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Canadian Society for History and Philosophy of Mathematics

Société canadienne d'histoire et de philosophie des mathématiques

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#### ABOUT THE SOCIETY

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

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

Vice-President: Glen Van Brummelen, Quest University, Squamish, BC V8B 0N8, CA, gvb@questu.ca Secretary: Patricia Allaire, 148-18 60 Ave., Flushing, NY 11355, USA, PatAllaire@gmail.com Treasurer: Dirk Schlimm, McGill University, Montréal, QC H3A 2T7, CA, dirk.schlimm@mcgill.ca Past President: Duncan J. Melville, St. Lawrence University, Canton, NY 13617, USA, dmelville@st-lawu.edu

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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 Antonella Cupillari, Penn State Erie, The Behrend College, Erie, PA 16563, USA, axc5@psu.edu. The Society's Archives are managed by Michael Molinsky (see above). Tom Archibald, Simon Fraser University, Burnaby, BC, V5A 1S6, CA, tarchi@math.sfu.ca, serves as CMS Liaison.

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

#### From the President

As I write these words, spring timidly shows its first signs in this part of the continent. As trees and animals come out of hibernation, historians and philosophers of mathematics seem to do the same, at least judging from their activities in various forums in March and April!

Craig Fraser opened up the month with a talk at Adelphi University on *Abraham de Moivre and de Moivre's Identity* on March 2.

There was a special session on history of mathematics at the AMS Sectional Meeting in Iowa last March 19. It really looked like a satellite event of our own Society: Michael O'Leary spoke on Archemedes and the Volume of a Sphere, Daniel Curtin followed by asking What numbers would Cardano use-, Thomas Drucker inquired about The Role of Languages in the Formulation of the Notion of an Ideal Language, Alexander F. Kleiner talked about The Early History of Summability Theory Preliminary Report and V. Frederick Rickey closed the day with a talk on Logic in Warsaw, 1915–1939.

I am myself coming back from the Association for Symbolic Logic (ASL) meeting which was held in Berkeley from March 24 to March 27, where I took part in a lively and interesting session on the foundations of mathematics, inspired by Solomon Feferman's classic objection to categorical foundations of mathematics. Elaine Landry and myself, to mention but the members of the Society, tried to answer Feferman's objection.

Judging from the list of speakers at the AMS Spring Eastern Sectional Meeting in Worcester from April 9 to April 10, it seems that it was another disguised meeting of a part of our Society! Indeed, not only is it organized by two of our members, Jim Tattersall and V. Frederick Rickey, the speakers include Maryam Vulis, Christopher Baltus, Bruce Burdick, Duncan J. Melville, Amy K. Ackerberg-Hastings, Francine F. Abeles, V. Frederick Rickey, Andrew B. Perry, Thomas Drucker, Paul R. Wolfson. What I cannot explain to myself is why the other speakers are not members of our Society. . . .

David Zitarelli will be speaking at the Philadelphia Area Seminar on the History of Mathematics on April 14 and will present David Hilbert's American Colony.

I am really looking forward to our Annual Meeting that will take place in Dublin in July. This is a joint meeting with the British Society for the History of Mathematics, and I certainly hope that many of you will come. Adrian Rice is organizing the meeting on our side (Tony Mann, John Earle, Noel-Ann Bradshaw and Raymond Flood are the other organizers). Although I haven't had the chance to see the program yet, I certainly want to thank Adrian for doing this. I know it is a lot of work and that it is certainly challenging to prepare such a program. I have no doubt that it will be an exciting, lively, and intellectually stimulating meeting.

Judging from the calendar of events, few of our members will be taking their vacation in July this year. Following our joint meeting in Dublin, there is the 14th Congress of Logic, Methodology, and Philosophy of Science in Nancy, France. I know that there will be special sessions in history and philosophy of mathematics. The Congress is overlapping with two other meetings: the 2011 Euler Society Conference from July 25 to 27, on the one hand, and the "Sets within Geometry" Conference, also in Nancy, from July 27 to 30. For those interested in experiencing jet lag: in principle, one could fly from Dublin to Nancy, then to Kenosha in Wisconsin to attend the Euler Conference, and then back to Nancy to attend the last one (not that I recommend it . . . ).

I cannot refrain from pointing out a wonderful new resource on our web site: Israel Kleiner has very kindly shared his list of references in history (and philosophy) of mathematics. You can easily access it and even download it. I really appreciated this gesture! I, for one, am completely depressed, now that I have seen all these books that look so interesting and that I haven't read! But at least I know where to start. Many thanks to Israel for sharing his list with us.

Jean-Pierre Marquis

#### Announcements

Best wishes to Jim Tattersall, who has been rehabilitating at home following quadruple bypass surgery in January. Clemency Montelle reports that she and her family were shaken but unharmed by the Christchurch, New Zealand, earthquake in February. They moved temporarily to their vacation home in an effort to restore daily routine while debris removal and rebuilding commenced. Courses at the University of Canterbury are re-starting on a progressive basis. Clemency greatly appreciates letters of support and concern; she may be reached at *C.Montelle@math.canterbury.ac.nz*.

Judith V. Grabiner's new book, A Historian Looks Back: The Calculus as Algebra and Selected Writings, is now available in the Mathematical Association of America's Spectrum Books series.

Amirouche Moktefi announces the publication of the intellectual biography, *Colin Maclaurin l'obstination mathématicienne d'un newtonien* (Presses Universitaires de Nancy, 2011), by Olivier Bruneau.

The Spring 2011 issue of *Philosophia Scientiae* was a special issue on "Hugh MacColl after one hundred years" edited by Amirouche Moktefi and Stephen Read. Contributors from CSHPM included: Francine F. Abeles and Amirouche Moktefi, "Hugh MacColl and Lewis Carroll: Crosscurrents in geometry and logic"; and James J. Tattersall, "Hugh MacColl's contributions to *The Educational Times*. Abstracts and the preface are available online: poincare.univnancy2.fr/PhilosophiaScientiae/-contentId=9029.

Danny Otero (Xavier) was an invited speaker at the MAA Allegheny Mountain Section Spring 2011 Meeting, 9 April 2011. The title of his talk was "Determining the Determinant (1693–1812), the Early History of a Sophisticated Idea."

Janet Barnett and George Heine moderated a parallel session on history of mathematics during the MAA Rocky Mountain Section Meeting, 9 April 2011. There was also a contributed papers session on history at the Southeastern Section Spring 2011 Meeting, 1–2 April 2011.

Amy Ackerberg-Hastings was promoted from Associate Adjunct Professor to Adjunct Professor at University of Maryland University College.

The Frederick V. Pohle Colloquium in the History of Mathematics, hosted by the Department of Mathematics & Computer Science at Adelphi University, presented the following speakers this past year: George P. H. Styan (McGill), "Some comments on old

magic squares illustrated with postage stamps" on 13 October 2010; Joseph Malkevitch (CUNY), "A Brief History of the Mathematics of Convex Polyhedra" on 3 November 2010; Karen Parshall (Virginia), "Algebra: Creating New Mathematical Entities in Victorian Britain" on 1 December 2010; Craig Fraser (Toronto), "Abraham de Moivre and de Moivre's Identity" on 2 March 2011; Rob Bradley (Adelphi), "The Binomial Theorem from Newton to Cauchy" on 6 April 2011; and Fred Rickey (USMA), "Logic in Warsaw, 1915–1939" on 4 May 2011.

The 2010–2011 schedule for the Philadelphia Area Seminar on the History of Mathematics (PASHoM) included: Karen Parshall (Virginia), "Algebra: Creating New Mathematical Entities in Victorian Britain" on 16 September 2010; Betty Mayfield (Hood), "Women, Mathematics, Euler and Undergraduates" on 21 October 2010; John W. Dawson (Penn. State), "The Role of Alternative Proofs in Mathematical Practice" on 18 November 2010; Paul Wolfson (West Chester), "Geometry of Relativistic Velocities" on 9 December 2010; Eugene Bowman (Penn. State-Harrisburg), "Benjamin Robins's 'Treatise on Fluxions': An Early Response to Berkeley" on 20 January 2011; Alan Gluchoff (Villanova), "Status ('Respect') in Mathematics: The Case of Nomography" on 17 February 2011; Florence Fasanelli (AAAS), "Andrew Ellicott: Surveyor, Town Planner, Mentor, Teacher" on 17 March 2011; and David Zitarelli (Temple), "David Hilbert's American Colony" on 14 April 2011.

The 26th meeting of the ORESME Reading Group was held February 25–26, 2011, at Northern Kentucky University. Following up on last fall's reading of Ernst Kummer's work on the invention of ideal complex numbers, the group continued to study the evolution of the concept of ideal by reading from Richard Dedekind's writing in the Supplement to the 2nd (1871) edition of Dirichlet's Vorlesungen 'uber Zahlentheorie, as translated by Jeremy Avigad. Further information on this and previous meetings is available at: www.nku.edu/~curtin/oresme.html.

The ARITHMOS Reading Group met March 26–27 at Western Connecticut State University. The topic of discussion was Section 5 of L'Hospital's *Analyse des infiniment petits* in English translation. The group will move on to Sections 9 and 10 at its next meeting, August 20–21. For information, contact Chuck Rocca,

RoccaC@wcsu.edu. For a copy of the readings, contact Rob Bradley, bradley@adelphi.edu.

Michel Serfati announces the second semester program for the annual seminar on Epistemology and History of Mathematical Ideas, held Wednesdays at 2:00 pm at the Institut Henri Poincaré in Paris. An emphasis on Descartes' mathematics, philosophy, and physics continues from last fall: Jean Mesnard (l'Institut), "Figure géométrique et construction philosophique chez Pascal," and Michel Serfati (IREM-Université Paris VII), "Mécanique, géométrie, et philosophie dans la Géométrie de Descartes" on March 9; Kenneth Manders (Pittsburgh), "Uniformity in Descartes' Geometric Method" on March 23; Christiane Vilain (LUTH & SPHÉRE), "Descartes, un mathématicien face à la Nature" on March 30; Eberhard Knobloch (Académie de Berlin), "Géométricité, rigueur et analyse: comment Leibniz a-t-il réagi à la Géométrie cartésienne-" and Michel Serfati, "Aspects philosophiques de l'émergence du symbolisme mathématique, de Descartes à Leibniz" on April 6; Michel Serfati, "Les treillis de Post. Théories 'modernes' (1960-1970). Aspects mathématiques et philosophiques" on May 18; Olivier Hudry (École Nationale Supérieure), "Structures ordonnées et agrégation des préférences" on May 25; and Michael Detlefsen (Notre Dame), "Freedom in Mathematics" on May  $30.^{1}$ 

The 14h Annual Legacy of R. L. Moore Conference, co-hosted by the Educational Advancement Foundation and the MAA, will be held in Washington, DC, June 2–4, 2011. The conference will unveil the final results of a three-year project assessing student outcomes in inquiry-based learning classes at four major research universities. For the program and registration information, see legacyrlmoore.org/events.html.

Proposals are invited for papers to be presented at the 2011 Euler Society Conference, to be held at Carthage College in Kenosha, WI, July 25–27. As always, papers relevant to Euler's life and work, including his contributions to mathematics, science, technology, philosophy, religion, or education, are encouraged. However, papers related tangentially to Euler's life, times, or work are also welcome. Proposals are due by May 20 and should be sent to

 $<sup>^1{\</sup>rm See}$ www.irem.univ-paris-diderot.fr under /sections/epistemologie.

Erik Tou, etou@carthage.edu, and Dominic Klyve, klyved@cwu.edu. See also eulersociety.org.

A Second International Conference on the History of Mathematics Education will be held in Lisbon, Portugal, October 2–5. This meeting follows the successful meeting held in Iceland in June 2009. Abstracts of proposed contributions should be submitted to José Manuel Matos, jmm@fct.unl.pt, by April 30. Further information is posted at: www.uied.fct.unl.pt under /moodle/course/view.php-id=27.

The Forum for the History of the Mathematical Sciences will again sponsor a session at the History of Science Society Annual Meeting in Cleveland, November 3–6, which will be a co-located meeting with the Society for the History of Technology and the Society for Social Studies of Science. Other presentations of interest to historians and philosophers of mathematics are expected. Online registration opens on August 1, and further information may be found at www.hssonline.org.

Vancouver will host the next American Association for the Advancement of Science conference (February 16–20, 2012). This is a significant opportunity to showcase Canadian research excellence and for scholars to network with scientists and media from around the world. CFHSS will be a significant presence at the meeting. Abstracts are due April 26, and further information is available at www.aaas.org.

An article on CFHSS's ongoing efforts to raise the profile of scholarship in the humanities and social sciences appeared in the April 4 issue of *University Affairs*, available via www.universityaffairs.ca.

The 46th Korean National Meeting of Mathematics Education was held at Soongsil University in Seoul April 1–3. Papers presented will appear in the journal of the Korean Society of Mathematical Education, Research in Mathematical Education 15, no. 1 (March 2011).

The Pushpa Publishing House invites original research papers and critical survey papers for consideration of publication in *Journal of Fixed Point Theory and Applications*. See www.pphmj.com.

The Deutsches Museum in Munich solicits applications to its Scholar-in-Residence program, for periods of either 6 or 12 months. This program is international and interdisciplinary, and it welcomes applications from scholars at all stages of their careers, from pre-doctoral to senior scholars. The Deutsches Museum is one of the world's premier museums of science and technology and has extensive library, archives, and collections resources. It operates its own Research Institute and has close ties to the history of science and technology programs in the three universities in Munich (Munich Center for the History of Science and Technology). For further information, see: www.deutsches-museum.de/en/research/scholar-in-residence/.

The research center SPHERE in Paris advertises a postdoctoral position in the history of mathematics for the academic year 2011–2012. The holder of this position is expected to take part in the pluri-annual research program "History of Numerical Tables" sponsored by a grant from the French Agence Nationale de la Recherche. The successful applicant will have a Ph.D. thesis (or equivalent) in the history and philosophy of science defended in the last three years. A good knowledge of English is necessary and knowledge of one or more other ancient or modern languages will be helpful. The applicant will be able to use computer programs used in the development of web platforms. Applications are due by May 15. For more information, contact M. Dominique Tournès, Dominique.tournes@univ.reunion.fr.

#### **HOM SIGMAA News**

The History of Mathematics SIGMAA hosted several successful sessions at the Joint Mathematics Meetings in New Orleans in January, including Treasures from the Past: Using Primary Sources in the Classroom. The HOM SIGMAA also held its tenth, yes tenth! annual reception, along with a business meeting and guest lecture, on the evening of January 6, the first full day of the Meetings. The business portion of the meeting included the introduction of the newest member of the Executive Committee, Prize Coordinator Herb Kasube of Bradley University. At the conclusion of the business meeting, Ken Clements and Nerida Ellerton, of the Department of Mathematics at Illinois State University, gave the annual HOM SIGMAA Guest Lecture, a fascinating presentation on "The Special Role of Cyphering Books in the Early History of Mathematics Education in North America." Their talk, richly illustrated with 18th-and 19th-century artifacts from their personal collection, opened our eyes to the role of "cyphering books," hand-copied books that demonstrated the penmanship and mathematical prowess of the young students who created them in pre-Civil War America. The presentation concluded with many questions and answers and a hands-on look at more than a dozen cyphering books that Ken and Nerida had brought with them.

In upcoming meetings, several HOM sponsored events are scheduled. At Math Fest in Lexington, KY, August 4-6, The History of Mathematics and Its Uses in Teaching contributed paper session (CPS) will be organized by Herb Kasube. At the Joint Mathematics Meetings in Boston, MA, January 2012, two CPSs will be run: Writing the History of the MAA and Its Sections, organized by Victor Katz, Janet Beery, and Amy Shell-Gellasch; and The History of Mathematics and Its Uses in the Classroom (it is a very popular topic!) organized by Amy S-G. Also in Boston, Amy S-G and Dominic Klyve will facilitate a mini-course aimed at revitalizing your Latin skills, entitled Reading Original Sources in Latin for the Historian and Mathematician. Kim Plofker and Stacy Langton will be our guides on this journey of rediscovery of lost Latin proficiency.

Finally, the HOM SIGMAA is very excited to announce that the group has funded the initial phase of digitizing 350 of the almost 2000 photos in the Paul Halmos collection, which is now housed at the Archives of American Mathematics in Austin, TX. Halmos was an avid photographer and took numerous pictures of mathematicians, mostly at meetings (along with many pictures of his cats). After these photos are digitized, they will be posted on Convergence (mathdl.maa.org/mathDL/46/)! A wiki will be set up by the MAA so that interested people can annotate the images, many of which have only brief descriptions on the back. Particularly troublesome photos will also be spotlighted in Focus. We hope to continue funding this project until most of the photos are digitized.

Amy Shell-Gellasch

#### 2010 Financial Statements

The following financial statements cover the period 1/1/2010 through 12/31/2010.

	\$ Can.
Income	7 5 31.23
dues/subscr.	11,463.83
SSHRC travel grant	3480.00
Interest (GIC)	115.15
TOTAL	15,058.98
Expenses	
CFHSS dues (2010)	1801.35
Historia Mathematica	2864.32
Philo. Mathematica	2069.60
Proceedings	1056.98
Postage etc.	201.78
May speaker	250.00
Travel claims	3817.10
Bank charges	9.52
TOTAL	12,070.65
NET	2,988.33
Balance	36,716.30
TD Mortgage Corp.	3838.43
(matures 23/2/'11)	
TOTAL	40,554.73

#### **Comments:**

Because the Society has 2 accounts, one in US dollars, we keep two different accounting systems. At the request of the editors, we have combined the numbers for these accounts. The numbers given are in Canadian dollars. A conversion factor of 0.995 has been used to convert American dollars into Canadian ones.

Due to a delay in transferring signing authority I was only able to access the Society's bank accounts in January 2011. I am grateful for Nathan Sidoli and Jean-Pierre Marquis for handling matters until then. As far as I can tell, no reciprocal membership fees for BSHM were paid or received in 2010. It is planned to reinvest the interest from the GIC together with the GIC in the future. Finally, I would like to express my thanks to Patricia Allaire and Nathan Sidoli, who gently helped me find my way through the Treasurer's tasks.

Dirk Schlimm

# 2011 BSHM/CSHPM Joint Meeting Programme

The Fifth Joint Conference of the British Society for the History of Mathematics and the Canadian Society for History and Philosophy of Mathematics will be held at Trinity College, Dublin, 15–17 July 2011. The meeting is co-sponsored by the International Commission on the History of Mathematics. This is a preliminary programme; updates will be posted at www.cshpm.org. Abstracts for all of the talks are available at the same website. Except for the plenary lectures, presentations are 20 minutes, with 5 minutes for discussion and 5 minutes of set-up before the next talk. Many advance thanks to the program organizers, Tony Mann and Adrian Rice.

#### Friday, July 15

- **9:30** PRESIDENTS' WELCOME (Tony Mann and Jean-Pierre Marquis)
- 9:45 Plenary I: Robert Thomas (Manitoba), "The dramatis personae of the Spherics of Theodosios"10:30 COFFEE

### PARALLEL SESSION IA: PHILOSOPHY OF MATHEMATICS

- **11:00** Yvon Gauthier (Montréal), "Infinite Descent: All the Way Down and Up Again"
- 11:30 Danielle Macbeth (Haverford), "Seeing How It Goes: The Peculiar Role of Writing in Mathematical Reasoning"

### PARALLEL SESSION IB: NEAR-EASTERN MATHEMATICS

- 11:00 Duncan Melville (St. Lawrence), "Locating Mathematics in the Scribal Culture"
- 11:30 Glen Van Brummelen (Quest), "A Survey of the Mathematical Sciences in Medieval Islam, 1995 to the Present"

12:00 CSHPM EXECUTIVE COUNCIL MEETING 13:00 LUNCH

## PARALLEL SESSION 2A: PERSPECTIVES ON EARLY-MODERN MATHEMATICS

- **14:00** Hardy Grant (York), "Mathematics in the Scientific Revolution: Competing Approaches"
- 14:30 Janet Beery (Redlands), "Shared Knowledge and Parallel Insights circa 1610 in Europe"
- **15:00** Reinhard Siegmund-Schultze (Adger), "Johannes Lohne—The forgotten Norwegian re-discoverer of Thomas Harriot"

### PARALLEL SESSION 2B: PHILOSOPHY OF MATHEMATICS

- 14:00 Michel Serfati (Paris VII-Denis Diderot), "Constructivism, obscurities, conflicts between criteria in Descartes' *Géométrie*. Mathematical and philosophical aspects"
- 14:30 Gregory Lavers (Concordia), "What is a neo-Carnapian foundation for mathematics, and why do we need one-"
- **15:00** Molly Kao (W. Ontario), "Is the Inferential Conception of Applied Mathematics Complete-"

### PARALLEL SESSION 2C: 18TH-CENTURY MATHEMATICS

- **14:00** Bruce Burdick (Roger Williams), "Various Observations on Euler's E72"
- **14:30** George Heine (Math & Maps), "Conformal Mapping in the 18th Century"
- 15:00 Bruce Petrie (Toronto), "Following Your Gut and Following the Rules: The Function of Intuition and Algorithm in 18th-Century Analysis"

#### **15:30** TEA

## PARALLEL SESSION 3A: HISTORY AND PHILOSOPHY OF PROBABILITY

- 16:00 Maria Zack and Megan Ford (Point Loma), "Huygens' Five Problems and the History of Probability"
- 16:30 Paolo Rocchi (IBM and LUISS) and Leonida Gianfagna (IBM), "Two Theorems and the Manifold Nature of Probability"

### PARALLEL SESSION 3B: 18TH-CENTURY MATHEMATICS

- **16:00** Andrew Perry (Springfield), "The Emigration of British Arithmetics to America"
- 16:30 Staffan Rodhe (Uppsala), "A Forgotten Booklet by Goldbach Now Revealed"
- 17:00 Plenary II: Gregg De Young (American U.-Cairo), "Further Adventures of the Rome 1594 Arabic Redaction of Euclid's Elements"

#### Saturday, July 16

#### 8:00 BREAKFAST

**9:00** Plenary III: Adrian Rice (Randolph-Macon), "Curved, elliptic . . . but not ellipses: An elliptical history of elliptic curves before Poincaré"

### PARALLEL SESSION 4A: 19TH-CENTURY MATHEMATICS

- 10:00 Steven Weintraub (Lehigh), "Cayley, Harley, and the Quintic"
- 10:30 Tony Crilly (Middlesex), "'Who do you think you are-' Thomas Penyngton Kirkman (1806–95)"

### PARALLEL SESSION 4B: MATHEMATICS EDUCATION

- 10:00 Amy Ackerberg-Hastings (UMUC), "The Evolution of Mathematics Teaching Practices, c. 1770–1970"
- 10:30 Patrick Touhey (Misericordia), "Using the History of Mathematics in a Basic Statistics Course"

#### **11:00** COFFEE

11:30 Plenary IV: June Barrow-Green (Open), "An American view of Europe. Oswald Veblen's correspondence with George Birkhoff during 1913–1914"

#### **12:30** LUNCH

13:30 CSHPM ANNUAL GENERAL MEETING

15:00 FREE AFTERNOON – Take time to enjoy the delights of Dublin. Admire the 13th-century architecture of nearby Dublin Castle, sample a pint at the Guinness Storehouse, or go shopping on Grafton Street. You can even visit the Book of Kells in the Old Library of Trinity College.

#### 19:00 CONFERENCE DINNER

#### Sunday, July 17

#### 8:00 BREAKFAST

**9:00** Plenary V: Karen Hunger Parshall (Virginia), "Mobilizing Mathematics: The American Mathematical Societies and World War II"

### PARALLEL SESSION 5A: PHILOSOPHY OF MATHEMATICS

- 10:00 George Rousseau (Leicester), "Definition by Induction in Modern Algebra"
- 10:30 Jean-Pierre Marquis (Montréal), "Axiomatizing Homotopy Theory: Lifting mathematical concepts via the axiomatic method"

# PARALLEL SESSION 5B: PICTORIAL REPRESENTATIONS OF MATHEMATICS AND MATHEMATICIANS

- 10:00 David R. Bellhouse (W. Ontario), "The Deification of Newton in 1711"
- 10:30 Eileen F. Donoghue (Staten Island), "Sources and Resources for the History of Mathematics: Contributions of David Eugene Smith"

#### **11:00** COFFEE

### PARALLEL SESSION 6A: WOMEN, SCIENCE, AND MATHEMATICS

- 11:30 Charlotte K. Simmons and John F. Barthell (Cen. Oklahoma), "Emmy Noether and Rosalind Franklin"
- 12:00 Della Fenster (Richmond), "Expect the Unexpected: Pioneers who Promoted Women in Mathematics and Science"

## PARALLEL SESSION 6B: MATHEMATICAL APPLICATIONS

- 11:30 Michiyo Nakane (Rikkyo), "Did Hamilton and Jacobi construct the Hamilton-Jacobi theory as we know it today-"
- 12:00 Shunshi Koyama (Aoyama Gakuin), "An Origin History of Computer Science in Japan: Eiichi Goto and Parametron Computer"

#### 12:30 LUNCH

## PARALLEL SESSION 7A: PHILOSOPHY OF MATHEMATICS

- **14:00** Dirk Schlimm (McGill), "Pasch's Ideas for a Renewal of Logic"
- **14:30** Madeline Muntersbjorn (Toledo), "On the Intellectual Heritage of Henri Poincaré"
- 15:00 Susan Vineberg (Wayne State), "Two Sorts of Explanation in 20th-Century Foundational Work"

### PARALLEL SESSION 7B: 18TH/19TH-CENTURY MATHEMATICS

- **14:00** Joao Caramalho Domingues (Minho) "The Influence of Euler's Calculus Treatises"
- **14:30** Janet Heine Barnett (Colo. State-Pueblo), "The Dual Arithmetic of Oliver Byrne: 'A New Art which entirely supersedes the use of logarithms"
- **15:00** Robin Wilson (Open/Pembroke, Oxford), "Thomas Hirst: A Victorian Mathematician in Europe"

## PARALLEL SESSION 7C: MATHEMATICS, DIALOGUE, LITERATURE

- 14:00 Travis D. Williams (Rhode Island), "Inventing Rigor in the Dialogue of Early Modern Mathematics"
- 14:30 Gavin Hitchcock (Zimbabwe/Stellenbosch), "Discovering History by Dialogue"
- **15:00** Tony Mann (Greenwich), "From Sylvia Plath to Bad Sex: Uses of Mathematics in Fiction"

#### **15:30** TEA

- **16:00** Plenary VI: V. Frederick Rickey (USMA), "Polish Logic from Warsaw to Dublin: The Life and Work of Jan Lukasiewicz"
- 17:00 VICE-PRESIDENTS' CLOSING REMARKS (Robin Wilson and Glen Van Brummelen)

# What's Sauce for Iowa City is Sauce for Worcester

Three weeks after the American Mathematical Society's meeting in Iowa City (described elsewhere in this issue), another AMS meeting (held at the College of the Holy Cross in Worcester, Massachusetts) featured a session devoted to history and philosophy of mathematics. It was organized by Fred Rickey of West Point and Jim Tattersall of Providence College. The idea had been conceived before the latter's quadruple bypass surgery, so Fred had been left with the bulk of the organizational work. Jim did, however, show up for this meeting, looking little the worse for wear, although not perhaps entirely happy with the diet enjoined by the medical authorities. Another welcome appearance was that of Ed Sandifer, as many of those present were seeing him for the first time since his stroke. His ability to get around without assistance was a welcome sight.

The session started off on Saturday morning (April 9, 2011) with Maryam Vulis looking at Markov's resistance to Kovalevskaya's application to the St. Petersburg Academy of Sciences, even if the mathematical resistance may have been motivated by political considerations. Chris Baltus (SUNY-Oswego) examined, with his characteristic attention to detail, the evolution of Poncelet's approach to Apollonius' problem. Then Bruce Burdick (Roger Williams) followed up on an earlier joint paper with Ed Sandifer, providing proofs for results of Euler that did not skate on quite such thin ice over the waters of divergence. Steve Weintraub of Lehigh described the contributions of Legendre to the ideas of quadratic reciprocity, especially by contrast with the language of Gauss on the subject. The morning session ended with a talk by Scott Guthery on the little-known figure of Charles Haros, which opened up into a broader discussion of the compilation of mathematical tables in nineteenth century France and the distinction between ordinateurs and calculateurs.

The afternoon started off with Duncan Melville (St. Lawrence University) offering further insight into the world of Mesopotamian word problems, as he connected the language in which the problems are stated with some incantatory texts from the same period. Then followed the trio of authors of the celebrated re-

cent book on instruments in American mathematics: Peggy Kidwell of the Smithsonian, Amy Ackerberg-Hastings of University of Maryland University College, and David L. Roberts of Prince George's Community College. Their talks here were entirely unrelated. The first, Peggy's, addressed the subject of eponymy especially as applied to machines. One question the audience was left to contemplate was whether it was an honour to have a machine named after a mathematician or not. Amy took time off from her editorial duties on this newsletter and from tending to Peter (whose picture was included among her slides) to talk about a forthcoming article of hers on the history of mathematical education for a Springer compendium. She argued that the project might have the more value if the educational community was ready to listen to the results. Then Dave Roberts tackled two questions, of which the first was how Simon Newcomb had reached such positions of eminence in the nineteenth century with such limited formal mathematical qualifications. The second was how Newcomb came to lose his influence as a result of developments in mathematical education.

The last two talks of the afternoon were by Fran Abeles of Kean University and Fred Rickey of West Point. Fran's subject was Richard Proctor, the founder in the nineteenth century of the journal Knowledge, whom she compared to Martin Gardner. Fred (reporting on joint work with Tina Hartley) looked at the calculus textbooks used at West Point in the twentieth century, speculating on why Granville's held pride of place for so long. He also looked at the attempts in the 1960s to do calculus in a more rigorous fashion, which did not prove enduringly popular.

Sunday morning started even earlier with a special lecture by Hardy Grant on van Helmont. (The term 'special' may have been intended just to denote its not having made the pages of the official program, but it also conveys some of the distinctive touch that Hardy brings to bear on any subject.) He tried to distinguish different strands in the mathematization of science in the so-called Scientific Revolution, ranging over the millennia with a light touch. This was followed by Shai Simonson of Stonehill College on a particular problem raised by Levi ben Gershon (Gersonides) in his *Maasei Hoshev*. It appeared in the first 'edition' of the book (whose title could be translated 'Deeds of Thought') but was lacking in the second,

perhaps because the solution was too opaque. Andrew Perry (Springfield College) then continued his investigation into presidential mathematics by looking at John Adams's mathematical interests. He also provided the first local connection, as Adams had spent a couple of years in Worcester early in his career.

The latter half of the last session began with Tom Drucker paying tribute to the memory of Bruce Miller (a musicologist at Holy Cross) by looking at the role mathematics had played in the work of the dramatist W.S. Gilbert. He received a warm expression of gratitude from the audience for not singing. Jennifer Beineke of Western New England College offered a quick tour of some of the highlights of progress on one strand of research into the Riemann Hypothesis, as well as ending with a Gilbert quotation entirely without consultation with the previous speaker. Finally, Paul Wolfson of West Chester University looked at the geometrical side of Sommerfeld's approach to relativity theory.

Since the session was titularly devoted to history and philosophy of mathematics, the shortage of the latter may have been something of a disappointment. On the other hand, the wide range of historical periods and topics was a tribute to the health of the history of mathematics. The organizers well deserved the thanks of the audience for putting together such an instructive session.

Tom Drucker

### Mathematical Ephemera

An occasional series that basically aims to be a "news of the weird" in the primary sources for the history of mathematics. In this installment, we contemplate Florian Cajori's *The Teaching and History of Mathematics in the United States* (Washington, DC: Government Printing Office, 1890). The starting point for anyone researching American mathematics education, the book is also a classic example of an author packing anything and everything between one volume's covers. For example, Cajori devotes 66 pages to the responses to a survey that attempted to depict "the mathematical teaching at the present time." These questions and answers are often discussed but not as often directly perused, but retyping them will have to wait

until a time when the columnist's time would not be better served by sleeping. Instead, here is an excerpt from one of the three historical essays placed as an appendix to the volume, dealing with "history of infinite series" (pp. 362-363).

In Volume III, page 272, [Montucla] expresses the desirability of having a more rigid demonstration of the binomial theorem than that given by Newton, so that no rational being might ever entertain the faintest doubt of its truth. Among the early English mathematicians there was one who did raise objections to the binomial formula, and of him Montucla says: "Thus we have seen a certain Dr. Green, \* \* \* although professor of physics at the University of Cambridge and a colleague of Cotes, not only doubt it, but pretend that it was false and say he could prove it by examples badly applied; but it does not appear that the English geometers, not even Cotes, his colleague, deigned to reply to him." In the light of modern science, this passage ridiculing Green is very instructive. Time has turned the tables, and the laugh is no longer upon Green, but upon Montucla himself. We now wonder at the recklessness with which infinite series were once used in mathematical reasoning. To be sure, talents of the first order, such as Newton, Leibnitz, Euler, Clairaut, D'Alembert, possessed too much tact and intuitive insight to permit themselves to be dragged to the dangerous extremes and yawning precipices of error, toward which their own imperfect theory of infinite series tended to draw them. And yet, some of them did not escape blunders. The penetrating and teeming mind of Euler, for instance, is said to have fallen into some glaring mistakes by the incautious use of infinite series.

Among the mathematicians who, above all others, made the most unrestricted and reckless use of infinite series, were the Germans. There flourished in Germany during the latter part of the eighteenth century a mathematical school which occupied itself principally with what was termed "combinatorial analysis." This analysis was cultivated in Germany with singular and perfectly rational predilection. One of the first problems considered by them was the extension of the binomial formula to polynomials, and the devising of simple rules by which polynomials could be developed into series. The solution of this problem was followed by the problem of "reversion of series." In this connection a quotation from Gerhardt's Geschichte der

Mathematik in Deutschland (p. 205) is instructive.

Says he: "The advocates of the combinatorial analysis were of the opinion that with the complete solution of this problem (of reversion of series) was given also the general solution of equations. But here they overlooked an important point—the convergency or divergency of the series which was obtained for the value of the unknown quantity. Modern analysis justly demanded an investigation of this point, inasmuch as the usefulness of the results is completely dependent upon it." It thus appears that, through the misuse of infinite series, the Germans were temporarily led to believe that they had reached a result which mathematicians had so long but vainly striven to attain, namely, the algebraic solution of equations higher than the fourth degree. It will be observed that their method lacked generality, since it could at best not vield more than one root of an equation. But in the determination of this one root the combinatorial school was deceived. The result was a mere delusion—a mirage produced by the refraction of the rays of reasoning from their true path while passing through the atmosphere of divergent series.

#### From the Land of Dormant Corn

The American Mathematical Society Central Section meeting in Iowa City, Iowa, included a special session on the history of mathematics on Saturday, March 19. The session was organized by Colin McKinney, currently at Bradley University and shortly to head off to Wabash College. Colin had arranged for a viewing of the some of the rare items in the University of Iowa special collections on Friday afternoon, and we carefully avoided spilling anything that would have left our mark on Galileo or Euclid. Originally six speakers had been lined up, but Larry D'Antonio allowed an attack of influenza to keep him home. The smaller number of speakers gave each one of them an hour by the schedule, although the organizer kept them to about forty minutes.

The opening talk was given by Michael O'Leary of the College of DuPage (in suburban Chicago). He is the author of the recent *Revolutions of Geometry* (Wiley, 2010) and devoted his time to Archimedes' argument for the volume of the sphere, both from the *Method* and *On the Sphere and Cylinder*. The careful

reconstruction by the speaker can be traced in his text (pp. 193-224). He ended with Cicero's description of finding the grave of Archimedes (although the book doesn't identify the translator of the Cicero whose English is used). The talk was laced with humour and furnished many of us with tips about how to present the Archimedes argument in a classroom.

Dan Curtin (of Northern Kentucky) followed with a talk on Cardano's use of various kinds of numbers. He pointed out the apparent inconsistencies in what Cardano was willing to accept, without having a means of reconciling them. After all, Cardano apparently (in his De Regula Aliza Libellus) claims that the product of a negative and a negative is a positive. After some of that lack of consistency and clarity, Bombelli's presentation of the same material was bound to be illuminating. Dan steered away from the Tartaglia controversy, but used his Irish wit to good advantage. (I shan't speculate on whether an organizer named McKinney would intentionally have chosen to start with two speakers of Irish ancestry for a session two days after St. Patrick's Day.)

Thomas Drucker (University of Wisconsin-Whitewater) addressed the question raised by Jeremy Gray in his *Plato's Ghost* of the relationship between the universal languages of the late nineteenth century (like Esperanto and Volap<sup>f</sup>uk), the formal languages of the same period (such as Frege's Begriffsschrift), and the rise of modernism. He pointed to similar developments in the seventeenth century and suggested that Gray had not articulated what made the nineteenthcentury cases different. In addition, he argued that the rapid appearance of semantics in the work of Hilbert moved mathematics into the post-modernist camp within a decade or two. His talk was illustrated with the quotation from Rhodri Lewis, 'It can be difficult to distinguish between irony, persiflage, charlatanism, and honest confusion.'

Alexander Kleiner of Drake University returned more to the core of mathematics with a talk about the early history of summability theory. The question he addressed was why in the late nineteenth century there seemed to be a revolt against the Cauchy/Abel abolition of divergent series from mathematical discourse. He explained some of the connections between different kinds of summability and entertained the audience with an account of one of the controversies featuring

Heaviside and Hardy.

The session concluded with Fred Rickey (West Point) looking back at the development of Polish logic in the early part of the twentieth century. He described the conscious efforts of the Polish mathematical community to create both a journal and a set of specialties in which Polish scholarship could lead the world. As the last student of Soboczyński, Fred was singularly well placed to be able to supplement documents with recollections. It is to be hoped that his account of the period and its accomplishments will find a wide readership. After Fred's talk, those present acknowledged the work of the organizer and the contributors.

Tom Drucker

### **Quotations in Context**

"There are no sects in geometry."

"He who has heard the same thing told by 12,000 eye-witnesses has only 12,000 probabilities, which are equal to one strong probability, which is far from certain."

In 1764, a collection of 73 articles on a variety of topics was published anonymously under the title *Dictionnaire philosophique portative*. The writing was informal and often in the first person, and the work is more accurately described as a collection of essays rather than as a dictionary. Despite being proscribed by the Catholic Church as well as burned in Paris and other cities, the work was extremely popular: it was reprinted five times and expanded to include additional articles. The final version was published in 1769 under the title *Dictionnaire philosophique*. Not until years later did it became widely known that the author of the work had been François-Marie d'Arouet, better known as Voltaire.

It is in the opening lines of the article "Sect" that the first quotation from the beginning of this column appears. The excerpts below come from H. I. Woolf's English translation, published in 1924:

Every sect, in whatever sphere, is the rallying-point of doubt and error. Scotist, Thomist, Realist, Nominalist, Papist, Calvinist, Molinist, Jansenist, are only pseudonyms. There are no sects in geometry; one does not

speak of a Euclidian [sic], an Archimedean. When the truth is evident, it is impossible for parties and factions to arise. Never has there been a dispute as to whether there is daylight at noon.

While it was true at the time the article was written that "one does not speak of a Euclidian," of course it is now commonplace to discriminate between Euclidean geometry and non-Euclidean geometries such as hyperbolic geometry. However, the actual meaning of Voltaire's quotation still seems to hold true today: unlike religious sects, modern mathematicians do not argue that Euclidean or non-Euclidean geometry is the one "true" geometry, but only that each is equally consistent as a mathematical system. Voltaire comes back to this same point about sects in geometry at the end of the article "Tolerance," generalizing to include other branches of mathematics:

It is thus that a great part of the world long was treated; but today when so many sects make a balance of power, what course to take with them- Every sect, as one knows, is a ground of error; there are no sects of geometers, algebraists, arithmeticians, because all the propositions of geometry, algebra and arithmetic are true. In every other science one may be deceived. What Thomist or Scotist theologian would dare say seriously that he is sure of his case-

The second quotation at the beginning of this column comes from the article "Truth," which opens by relating the Biblical story of Pontius Pilate asking, "What is truth-" and then immediately leaving the room. Voltaire laments Pilate's lack of intellectual curiosity and proceeds to imagine a lengthy training regimen for him: at least six months of logic, three or more years of geometry, a year of physics, as well as additional years of theology and metaphysics. Once this training was complete, Voltaire concludes:

I should then have said to Pilate:—Historical truths are merely probabilities. If you had fought at the battle of Philippi, that is for you a truth which you know by intuition, by perception. But for us who dwell near the Syrian desert, it is merely a very probable thing,

which we know by hearsay. How much hearsay is necessary to form a conviction equal to that of a man who, having seen the thing, can flatter himself that he has a sort of certainty- He who has heard the thing told by twelve thousand eye-witnesses, has only twelve thousand probabilities, equal to one strong probability, which is not equal to certainty. If you have the thing from only one of these witnesses, you know nothing; you should be sceptical. If the witness is dead, you should be still more sceptical, for you cannot enlighten yourself. If from several witnesses who are dead, you are in the same plight. If from those to whom the witnesses have spoken, your scepticism should increase still more. From generation to generation scepticism increases, and probability diminishes; and soon probability is reduced to zero.

The *Dictionnaire philosophique* contains many other mathematical references besides the two most common quotations that this column has traced. As an example, I'll conclude with my personal favorite, which appears in the "Contradictions" article:

I know only two kinds of immutable beings on the earth, mathematicians and animals; they are led by two invariable rules, demonstration and instinct: and even the mathematicians have had some disputes, but the animals have never varied.

Mike Molinsky

#### AGM of CFHSS

The Annual General Meeting of the Canadian Federation of Humanities and the Social Sciences took place in Ottawa on 26–27 March 2011.

I was unable to attend the Annual Meeting of the CFHSS in person this year because of medical problems. However, I hope to go next year. The format of the meeting has also been changed to add a conference open to the public besides the presidential address and business meeting. Of the 162 (half in French) pages of reports distributed in advance of the meeting, two

topics stood out: Copyright Reform and Open Access. This report is based on those preliminary materials. Note that there will be a Canadian election, so the Copyright Act (C-32) again has not been enacted.

Copyright Reform: Bill C-32, the most recent legislation proposed to amend the Copyright Act, sets out several changes that would achieve a more balanced and fair approach to copyright. Our community is in support of a number of Bill C-32's proposed amendments to current legislation, including the expansion of the definition of fair dealing to include parody and satire, and the amendment stating that an individual does not infringe copyright when using existing copyright-protected material in the creation of new work (provided that certain conditions are satisfied). The Federation will continue the work undertaken by the Copyright Committee, who proposed a number of minor adjustments to the bill.

**Open Access:** First and foremost is the challenge for research to be available through Open Access for journals. There has been some progress in that respect during the last four years, but a lot remains to be done. We have to work on the culture, the economics and the technical aspects of Open Access (OA). Most researchers agree today that OA is the way to go, not only for ethical reasons, but also because it gives more visibility to the authors of research, promotes exchanges within the discipline and opens articles to new models of data mining. For these reasons, a growing proportion of university libraries are creating repositories for their faculty members' published articles. This option, called "Green OA", is the most cost-effective way of implementing OA. The system is robust while being quite simple and requiring just a few clicks for the article to be added to the repository. In spite of that, it is only a small proportion of our colleagues who actually take advantage of this possibility to make their research more visible. This is a constant across universities in the world and the phenomenon is much more common in the humanities and social sciences than it is in hard sciences. If you look at the relative number of articles in university repositories, you will find on average ten times more OA articles coming from the departments of Engineering than from those of English, be it at Harvard, Calgary or the University of Ottawa. The reasons for this lack of commitment should be investigated thoroughly if we want to make a change. I would suggest that there is probably a complex set of reasons. Many people are afraid that the publisher of the article would not accept this practice, and it is true that we still see many journals reserving the exclusive rights to an article. In the survey conducted by the Federation last October, just 50% of the journal respondents explicitly allow auto-archiving by the author of the article. In a charter of best practices, this kind of restriction should be banned. And the sooner the better. A second reason for the poor standing of humanities research in OA may be due to the nature of our discipline.

With respect to OA, Books, New Models of Dissemination, and Long-Term Accessibility were also discussed.

Edward L. Cohen

#### **HPM Americas Section**

The Americas Section of the International Study Group on the Relations Between History and Pedagogy of Mathematics held a conference and its annual business meeting at American University in Washington, DC, on March 12–13, 2011. Mary Gray and her marvelous assistant, Stacey, were splendid hosts. Organizers chose Two Amys, which serves the DC area's best gourmet pizza, for lunch on Saturday.

Twenty-eight teachers, mathematicians, and historians engaged with ten talks exploring aspects of the history of mathematics, the pedagogy of mathematics, and the history of the pedagogy of mathematics. Chris Rorres (Pennsylvania) opened the meeting by tracing the history of Archimedes' "Cattle Problem," including nineteenth- and twentieth-century solutions. Next, Ken Clements (Illinois State) presented joint work with Nerida Ellerton on the role of Salem, Massachusetts, in mathematics during the American founding era. Salem was the stomping grounds for Nathaniel Bowditch, who is known for the North American Navigator and a translation of Laplace's Mécanique Céleste, as well as the home of Benjamin Peirce. Because of the town's mercantile importance, boys and girls also received substantive training in arithmetic, which was recorded in ciphering books.

Tina Hartley and Fred Rickey (USMA) used the historically uninteresting question of why "m" is used for

slope as a jumping-off point to discuss the history of the analytical geometry of straight lines. Peggy Kidwell (NMAH) looked at how Benjamin Peirce's efforts to answer problems posed in mathematical journals intertwined with his interest in physical objects. Semyon Litvinov (Penn State-Hazelton) and Elena Litvinova (Bloomsburg) pointed out problems prospective teachers encounter in solving inequalities, a dilemma the audience wished had been placed in historical context. Walter Meyer (Adelphi) shared his preliminary thoughts on how to characterize curricular developments in the second half of the twentieth century, concluding that they appear to be countermodern, meaning they emphasize practical work and applications.

Late Saturday afternoon, the group enjoyed a rare book viewing with AU's archivist, Susan McElrath, and a presentation on rare book acquisition by Doug McElrath (UMCP). As the accompanying photo shows, Susan brought out several of the cipher books collected by Karen Michalowicz so that Ken Clements could point out some of their unique features. After the library visit, Florence Fasanelli welcomed the group to her home for champagne and goodies.

On Sunday, Calvin Jongsma (Dordt) provided examples of Egyptian algorithms from his course for prospective middle school teachers. Marina Vulis (Norwalk CC) highlighted the biography of Nikolai Lobachevsky. Ilhan Izmirli (George Mason) pointed out medieval achievements in areas controlled by Arab Muslims and Persians. Amy Ackerberg-Hastings (UMUC) reported on the early preparation of an encyclopedia article that will survey the evolution of mathematics teaching practices.

Some speakers have provided notes or slides to the website, www.hpm-americas.org. News of future meetings is also posted online. The group thanked Bob Stein for over a decade of service as president. There are two key volunteer needs: a representative to the HPM quadrennial meeting, which will be a satellite to the 12th International Congress on Mathematical Education, to be held in Seoul, Korea, July 8–15, 2012; and a secretary to replace David L. Roberts, who has accepted the president's duties.

Amy Ackerberg-Hastings



Figure 1: Ken Clements at HPM

#### **New Members**

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

Maritza M. Branke Niagara University Lewisboro, NY USA

Eileen Donoghue New York, NY USA

Scott Guthery Chestnut Hill, MA USA

George Heine Pueblo, CO USA

Philippe Henry Geneva Switzerland

Clyde Hendrick Lubbock, TX USA

Molly Kao London, ON Canada

Danielle Macbeth Haverford College Haverford, PA USA

Kevin Thomas Toronto, ON Canada

Pat Touhey Misericordia University Dallas, TX USA

#### From the Editor

A spring storm raged outside as I was compiling this issue, which means that it will soon pass from the season of winter to the season of humidity in Maryland. Shortly thereafter, it will be time for us to meet in Dublin with the BSHM. As you have seen elsewhere in this issue, the list of speakers is first-rate. If you have not yet made travel or accommodations arrangements, be sure to visit www.cshpm.org for the necessary forms as soon as possible. One source for tourist information is www.dublin.ie. For instance, the treasures of Tutankhamun will be on exhibit at the RDS Industries Hall, approximately 2km from Trinity College.

While the issues that appear in May tend to be more slender than those published in November (when the bulk of Society business reports appear), this number of the *Bulletin* is nonetheless not as weighty as I would have liked. Results from surfing the web in the usual places are necessarily finite, so we are dependent on your contributions and suggestions for publicizing activities in our field. If you attend meetings with a history or philosophy of mathematics component, please consider putting together a brief account. Personal and professional news, memorials, subjects

for book or web reviews, informative or thought-provoking column-style articles that increase our understanding of the history or philosophy of mathematics, and photos are also welcomed. The next submission deadline is October 1, 2011, and I can be reached at aackerbe@verizon.net.

Many thanks to the stalwart contributors whose work you have read on your way to my report. As always, you are eyeballing this issue onscreen or holding it in your hands due to the efforts of the Layout Editor, Eisso Atzema; the Production Editor, Maria Zack; the Webmaster, Mike Molinsky; and the Secretary, Pat Allaire.

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 (Maria-Zack@pointloma.edu). Material without a byline or other attribution has been written by the editors. Les pages sont chaleureusement ouvertes aux textes soumis en français. Comments and suggestions are welcome and can be directed to any of the editors; submissions should be sent to Amy Ackerberg-Hastings at the above email address, or by postal mail to 5908 Halsey Road, Rockville, MD 20851, USA.

