noted that our

default is to meet in conjunction with HSSFC. We do wish to meet occasionally with CMS, but their meetings are quite expensive, and cost is crucial, especially for our younger members. Maria Zack suggested that at some time we might consider meeting at an institution that has dorms available.

In 2017, we plan to meet in conjunction with HSSFC at Ryerson in Toronto. HSSFC will meet in Regina in 2018. We will explore the possibility of meeting with CMS that year.

It was noted that BSHM provided travel grants to assist their members in attending this joint meeting.

10. Elaine announced the 2014 winner of the CSHPM Student Award, Sylvia Marie Nickerson, for her paper "Mathematics for the World: Publishing Mathematics and the International Book Trade, Macmillan and Co." There was only one student paper presented at this meeting.

11. For Elaine's report on the Phil Math Preprint Archive, see the minutes of the Executive Council. She explained that the refereeing is relatively easy—it's accept or reject. A CSHPM member is needed for the editorial board. The cost to us is about $200 a year to pay a student archive manager. Were we to maintain an independent site, the cost would be about $2,000 per year. Fred Rickey asked if this website would be an appropriate place for a bibliography of Ivor Grattan-Guinness's papers.

12. Fernando Gouvea announced that he is seeking reviewers for *MAA Reviews*.

13. Elections are to be held in 2016. Our by-laws are on the CSHPM website, in the "About" menu. Elaine announced that Rob Bradley, Duncan Melville, and Glen Van Brummelen have agreed to serve on the Nominating Committee.

14. Elaine expressed thanks to Maria Zack, the editors and volunteers who carry out Society duties, the Council, and the conference organizers (Maria Zack, Jean-Pierre Marquis, Tom Drucker, Robin Wilson, June Barrow-Green, and the MAA).

The meeting was adjourned at 1:25 pm.

Patricia Allaire, Secretary

Book Review

Alan Turing: The Enigma. The Book That Inspired the Film *The Imitation Game*. By Andrew Hodges. Princeton and Oxford: Princeton University Press, 2014, xxxii + 736 pp. ISBN 978-0-691-16472-4. $US16.95, £11.95.

This is a re-issue of earlier publications of this book (in 1983, 1985, and 1992), with a new preface and a new foreword by Douglas Hofstadter. If there are any other changes, they are minor typographical corrections.

The book is an excellent biography of one of the most important scientific figures of the twentieth century. The author not only brings Alan Turing to life, but also explains, in a way a layman can understand, the work and ideas of this great scientist. Hodges begins with Turing's family background, and then covers his childhood, including his early education and the books on science that interested him as a child. He then moves on to Turing's secondary school. Sherborne School was what the British call a "public" school, but we North Americans call a private school. It was a boarding school for boys only. While he was there, Turing fell in love with another student, Christopher Morcom, who died in 1930 when Turing was 17. Hodges describes how this death led Turing to an extremely strong desire that something of Christopher's mind should survive, while, at the same time, he questioned the value of any religious idea of an afterlife. Hodges explains how Turing, on the basis of what he knew about science, began to think about how brains might work, which in turn ultimately led him to his ideas for electronic computers, or, as he called them, electronic brains. Hodges also explains how Turing became interested in codes and cyphers while he was at Sherborne.

Hodges goes on to describe how Turing was awarded a scholarship to King's College, Cambridge, also in 1930, and finished his undergraduate work in 1934. He was then awarded a fellowship that enabled him to stay at King's College, and Hodges shows how his scientific ideas developed there. This development led eventually to the writing and publication of [6], which included a theoretical idea for a kind of universal computing machine that can be made to imitate any other computing machine with the right instructions. (This theoretical model of a computing machine is still called a *universal Turing machine*.) As this paper was being sent for publication, word reached Cambridge that an American logician, Alonzo Church, who was at Princeton, had just solved the *Entscheidungsproblem* in his paper [2], which appeared to have anticipated Turing's work. The only reason that Turing's paper was pub-

lished was that it contained material that was not in Church's paper.

However, the relationship of Church's work to Turing's did strongly suggest to his professors at Cambridge that Turing should go to Princeton to work with Church, so Turing spent the years 1936–1938 at Princeton. Hodges covers his time there, including his work on his doctoral dissertation [9]. He also discusses Turing's ideas on disproving the Riemann Hypothesis by building a calculating machine to calculate zeros of the zeta-function. So, even this early in his career, Turing was already thinking of a practical computing machine. (Hodges says that Turing decided to try to disprove the hypothesis because all attempts to prove it had failed.) Turing also did some work related to recursive function theory and calculus; see [7, 8], which Hodges does not mention. Hodges also does not mention some later work Turing did on Church's simple type theory, including [5], [11], [12], and his proof (which he never published, and which appears to be the first proof of this result) that every term in Church's simple theory of types has a normal form [10]; see [4]. (A full bibliography of Turing's work can be found at `http://www.turing.org.uk`, which is maintained by Hodges. But the web page does not mention this theorem, which has now become very important in applications to theoretical computer science. I believe that Alan Turing's priority for this result deserves to be better known.)

By the time Turing returned to the UK in 1938, it was clear that war against Germany was likely, and, in fact, World War II began only a little more than a year after Turing's return to Cambridge. Before the beginning of 1939, Turing had begun working on cyphers and codebreaking for the British government, and when the war actually began, he was sent to Bletchley Park to work on the problem of breaking German codes.

Turing became one of the people at Bletchley Park most responsible for the breaking of these codes, especially the naval code which enabled the British Navy to determine when and where German submarines would threaten Allied shipping. This code had to be broken twice, since in early 1942 the Germans modified the machine behind the Enigma code. But Turing's group succeeded in breaking the code the second time as well. They did this both times by building machines to aid in this process. Turing did not work alone, but he was one of the people most important to the success of the code-breaking enterprise, and this success played a very important role in enabling Britain to stay in the war until Germany was defeated. Hodges does an excellent job of explaining in a general way how the codes worked and how the group at Bletchley Park succeeded in breaking them. He also explains that Turing, unlike most serious mathematicians, was very good with his hands and liked to build electronic machines of various kinds.

Hodges goes on to explain that at the end of World War II, Turing had decided to work on building an "electronic brain," or, as we call it today, a computer, as a practical realization of a universal Turing machine. For this purpose, in 1945 he took a position with the National Physics Laboratory (NPL). Hodges describes how he started by working out the design for an *Automatic Computing Engine*, or *ACE*. Turing completed the initial design and actually wrote some programs for it. According to Hodges, Turing had also been thinking about whether computing machines could be truly intelligent, and so he invented the subject of *Artificial Intelligence*, or *AI*, as it is now known. This thinking eventually led Turing to the *Turing test* of machine intelligence: could an electronic machine interact with a human being in such a way that the human being would believe him or herself to be communicating with another person? Hodges explains all this very clearly.

However, the ACE computer was not built according to Turing's plans. The reasons were partly technical and partly due to political issues at NPL. Turing resigned from NPL in 1948 and got a position at the University of Manchester, where there was another project to build an electronic computer. Hodges explains how, once this computer was completed, Turing started using it for calculations, including calculations related to the growth of living organisms.

Unfortunately, because Turing was a homosexual at a time when homosexuality was illegal in the UK, he was ultimately rejected by the world he had done so much to help. At King's College, Cambridge, there were other homosexuals, and their homosexuality was quietly tolerated. This was not true at Manchester. In 1952, Turing was convicted of "gross indecency" and forced to undergo hormone treatment to "cure" him of his homosexuality. This treatment lasted for one year. One of the conditions of Turing's sentence (and his avoidance of jail) was that he have no further homosexual relations with British men. So Turing started

looking abroad, and at one point went to Norway in search of a homosexual partner.

Turing died in 1954. The official verdict was suicide, and Hodges accepts this. However, Turing's mother did not, and it has been questioned by others, including B. J. Copeland [3] (according to [1]).

Despite what the title page of the book says, the screenwriters of the film *The Imitation Game* seem not to have read very carefully the book that they claim as their source material. I have seen the film, and it distorts the history of the period and Alan Turing's personality. For example, the film implies that when Turing was first hired to work on breaking the German codes in 1939, he had no previous experience with codes and codebreaking, whereas it is clear from Hodges's text that Turing had become interested in codes in secondary school and had been doing work on codes for some months before the start of World War II. Furthermore, the man depicted in the film as giving Turing a severe grilling during the job interview for the codebreaking position when Britain entered World War II, actually recruited Turing because of the work he had done on codebreaking before the start of the war. See [1], which is a commentary on the film, the book which is the subject of this review, and [3].

One of the most important ways in which the film distorts the record and Alan Turing's personality is the way it treats (or, I should say, mistreats) his reaction to the death of his first love, Christopher Morcom, who died while Turing was still in secondary school. The film has Turing naming computing machines "Christopher" at the end of his life. But, Turing never named a computer "Christopher," and as I have said above, Hodges shows how Turing's reaction to this death played an important role in the development of his scientific ideas. The film thus trivializes the effect Christopher Morcom's death had on Turing, and thus misses one of the main sources of his scientific thinking.

It also misses the fact that Alan Turing's atheism and homosexuality were not just facts about him, but seem to have played an important role in his intellectual life and in his contributions to the world. If he had not rejected religion, would he have been searching for a scientific way to justify the idea that something of Christopher's mind still existed? It also appears that his homosexual relationship with Christopher Morcom played a role in getting him to think about brains.

The new preface includes some reflections on the importance of Alan Turing in the 21st century, some additions to the evidence about Turing that have come to light since 1983, and some minor corrections to the text of the book. There is nothing in this preface that suggests major changes to the basic story of Alan Turing's life.

There are a couple of minor flaws in this otherwise excellent book:

1. On page 107, Hodges says that Bertrand Russell made the work of Gottlob Frege more "concrete by introducing the idea of 'set'." But Frege already had the idea of 'set' in his system. He specifically refers to the "extension of a concept," which is, in today's terminology, the set of things of which the concept is true. Furthermore, Russell's paradox can be stated for concepts without reference to sets: consider the concept of all those concepts and only those concepts which are not true of themselves.

2. On page 270, in discussing the possibility of a computer program to play chess, Hodges refers to "pins or forks" without explaining what they are. I am a chess player, so I know what they are, but readers who do not play chess might not know this.

Despite these few flaws, I strongly recommend this excellent book to all readers.

References

[1] C. Caryl. Saving Alan Turing from his friends. *The New York Review of Books*, 62(2):19–21, February 2015.

[2] A. Church. An unsolvable problem of elementary number theory. *American Journal of Mathematics*, 58:345–363, 1936.

[3] B. J. Copeland. *Alan Turing: Pioneer of the Information Age*. Oxford University Press, 2014.

[4] R. O. Gandy. An early proof of normalization by A. M. Turing. In J. P. Seldin and J. R. Hindley, editors, *To H. B. Curry: Essays on Combinatory Logic, Lambda Calculus and Formalism*, pages 453–455. Academic Press, 1980.

[5] M. H. A. Newman and A. M. Turing. A formal theorem in Church's theory of types. *The Journal of Symbolic Logic*, 7:146–156, 1942.

[6] A. M. Turing. On computable numbers, with an application to the Entscheidungsproblem. *Proceedings of the London Mathematical Society*, 42:230–265, 1936–1937. Correction, *Ibid.* 43:544–546, 1937.

[7] A. M. Turing. Computability and λ-definability. *Journal of Symbolic Logic*, 2(4):153–163, December 1937.

[8] A. M. Turing. The *p*-function in λ-K-conversion. *Journal of Symbolic Logic*, 2(4):164, December 1937.

[9] A. M. Turing. Systems of logic based on ordinals. *Proceedings of the London Mathematical Society*, 45:161–288, 1939. This is the published version of Turing's Ph.D. dissertation written at Princeton under the direction of A. Church. Published as a book, *Alan Turing's Systems of Logic: The Princeton Thesis*, with introductory essays by Andrew W. Appel and Solomon Feferman, by Princeton University Press in 2012.

[10] A. M. Turing. Some theorems about Church's system. Includes Turing's proof that every λ-term in Church's simple type theory has a normal form. Unpublished, 1942.

[11] A. M. Turing. The use of dots as brackets in Church's system. *Journal of Symbolic Logic*, 7:146–156, 1942.

[12] A. M. Turing. Practical forms of type-theory. *Journal of Symbolic Logic*, 13:80–94, 1948.

Jonathan Seldin

Jacqueline Anne Stedall (1950–2014)

Jacqueline Stedall, who died of cancer on 27 September 2014, had a very productive and influential 18-year career as a scholar and teacher of history of mathematics at the UK's Open University and Oxford University, where she was affiliated with Queen's College and the Mathematical Institute. Jackie was wise, witty, kind, generous, and smart, and I feel grateful and privileged to have known and worked with her.

Although she earned a bachelor's degree in mathematics at Cambridge in 1972 and a master's degree in statistics at Kent in 1973, Jackie's career in history of mathematics didn't actually begin until 1996. Her friend and Oxford colleague Peter Neumann wrote in a memorial in *Historia Mathematica* [1] that mathematics history was actually her fifth career, the first four being statistician, administrator for a charity, stay-at-home mom, and mathematics teacher.

Jackie's career in mathematics history began when she enrolled in the well-known History of Mathematics course at the Open University, with its even better known textbook consisting of original source readings.

Figure 7: Jacqueline Stedall (1950-2014)

Jackie explained how she wound up in that course in the preface to her first book, writing

> I begin with thanks to my husband, a reader of book reviews, who thought that *The history of mathematics: a reader*, edited by Fauvel and Gray, might interest me. Little did he know what he was setting in motion. . . . [2, p. vii]

She was so taken with this book that in 1996 she enrolled in the Open University's history of mathematics course, where she quickly impressed her instructor, June Barrow-Green, and the other course instructors, John Fauvel and Jeremy Gray. By December of that year, Jackie was meeting with Open University faculty members Fauvel, Gray, and Barrow-Green to discuss Ph.D. thesis topics. She reported in early 2014 (see [1]) that they steered her away from her first choice of project, trying to organize and publish Thomas Harriot's manuscripts, with Gray suggesting instead that she investigate John Wallis's 1685 *Treatise of Algebra*. This project, advised by Fauvel, allowed her to examine the algebra not only of Wallis himself, but also of the late 16th- and 17th-century English mathematicians Oughtred, Harriot, Pell, and Brouncker, because Wallis had addressed them all in his book.

Jackie earned the Ph.D. in History of Mathematics in 2000 with an unusually broad and deep dissertation on the history of algebra in England as seen through John Wallis's eyes that resulted in six papers and the book mentioned above [2]. Sadly, John Fauvel died shortly before she completed her degree. He and his colleagues had certainly instilled in her the importance of seeking out and using original sources in historical research. I

am convinced that her Ph.D. research included studying every mathematical manuscript and book from the Medieval, Renaissance and Early Modern periods in the Bodleian Library's extensive collection.

Jackie continued her work on mathematics in 17th-century England with several more articles and with publication in 2003 of Thomas Harriot's extensive manuscript work on algebra in book form, her translation of Wallis's 1656 *Arithmetica infinitorum* in 2004, the mathematics and correspondence of John Pell in 2005 (with Noel Malcolm), and Harriot's manuscript work on interpolation methods and its influence in 2008/2009 (with me). Her work on 17th-century English mathematics and, in particular, on Harriot culminated in a digital edition of all 8,000 pages of Harriot's manuscript work on mathematics and science, the project she had originally wanted to do for her Ph.D. thesis. Although one could say Jackie worked on this project from 1996 forward—that is, throughout her career—she focused on it during the last few years of her life. During the summer of 2011 she wrote me to say she was at her cottage in the Hebrides with her daughter Ellie and the Harriot manuscripts (in digital form) and Neumann reported that she finished the lion's share of the manuscript work in December of 2013 [1].

But Stedall's work on Harriot and on 17th-century English mathematics is only part of her legacy. In the years following her dissertation she widened her already broad focus to include teaching of history of mathematics, writing on history of mathematics and in particular algebra beyond the 17th century, and historiographical issues. She also edited the *BSHM Bulletin* from 2002 to 2013, taking it from *Newsletter* to *Bulletin* in 2004 and from in-house production to bound academic journal in 2006.

In helping design an upper-level history of mathematics course at Oxford, she produced a sourcebook that went beyond Fauvel's and Gray's *Reader* by including facsimiles of the manuscripts themselves. *Mathematics Emerging: A Sourcebook 1540–1900* was published in 2008. She continued her study of early modern European algebra in *From Cardano's great art to Lagrange's reflections: filling a gap in the history of algebra*, published in 2011. Finally, her *Oxford Handbook of the History of Mathematics* (edited with Eleanor Robson, 2011) and her *History of Mathematics: A Very Short Introduction* (2012) challenged both historians of mathematics and those potentially interested in the field to broaden their perspectives beyond "elite history." In the latter book, she wrote,

> Without people who do and teach mathematics at every level, the elite could not flourish. Behind the outposts occupied by Wiles, Fermat, or Diophantus, there stretch vast hinterlands of mathematical activity that have been all too little explored in general histories of the subject. Part of the purpose of this book is to redress the balance and to reclaim mathematics for the man, woman, and child in the street, to revisit the history of mathematics from some new perspectives. [3, p. 17]

Besides her many publications and presentations (although not nearly as many of the latter as she might have made had she accepted all invitations), Jackie Stedall's very successful 14-year career at Oxford also included exceptional teaching and mentoring and exceptional service to the history of mathematics research and teaching communities. As a mentor to me, she taught primarily by example with an occasional word of advice, always gently delivered. In person and in correspondence, I found her to be at once warm and efficient. Her historical analysis and writing was careful and insightful, yet amazingly quickly done, and she retained a truly "fresh eyes" approach to original source material throughout her career. Jackie Stedall's distinctive approach to historical research, her significant contributions to the body of knowledge of history of mathematics, and her commitment to making source materials more readily available to scholars and students will continue to influence and advance our field well beyond her lifetime.

References

[1] Peter M. Neumann, "In Memoriam: Jacqueline Anne Stedall (4 August 1950 – 27 September 2014)," *Historia Mathematica* 42:1 (Feb. 2015), pp. 5–13.

[2] Jacqueline A. Stedall, *A Discourse Concerning Algebra: English Algebra to 1685*, Oxford University Press, 2002.

[3] Jacqueline Stedall, *The History of Mathematics: A Very Short Introduction*, Oxford University Press, 2012.

Janet Beery

Quotations in Context

> "The generation of random numbers is too important to be left to chance."
> – R. R. Coveyou

In 1967, the annual meeting of the Society for Industrial and Applied Mathematics was held in Washington, D.C. The program for the meeting included a symposium on applied probability and Monte Carlo methods, which was sponsored by the Air Force Office of Scientific Research. As part of the symposium, Robert Coveyou from Oak Ridge National Laboratory presented an invited paper entitled "The Mathematics of Random Number Generators." A revised version of the paper was included in *Studies in Applied Mathematics 3*, published by SIAM in 1969. The paper evaluates the strengths and weaknesses of random number generators, specifically those methods that could be easily implemented by computer.

Although the title of the original talk was somewhat prosaic, the revised, published version of the paper was given the more humorous title, "Random Number Generation is too Important to be Left to Chance." This title appears to be the source of the more common, slightly paraphrased statement that appears at the beginning of this column, since the author never uses any similar wording throughout the body of the paper. So in the case of this quotation, there is in a sense no surrounding context; instead, it appears to have been intended as a clever, eye-catching title to draw the reader into the paper.

There are other flashes of humor throughout the paper. For example, in Section 5.7, when a random set element has to be selected, the author states, "Choose a $\Sigma \in K^{\infty}$. (How? Don't ask!)"

Although I have seen the paraphrased version of Coveyou's paper title in many mathematical sources, I actually first ran across it in the online "space opera" comic *Schlock Mercenary* by artist and writer Howard Tayler.[4] It appears in the strip on May 28, 2003, where the quotation is attributed to an "ancient Earth mathematician" (the comic is set in the 31st century).[5] Below the strip, the author provides the following commentary:

> In 1969, Robert Coveyou, a mathematician at the Oak Ridge National Laboratory, said "the generation of random numbers is too important to be left to chance." Naturally, he was quoted out of context for the next thousand years, and his words appeared in everything from videogames to volumes of scripture.
>
> Had he trademarked the phrase, he might have made millions. Then again, he might not. Fame is fickle, and whether or not you object to the role played by chance, she rolls her own dice.

Mike Molinsky

[4] See `http://www.schlockmercenary.com/`

[5] See `http://www.schlockmercenary.com/2003-05-28`

New Members

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

Steve N. Dulaney
Stayton, OR
USA

Shiv Gupta
West Chester University
West Chester, PA
USA

John Hoskinson
Leominster
UK

John Nicholas
University of Western Ontario
London, ON
Canada

Samuel Patterson
University of Missouri-KC
Kansas City, MO
USA

George M. Rosenstein
Lancaster, PA
USA

Sinan Sencan
University of Calgary
Calgary, AB
Canada

Briana Yanke
Lee University
Antioch, TN
USA

From the Editor

CSHPM has much to celebrate this year, as you can see in this issue. Although we try in the Programme and Minutes, it is impossible to list all of the opportunities that were available at our joint meeting with BSHM, POM SIGMAA, and HOM SIGMAA. Somehow, there was also ample time for catching up with colleagues and friends. And, every talk offered something useful and engaging. Our membership numbers are holding the line, and we continue to utilize electronicized administrative tasks and publications. We are joining in an initiative to make pre-prints more accessible. After an approximately three-year absence, a CSHPM-organized session is returning to the CMS Winter Meeting. As I was preparing this issue, an email arrived from Springer, announcing the impending shipment of our first *Proceedings* to go through a formal publication process.

At the same time, we have areas for improvement. The number of graduate students attending our meetings appears to be significantly lower than it was 15–20 years ago, and students who complete their degrees are not converting over into regular membership. That is a multi-pronged and ongoing problem, related in part to changes occurring throughout academia, and better publicizing our Student Award is a start at addressing it. CSHPM Notes, our column in CMS *Notes* that brings issues in history and philosophy of mathematics to mathematicians with general interests, continues to lack a back-up supply for last-minute deadline difficulties. These pieces of 1,200 words plus a brief biographical note tend to fall into four categories: a) an overview of current happenings in a particular subfield; b) a view "behind the scenes" of how we do what we do; c) ideas for teaching history and/or philosophy in mathematics courses; and d) a non-technical taste of a small part of a research project. Contact Hardy Grant, *hardygrant@yahoo.com*, or me.

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. In the season of Canadian and American Thanksgivings, I also appreciate our officers, Councillors, and the volunteers who keep the Society's other functions operating smoothly. The next submission deadline for the *Bulletin* is 1 April 2016. As always, the editors seek news items of interest to historians and philosophers of mathematics, reports on conferences attended, and personal and professional announcements. We also welcome suggestions for memorials, book and web reviews, and informative or thought-provoking column-style articles. 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 (atzema@math.umaine.edu), and Production Editor Maria Zack (MariaZack@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.