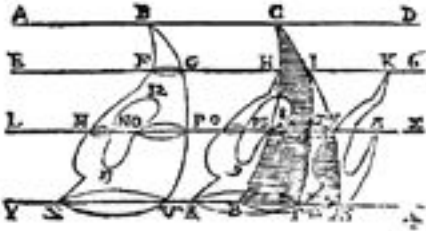


# BULLETIN

CSHPM



SCHPM

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Canadian Society for History  
and Philosophy of Mathematics

Société canadienne d'histoire et  
de philosophie des mathématiques

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## ABOUT THE SOCIETY

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

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

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

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

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

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

## Members of Council

**Francine Abeles**, Kean University, Union, NJ 07083, USA, fabeles@kean.edu

**Gregory Lavers**, Concordia University, Montréal, QC H3G 1M8, CA, laverscourses@gmail.com

**Adrian Rice**, Randolph-Macon College, Ashland, VA 23005, USA, arice4@rmc.edu

**Sylvia Svitak**, Queensborough Community College, CUNY, Bayside, NY 11364, USA, smsvitak@gmail.com

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

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

## From the President: Whither the *Proceedings*?

Safely home from Hartford, we can reflect back with satisfaction upon the CSHPM's first-ever joint meeting with the Mathematical Association of America at MathFest in August. Our program was full of varied and interesting talks, capped by an inspiring Kenneth May address on Henri Poincaré by Jeremy Gray, based on his new book. It was a real pleasure to see a robust collection of papers in the philosophy of mathematics, and especially (as part of the special session) moving seamlessly back and forth between the history and philosophy of mathematics. Philosophy without history is science without data; history without philosophy is just biography.

It was delightful to see the crowds attending our sessions, ranging from 60 to packing the room at over 100. One of the missions of the CSHPM is to spread the word to client communities about the value of philosophy and history of mathematics, and this meeting was invaluable to that purpose. We need to consider further how to spread the word. One of the decisions taken at the Annual General Meeting in Hartford was to work on a proposal in this regard, with respect to our publications.

This year is the 25th anniversary of the CSHPM *Proceedings*. I was still a newly-minted grad student at Simon Fraser University when the notion of the *Proceedings* was first floated. During that year, 1988, I helped cut and paste bits of text (using scissors and tape, not the computer kind) under the pioneering editorship of Tasoula Berggren, to produce a coil-bound 150 pages of contributions (including my first-ever article), some of which I still look through today. Tasoula produced a larger *Proceedings* in 1989, and since then the Proceedings has been headed by such distinguished editors as Francine Abeles, Victor Katz, Robert Thomas, Hardy Grant, Israel Kleiner, Abe Shenitzer, Jim Tattersall, Michael Kinyon, Antonella Cupillari, and our current editor, Tom Archibald. However, the *Proceedings* has always been a closed publication, accessible to members only. This decision was made in the early days to give the *Proceedings* some legs, since one could submit to the *Proceedings* and still publish elsewhere. Twenty-five years later, our authors no longer pursue this option. Additionally, tenure and promotion com-

mittees are no longer sympathetic to articles placed in closed publications. I believe that the time has come to open up the *Proceedings* to the public.

The Council has been discussing two options: producing the *Proceedings* through an academic publisher, or moving to an open source online publication. Both possibilities have advantages: the former, the prestige and stability that a publisher provides; and the latter, easier accessibility and greater control. This decision, to be taken at the annual meeting at Brock University in May 2014, is an important one. So, I am asking for input from the membership. If you would like to express an opinion, please send it to me at [gvb@questu.ca](mailto:gvb@questu.ca). I will gather the responses together and bring them to Council for further discussion. Whatever happens to the *Proceedings* next year, I'm excited about the future. With a *Proceedings* available to the broader academic community, our ability to make a difference will be stronger than ever before. Keep writing, everyone!

*Glen Van Brummelen*

## Announcements

Robert Bradley received the MAA Metro Section Teaching Award in 2013. Also, a belated congratulations to Fred Rickey for the MAA Metro Section Service Award in 2012.

Jim Tattersall was profiled by Kenneth A. Ross in the June/July 2013 issue of MAA *FOCUS*, pp. 21–24.

Jeff Oaks delivered “A second premodern number concept” (on medieval arithmetic and al-Khayyam) at the Second Conference on Jacob Klein at St. John’s College (Annapolis), June 4–5, 2013, and “The shift from enunciation to solution in Medieval problems” at the continuing workshop, “Les séries de problèmes comme ‘carrefours de cultures’” in Paris, June 18, 2013.

William M. Priestley has published “Wandering About: Analogy, Ambiguity, and Humanistic Mathematics” in volume 3, number 1, of *Journal of Humanistic Mathematics*. Volume 3, number 2 is also now available. See <http://scholarship.claremont.edu/jhm>.

Fred Rickey announces that Nerida Ellerton and Ken Clements have discovered two leaves (four pages) of Abraham Lincoln’s cyphering book in the Houghton

Library at Harvard University. These can be added to the twenty pages previously known, ten of which were on exhibit at the Indiana State Museum in the summer of 2013.

**HOMSIGMAA News:** Dominic Klyve was elected Prize Coordinator. Larry D’Antonio was appointed Secretary/Treasurer to complete Charlotte Simmons’s term. Paul Erdős’s letters to Carl Pomerance were digitized by the Archives of American Mathematics. Paul A. M. Dirac’s mathematical papers will be preserved and digitized at Florida State University. Frank Swetz is working on a long-term project to digitize and make available through *Convergence* many historical items housed at Columbia and other locations. Walter Meyer is wrapping up work on his Cajori II project.

HOMSIGMAA announces its eighth annual student writing contest, which is open to all undergraduates, whether or not they are enrolled in a history of mathematics course. See <http://historyofmathematics.org/>. Submission deadline is March 31, 2014.

Silke Ackermann has been appointed to succeed Jim Bennett as Director of the Museum of History of Science at Oxford University. She will assume her new duties in March 2014.

Juan-Andres Leon (Harvard) received a long-term postdoctoral fellowship for 2013–2014 from the Chemical Heritage Foundation for his project, “Mathematical Models in Polymer Research, 1940s–1970s: An Industry-Driven Theoretical Science?”

Simon Fraser University offers MSc and PhD programs in history of mathematics, undertaken in the context of the mathematics department. For program requirements, see [math.sfu.ca](http://math.sfu.ca); a portion of the course requirements are typically satisfied by reading courses in the history of mathematics. Graduate students typically have 60–80 hours of undergraduate mathematics and demonstrate the ability to participate in and carry out a research program in the history of mathematics, 1750–1950, using resources in more than one language. Full financial support is available through a combination of scholarships and teaching and research assistantships. Prospective applicants are encouraged to contact Tom Archibald, [tarchi@sfu.ca](mailto:tarchi@sfu.ca). Application deadline is February 1, 2014.

York University, Toronto, is accepting applications to its MA program in Science & Technology Studies. Application deadline is January 29, 2014. See <http://sts.gradstudies.yorku.ca/>.

The Philosophy program at the University of Leeds now offers undergraduate and MA programs in History and Philosophy of Science, Philosophy of Science, as well as in History of Science, Technology, and Medicine. See <http://www.leeds.ac.uk/arts/info/20048/philosophy>.

The Dolph Briscoe Center for American History, home of the Archives of American Mathematics, offers the William and Madeline Welder Smith Research Travel Award of up to \$1,000 to five graduate students to conduct research in its holdings. See [http://www.cah.utexas.edu/research/smith\\_travel\\_require.php](http://www.cah.utexas.edu/research/smith_travel_require.php).

The Third International Conference on the History of Mathematics Education was held September 25–28 at Uppsala University. See [www.blasenhuss.uu.se/3ICHME](http://www.blasenhuss.uu.se/3ICHME).

A Science in History lecture series began at the Toronto Public Library on October 8 with “Medical Practice in the Islamic World,” by Ingrid Heheymer of Ryerson University. See <http://torontopubliclibrary.typepad.com/programming/>.

Michel Serfati announces the fall 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: François Lê (Institut Mathématique de Jussieu & UPMC), “Théorie (des substitutions) et géométrie(s) : Jordan, Geiser et les 27 droites (1868–1870)” on October 16; Jean-Paul Allouche (Institut Mathématique de Jussieu), “Algèbricité et transcendance : pourquoi et comment?” on November 13; Michel Bourdeau (CNRS, Paris I), “La philosophie des mathématiques de Comte” on November 27; Michel Serfati (IREM-Univ. Paris Diderot), “Le symbolisme de la mise entre parenthèses, entre auteur et lecteur d’un texte mathématique” on December 11; Christiane Vilain (LUTH & SPHÈRE), “Christian Huygens et l’éther” on January 29; and Michel Serfati (IREM-Univ. Paris Diderot), “Courbe algébrique ou transcendante? Leibniz versus Huygens, Aspects d’une controverse” on February 5.

As a follow-up to the January 2013 meeting of the

ORESME (Ohio River Early Sources in Mathematical Exposition) Reading Group on some work of Cauchy in rigorizing the calculus, its fall meeting was dedicated to two pieces by Karl Weierstrass: *Differentialrechnung, Ausarbeitung der Vorlesung an dem Königlichen Gewerbeinstitut zu Berlin im Sommersemester 1861 von H. A. Schwarz* (Differential calculus, an elaboration of lecture notes at the Royal Technical Institute in Berlin in the summer semester of 1861 by H. A. Schwarz), as excerpted in “Éléments d’analyse de Karl Weierstrass,” by Paul Dugac, *Archive for Hist. Exact Sci.* 10, no. 1/2 (1973): 118–125; and “Über continuirliche functionen eines reellen arguments, die für keinen werth des letzteren einen bestimmten, differentialquotienten besitzen” (On continuous functions of a real argument which possess derivatives at not a single one of their values), *Königl. Akad. Wiss.* (1872), *Mathematische Werke* II, 71–74. The meeting was held October 25–26 at Xavier University. For more information, contact Danny Otero, [otero@xavier.edu](mailto:otero@xavier.edu), or Dan Curtin, [curtin@nku.edu](mailto:curtin@nku.edu).

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 2013 History of Science Society Annual Meeting in Boston, Massachusetts, November 21–24. History and philosophy of mathematics on the HSS program includes: the FoHoMS session on “What It Means to Be a Mathematician: Post-WWII Mathematics in Search of Identity”; a session on “‘Secreta Secretorum’? Sarton, the History of Mathematics, and the History of Science,” with participation by Len Berggren; a session on “Interrogating the Cosmos with Mathematical Imaginings and Physical Intuitions, 1880–1965: Bridging Disciplinary and Cultural Practices”; and a session on “When Mathematics Mattered”. Other individual talks of interest include: Stephanie Dick, “‘Mathematical Objects in Action’: Ontological Entanglements of Mathematics and Computing”; Emily Redman, “Making the Grade: Quantification, Measurement, and Assessment in U. S. Precollege Mathematics Education”; Margaret Schotte, “Triangulating Through Mathematical Seas: Teaching Trigonometry in Early Modern Navigational Manuals”; Renee Raphael, “Doing Math with Galileo: Marginal Annotations in Extant Copies of his ‘Two New Sciences’”; Renzo Baldasso, “The Graphic and Typographic Context of Regiomontanus’s Books (Nuremberg 1474–

1575”; Noam Andrews, “Training in the Abstract: Geometry and Visual Culture in Early Modern Europe”; Jean De Groot, “The Cultural Synergy of Mathematical Knowledge in Magna Graecia.” Posters on the history of mathematics include: Kaat Louckx, “The Units of Observation in the Belgian Population Censuses, 1846–1930”; and Ion Mihailescu, “Worlds of Paper: The Correlation of Disciplines in the Reform of Mathematics and Science Education.”

The 7th European Summer University on History and Epistemology in Mathematics Education (ESU-7) will be held July 14–18, 2014, at Aarhus University in Denmark. These activities mainly aim to provide a school for working on a historical, epistemological and cultural approach to mathematics and its teaching, with emphasis on actual implementation. The full initial announcement appeared in the July 2013 *HPM Newsletter*, <http://groupphm.wordpress.com/>. The deadline for abstracts was October 31, 2013. Jim Kiernan reported on ESU-6 in the November 2010 issue of the *Bulletin*.

*Spontaneous Generations* is an open, online, peer-reviewed academic journal published by graduate students at the Institute for the History and Philosophy of Science and Technology, University of Toronto. Contents include a focused discussion section on topics such as “economic aspects of science,” peer-reviewed research papers, book reviews, and commentaries on HPS concerns. See <http://spontaneousgenerations.library.utoronto.ca>.

Ed Cohen reports that three of the final additions to the “Scientists’ Bookshelf” column in *Sigma Xi’s American Scientist* (101, no. 2 (March–April 2013)) came from the history of mathematics: David Berlinski, *The King of Infinite Space: Euclid and His Elements*, reviewed by Brian Hayes; Bettye Anne Case and Anne M. Leggett, eds., *Complexities: Women in Mathematics* and Benjamin Wardhaugh, ed., *A Wealth of Numbers: An Anthology of 500 Years of Popular Mathematics Writing*. Jim Tattersall reviewed Wardhaugh’s book in the November 2012 issue of the *Bulletin*, pp. 9–10.

On October 12–13, David Zitarelli, Tom Bartlow, and Paul Wolfson organized a Special Session on the History of Mathematics in America at the American Mathematical Society Eastern Section Meeting at Temple University in Philadelphia, PA. Speak-

ers included: David Lindsay Roberts, “The Role of Psychology in Mid 20th Century Reform in American Mathematics Education”; Peggy Aldrich Kidwell, “Mathematical Recreations and Machines—Nim, Tic-Tac-Toe, and the Advent of the Digital Computer”; Walter J. Meyer, “The Cajori Two Project: Initial Results”; Joseph W. Dauben, “The History of Chinese Mathematics in America”; Stephanie Dick, “Reproving *Principia*: Automated Theorem Proving and the Materials of Mathematics”; Karen V. H. Parshall, “Mathematics and the Politics of Race: The Case of William Claytor”; Florence Fasanelli, “The Mathematics That Informed Marcel Duchamp”; Patti W. Hunter, “Funding Science in the Cold War: Persuading the Ford Foundation”; Deborah A. Kent, “*The Analyst*: Mathematical Publishing ‘On the Boarders [*sic*] of Civilization’, 1873–1883”; Steve Batterson, “American Mathematics 1890 to 1913: From Approximate Nullity to the Verge of Parity with Europe”; Alan Tucker (read by Tom Bartlow), “The History of the Undergraduate Program in Mathematics in the United States”; Brittany Shields, “Mathematics and Cultural Exchange: New York University’s Courant Institute of Mathematical Sciences’ Participation in International Conferences and Visits”; Charlotte K. Simmons, “Göttingen is Here”; and Amy Ackenberg-Hastings, “American Innovation in Mathematical Instruments.”

## 2013 CSHPM/SCHPM Meeting Programme

The Annual Meeting of the Canadian Society for History and Philosophy of Mathematics was held at the Hartford (Connecticut) Convention Center, 1–3 August 2013. It was a joint meeting with the History of Mathematics and Philosophy of Mathematics Special Interest Groups of the Mathematical Association of America, during the MAA’s summer meeting, MathFest. Glen Van Brummelen and Tom Drucker organized the special session, on interactions between history and philosophy of mathematics, and Rob Bradley, Maria Zack, and Bonnie Gold organized the general session. A booth in the book exhibit was staffed by Maria Zack, Tom Drucker, Robert Thomas, Janet Beery, David Bellhouse, and Rob Bradley.

## Thursday, August 1

**GENERAL SESSION I: EULER'S MATHEMATICS** (Presiders: Dan Sloughter & Glen Van Brummelen)

9:00 Robert E. Bradley: "Leonhard Euler's Mathematical Correspondence: The Early Berlin Years"

9:30 Stacy Langton: "Vector Calculus in Euler's Fluid Mechanics"

10:00 Michael P. Saclolo: "Euler's Method for a Plentiful Harvest"

11:30 CSHPM EXECUTIVE COUNCIL MEETING

**GENERAL SESSION II: 17th CENTURY** (Presiders: Rob Bradley & Carl Behrens)

13:00 Christopher Baltus: "Conics in the 17th Century: Claude Mydorge and After"

13:30 John F. Bukowski: "Christiaan Huygens's Work on the Catenary, 1690–1691"

14:00 Maria Zack: "The Geometric Algebra of John Wallis"

**GENERAL SESSION III: 18th CENTURY** (Presiders: Rob Bradley & Carl Behrens)

15:00 David R. Bellhouse: "Après 1713: Bernoulli, Montmort et Waldegrave"

15:30 Theodore J. Crackel, Frederick Rickey, and Joel Silverberg: "George Washington's Use of Trigonometry and Logarithms"

16:00 Scott Guthery: "Mathematics as Practiced in Colonial and Post-Colonial America"

16:30 Florence Fasanelli: "Images of Andrew Ellicott (1754–1820)"

17:00 Duncan Melville: "How Brook Taylor Got Joshua Kirby a Job"

## Friday, August 2

**GENERAL SESSION IV: 19th CENTURY** (Presiders: Rob Bradley & Maria Zack)

8:30 Ezra Brown: "Origins of Block Designs, Normed Algebras, and Finite Geometries"

9:00 Salvatore Petrilli: "Monsieur François-Joseph Servois: His Life and Mathematical Contributions"



Figure 1: Maria Zack prepping the booth

9:30 Shigeru Masuda: "The Definite Integral by Euler, Lagrange and Laplace from the Viewpoint of Poisson"

**GENERAL SESSION V: 20th CENTURY I** (Presiders: Bonnie Gold & Mike Scudder)

9:00 Matt Clemens: "Fictionalism and Mathematical Practice"

9:30 BREAK

10:00 Robert Moir: "Rational Discovery of the Natural World: An Algebraic and Geometric Answer to Steiner"

10:30 Jonathan P. Seldin: "Mathematical Logic and the History of Computers"

11:00 Jean-Pierre Marquis: "Canonical Maps: Where Do They Come From and Why Do They Matter?"

13:00 CSHPM ANNUAL GENERAL MEETING

14:30 Glen Van Brummelen: "Tools of the Table Crackers: Quantitative Methods in the History of Numerical Tables"

**GENERAL SESSION VI: 20th CENTURY II** (Presiders: Duncan Melville & Fred Rickey)

15:00 Roger Godard: "On the Chebychev Quadratures"

15:30 Charlotte Simmons: "Felix Hausdorff: We Wish for You Better Times"

**GENERAL SESSION VII: USING HISTORY AND PHILOSOPHY IN TEACHING MATHEMATICS** (Presiders: Maria Zack & Bonnie Gold)





Figure 2: Patricia Allaire, Sharon Kunoff, Sylvia Svi-tak

- 15:00 Martin Flashman: “Logic is Not Epistemology: Should Philosophy Play a Larger Role in Learning about Proofs?”
- 15:30 Xinlong Weng: “Teaching Mathematical Ideas by the History of Quadratic to Quartic Equations”
- 16:00 Lyn Miller: “Playful History: A Generalizable Mesolabulum for Geometer’s Sketchpad”
- 16:30 Diana White: “Historical Accuracy, Popular Books, and Videos: Three Components of a History of Math Class”
- 17:00 Santosh Mathew: “The Use of History of Mathematics as a Tool in Teaching Mathematics”

**Saturday, August 3**

**GENERAL SESSION VIII: THE ARC OF TIME** (Presiders: Fred Rickey & Stacy Langton)

- 8:30 Charlie Smith: “Euclid’s Treatment of the Golden Ratio”
- 9:00 Eugene Boman: “How We Got From There to Here: A Story of Real Analysis”
- 9:30 George P.H. Styan: “Some Illustrated Comments on Selected ‘Magical Squares with Magical Parts’”

**SPECIAL SESSION: INTERACTIONS BETWEEN HISTORY AND PHILOSOPHY OF MATHEMATICS** (Presiders: Glen Van Brummelen & Tom Drucker)

- 10:00 Thomas Drucker: “Zeno Will Rise Again”
- 10:30 Amy Ackerberg-Hastings: “Analysis and Synthesis in Geometry Textbooks: Who Cares?”



Figure 3: Mary and Robert Thomas

**11:00 BREAK**

**13:00 THE KENNETH O. MAY LECTURE**, by Jeremy Gray: “Henri Poincaré: Mathematician, Physicist, Philosopher”

**14:30 Robert Thomas**: “Assimilation in Mathematics and Beyond”

**15:00 Lawrence D’Antonio**: “Euler and the Enlightenment”

**15:30 Maryam Vulis**: “Persecution of Nikolai Luzin”

**16:00 Roger Petry**: “Philosophy Etched in Stone: The Geometry of Jerusalem’s ‘Absalom Pillar’”

**16:30 Jeff Buechner**: “Understanding the Interplay between the History and the Mathematics in Proof Mining”

**2014 Meeting Information**

As you will see elsewhere in this issue, we next meet during the FedCan Congress at Brock University, 25–27 May 2014. You should receive an email from Fed-Can with registration information early in 2014; it will also be posted on <http://www.cshpm.org> when it’s available. In the meantime, CSHPM’s local organizer shares some information for making travel plans.



Figure 4: Dinner with Jeremy Gray

1. For those arriving by air, the most probable entry is at Toronto Pearson Airport. There is a shuttle service, Niagara Airbus, that will take people from the airport to St. Catherines.

2. Hotels have been booked in St. Catherines and Niagara Falls (Canadian side, of course) and FedCan is working on shuttle buses from the hotels to the campus.

3. The Shaw Festival is a top-notch theatre festival that will be on at the time of the Congress close by in Niagara-on-the-Lake. See <http://www.shawfest.com>, with a preview of the 2014 season under 2014-sneak/. Ticket sales start in January. I will get a promotion number from the Shaw Festival people so that when CSHPM people go online to book a ticket they will get a 25% discount on their tickets.

4. Ontario wines from the Niagara area are of very good quality. (Francine Abeles and I both go to Niagara-on-the-Lake for the Shaw Festival and the wine nearly every year.) People may want to take wine tours. See <http://www.winecountryontario.ca> for wineries open for tours and tastings; use the subdirectory niagara-on-the-lake for the original growing area.

There are a number of anniversaries in 2014 that we could recognize at this meeting through the topics of talks: CSHPM's own 40th, Brock University's 50th, and the 100th anniversary of the beginning of World War I. The Canadian government is planning many activities related to WWI.

*David Bellhouse*

## Irving Anellis (1946–2012)

It is with great sadness that I announce that Dr. Irving H. Anellis, a long-time Contributing Editor and Visiting Research Associate of the Peirce Edition Project in the Institute for American Thought, passed away in July 2013. Dr. Anellis became a Contributing Editor for logic and mathematics in 1989, and a Visiting Research Associate in 2008 after he moved from Fort Dodge, Iowa, to Indianapolis, Indiana. He was a member of CSHPM in the 1990s and a long-time friend to the Society.

With his passing we have lost one of the nation's preeminent historians of logic and mathematics. Dr. Anellis received his Ph.D. in philosophy from Brandeis University in 1977 with a dissertation on "Ontological Commitment in Ideal Languages: Semantic Interpretations for Logical Positivism." Since then, he built his reputation through a life entirely dedicated to scholarship. We owe him more than 430 publications, including four books (including his 1994 *Jean van Heijenoort: Logic and Its History in the Work and Writings of Jean van Heijenoort* and his 2006 *Evaluating Bertrand Russell, the Logician and His Work*); 103 articles on the history of logic; 211 reviews, abstracts, or notes; 36 edited works; and 78 pieces on subjects as varied as psychology, philosophy of mind, artificial intelligence, cognitive sciences, mental health, Soviet philosophy, history of science, and Russian and Soviet history and culture.

A student of historian of logic Jean van Heijenoort, Anellis's early research centered on mathematical logic—in particular, proof theory and metamathematics—and on applications of logic to algebraic structures, including Boolean algebras and group theory. His recent historical research focused on the work of Bertrand Russell in set theory and logic and of Charles Sanders Peirce in algebra and algebraic logic; on the history of proof theory, especially regarding the roles of the Löwenheim-Skolem Theorem and Herbrand's Fundamental Theorem; and on the history of logic and mathematics in Russia. Dr. Anellis was also much interested in applications of mathematics in linguistics, psychology, education; the logic of mental acts; the logical formalization of intentionality; and the logic and algebra of neural networks. His philosophical interests encompassed the philosophy of logic and of mathematics, Austrian realism, phenomenol-



**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**

**Brock University**

**May 25–27, 2014 / 25–27 mai 2014**

**Special Session / Séance Spéciale**

**Early Scientific Computation / Début calcul scientifiques**

The CSHPM will be holding its 2014 Annual Meeting at Brock University in conjunction with the 2014 Congress of the Humanities and Social Sciences. The meeting will be held Sunday through Tuesday, May 25–27, 2014.

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.

Please send your title and abstract (200 words or less) in Word or in the body of an email by February 10, 2014, to:

**SPECIAL SESSION / SÉANCE SPÉCIALE**  
or/ou

Christopher Baltus  
Department of Mathematics  
SUNY Oswego  
Route 104 West  
Oswego NY 13126  
USA  
Tel: (315) 312-2731  
[christopher.baltus@oswego.edu](mailto:christopher.baltus@oswego.edu)

La SCHPM organisera son colloque annuel de 2014 à Brock University, au sein du Congrès des sciences humaines et sociales 2014. Le colloque aura lieu du dimanche 25 mai au mardi 27 mai 2014.

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.

Veillez 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 10 février 2014 à:

**GENERAL SESSION / SÉANCE GÉNÉRALE**

Lawrence D'Antonio  
Mathematics Department  
Ramapo College of New Jersey  
505 Ramapo Valley Rd.  
Mahwah NJ 07430  
USA  
Tel: (201) 684-7714  
[ldant@ramapo.edu](mailto:ldant@ramapo.edu)

ogy, and logical positivism. He was the founding editor of the journal *Modern Logic*, served as a reviewer or referee for numerous journals, and was a contributor to several academic societies or commissions, including most recently the advisory board of the Hilbert-Bernays Project.

Irving Anellis was a modest and delightful person, sweet and humorous. His was a life of service to knowledge, and the Peirce Project has immensely benefited from his encyclopedic mind. Over the last few years Anellis wrote hundreds of detailed annotations for volume 11 of the Peirce Edition Project, which will contain the 22 chapters of Peirce's unpublished masterpiece, "How to Reason: A Critick of Arguments" (1894). Anellis was far from finished with this painstaking work, but the legacy he leaves us will make this volume a monument to his prodigious mastery of the entire history of logic. He was also working on numerous other projects, including his long-planned magnum opus, "From Algebraic Logic to Logistic," which was to be a summation of his work in the history of logic, and a special essay on "The History and Development of Mathematical Logic, from Descartes and Leibniz to the Present," to be published in the *Encyclopedia of Life Support Systems*, UNESCO.

One of Irving's favorite sayings was Peirce's remark, "One's special knowledge of logic can be a painful cross to bear but duty demands that you fulfill your calling." Irving bore such a cross and fulfilled its duty with admirable resilience and simple grace. We shall long remain in his debt.

*André De Tienne*

Irving Anellis had an indefatigable amount of energy, which could be recognized in every conversation one had with him or anything that he wrote. He was incapable of telling a story without filling in details that went well beyond what most audiences would expect to hear. As a result, those of us who looked at his prose editorially as well as aesthetically wished that he could recognize that the longer a sentence ran on, the more it needed work to prevent its readers from losing interest and themselves. Even those who were themselves given to prolonged constructions could not always keep up with his prose style.

Irving devoted immense amounts of time to every as-

pect of his journal *Modern Logic* (subsequently *Review of Modern Logic*). After founding a journal for which he felt there was a need (providing serious history of serious technical details in mathematical logic), he then undertook everything from soliciting manuscripts and finding referees to handling issues of production and maintaining accounts and the list of subscribers. The comparison he tended to draw was with Alonzo Church in the early days of *The Journal of Symbolic Logic*. One difference was that Church was a faculty member at Princeton at the time and so had an additional source of income. Irving's occasional efforts at teaching never lasted long enough for him to have a dependable income, so he was inclined to dream about the possibility of making money off a journal on the history of mathematical logic. This was one case in which his ambitions never managed to turn the dream into reality.

One aspect of Irving Anellis's personality that may have prevented his achieving everything that he wished was a tendency to view the world as made up of allies and enemies. This may have been connected with his having been a student of Jean van Heijenoort and so tied in with the web of the history of Trotskyism around the world. Although most of us are not students of the intricacies of Trotskyist sectarianism, we can appreciate the extent to which quarrels over ideological purity would not lend themselves to the creation of mass movements. Bringing a similar attitude to the history of logic created antipathy on Irving's part to other scholars in the field, and the feeling was not uncommonly reciprocated. Irving's having to work outside any academic institution probably added to his bitterness.

In his last years, Irving Anellis tended to look back on the story of his life as a chronicle of opportunities not taken. This certainly understates the value of what he accomplished. His writing was not appealing stylistically, but he put together a wealth of information on which other scholars have been able to draw. His view of the history of logic challenged the centrality of Frege and Russell and sought to revive the memory of alternative traditions. In particular, his time in Indianapolis saw him writing extensively on behalf of C. S. Peirce. There is the hope that some of that material will be generally available shortly. If there is one aspect of his legacy that he would wish to be kept alive, it is the recognition that the devil

is in the details and that broad narratives endorsing fashionable views are not the business of scholars.

Tom Drucker

## Executive Council Meeting

The meeting of the Executive Council of CSHPM/-SCHPM took place at the Hartford (Connecticut) Convention Center on August 1, 2013. The following members were present: Amy Ackerberg-Hastings, Patricia Allaire, Jean-Pierre Marquis, Michael Molinsky, Sylvia Svitak, Glen Van Brummelen, and Maria Zack. Glen Van Brummelen, President, called the meeting to order at 11:30 am.

Minutes from the 2012 Executive Council Meeting were accepted as printed in the November 2012 *Bulletin*.

**Treasurer's Report:** In the absence of Dirk Schlimm, Glen reviewed the report distributed to the Council and published in the May 2013 *Bulletin*. He noted we have a significant surplus. We have yet to reconcile with BSHM and CSHP.

**Secretary's Report:** Patricia Allaire thanked Amy for taking minutes last year, Maria for arranging lunch, and Mike and Dirk for helping with the Secretary's duties.

Pat presented comparative membership data for 2012 and 2013:

	2012	2013
<b>Total Members</b>	160	165
<b>Break-out</b>		
\$Can	42	33
\$US	96	88
Other	0	15
BSHM	19	17
CSHP	4	7
Complimentary	1	3
<b>By Status</b>		
Active	89	80
Retiree	40	48
Student	9	8
Developing nation	3	2
continued in next column...		

...continued from previous column		
Student Associate	0	3
<b>By Pay Method</b>		
On-line	69	83
Snail mail	72	53
<b>New Members</b>	4	17
<b>Reciprocal Memberships</b>		
To BSHM	48	46
To CSHP	23	28
<b>Journal Subscriptions</b>		
Historia (paper)	69	60
Historia (electronic)	0	6
Philosophia	36	34
<b>Proceedings</b>	76	62
Paid	42	33
Complimentary	33	28
Federation	1	1
<b>Bulletin</b>		
Electronic	104	149
Paper	37	53
<b>Donations</b>		
No. Donors	25	26
Amount	\$658.00	\$723.00

Contrary to the trend in many other professional organizations, our membership increased slightly in 2013. Pat noted that she had expected a decline in the number of donations because on-line registration does not offer the opportunity for retirees to pay for *Proceedings*, as a number did in the past. However, the number of donations and amount of money donated actually increased.

For 2012, "payment method" provides a rough approximation of nationality, although members from outside the US and Canada usually pay in \$US. For 2013, because all on-line payments are in \$Can, mailing addresses are used. For 2012, donations are sometimes provided in the form of retirees preferring to pay for their complimentary *Proceedings*. For 2013, on-line payments do not allow this option. Of the 53 paper copies of the *Bulletin*, 35 went to current members.

**Proceedings Editor's Report:** Tom Archibald sent word that he anticipates the 2012 *Proceedings* will be ready for printing in the near future. He has agreed to edit the volume for one more year.

**Bulletin Editor's Report:** Amy Ackerberg-Hastings reported that all is going smoothly and reminded

the Council that contributions and feedback are always welcome. She expressed thanks to the co-editors, Eisso Atzema and Maria Zack. Additionally, Amy and Hardy Grant are working on providing a history and philosophy column for publication in the *CMS Notes*. The first contribution will be by Tom Archibald. Amy is open to a discussion of reorganizing the *Bulletin* and *Proceedings*. (See below.)

**Webmaster's Report:** Mike Molinsky reported that the web page continues to provide a calendar of history- and philosophy-related events and other information. He has redone the electronic payment option to be a web page instead of using Acrobat. The coding language he used is PHP, which should work with all browsers and systems. This should solve a number of the problems that arose on the members' end.

**Archivist's Report:** Mike Molinsky reported that he is still inventorying the archives. He has been scanning some documents, and his goal is to have all relevant material scanned.

**President's Report:** Glen Van Brummelen noted that, like other societies, we have lost membership over the last decade. Some of the factors are: a) there are other ways of obtaining information, especially online; b) many journals are available online through universities; c) new scholars don't seem to be interested in joining professional organizations.

Jean-Pierre suggested that we consider affiliation with PMA, the Philosophy of Mathematics Association, and with APMP, the Association for the Philosophy of Mathematical Practice. We already advertise these societies and their activities on our website. He proposed that we investigate the possibility of organizing joint meetings with these organizations at some point. Elaine Landry is on the board of PMA, and Elaine, Tom Archibald, and Jean-Pierre are involved in the APMP. We would simply need to get the approval of the membership to investigate further ties.

Glen suggested that we consider a re-configuration of the *Bulletin* and the *Proceedings*, perhaps along the lines of the BSHM *Bulletin*. One possible model is a publication three times a year, containing refereed papers from the past meeting, announcements, etc. Members of the Council noted: a) that such a publication might have wider appeal; b) other societies han-

dle the publications this way; c) papers in un-refereed proceedings usually are not considered for hiring, promotion, or tenure; d) we would have to consider copyright issues; e) we would have to plan carefully the organization of this publication. Glen said that he would be meeting with Birkhäuser publishers later in the day and would discuss the possibility of their handling the publication of this newly-structured *Bulletin*.

**2014 Meeting:** We will be meeting with CFHSS, the Canadian Federation for the Social Sciences and Humanities (aka, the Learned), at Brock University in St. Catharines, Ontario, May 25–27, 2014. It was noted that 2014 is the 400th anniversary of logarithms. It was suggested that “Early Scientific Computation” could be a special session topic that would include logarithms, which will also be the focus of a BSHM meeting in early May. It was suggested that each society record its presentations on that topic so that the recordings could be shown to the other. Session organizers and a local organizer will be needed.

**2015 Meeting:** CFHSS will be meeting in Ottawa in 2015. BSHM has expressed interest in a joint meeting. This time, it would be our turn to host such a meeting. Glen suggested that we consider a location in the US, such as New York City or Washington, DC, that might be attractive to BSHM members. Airfare between the UK and major US cities is less expensive than the fare to Canadian cities.

**Nominating Committee:** The terms of the present officers expire in 2014. A nominating committee of three is needed. Several names were suggested, and Glen will work on setting up the committee.

**Student Prize:** A committee is needed to select the paper for the student prize. It was decided that the organizers of this meeting (Glen, Maria, Rob Bradley, Tom Drucker, and Bonnie Gold) will comprise the committee. Since we received \$723 in contributions earmarked for student travel, we will supplement that amount and award \$750 to the winner.

**Other Business:** Glen thanked organizers, officers, *et al.*, for their services. The agenda for tomorrow's Annual General Meeting was approved.

The meeting was adjourned at 12:45 pm.

*Patricia Allaire, Secretary*

## History & Philosophy of Infinity

Over 2,400 years after philosophers and mathematicians were first puzzled by Zeno's paradoxes, the concept of infinity continues to be a fascinating and debated topic. The conference 'History and Philosophy of Infinity,' organized by the INFTY network in the Foundations of Formal Sciences series at Cambridge, September 20–23, 2013, brought together a multidisciplinary selection of researchers, discussing issues around infinity. The invited speakers included historians of mathematics, such as Catherine Goldstein and Adriane Rini; philosophers, including Charles Parsons and Michael Potter; mathematics educators, such as Matthew Inglis and John Mason; and logicians, including Luca Incurvati and Haim Gaifman. The contributed talks ranged from Anaximander over Nicole Oresme to Cantor, covered how children read texts on cardinalities, and delved into contemporary topics, such as 'Multiverse conceptions and the hyper-universe programme' and modern views of infinitesimals. Because of this unusual mix, many participants initially felt a little bit out of their own comfort zone and were confronted with perspectives that they would not necessarily have come across otherwise. This made for a very exciting conference atmosphere and prompted many interesting discussions and exchanges.

For more information on the programme, including abstracts, see here: <http://www.math.uni-hamburg.de/home/loewe/HiPhI>

*Dirk Schlimm*

## AGM of CSHPM/SCHPM

The Annual General Meeting of the Canadian Society for History and Philosophy of Mathematics took place at the Hartford (Connecticut) Convention Center on August 2, 2013. The meeting was called to order at 1:00 pm by Glen Van Brummelen, President, with 28 members in attendance.

### Agenda for the General Meeting

1. Approval of agenda
2. Approval of minutes of 2012 AGM
3. Treasurer's report

4. Secretary's report
5. *Proceedings* Editor's report
6. *Bulletin* Editor's report
7. Webmaster's report
8. Archivist's report
9. Future activities
10. Future meetings
11. Other business

1. The agenda for the general meeting was approved.

2. **Motion:** To approve the minutes of the 2012 Annual General Meeting as printed in the November 2012 *Bulletin*. Carried unanimously.

3. a) In the absence of the Treasurer, Dirk Schlimm, Glen presented the 2012 financial statements. Overall, the finances are healthy. There are several years that are not yet settled with BSHM and CSHPs, which will affect our available balance; nevertheless, we have a healthy surplus. If required, our assets can be used for student travel, etc., in the future. b) It was suggested that additional moneys be invested to earn interest. It was noted, however, that we do need to have a considerable amount in liquid assets. Fran Abeles asked if there are limitations on the kind of investments we can make. All of these remarks will be passed on to Dirk. c) **Motion:** To approve the report. Passed unanimously.

4. a) Patricia Allaire thanked Mike Molinsky and Dirk Schlimm for their assistance with PayPal, communication, technical assistance, and other items that help her accomplish her duties. She also thanked Amy Ackerberg-Hastings for taking minutes in her absence last year. b) Pat presented comparative membership data for 2012 and 2013. (Please refer to the CSHPM Executive Council Minutes in this issue of the *Bulletin* for this data and the Secretary's comments.)

5. Glen reported that Tom Archibald suggests December 1 as the deadline for submissions to the 2013 *Proceedings*. Submissions must be in LaTeX or Word, with the former preferred. Much of the work of the editor has been to set submissions into TeX. Full directions for submission will be on the website. Tom is willing to continue as editor for one more year.

6. a) *Bulletin* Content Editor, Amy Ackerberg-Hastings, noted that all went well this year and that all



of the editors are continuing in their positions. As always, members' submissions are needed to fill each issue. Deadlines are October 1 and April 1. b) Amy and Hardy Grant are working on providing a history and philosophy column for publications in the CMS *Notes*, which looks much like MAA *Focus*. The first contribution will be by Tom Archibald. Amy and Hardy will edit submissions and then forward them to CMS.

7. a) The Webmaster, Mike Molinsky, reported that the website continues to provide a calendar of history- and philosophy-related events and other information. b) He has redone the electronic payment option to be a web page instead of using Acrobat. The coding language he used is PHP, which should work with all browsers and systems. Acrobat is no longer needed to open the on-line registration form. This change should solve a number of the problems that arose on the members' end. c) Rob Bradley noted that he has purchased the domain names for the society. He is willing to continue doing so.

8. a) As Archivist, Mike Molinsky reported that he continues to inventory the archives. He has been scanning some documents. His goal is to have all relevant material scanned. b) Pat again suggested that all officers, etc., provide job descriptions for the archives, so that successors (either in an emergency or in the ordinary course of events) will know what is to be done.

9. a) Elaine Landry has suggested that we increase our cooperation with other associations involved in the philosophy of mathematics. *Motion:* That CSHPM express an interest in learning more about the PhilMath preprint archive along with the Philosophy of Mathematics Association and the Association for the Philosophy of Mathematical Practice. Discussion: Jean-Pierre Marquis explained that the main idea is to set up a site like the ArXiv in mathematics and physics, but for history and philosophy of mathematics. It is more a consortium of pre-prints. Motion was carried. b) In addition, we might wish to consider future joint meetings with these associations.

c) Glen suggested that we study and develop a motion for next year's AGM with regard to reconfiguration of our *Bulletin* and *Proceedings*. A possibility is to combine the two publications into a journal to be published three times a year and containing both announcements and papers from the annual

meeting. Items to be considered: i) Would we look for a publisher to handle this journal? ii) The publication would no longer be an internal publication, thus the papers would be refereed. Tom Drucker noted that this would shift the burden of the work from production to refereeing. In addition, someone would still have to supervise announcements, etc. iii) Duncan Melville questioned whether such a journal would put us in competition with BSHM. iv) Maria Zack spoke of a similar publication with which she is involved. This publication uses two-reader agreement for refereeing. Authors are given a set of standards, and the decision is accept, accept with minor revisions, or reject. v) Glen noted that university libraries might subscribe to such a publication, which would increase our public presence. vi) Such a journal would include both history and philosophy and would be broader in scope than *Historia Mathematica*. vii) Fran Abeles noted that this journal could be an avenue for publication by young scholars.

10. a) Next year, we will be meeting with CFHSS, the Canadian Federation for the Social Sciences and Humanities (aka, the Learned's), at Brock University in St. Catharines, Ontario, May 25–27, 2014. It was noted that 2014 is the 400th anniversary of logarithms. It was suggested that "Early Scientific Computation" could be a special session topic that would include logarithms, which will also be the focus of a BSHM meeting in early May. It was suggested that each society record its presentations on that topic so that the recordings could be shown to the other. Robert Thomas noted that 2014 is also the 40th anniversary of CSHPM. Volunteers are needed to organize the general and special session and to be the local arrangements coordinator. Glen asked those interested to speak with him after the meeting.

b) In 2015, CFHSS will be meeting at the University of Ottawa in early June. However, BSHM has expressed an interest in a joint meeting. Glen suggests that a city along the East Coast of the US, e.g., New York, Boston, or Washington DC, would be a venue attractive to BSHM members. A volunteer is needed to explore options. It was also noted that 2015 is the centennial year of the MAA. c) For 2016, we don't know where CFHSS or CMS will be meeting.

11. a) The members of the Nominating Committee are Fred Rickey and Tom Archibald, with a third mem-

ber to be named. b) Since we received \$723 in contributions earmarked for student travel, we will supplement that amount and award \$750 to the winner of the CSHPM Student Prize. The organizers of this meeting (Glen, Maria, Rob Bradley, Tom Drucker, and Bonnie Gold) will comprise the selection committee. c) Jean-Pierre requested reciprocal advertising between CSHPM and the Philosophy of Mathematics Association and the Association for the Philosophy of Mathematical Practice on the organizations' respective websites. This was agreed to. d) Tom Drucker thanked those who provided copies of their books for the booth and the booth workers.

e) Glen extended the following thanks: Elaine Landry, Philosophy of Science Association representative; Hardy Grant, CFHSS representative; Tom Drucker and Maria Zack, who set up and staffed the booth; Maria Zack, who took on many responsibilities in connection with this meeting; Pat Allaire, Secretary; Dirk Schlimm, Treasurer; Jean-Pierre Marquis, Past President; Tom Archibald, *Proceedings* Editor and CMS representative; Amy Ackerberg-Hastings, Eisso Atzema, and Maria Zack, *Bulletin* editors; Mike Molinsky, Webmaster and Archivist; Fran Abeles, Greg Lavers, Adrian Rice, and Sylvia Svitak, Councilors; Rob Bradley, Tom Drucker, Bonnie Gold, Maria Zack, and Glen Van Brummelen, conference organizers.

The meeting was adjourned at 2:17 pm.

*Patricia Allaire, Secretary*

## Joint Book Review

*The Continuity Debate: Dedekind, Cantor, du Bois-Reymond and Peirce on Continuity and Infinitesimals*, by Benjamin Lee Buckley, Boston, MA: Docent Press, 2012, x + 169 pp. \$17.99; *Peirce's Logic of Continuity*, by Fernando Zalamea, Boston, MA: Docent Press, 2012, xiv + 176 pp. \$17.99.

Interest in C.S. Peirce's philosophy of mathematics has gained some momentum over the last ten years or so. The two texts reviewed here both contribute to the study of Peirce's highly original, but frequently opaque, ideas. Buckley's *Continuity Debate* deals with the dispute over mathematical continuity and Peirce's place therein. Zalamea's *Peirce's Logic of*

*Continuity* deals more directly with Peirce himself.

Before I engage the details of these books, I must briefly wax methodological. To do the history and philosophy of mathematics well can prove elusive. Each of the history and philosophy of mathematics involves the convergence of several disciplines, the training for which does not always converge upon a single scholar. Unfortunately, both of these books suffer from the expected deficiencies. Buckley is a trained philosopher whose conceptual care and literary finesse is offset by some technical mathematical errors and a simplistic narrative of the history of analysis. On the other hand, Zalamea is a mathematician who draws novel connections between Peirce's work and contemporary mathematics but whose exposition leaves Peirce's concepts as opaque as he found them in Peirce's corpus. Below, I will get into greater detail about what a reader will find in each text.

I begin with Buckley, whose own description of *The Continuity Debate* is found in his introduction:

[T]his book focuses on the debate surrounding the nature of real numbers and whether they form a continuous entity, as it occurred in the late nineteenth century, *as calculus became more widely accepted*. (Buckley, 3, emphasis added)

The first two chapters lay out some broad historical and philosophical background. The third through sixth chapters focus on each of the four figures: Dedekind, Cantor, du Bois-Reymond and Peirce. The final two chapters provide some more general philosophical analysis and summary.

Truthfully, *The Continuity Debate* is a rather enjoyable read, in part because Buckley is a capable stylist and does a fair enough job of analyzing the primary texts of his four "debaters". The problem comes when Buckley moves beyond these four, either (i) to generalize historically or (ii) to place them into some kind of broader philosophical or dialectical context. Regarding (i), one finds Buckley following some outdated secondary sources into error. For example, to speak of the calculus becoming more widely accepted (as quoted above) suggests the kinds of anachronisms found in Carl Boyer's *The History of the Calculus and its Conceptual Development*, a book cited regularly by

Buckley. Regarding (ii), the problem is not a matter of error but rather that the reader desires more than is provided. The deeper philosophical action is found in the last two chapters, which together only amount to just over thirty pages. I particularly enjoyed chapter seven, and especially the argument for infinitesimals from probability. I would have liked to see the content of these last two chapters expanded and included more throughout the earlier chapters.

What about *Peirce's Logic of Continuity*? Zalamea's book comprises two parts, which correspond to expanded, revised, and translated versions of two earlier books of his. Part I, entitled "Peirce's Continuum," contains three chapters. The first is introductory. The second chapter compares Peirce's philosophical perspective on the continuum with mathematical models other than the standard real number construction. The last chapter of Part I details how the concept of continuity was meant to play for Peirce a much larger philosophical role.

Part II, entitled "Peirce's Existential Graphs," is much longer. This part is primarily dedicated to Peirce's unusual logical systems: a trio of calculi (called ALPHA, BETA and GAMMA) where the combination of lines with nested ellipses together represent standard logical expressions. Given that this was originally a separate monograph, there are two more introductory chapters, each of which describes the unique philosophical roles that Zalamea takes these systems to play. The remaining chapters are dedicated to directly unraveling the philosophical consequences for each of the three calculi. The last chapter is a combination of a conclusion (primarily to Part II) and a discussion of the metalogical role that (an augmented) GAMMA system can play—a natural thought since GAMMA is Peirce's modal logical analogue.

The greatest difficulty for this book is the demands it places on its readers. Zalamea seems to assume that his audience is already familiar with much of Peirce's incredibly nonstandard outlook or with the variety of obscure cultural references that are scattered throughout the book—including even fleeting references to French author Marcel Proust and Russian filmmaker Andrei Tarkovsky! This text would greatly benefit from a gentler introduction to the Peircean repertoire, drawing analogies to more familiar philosophical terminology and concepts.

As one with some acquaintance with Peirce's work on the continuum, I struggled to make sense of large portions of this text. The connections being drawn to modern mathematics ended up serving as the best entry point for me in otherwise impenetrable prose. The following sentence may serve as representative of the kinds of obfuscation one might find here:

Since a quasi-mind can be either a protoplasm medium where semeiosis grows in back-and-forth processes of liquefaction and cohesion, or a nervous system where semeiosis integrates cells [sic] excitation, fibers [sic] transmission and habit taking, or a cultural environment spanned by linguistic grids, or even the very cosmos where the laws of physics are being progressively determined, it is clear that Peirce's "general signs" can cover huge domains of reality. (Zalamea, 62)

One looking for a more accessible article on this material might prefer Zalamea's own "A Category Theoretic Reading of Peirce's System: Pragmaticism, Continuity, and the Existential Graphs" in *New Essays on Peirce's Mathematical Philosophy*, edited by Matthew E. Moore. There he spends almost half of the article easing his readers into the Peircean worldview. Indeed, the reader might find the text under review more approachable after reading this related article by the same author.

In summary, these texts on Peirce—and his companions, in Buckley's case—leave something to be desired. When Buckley sticks to his four "debaters", the results are worth the effort. I especially enjoyed his illuminating discussion of the progression of Peirce's views of the continuum. Those drawn to Buckley's title but looking for greater historical and mathematical care would benefit from reading Philip Ehrlich's book-length journal article, "The Rise of non-Archimedean Mathematics and the Roots of a Misconception I: The Emergence of non-Archimedean Systems of Magnitudes" found in the *Archive for History of Exact Sciences*, Volume 60. As far as Zalamea's book is concerned, I can only say that a would-be reader should proceed warily.

*Patrick Reeder*

## Joint AMS/MAA Meetings

A number of events in history and philosophy of mathematics have been planned for the Joint Mathematics Meetings, to be held in Baltimore, Maryland, January 15–18, 2014. More information can be found on the MAA or AMS websites: [www.maa.org](http://www.maa.org) or [www.ams.org](http://www.ams.org).

Monday, 13 January, 9:00–17:00, and Tuesday, 14 January, 9:00–17:00: MAA Short Course on “Reading, Writing, and Doing the History of Mathematics: Learning the Methods of Historical Research,” organized by Amy Shell-Gellasch. Topics include: theories of history, historical sources, reading historical sources, translating historical sources, cultural and temporal context, history compared to historiography, and implications for pedagogy. The speakers are: Ron Calinger, Karen Parshall, Joe Dauben, Fred Rickey, Michael Fried, and Colin McKinney. (NOTE: You must preregister for this course.)

Wednesday, 15 January, 8:00–10:50 and 14:15–18:05, and Thursday, 16 January, 8:00–11:50: AMS Special Session on History of Mathematics, organized by Sloan Despeaux, Della Dumbaugh, and Glen Van Brummelen.

Wednesday, 15 January, 11:10–12:00: AMS-MAA Invited Address, “Paul Erdős and the Rise of Statistical Thinking in Elementary Number Theory,” by Paul Pollack and Carl Pomerance.

Wednesday, 15 January, 17:30–19:20: HOMSIGMAA Reception and Business Meeting; and Guest Lecture, “The Notebooks of George Washington on Arithmetic, Geometry, Trigonometry, Logarithms, and Surveying,” by V. Frederick Rickey.

Thursday, 16 January, 8:40–9:00: “The Contributions of a History and Philosophy of Mathematics Course on Undergraduate Students’ Mathematical Thinking,” by Kathleen M. Clark, in MAA Session on Research on the Teaching and Learning of Undergraduate Mathematics.

Thursday, 16 January, 9:00–11:00, and Saturday, 18 January, 9:00–11:00: MAA Minicourse on “Historical Role-Playing in the Mathematics Classroom,” presented by John P. Curran. (NOTE: You must preregister for this course.)

Thursday, 16 January, 13:00–16:00: HOMSIGMAA Session on History of Mathematical Communities, organized by Amy Shell-Gellasch and Linda McGuire.

Thursday, 16 January, 13:00–16:15: POMSIGMAA Session on Is Mathematics the Language of Science? organized by Carl Behrens, Thomas Drucker, and Dan Sloughter.

Thursday, 16 January, 17:30–19:20: POMSIGMAA Reception and Business Meeting; and Guest Lecture, “Hermann Minkowski: The Quiet Genius,” by Steve Gimbel.

Thursday, 16 January, 18:00–19:10: AMS-MAA Special Film Presentation, “The Genius of Srinivasa Ramanujan.”

Friday, 17 January, 8:00–10:50: MAA Invited Paper Session on the Continuing Influence of Paul Erdős in Number Theory, organized by Paul Pollack and Carl Pomerance.

Friday, 17 January, 13:00–15:00, and Saturday, 18 January, 13:00–15:00: MAA Minicourse on “Heavenly Mathematics: The Forgotten Art of Spherical Trigonometry,” presented by Glen Van Brummelen and Joel Silverberg. (NOTE: You must preregister for this course.)

Friday, 17 January, 13:00–17:50: AMS Special Session on Nineteenth Century Algebra and Analysis, organized by Frank D. Grosshans, Karen H. Parshall, and Paul R. Wolfson.

Friday, 17 January, 18:30–21:00: SIGMAA on Business, Industry, and Government and HOMSIGMAA Lecture, “Eureka! The Archimedes Palimpsest,” by William Noel; Reception; and BIG Business Meeting.

Saturday, 18 January, 7:45–10:55: AMS Session on History of Mathematics.

Saturday, 18 January, 8:00–11:00: HOMSIGMAA Session on Putting a Theme in a History of Mathematics Course, organized by Eugene Boman and Robert Rogers.

Saturday, 18 January, 10:05–10:55: MAA Invited Address, “Heron, Newton, Euler, and Barney,” by William Dunham.

Saturday, 18 January, 15:00–16:50: “Benjamin Banneker’s Original Handwritten Document: Observations and Study of the Cicada,” by Janet E. Bar-

ber and Asamoah Nkwanta; “The Influence of John Robert Kline on African-American Mathematics,” by Idris Stovall; and “Mathematics at Howard University: 1900–1960,” by James A. Donaldson; in AMS Special Session on Highlighting Achievements and Contributions of Mathematicians of the African Diaspora.

At press time, an MAA General Contributed Paper Session on History and Philosophy of Mathematics, organized by Jennifer Beineke, Bem Cayco, and Kimberly Presser, was planned but not yet scheduled.

*Amy Shell-Gellasch*

## 2nd Fields Medal Symposium

The second annual Fields Medal Symposium held its public opening on September 30, 2013, in the well-appointed Isabel Bader Theatre at the University of Toronto. The full symposium continued for three more days on the theme of Ergodic Theory, the field of the honoured Fields Medallist, Elon Lindenstrauss, Hebrew University of Jerusalem. Walter Craig, Director of the Fields Institute, introduced the evening and the five other speakers, thanking his predecessor Edward Bierstone for conceiving and organising both the 2012 and 2013 symposia. Craig praised both John Charles Fields (Mathematics, U. of T.), whose bequest helped establish the Medal in 1932, and the Medals themselves for fulfilling Fields’ desire to enhance mathematical internationalism. The first speaker, Paul Young (Vice-President for Research and Innovation, U. of T.), comes from a civil engineering background. For him the Fields Institute’s world-changing research uses mathematics as the great enabler, a key to implementing U. of T.’s commitment to diversity and comprehensiveness. Though located on campus (between the architecture building and the university bookstore) the Institute is independent of the University, with its own board of directors. Next was Reza Moridi, Ontario’s Minister of Research and Innovation, who holds a Ph. D. in Physics and represents the riding of Richmond Hill, the home of the David Dunlap Observatory. He praised mathematics, J. C. Fields, Elon Lindenstrauss, and the Fields Institute. As Minister he recognised that mathematics is vital to the knowledge economy but it is also “the poetry of logical ideas.”

Brad Duguid, the Minister for Colleges and Universities, admitted to feeling way out of his league and then continued with a math joke: “Why did the chicken cross the Möbius strip? To get to the same side.” Duguid was gratified by the hearty laughter. He had been able to impress his children for having met Stephen Hawking at Waterloo’s Perimeter Institute. Why? They had seen Hawking as a guest on TV’s *Big Bang Theory*. Duguid argued that the next generation must be encouraged to pursue careers in mathematics and science. The evening concluded with two mathematics talks. Peter Sarnak, from Princeton’s Institute for Advanced Study, explored “Randomness in Number Theory”. Sarnak examined the Rigidity-Randomness dichotomy whether in stock market fluctuations or in the decimal expansion of  $\pi$ . Of course, the Riemann Hypothesis of the zeroes of the Zeta Function illustrates the dichotomy. Modular forms, which can’t be explicitly written, can be computed to model such phenomena as the vibrational modes of polygons in the hyperbolic plane. From ergodic theory we can see the more even distribution of eigenvalues. The Fields Medallist, Elon Lindenstrauss, entitled his presentation on ergodic theory “Information, Entropy and Numbers”. It was the evening’s finale. It was also after 9:00 pm and by then I had lost the energy to keep up notetaking while fighting off drowsiness. One example of the problems Lindenstrauss looked at was the amount of information in a plain English text in relation to its length. He looked at quite an array of historical periods and fields of study that generate problems and applications. Lindenstrauss concluded with two cardinal points: 1) Mathematics never becomes obsolete. We can still build productively on the problems of previous centuries. 2) There is a clear trend in mathematics to build bridges between seemingly unrelated fields of study. Financing is already in place for the next eight years of Fields Medallist Symposia. Next spring’s *Bulletin* should provide early notice of the third one, in 2014. Next year will mark the 90th anniversary of J. C. Fields’ greatest triumph, the hosting of the 1924 International Mathematical Congress at the University of Toronto. The Congress’s financial surplus, along with Fields’ bequest of the bulk of his estate, funded the Fields Medals.

*David Orenstein*



## ICHSTM Optimization Symposium

The symposium, *The history and philosophy of mathematical optimization*, co-sponsored by the International Commission on the History of Mathematics, took place at the University of Manchester on July 25, 2013. The symposium was organized by Craig Fraser (University of Toronto) and Michael Stoeltzner (University of South Carolina). It was one of several symposia on the history of mathematics at the 24th International Congress of the History of Science, Technology and Medicine.

The idea to describe the laws of nature by means of optimal forms, by the minima or maxima of empirical measures, has fascinated mathematicians, physicists and philosophers over the centuries. Great hopes in a universal approach were followed by striking counterexamples, both having in their wake some classical philosophical controversies. The symposium examined historical studies of optimization from the sixteenth to the twentieth centuries. The scope of the symposium was broad and included the differential calculus, calculus of variations, variational mechanics and the mathematical physics of work and potential, Hamilton-Jacobi theory, and linear programming. Topics that were not specifically addressed but that were within the purview of the symposium include optimal control theory, optimization in economics and geometric optimization. Technical, contextual and philosophical aspects of the subject were explored.

The subject of the symposium was ideally suited to the theme of the 24th International Congress, “Knowledge at work.” In many areas of physical science, the investigation of optimization involves the integration of theoretical and applied concepts and techniques of solution. In fields as diverse as mechanics, thermodynamics, engineering, economics, population biology and game theory, the effective implementation of procedures based in theory is achieved using a principle of optimization.

The symposium was divided into two parts A and B. Session A, chaired by Fraser and Stoeltzner, featured presentations by Maria Rosa Massa Esteve (Universitat Politècnica de Catalunya, “Maxima in geometric figures in Mengoli’s *Geometriae speciosa elementa*”); Ariga Nobumichi (Japan’s National Museum of Na-

ture and Science, “Euler’s principle of least ‘effort’: development and interpretation”); and Sandro Caparrini (Turin, “Maxima and minima in Italian mathematics, 1770–1820”).

Massa Esteve then chaired Session B, including presentations by Fraser (“Zermelo’s navigation problem in the calculus of variations”); Helmut Pulte (Ruhr-Universität Bochum, “Hermann von Helmholtz on least action and ‘monocyclic systems’”); Stoeltzner (“The principle of least action as a universal guide to theory-building: Max Planck and physics around 1900”); Adrian Wüthrich (Technische Universität Berlin, “The role of the action function in Feynman’s development of a divergence-free quantum electrodynamics”); and Jos Uffink (University of Minnesota, “Extremal principles in physics”).

The organizers consider that the Manchester event was highly successful. Overall, the sessions were well attended. The two organizers tentatively plan to produce a book, which will include some of the talks from the symposium, as well as other chapters. We would like to express our thanks for the support of the ICHM in the organization of this symposium.

*Craig Fraser*

## Quotations in Context

Alexander Pope’s *Epitaph Intended for Sir Isaac Newton*, which dates from 1730 or earlier, is often quoted. With occasional variations in capitalization or punctuation, it reads:

Nature, and Nature’s Laws, lay hid in  
Night: God said, “Let Newton Be!” and All  
was *Light*.

Should these words be taken at face value, expressing an unbounded appreciation for Newton’s accomplishments, or is there a hint of satire here? Most readers think the former, noting that upon his death in 1727 Newton was a respected old man, so that satire would have been inappropriate.

Yet Pope’s allusion to the phrase from Genesis, “God said, ‘Let there be light.’ And there was light,” may give some of us pause. Pope has here replaced “there” by “All,” but who could seriously maintain that “All”

was light after Newton? Newton himself, in his well-known *Queries*, raised many questions that he knew he could not answer. Frank N. Magill asserts that

Pope was, of course, one who ascribed to his own admonition . . . that the proper study of mankind is man, [unlike] Sir Isaac Newton, . . . a student of the physical world, not man. [Pope's *Epitaph*] is half-satiric, half-admiring. . . . The paraphrase of the line from Genesis is obvious—and cynical. (Magill's *Quotations in Context*, 1965, 302)

Some readers also point to earlier works of Pope as exhibiting parodies of the biblical formula from Genesis (*Windsor-Forest* 1.327 and *Rape of the Lock* 3.46), and, while recalling Pope's admiration for Newton himself, also recall Pope's opposition to the Newtonians' desire for his near-deification.

Other readers, however, take Pope's "Light" as alluding to Newton's accomplishments in optics, while "Nature and Nature's Laws" refers to Newton's discovery and exploitation of the law of gravity. In any case, as they point out, Pope is known to have used exaggeration in his works.

Nevertheless, John Conduitt, who married Newton's niece and was in charge of designing Newton's elaborate memorial in Westminster Abbey, apparently made a conscious choice not to include Pope's *Epitaph* in the memorial—despite Pope's words being in circulation at the time and preceded by a Latin phrase praising Newton to the skies. In fact, Pope gave his words the full title of "Epitaph Intended for Sir Isaac Newton, in Westminster-Abbey." It would be interesting to know whether Conduitt wrote to Pope about his decision not to include the *Epitaph* in Newton's memorial.

So, CSHPM readers, what is the case? Should Pope's *Epitaph* be read as describing the unbounded admiration of the Age of Reason for the accomplishments of one of its greatest heroes? Or is the *Epitaph* to some extent playful and half-satiric? Or is it somehow both at once?

An exchange of letters to the editor on pp. 5-6 of *The Mathematical Intelligencer* 12, no. 3 (1990), raises most of these issues, but does not settle them in a definitive way.

*W. M. Priestley*

## 2013 MathFest in Review

This year's annual meeting was unprecedented in a couple of respects. It was the first time that the Society had met in the United States, a location that seemed reasonable in view of the proportion of our members that are resident there. It was also the first time that we met jointly with the Mathematical Association of America. The idea for the joint meeting arose in the context of the Society's president's also serving on the Board of Governors of the Association. The MAA holds an event called MathFest at the beginning of August each year and there is always quite a crowd in attendance. One concern going into this year's meeting was that the Society's activities might be lost in the shuffle.

Fortunately, that did not prove to be a problem, and the attendance at the various sessions of Society talks was quite healthy. The organizers made an effort to try to incorporate philosophy with history in sessions rather than to have them parallel. This certainly was to our benefit, judging by the size of the crowd at the philosophy talks, and there was some interest in hearing juxtaposition of philosophical and mathematical themes from the same period.

Thanks are due to those who took part in the planning of the meeting, which took place over the course of eighteen months. All of those on the committee responsible were members of the Society, but they were also able to represent the two Special Interest Groups of the MAA that co-sponsored the sessions, namely, the History of Math SIG (HOMSIGMAA) and the Philosophy of Math SIG (POMSIGMAA). In addition to the ordinary work of a program committee, the members had to figure out how best to accommodate differences between the Society's usual manner of proceeding and the MAA's requirements about, say, submitting abstracts. The efforts of the committee reduced the confusion to a minimum, thanks to Rob Bradley (HOM), Tom Drucker (POM), Bonnie Gold (POM), and Maria Zack (HOM) as well as to Glen Van Brummelen in his role as chair. Rob also represented the Euler Society, which did not have an annual meeting of its own this year but some members of which spoke on their eponym at MathFest.

The invited lecture by Jeremy Gray was well attended. Those who remember his May Lecture in St. John's a few years ago are not likely to be surprised to learn that his ability to tie together the various parts of Poincaré's career helped to make the story into more than just a succession of incidents and publications. The attendance at the lecture was not as large as at some other MAA invited lectures at the meeting, but it was considerably larger than it is likely to have been without the joint organization. The costs associated with the lecture were divided among the three sponsoring organizations.

One other feature of the meeting worth mentioning was the provision of a booth for the use of the Society to advertise ourselves to an American audience that might not have been familiar with our activities or even our existence. The booth was decorated with books and other publications illustrating the scholarship of our members. With luck illustrations elsewhere in this issue will provide evidence for how hard Maria Zack worked to create an environment welcoming visitors to the world of history of mathematics. She also provided chocolates for those passing by. It would be pointless to speculate whether the chocolates or the scholarship drew more of a crowd.

There was a little less social interaction at MathFest than there usually is when the Society meets with the Learned. It was also somewhat more expensive, especially for those choosing to stay at the conference hotels, since there were no university lodgings available. On the other hand, the turnout for sessions was healthy and the MAA's employees were able to take care of some of the details otherwise left to Society volunteers. How soon this particular joint meeting will be repeated is currently being discussed, but the cooperation of the Society with these SIGs of the MAA had much to recommend it.

*Tom Drucker*

## **Book Review: *Turbulent Times in Mathematics***

*Turbulent Times in Mathematics: The Life of J. C. Fields and the History of the Fields Medal*, by Elaine McKinnon Riehm and Francis Hoffman, Providence and Toronto: American Mathematical Society and

The Fields Institute, 2011, xii + 257 pp. \$45.00.

World War I forced the cancellation of the International Congress of Mathematics (ICM) slated for 1916 in Stockholm, Sweden, under the leadership of Gösta Mittag-Leffler. When France triumphantly reinstated the Congress in 1920 in the newly liberated Alsatian capital, Strasbourg, delegates from the defeated Central Powers (Germany, Austria-Hungary, etc.) were excluded.

Into this highly charged atmosphere, the American mathematician, L. E. Dickson (*History of the Theory of Numbers*) brought an offer to host the 1924 meeting in the USA. Dickson was the chair of the American Section of the International Mathematical Union (IMU), whose members had unanimously agreed to this invitation. The offer was accepted. Unfortunately, the Americans had naïvely assumed that, after the passing of four more years, the Europeans would be ready to accept the presence of German and Austrian mathematicians. But this would have violated the exclusion policy of the International Research Council, of which the IMU was an integral part. Furthermore, the President of the IMU was Belgian (Charles de la Vallée-Poussin) and its Secretary General (Gabriel Koenigs) was French. The mathematicians of both countries adamantly opposed any such participation.

This conflict led to the greatest triumph of the career of the University of Toronto (U. of T.) mathematician, John Charles Fields: the hosting of the International Mathematical Congress (IMC) at the University of Toronto in the summer of 1924.

In *Turbulent Times in Mathematics*, historians Elaine McKinnon Riehm and Frances Hoffman show us Fields's life and career in a thoroughly documented, flowing narrative with special emphasis on how the Fields Medal, the highest award in mathematics, was established. J. C. Fields (1863–1932) was born in Hamilton, Ontario, into a financially comfortable middle class family. He was educated in the excellent local public schools, Central School and Hamilton Collegiate Institute. In 1881, he started his post-secondary studies at the University of Toronto, then on the north edge of the burgeoning city. While taking other required courses, he followed the programme of the Department of Mathematics and Natural Philosophy, led by physics professor James Loudon. After

graduating in 1884 with the gold medal in mathematics, he went on to Johns Hopkins University in Baltimore in the United States. There he obtained his Ph. D. in 1887, for the dissertation “Symbolic Finite Solutions and Solutions by Definite Integrals of the Equations  $d^m y/dx^n = x^m y$ .” His likely supervisor was Thomas Craig. There he stayed for two more years as a fellow with some teaching responsibilities before he was hired, in 1889, to teach at Allegheny College in Meadville, Pennsylvania. While teaching there for three years he continued his research.

He then decided to pursue post-doctoral studies in Europe for almost a decade. This started with a two-year stay in Paris where he heard lecture courses at the Collège de France and at the Sorbonne but also attended the bi-weekly meetings of Société Mathématique de France. In 1894, Fields moved to Germany, first going to Göttingen to study with Felix Klein, taking the course in number theory. After only six months, he moved to Berlin, where he stayed until 1900.

Fields joined the Mathematics Department at U. of T. as a Special Lecturer in fall 1901 offering a short course, “Quadrature of the Circle”. He was back in Europe, to represent the U. of T., at the Abel Centenary in Oslo, Norway. By 1905 he was an Associate Professor, reaching Professor in 1914 and Research Professor in 1923. In 1913 he became a fellow of the Royal Society, London, and in 1911 was asked to join the International Committee for the Cambridge, England, ICM.

The two chapters on the acquisition and organization, and then the unfurling, of the 1924 International Mathematical Congress (IMC) at the University of Toronto are greatly enjoyable. Fields had organised the 1921 meeting of the American Association for the Advancement of Science (AAAS) at the university, where he heard informal American Mathematical Society (AMS) discussions that offhandedly mentioned avoiding the issue of excluding German mathematicians by moving the Congress to Toronto.

Fields took action on the suggestion. After his great success with the AAAS meeting, he had little trouble convincing U. of T. President Robert Falconer to take the 1924 ICM off the hands of the Americans. Fields was ready to outline preliminary plans for such a congress in Toronto at the December 20, 1922, meet-

ing of the Council of the AMS.

Field’s job in organising the IMC was made easier because U. of T. was already hosting the Annual Meeting of the British Association for the Advancement of Science in that same summer of 1924. Fields had been helping his friend and colleague, U. of T. physics professor John C. McLellan, with organisation.

Fields went about his IMC work with a singular focus. He met the Prime Minister of Canada, the Liberal William Lyon Mackenzie King, in May 1922. On June 14, 1922, King wrote to Fields: “I have the pleasure in bringing to the attention of my colleagues the considerations you have presented with a view to securing assistance from the Federal Government.” In the end the Canadian Government provided \$20,000, which largely went to travel subsidies for the European delegates. Later, in April 1927, \$2,000 was granted toward the publication of the massive, two volume *Proceedings* edited by Fields and published by the University of Toronto Press.

Fields also traveled extensively—to New York, to Ottawa twice, to Montreal six times, and to Quebec City thrice—to garner support for the meeting and housing for participants. He also went to Europe twice to drum up attendance, publicise the travel subsidies, and personally visit mathematicians. John Lighton Synge, who had joined Fields in the U. of T. Mathematics Department in 1920, held down the fort in Toronto. As Secretary of the Congress he concentrated on the detailed arrangements, such as sending out 6,000 individual invitations.

The Toronto IMC was a resounding success, with 444 delegates from 33 countries hearing 249 talks. There were a host of excursions, garden parties and receptions, capped by the August 12 *Conversazione* at Hart House, the student union building. The entire endeavour culminated in a major Western Expedition by train to Vancouver and Victoria, departing by a northern route and returning by a southern one. Despite his exhaustion, Fields went along on the two and a half week trip to help visitors with translation. Sadly, this extreme effort led to his heart difficulties.

The Fields Medal came out of Fields’ mathematical internationalism. At the February 24, 1931, meeting of the Toronto IMC’s Organising Committee, with the *Proceedings* finally published, it was found that

the IMC had taken in \$75,000 while only spending \$72,300. \$2,500 was set aside for two medals to be awarded at future Congresses. That summer Fields was in Europe yet again, to drum up support, increasing the surplus to \$3,209, and developing a plan to make the medal as international as possible. When Fields fell seriously ill soon after, he sent for J. L. Synge and discussed endowing the medals with the bulk of his estate, in part because mathematics had been omitted from Nobel Prizes.

In September 1932, Synge ensured that the medals were established by seeing through a resolution at the Zurich ICM. Fields had commissioned R. Tait McKenzie, Canadian sculptor and physical education specialist, to design the medal. After a visit from Synge, Tait McKenzie was able to submit the final design, featuring Archimedes, to the Toronto Organising Committee. They approved it on January 16, 1933. It was ready to be awarded at the 1936 Oslo ICM.

Let's conclude by looking at some aspects of presentation in *Turbulent Times*. Quotations in other languages are handled in the best way: first the original, followed immediately by an English translation in the main body of the text. Actual footnotes are conveniently placed at the bottom of the page to document sources. Eight pages of illustrations, inserted between pages 136 and 137, bear 55 small, historic photographs. Sources for these images are listed in the back of the book.

The Bibliography itemises unpublished sources first: Mathematical Notebooks of J. C. Fields, Papers of Gösta Mittag-Leffler, and so on. The published sources include both primary (Robert Falconer's 1915 *The German Tragedy*) and secondary (Yves Gingras's 1986 "The Institutionalization of . . . Canadian Physics") literature. There are three formal appendices: a list of Fields's publications, divided into scientific and non-scientific; a short description of each of the Fields Medallists (from 1936 to 2010); and a similar description of thirteen of Fields's colleagues and friends.

*David Orenstein*

## New Members

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

David Bressoud  
Macalester College  
St. Paul, MN  
USA

Brian Hepburn  
Aarhus University  
Aarhus  
Denmark

James F. Langan  
Stratford, CT  
USA

Zou'bi Moneef  
Amman  
Jordan

Salvatore Petrilli  
Adelphi University  
Garden City, NY  
USA

David Pengelley  
New Mexico State University  
Las Cruces, NM  
USA

Rebecca Young  
USA

## From the Editor

A year ago, the *Bulletin* promoted the upcoming joint CSHPM/HOMSIGMAA/POMSIGMAA meeting scheduled for MathFest 2013. The conference proved to be even more successful than the Society anticipated in 2012; in addition to the expressions of gratitude to the hardworking organizers that you will find in this issue, I thank Tom Drucker for providing photographs as a visual record of an experience the Council hopes to repeat at some point in the future.

As you will read in Glen Van Brummelen's President's Message, one of the Council's ongoing projects is wrestling with the Society's structure and publica-



tions in a rapidly changing academic world. In particular, how can the format of the *Bulletin* and *Proceedings* best promote the Society and demonstrate its scholarly value? In addition to a crash course in the brave new world of open-access publishing, I have recently been educating myself in Open Educational Resources. In brief, my institution, which offers the opportunity to earn undergraduate and graduate degrees through open enrollment to the US military and other working adults, intends to develop online materials lists (via the free web and institutional subscriptions) for all of its courses so that students no longer need to spend money on textbooks.

My takeaway from both of these endeavors is that predicting the future direction of academic publishing is hopelessly complex. A vision is required that I am certainly lacking. At the same time, we in CSHPM must remain mindful that we rely on the tasks and time of volunteers, and so we need to establish publication processes that can realistically be accomplished by our members. For both of these things, as Glen explains in his column, the Society needs your ideas and input. The goal is for Council to prepare a resolution for discussion at the 2014 AGM at Brock next May.

The next submission deadline for the *Bulletin* is 1 April 2014. As always, the editors seek news items of interest to historians and philosophers of mathematics, reports on conferences attended, and personal and professional announcements. We also welcome suggestions for memorials, book and web reviews, and informative or thought-provoking column-style articles. Plain text and LaTeX files are easiest for the editors to deal with, but we can also convert Word documents. Submissions may be sent to [aackerbe@verizon.net](mailto:aackerbe@verizon.net).

The *Bulletin* reaches your hands or computer screen due to the continued efforts of Eisso Atzema, Layout Editor; Maria Zack, Production Editor; Pat Alaire, Secretary; and Mike Molinsky, Webmaster. I am thankful also for our officers, Councillors, and the volunteers who keep the Society's other functions operating smoothly.

*Amy Ackerberg-Hastings*

## About the Bulletin

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



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