



# CMS NOTES de la SMC

## FROM THE EXECUTIVE DIRECTOR'S DESK

Johan Rudnick

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Having only just recently joined the CMS from outside the mathematics and academic community, I have spent my first few weeks 'kicking the CMS tires.' I am amazed at the breadth and depth of CMS activities while still grappling with what to make of it all.

CMS activities touch everyone in the mathematics community. CMS hosts semi-annual national meetings, providing opportunities for the presentation of hundreds of research 'talks' as well as numerous public lectures. CMS manages an extensive journal, magazine, newsletter and book publishing program. CMS provides prizes and awards to recognize research, publication, education, and service excellence. CMS funds scholarships and endowment grants. CMS administers national and regional math camps and the Canadian Open Mathematics Challenge. And CMS selects, trains, and supports the Canadian team for the International Mathematical

### WHAT TO MAKE OF IT ALL

Olympiad. This represents a considerable national presence.

CMS activities reflect the Canadian mathematics community. CMS works with the regional mathematics institutes, AARMS, CRM, Fields, and PIMS. CMS works with the universities, colleges, and CEGEPs. CMS works with federal and provincial governments as well as other institutional research partners, like BIRS and MITACS. CMS operates with a large national Board and numerous standing committees. CMS membership is drawn from across Canada. This represents considerable community engagement.

CMS activities garner private and public sector support. CMS sponsors include Sun Life Financial, Imperial Oil Foundation, NSERC, and the Harold Crabtree Foundation. CMS is also supported by TD Bank Financial Group, RBC Foundation, National Bank Group, Nelson Education, COM DEV, the Samuel Beatty Fund, as well as other corporate supporters. CMS also receives numerous private individual donations. CMS receives funding assistance from federal, provincial and

territorial governments. And CMS is supported by almost 1,000 members. This represents a considerable vote of confidence.

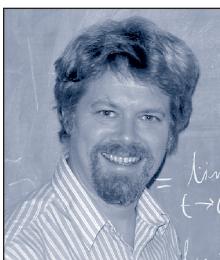
So the not surprising good news is that the CMS is a credible and solid national organization. Unfortunately, in today's environment that may not, of itself, be sufficient to sustain success.

In today's economic climate, both public and private sector organizations are being forced to rethink why and how they operate. Organizations are re-evaluating the viability and sustainability of their business model. Organizations are rethinking the core value they provide to their clients and whether it still makes sense, not just logical sense, but competitive sense as well. Organizations are reconsidering what they need to continue doing, what they need to do better, what they need to stop doing, and what they need to start doing. And organizations are addressing these difficult issues while continuing to grapple with unique sectoral and technological challenges.

And like all organizations today, the CMS needs to

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## PROMETHEUS

Students in the second half of a first-year calculus class are often surprised to hear that integration is two thousand years older than differentiation. Nonetheless, it is true; the roots of integration can be found in classical Greek mathematics in the work of Bryson, Antiphon, Eudoxus, and eventually Archimedes, going back half a millennium before the common era. Differentiation cannot really be traced back much before Newton and Leibniz in the seventeenth century.

Unless the course uses one of the rare texts such as that of Apostol which take a nontraditional approach, the students tend to see things in the opposite order. Differentiation is comparatively easy and somewhat mechanical. Integration is harder, doesn't always cooperate, and makes heavy use of differentiation. And besides it comes after Christmas.

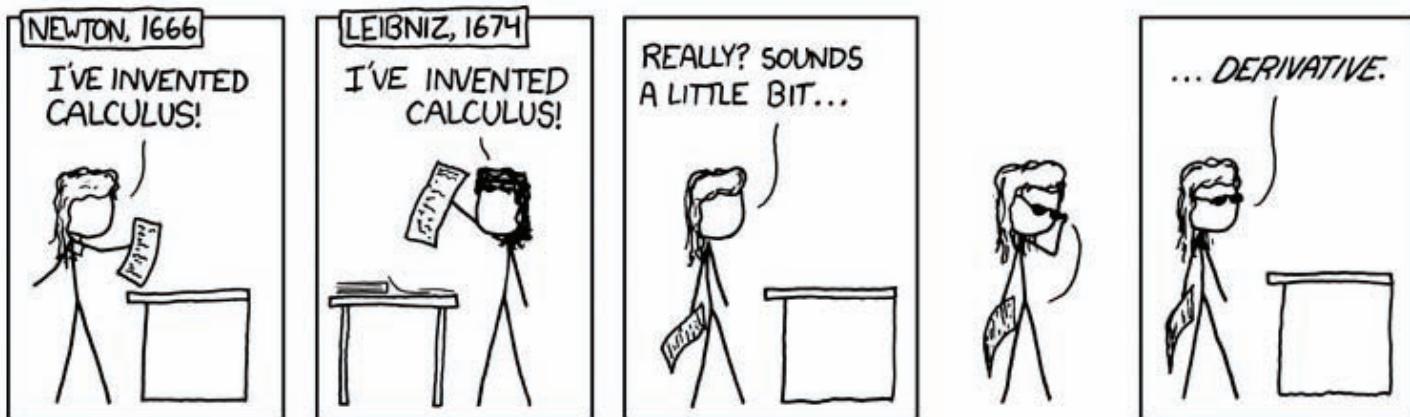
The point is that while some of the great mathematicians of antiquity used integration, they were the only ones who could, and each result they obtained was a major triumph. It is said that Archimedes considered relating the volume of

a sphere to that of the circumscribed cylinder to be one of his greatest accomplishments; according to Cicero, he had the diagram carved on his tombstone.

What Archimedes did not have was the Fundamental Theorem of calculus, first glimpsed by James Gregory and put on a solid footing by Newton and Leibniz, which brought integration down to the level of mere mortals. Today, first year students can use antidifferentiation to obtain the same result that Archimedes had to work so hard for.

The history of mathematics contains many other examples of developments which "popularized" ideas that had previously been hard to work with. The ancients knew that a handful of irrational numbers existed, but had no general way of working with them. Nonterminating decimal notation makes it easy — circulating decimals correspond to rational numbers, all others to irrationals. And — surprise! — most real numbers are irrational!

Developing a mathematical idea is only a start. Making it accessible to as wide a part of the mathematical community as possible is at least as important.



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Vous aimeriez une critiques littéraires de celui-ci dans les Notes de la SMC?  
Si oui, veuillez faire parvenir une copie au rédacteur des critiques littéraires.

**Keith Johnson**, Department of Mathematics and Statistics, Dalhousie University, Halifax NS B3H 3J5

## PROMÉTHÉE

Les étudiants des cours de calculs sont souvent surpris, à mi-chemin de leur première année, d'apprendre que les origines de l'intégration remontent à deux mille ans avant celles de la dérivation. Mais c'est pourtant vrai : l'intégration remonte aux mathématiques grecques classiques, dans les travaux de Bryson, d'Antiphon, d'Eudoxe et même d'Archimède, soit plus de 500 ans avant l'ère chrétienne. Quant à la dérivation, ses origines ne remontent pas beaucoup plus loin qu'à Newton et Leibniz au XVII<sup>e</sup> siècle.

À moins de se servir d'un des rares manuels qui adoptent une approche non traditionnelle, comme celui d'Apostol, les étudiants pensent généralement le contraire. La dérivation est assez facile en comparaison, et plutôt mécanique. L'intégration est plus complexe, elle ne se laisse pas apprivoiser facilement et utilise fréquemment la dérivation. Sans compter que le sujet vient après les vacances de Noël...

Le fait demeure que si quelques grands mathématiciens de l'Antiquité avaient recours à l'intégration, ils étaient les seuls à pouvoir le faire, et chacun de leurs résultats était un grand triomphe. On dit que pour Archimède, le fait d'établir un lien entre le volume d'une sphère et celle d'un cylindre circonscrit était l'une de ses plus grandes réalisations; selon Cicéron, il aurait même fait graver le diagramme sur sa tombe.

Ce dont Archimède ne disposait pas, c'est du théorème fondamental du calcul intégral, d'abord imaginé par James Gregory, puis installé sur des bases solides par Newton et Leibniz, qui l'ont rendu abordable pour le simple mortel. Nos étudiants actuels de première année se servent maintenant de l'antidérivation pour obtenir les résultats qu'Archimède avait obtenus avec tant de peine.

L'histoire des mathématiques offre de nombreux autres exemples de percées qui ont permis la vulgarisation d'idées très complexes et récalcitrantes. Les Anciens savaient qu'il existait une poignée de nombres irrationnels, sans toutefois savoir comment les utiliser de façon générale. La notation décimale nonterminating simplifie les choses, les fractions décimales périodiques correspondant aux nombres rationnels, et toutes les autres, aux nombres irrationnels. Et, surprise! La plupart des nombres réels sont irrationnels!

Le développement d'une idée mathématique n'est qu'un début. La rendre accessible à une portion aussi large que possible de la communauté mathématique est au moins aussi important.

### NOTES DE LA SMC

Les Notes de la SMC sont publiés par la Société mathématique du Canada (SMC) huit fois l'an (février, mars, avril, mai, septembre, octobre, novembre et décembre).

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### Letters to the Editors Lettres aux Rédacteurs

The Editors of the NOTES welcome letters in English or French on any subject of mathematical interest but reserve the right to condense them. Those accepted for publication will appear in the language of submission. Readers may reach us at [notes-letters@cms.math.ca](mailto:notes-letters@cms.math.ca) or at the Executive Office.

Les rédacteurs des NOTES acceptent les lettres en français ou anglais portant sur un sujet d'intérêt mathématique, mais ils se réservent le droit de les comprimer. Les lettres acceptées paraîtront dans la langue soumise. Les lecteurs peuvent nous joindre au bureau administratif de la SMC ou à l'adresse suivante : [notes-lettres@smc.math.ca](mailto:notes-lettres@smc.math.ca).

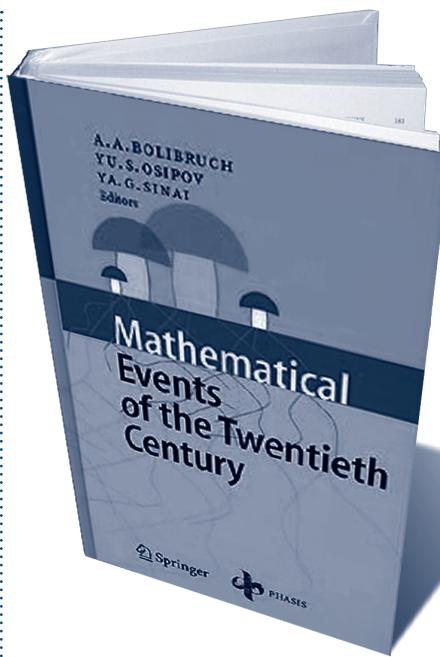
### Mathematical Events of the Twentieth Century

Edited by A.A. Bolibruch, Yu.S. Osipov, Ya.G. Sinai  
Springer Verlag, 2005  
545 pp. \$149.00 US ISBN 978-3540232353

Reviewed by Michael Shub, University of Toronto

To see major mathematical events through the eyes of some of the main players, to have it situated intellectually and socially, to see how the players evaluate their own contributions and those of others is a wonderful pedagogical and historical opportunity. *Mathematical Events of the Twentieth Century* is a collection of 24 articles in this spirit by Russian-Soviet mathematicians representing a variety of disciplines in which Russian-Soviet mathematics made a considerable contribution. The long freeze in Soviet-Western communication and the inability of most Anglophone mathematicians to read Russian makes the translation of this book to English especially useful. At the end of Arnold's contribution Milnor asks how to locate information in the Russian literature starting from zero. This book is a good start.

In a brief review of 24 articles which are themselves surveys of considerable breadth, it is impossible for me to say anything useful or intelligent about a great majority of articles. In style they vary quite a lot, some are more historical, some more tutorial. Some report private conversations and some stick to published literature. I perused quite a few of the tutorial articles which interested me from a distance. I particularly like the articles of Matiyasevich, Parshin and Razborov from this aspect. For some of the articles the personal reminiscences of the authors are often the most interesting parts of the articles. Historians will have to sort out the accuracy of these reminiscences especially as to their relevance to the intellectual progress of the subject matter, especially if they involve private conversations. If the author is the speaker it is a different matter than if the author is the listener. Let me make the job harder with a few personal reminiscences of my own about one of the articles closest to my own mathematical life.



I was a graduate student at the University of California at Berkeley from 1964-1967. In the first year I was not yet interested in dynamics. Smale and Pugh and I were walking on the campus one day and I overheard Steve tell Charles that he had just proved that structurally stable systems are not dense. Soon after that a paper with that title and his Axiom A generalizing Anosov's U-systems. I remember being surprised at the time, wondering how he could be proving theorems at Berkeley in 1964-65? The campus was in a constant state of turmoil due to the Free Speech Movement in the fall semester and anti-war movement in the spring and Steve and I were heavily involved in both. I remember that Anosov came to Berkeley that year and gave a Colloquium talk. Reading Anosov's account I see I am a lucky man. My first result in dynamics was to prove that the angle doubling map on the circle is structurally stable. Anosov recounts that he considered an expanding map on the interval, but didn't think to put it on the circle. Had he had my life it would most likely have turned out very different. A brief further comment. Anosov ends his article with a question dating from the hyperbolic period. The question is answered in the literature by recent work of Crovisier and Fisher. In fact, the question could have been answered long ago as there are simple counterexamples. If I remember correctly one was pointed out by Albert Fathi some decades ago but probably never published. It is encouraging to see that people doing great work also have a blind spot from time to time.

## Thomas Harriot's Doctrine of Triangular Numbers: the *Magisteria Magna*

by Janet Beery and Jacqueline Stedall,

European Mathematical Society,

144 pp, 39 illus., \$84.00 US,

ISBN-10: 3-03719-059-0, ISBN-13: 978-3-03719-059-3.

and

## Compter en 1619: Le livre d'arithmetique de Johan Rudolff von Graffenried

by Alain Schärlig, Presses Polytechniques

et Universitaires Romandes,

160 pp, 44 illus., €37.50, ISBN 978-2-88074-777-0.



Reviewed by Tony Mann, University of Greenwich

Thomas Harriot (c. 1560–1621) is a fascinating figure. Under the patronage of, first, Walter Raleigh and later the 'Wizard Earl' of Northumberland, he acquired a reputation as the leading English mathematician of his time. A plaque commemorating his telescopic observations of the moon in July 1609, in which he anticipated Galileo, has just been unveiled at Syon Park. He worked on a wide variety of topics, not all mathematical. His work circulated in manuscript but none of his mathematics was published in his lifetime (his only published book was the *Brief and True Report of the New Found Land of Virginia* of 1588). The posthumous *Artis Analyticae Praxis* gives only a limited view of his achievements and it is only with the recent study of his extensive surviving manuscripts that we are becoming fully aware why he was so highly regarded by his contemporaries and immediate successors.

It is therefore extremely appropriate that Harriot's *Magisteria Magna* (the title he gave to a treatise analysing the mathematics of constant differences) should be published in the European Mathematical Society's *Heritage of European Mathematics* series. Harriot's manuscript consists of almost 40 pages, each of which is reproduced here. In this manuscript Harriot expounds his analysis of the use of constant differences in interpolation for the construction of mathematical tables. The editors provide a lucid introduction which gives the background to Harriot's work, discusses the seventeenth-century mathematicians who engaged with Harriot's theory, and shows how it relates to later work by Newton and Gregory.

The *Magisteria Magna* is a wonderful example of Harriot's expository style. He doesn't use many words – 'hoc est' (that is) on the fourteenth page are the first words after the title! The mathematics is clearly set out and a delight to follow. The editors provide notes to each page (facing the reproduction) to help the modern reader. I imagine many mathematicians will thoroughly enjoy working through this interesting seventeenth-century mathematics in the original, and the editors and the European Mathematical Society deserve our gratitude for making it available.

Harriot wrote a fair copy of the *Magisteria Magna* in 1618, so it makes an interesting contrast with the idiosyncratic arithmetic book of 1619 which Alain Schärlig found in a flea market. Johan Rudolff von Graffenried's *Arithmeticae Logisticae Popularis Libri IIII* is written in old German and printed in Gothic script. Its length, at over 700 pages, makes it too long to reproduce in full, so Schärlig summarises each section, with copious reproductions showing examples and notation. The mathematics is very different from Harriot's (although constant differences come up in Book IV), but Schärlig's enthusiasm is infectious and my limited schoolboy French proved perfectly adequate. For anyone who loves old mathematics books, this is a joy.

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## **Representations, Wavelets, and Frames, A Celebration of the Mathematical Work of Lawrence W. Baggett**

Edited by Palle E. T. Jorgensen, Kathy D. Merrill and Judith A. Packer  
XI + 322 pp, Birkhäuser 2008

On the occasion of (semi)retirement of Larry Baggett of the University of Colorado at Boulder, a three-day workshop, called C'estLarrybration, was held at Boulder, in May 2006, by a group of his friends and admirers, reflecting on his contributions to mathematics. The theme of the workshop was: Current trends in Harmonic Analysis and its applications: Wavelets and Frames.

This volume consists of fourteen papers based on talks given by the authors at the workshop. The papers present trends and new results in a wide range of areas: Classical and abstract harmonic analysis, Frames and multiresolution structures, Wavelet sets, Applications to dynamical systems and  $C^*$ -algebras, and Signal and image processing. These five sections range from theoretical underpinnings of the subject through geometric connections to tilings, lattices and fractals, and concludes with analyses of computational schemes used in communication engineering. The chapters include new research pointing to new trends and open questions. The book will be useful to students from both pure and applied mathematics.

## **A First Course on Wavelets with Fourier Analysis**

By Albert Boggess and Francis J. Narcowich  
Xix + 283 pp, Prentice Hall 2007

Fourier series and Fourier transform are topics included in standard higher analysis courses and have been around since the nineteenth century. The development of wavelets is much more recent although its origins go back to many decades. Recently wavelets are used as tools in signal analysis and other areas of applications ever since Ingrid Daubechies's work on compactly supported, orthonormal wavelets. A study of wavelets has become a necessity in courses on higher analysis. The present book provides many of the essential ideas behind Fourier analysis and wavelets, along with applications to signal analysis, suitable for students in advanced undergraduates in science, engineering and for mathematics majors. Wavelets are discussed in three chapters starting with Haar wavelets. Continuing with multiresolution analysis in a framework that generalizes the structure of the Haar wavelet, a discussion is given for the construction of the Daubechies wavelet. The final chapter deals with wavelets in higher dimensions and wavelet transforms.

## **Calculus Deconstructed, A Second Course in First-Year Calculus**

By Zbigniew H. Nitecki  
xvi + 489 pp. Mathematical Association of America 2009

Calculus is taught at different levels to different groups of students. Hence there is a large collection of Calculus texts. In the preface to the present book the author writes that he has chosen "a course that approaches the tools of the calculus through the eyes of a mathematician. In contrast to 'Calculus Lite', the present book is 'Calculus Tight': a review of often familiar techniques is presented in the spirit of mathematical rigor (hopefully without the mortis)." The book is meant for the reader with some exposure to the techniques of calculus, especially honors students who would like to revisit the subject from a more conceptual point of view. Definition-Theorem-Proof style is adopted. There are six chapters with titles: Pre-calculus, Sequences and their limits, Continuity, Differentiation, Integration, and Power Series. Each chapter begins with a sketch of the highlights of the topics and tools from a historical perspective. The exercises are of four kinds: practice problems, theory problems, challenge problems, and historical notes (hybrids of exposition and exercise). Appendix A discusses the rhetoric of mathematics (methods of proof) and Appendix B gives answers to selected problems.

## **Crocheting Adventures with Hyperbolic Planes**

By Diana Taimina  
xi + 148pp. A. K. Peters, Ltd 2009

A sphere has constant positive curvature and a banana has both positive and negative curvature. A surface with constant negative curvature is called the hyperbolic plane. It has traditionally been difficult to visualize such a surface as a mathematical object. But Diana Taimina has made it come to life with hook and yarn! The models illustrated in this book are prime examples of art influencing mathematics. Diana provides the necessary instructions for even novices to crochet and create hyperbolic models of their own. With such models one can explore the properties of hyperbolic geometry and negative curvature along with the text in a tactile way. The book begins with an exploration of geometry as it pertains to art and other universal features societies, providing a context to comprehend the significance of the beautiful hyperbolic plane models. These historical explorations extend to crochet and to non-Euclidean geometries. Bill Thurston's foreword to the book is a good essay to read. He concludes: 'I hope this book gives you pause for thought and changes your way of thinking about mathematics.'

# 2009 PRESENTATION OF PRIZES / PRÉSENTATION DES PRIX 2009

## 2009 Excellence in Teaching Award/ Prix d'excellence en enseignement 2009 Dr. David Poole (Trent University)

"David's success as a teacher reflects his love of teaching, as does the fact that he did not take a teaching reduction while he was chair of our Department from 1996 to 2001. He is an exemplary academic citizen: diligent, inclusive, keen, sanguine, serious and modest", said Reem Yassawi, the Department's Chair.

His students describe him as a gifted mathematician whose love and passion for the subject shine through all of his interactions with his classes and as a multi-talented professional, working diligently and with considerable creativity and notable success to enrich the lives of his students. His depth of knowledge allows him great flexibility in the range of examples and applications that he brings to the teaching of almost any mathematical concept. They also praise the way he prepares his assignments in a way that the understanding of the material increases significantly at the end of the assignment due to careful choice and ordering of the questions. David's development of the course MATH 2080 (Mathematics for the contemporary classroom) was crucial in serving the needs of prospective elementary school teachers and it reflects his conviction that a mathematician has a responsibility to educate, and educate effectively.

"David is a gifted Teacher, both inside the classroom and out, who truly cares about his students. His teaching is the model on which I try to base my own. He has been a strong and positive influence on the lives of students at Trent for many years, and his influence has now been extended to many more students through his text book", said Joy Morris, a former student of David and an associate professor at the University of Lethbridge.

Professor Poole's excellence in teaching has been recognized through his numerous teaching awards: Trent University's Symons Award for Excellence in Teaching (1995), an Ontario Confederation of University Faculty Associations Teaching Award (2002), a 3M Teaching Fellowship (2003), a Leadership in Faculty Teaching Award (Ontario, 2007), and several merit awards for excellence in teaching. He has given many invited talks related to mathematics education, notably the John F. Randolph Lecture to the Seaway Section of the Mathematical Association of America in 2005.

David Poole completed his undergraduate studies at Acadia University and his graduate studies at McMaster University,



Anthony Lau, David Poole and Sean Chamberlain

where he received a Ph.D. in Mathematics in 1984. He has taught at Trent University since then and is currently Professor of Mathematics. He chaired Trent's Mathematics Department from 1996–2000 and from 2001–03. From 2002–2007, he was Associate Dean of Arts and Science (Teaching and Learning) with responsibility for Trent's Instructional Development Centre, Academic Skills Centre,

Trent Centre for Community-Based Education, classroom technologies, and the university's academic integrity policy.

Professor Poole's research interests are in ring theory, discrete mathematics, and mathematics education. He is the author of the textbook Linear Algebra: A Modern Introduction (Brooks/Cole), currently in its second edition and used in universities and colleges worldwide.

\*\*\*

« L'excellence de David en tant que professeur témoigne de sa passion pour l'enseignement, tout comme son refus de réduire sa charge d'enseignement durant son mandat à la direction de notre département de 1996 à 2001, souligne Reem Yassawi, directeur actuel du département. C'est un universitaire exemplaire : il est conscientieux, ouvert, enthousiaste, passionné, sérieux et modeste. »

Ses étudiants le décrivent comme un mathématicien surdoué, dont la passion pour ce qu'il fait transparaît dans ses rapports avec ses étudiants, et un professionnel aux nombreux talents qui, par sa diligence et sa grande créativité, parvient avec brio à enrichir la vie de ses étudiants. Sa connaissance approfondie de la matière lui donne accès à un immense bassin d'exemples et d'applications dans lequel il peut puiser pour enseigner à peu près n'importe quel concept mathématique. Ses étudiants vantent également la qualité des travaux et devoirs qu'il leur confie, dont l'organisation et le choix minutieux des questions nécessaires pour effet d'approfondir leur compréhension de la matière. On doit en outre à David l'élaboration du cours MATH 2080 (Mathématiques pour les écoles primaires d'aujourd'hui), qui a comblé une grande lacune dans la formation des futurs enseignants du primaire, et qui illustre sa conviction qu'un mathématicien a le devoir d'éduquer, et de le faire avec efficacité.

[suivre page 25](#)

## Prix 2009 Krieger-Nelson Prize Dr. Yael Karshon (University of Toronto)

Dr. Yael Karshon is one of Canada's leading experts in symplectic geometry. Symplectic geometry is the geometry underlying classical mechanics, and has close relations with quantum mechanics and quantum field theory. The tools of symplectic geometry appear in algebraic geometry and representation theory, and in connection with convex polytopes. Symplectic spaces arising in physics and mathematics often admit many symmetries.

Dr. Karshon's work has focused on symmetries of symplectic manifolds, formalized as Hamiltonian group actions. She has obtained deep results on the classification of such structures. One of her significant contributions is the idea of "abstract moment maps", which are maps between (not necessarily symplectic) manifolds with group actions, and which generalize moment maps on symplectic manifolds. She is the author (jointly with Guillemin and Ginzburg) of an authoritative monograph that provides new connections between moment maps, cobordisms and Hamiltonian group actions. Some of her recent work is in symplectic topology, involving symplectic capacities and symplectomorphism groups.

Dr. Karshon completed her Ph.D. in 1993 under the supervision of Shlomo Sternberg at Harvard, and then held a C.L.E. Moore Instructorship at MIT. In 1995 she moved to the Hebrew University of Jerusalem, where she obtained tenure. She joined the University of Toronto Mississauga in 2002, and was promoted to Full Professor in 2006. In 2005 she received the University of Toronto's McLean Award, which is given each year to one faculty member in the mathematical or physical sciences or engineering, within 12 years of Ph.D. Dr. Karshon takes pride in the achievements of her Ph.D. students and postdoctoral fellows.



Anthony Lau, Yael Karshon and Edward Bierstone

Madame Yael Karshon est une grande spécialiste canadienne de la géométrie symplectique. Ce type de géométrie est le fondement de la mécanique classique et est étroitement lié à la mécanique quantique et à la théorie des champs quantifiés. Les outils de la géométrie symplectique se retrouvent en géométrie algébrique et dans la théorie des représentations,

et ils sont liés aux polytopes convexes. En physique et en mathématiques, les espaces symplectiques admettent souvent de nombreuses symétries.

Les travaux de Mme Karshon portent surtout sur les symétries des variétés symplectiques vues comme des actions hamiltoniennes de groupes. Elle a obtenu des résultats intéressants quant à la classification de telles structures. L'une de ses principales contributions est le concept de «fonctions du temps abstrait» qui sont des fonctions entre des variétés (pas nécessairement symplectiques) avec des actions de groupe, et qui généralisent les fonctions du temps sur les variétés symplectiques. En collaboration avec Guillemin et Ginzburg, elle est l'auteure d'une monographie qui fait autorité et qui établit de nouveaux rapports entre les fonctions du temps, les cobordismes et les actions hamiltoniennes de groupe. Récemment, elle a travaillé dans le domaine de la topologie symplectique, et en particulier sur les capacités symplectiques et les groupes des symplectomorphismes.

Yael Karshon a obtenu son doctorat de Harvard en 1993 sous la direction de Shlomo Sternberg. Elle a ensuite enseigné au MIT grâce à une bourse prestigieuse (C.L.E. Moore Instructorship). En 1995, elle est entrée à l'Université hébraïque de Jérusalem, où elle a obtenu sa permanence. Elle est arrivée à l'Université de Toronto (Mississauga) en 2002 et est devenue professeure titulaire en 2006. En 2005, elle a reçu le prix McLean de l'Université de Toronto, attribué annuellement à un professeur de mathématiques, de physique ou de génie qui a obtenu son doctorat il y a moins de 12 ans. Les réalisations des étudiants au doctorat et des boursiers postdoctoraux qu'elle dirige sont pour elle une source de grande fierté.

## Prix 2009 Jeffery-Williams Prize Dr. Stephen Kudla (University of Toronto)

Dr. Stephen Kudla has initiated a revolutionary program which reveals surprising and deep connections between the theory of automorphic forms and the theory of algebraic cycles on Shimura varieties. The impressive body of established results and far-reaching conjectures that has merged from Kudla's work has come to be referred to as the "Kudla Program". Among the most exciting developments in number theory in the last decades, Kudla's program has been featured in many research seminars worldwide, including the Séminaire Bourbaki in Paris and the Current Developments in Mathematics series in Boston. Stephen Kudla has been regularly invited to deliver distinguished lectures, such as the Coxeter Lectures at the Fields Institute, the Kuwait Foundation lecture at Cambridge University, the Schur Lecture at Tel Aviv University, and an invited address at the 2002 International Congress of Mathematicians in Beijing. He also received a Sloan Fellowship in 1981 and a Max Planck Research Prize in 2000.

Dr. Kudla received his undergraduate degree from Harvard University in 1971 and completed his doctoral degree at SUNY Stony Brook in 1975. After a year at the Institute for Advanced Study, he served on the Faculty of the University of Maryland from 1976 to 2006, before joining the University of Toronto where he currently holds the Canada Research Chair in Automorphic Forms and Arithmetic Geometry. He has held numerous visiting positions at leading institutions including the University of Cologne, University of Paris VI, Cambridge University, and the Tata Institute for Fundamental Research.

Prior to coming to Toronto, Dr. Kudla served the Canadian mathematical community as an Associate Editor for the Canadian Journal of Mathematics and the Canadian Mathematical Bulletin.



Anthony Lau, Stephen Kudla and Edward Bierstone

Stephen Kudla a créé un programme révolutionnaire qui révèle des liens étroits et surprenants entre deux domaines des mathématiques semblant a priori très différents : la théorie des formes automorphes et la théorie des cycles algébriques sur les variétés de Shimura. En raison de la quantité impressionnante de résultats

établis et de conjectures d'une grande portée qui découlent des travaux de Stephen Kudla, on parle désormais du « programme Kudla ». Ayant obtenu certains des résultats les plus spectaculaires des dix dernières années en théorie des nombres à l'échelle internationale, M. Kudla et son programme ont été présentés à de nombreux séminaires scientifiques un peu partout dans le monde, notamment au Séminaire Bourbaki à Paris et au programme « Current Developments in Mathematics » à Boston. Stephen Kudla est souvent invité à donner des conférences prestigieuses : la série de conférences Coxeter à l'Institut Fields, la conférence de la Fondation Kuwait à Cambridge et la conférence Schur à l'Université de Tel-Aviv. Il a aussi été invité à prononcer une conférence au Congrès international des mathématiciens 2002 à Beijing. Il a obtenu la bourse de recherche Sloan en 1981 et un prix de recherche Max Planck en 2000.

M. Kudla a obtenu son baccalauréat de Harvard en 1971, et son doctorat de la SUNY (Stony Brook) en 1975. Après un an à l'Institute for Advanced Study, il a enseigné à l'Université du Maryland de 1976 à 2006, puis il s'est joint à l'équipe de l'Université de Toronto, où il est en ce moment titulaire de la Chaire de recherche du Canada en formes automorphes et en géométrie arithmétique. Il a été invité dans plusieurs établissements prestigieux, dont l'Université de Cologne, l'Université de Paris VI, l'Université Cambridge et l'Institut Tata de recherche fondamentale.

Avant d'arriver à Toronto, M. Kudla a contribué à la communauté mathématique canadienne à titre de rédacteur adjoint du Journal canadien de mathématiques et du Bulletin canadien de mathématiques.

The conference *Sharing Mathematics: A Tribute to Jim Totten* was held from May 13 to May 15, 2009 at Thompson Rivers University (TRU) in Kamloops. Fae DeBeck and Rick Brewster, his colleagues at TRU, co-chaired the organization of this event. The personal story shared by Jennifer Hyndman in her plenary talk, *Hands-free Teaching*, is featured here in the Education Notes. A detailed article on the conference will appear next month. Thanks to John Grant McLoughlin (UNB) for bringing this talk to my attention.

## Hands-free Teaching

by Jennifer Hyndman

University of Northern British Columbia

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*Stand up. Think about a mathematics class that you teach or have taken. Mime what the instructor of the class does. . . . Now imagine that the instructor is wearing boxing gloves. Sit down if the instructor has to change their teaching technique.*

The above is how I started my presentation at the conference *Sharing Mathematics: A Tribute to Jim Totten*. Almost everyone sat down. Upon surveying the group still standing, the one technique that was mimed that really needed no change was pointing at people and asking them to speak.

In July 1994 I joined the faculty at a small, brand new university, the University of Northern British Columbia. By January 1995 I had developed a work related repetitive stress injury. Over several years, the injury progressively worsened until I lost the normal use of my hands and thought I might have to quit being a university faculty member. Fortunately, with a reduced workload, therapy, voice-recognition software, braces, and highly supportive students, colleagues and staff, I regained much of the use of my hands and kept my position. This article is based on the talk I gave at the Sharing Mathematics conference. It is a survey of some of the teaching strategies I tried when I lost the normal use of my hands.

Another discussion exercise that I conducted in my conference presentation was as follows:

*Think for a minute about what you would do if you had to prepare and teach a class and suddenly could not write (or even hold a pen) for more than a few minutes at a time.*

*Pair up with someone for a couple of minutes to talk about this. Share with the group what you discussed.*

This “think, pair, share” activity led to a number of suggestions about what could be done, as well as questions on how much to imagine limiting the use of hands. In my reality, at the worst point, I could barely type, or write, and lifting up a first-year textbook was beyond my abilities. I have taken scissors to more than one textbook in order to reduce the weight to something manageable. I would then take the relevant ten pages of the textbook to class.

Ideas that were suggested included:

- have groups present to the class;
- assign blackboard exercises to students;
- rely on the textbook;
- hire a student to write on the board;
- hire a student to typeset notes; or
- have a colleague come into the class and assist.

During the talk I was fascinated by the idea of bringing my colleagues into my class and having them help me. This is something I never thought of doing even though, in retrospect, I know they would have been willing. I did try out several other ideas that were suggested by the audience, as well as, some not mentioned. Descriptions of my adventures with teaching with minimal hand usage follow starting with large, first-year classes and moving through the undergraduate curriculum to small, fourth-year classes.

### Information distribution in first year classes

When I was a student, every class I attended was taught with chalk on a blackboard. As a graduate student I had a class where the professor was innovative – he handed out the entire course’s lecture at the beginning of the semester and then wrote the notes on the blackboard from memory.

Today the use of an online system like WebCT/Blackboard is taken for granted. In 1997 I was an early adopter of WebCT at UNBC and for several years my course was one of the university’s most complex shells. In this endeavour I had the support of Lynda Williams, from the Centre for Teaching and Learning, and Erin Beveridge, one of UNBC’s first undergraduate students. Erin was hired to turn my handwritten notes for Calculus I into two different types of documents.

My primary need was to not have to write in class. As I will discuss below, I simply quit writing in upper year classes. The minimal amount of writing I could do would all happen in my first year class. Erin’s first task was to create transparencies with most of my lecture already written out. “All” I did in class was fill in material on the transparencies. I could have had Erin typeset all of the examples and calculations but I felt that I had to write out calculations. For example, before starting a problem, I always asked students what technique to use and followed their lead whenever possible. (This is why I do not use PowerPoint-like packages.) Erin wrote these notes in LaTeX as this provides the best type-setting for complex mathematics.

Students quickly started asking for copies of my transparencies so Erin devised a process involving scripts to create large-font transparencies for class and small-font html pages for distribution on WebCT, and then later as packaged lecture notes.

In addition to lecture notes, we devised a process to use the quiz capabilities of WebCT so I would not have to mark quizzes. Homework, old exams, and anything else that students might have asked me to write about were put in the shell.

I have kept these ideas and each first year course that I teach is developed as a blended course with WebCT/Blackboard.

### Things not to do in third year.

The students who suffered the most from my efforts to cope were those in my third-year Abstract Algebra class. I had previously taught the course by writing on overhead transparencies in class. I had kept the transparencies so that I knew exactly what I had done. When I had to figure out how to teach this class I looked at the transparencies and said to myself *they will do*. I simply re-used them and talked about what was on each transparency. In order to understand why this was such a bad idea, imagine the worst hand-writing you can, written with fine erasable pens, stored carelessly, and displayed several times. My pages were full of side-notes and scribbles in multiple colours, accidental erasures, and the occasional incomplete thought. I used these notes for several years. Each year I only rewrote the very worst of the pages from the previous year. Interestingly, the only year that the students complained about the notes was the year that I did not explain what had happened to me. (To all of the students who took this course: *I am sorry!*)

### (Mis)adventures in fourth year.

Despite my misgivings about how I dealt with my third-year course, I am really happy that I quit teaching fourth-year courses in favour of having the students do all of the work. I will elaborate on what I mean by this. Of the things I have tried, I will start with what I have kept and finish with what I discarded. I actually learned the most from what I have chosen to discard.

After a couple of years of trying many things in fourth year courses, I settled on using a lecture framework that the students use to assist them in doing all of the lecturing. During the classes I sit at the back of the room and orchestrate the environment until the students no longer need me. A typical lecture framework for a course consists of an eighteen-page document which is a relatively terse list of instructions about what material to discuss. The last page is the list of which student is lecturing on what sections. I created the frameworks by considering what material I had, in previous years, lectured

about and making a note about every concept, example, theorem, proof, definition, and idea I wanted to include. As the sample from a framework below illustrates, my instructions are quite terse. It is up to the student lecturer to talk to me to determine what they should say.

### Homework:

Hw 1. Read Chapter 4.

#### 4.1 Polynomial Arithmetic and the Division Algorithm

Page 81: Define polynomial with coefficients in  $R$ .

Page 81: Ask what  $x$  is.

Page 81: Theorem 4.1 with no proof.

Page 82: Define coefficient and indeterminate and introduce the notation  $R[x]$ .

Page 83: Define polynomial addition and polynomial multiplication.

Page 84: Define leading coefficient and degree.

Example: Discuss the (lack of ) degree of the polynomial  $0_R$ .

Page 84: Theorem 4.2 and proof.

Page 84: Corollary 4.3 and proof.

Example: Show that the equality of Theorem 4.2 might not hold in a ring with zero divisors.

Example: Explain which inequality of Theorem 4.2 always holds.

Page 85: Theorem 4.4 and proof. Discuss the presentation with Dr. J in advance. Possibly no proof.

### Homework:

Hw 1. Page 88 Problems 3,6,7,10,14b,18.

This style of class does have the expected problems. Some students are utterly terrified of speaking in class. They try to stand with their back to the room, write badly on the board and whisper. Other students try to avoid coming to me in advance and get into the classroom with misunderstandings about the mathematics. Some prepare entire lectures before realizing they are required to follow the framework provided. A bad lecture provided by a student who does not understand the material does not help the other students in the class at all. Some classes have extremely weak students and extremely strong students all at once. I sometimes spend hours with a student helping them to prepare for a one hour lecture. With all of the possibilities for things to go wrong and the increased work on my part, one might wonder why I still use this technique in all my fourth year classes even though now I could probably write in class if I wanted to. I will try to explain.

The biggest reason for continuing this style of course is the students' response to it. Many come back after taking a course and say that they learned the most about the material that they presented. They often take a second course from me because they like the presentation style of the classes. Even the students who are frightened at first come back. I think that they also like learning about teaching which is also a big component of these courses.

When I first started running courses this way I had already had experience with very weak students giving presentations and I was deeply concerned about ensuring every student got the most they could out of my courses. I needed to have the student lecturers learn about lecturing as well as about mathematics. These courses start with a lecture from me about how to give a good lecture. I also provide information on how to critique other's work constructively. I carefully choose a confident and bright student for the first lecture and proceed to interrupt their lecture every time they do something with respect to lecturing that could be improved. During the course we end up discussing how to write on a blackboard without wasting space; how to write in a straight line; what to do if you are short; what direction to face when you are speaking; how to tell if the class is following the lecture; how to ask questions of the class that elicit answers other than yes or no; and how to effectively rephrase and express the idea *you are boring me*.

One of the aids that I use in ensuring student awareness of the above ideas is the *yellow sheet*. This is a yellow handout that three students fill in every class and sign. I collect the sheets, read them for appropriateness, and return them to the student lecturer. The yellow sheets help the lecturer know if they are effectively communicating with the class.

The questions on the yellow sheet currently are:

1. What was the key point in this lecture?
2. What are two other important ideas in this lecture?
3. How did the instructor demonstrate their understanding of the material?
4. Did the instructor explain the mathematics clearly? If not, what could be done differently?
5. How were visuals used?
6. What did the instructor do to help you learn?
7. What could the instructor do better to help you learn?

This list of questions is a work-in-progress and, at the Sharing Mathematics conference, alternate wording for Question 4 was suggested: "What concept or idea would you like the instructor to revisit?" I intend to try this new wording in my next class. It will tell me what the students are having difficulties with. My courses that use the lecture

framework and associated yellow sheets appear to be very effective in both developing communication skills and ensuring students learn mathematics while eliminating my in-class writing. However, a miracle did not occur and I did not go directly from lecturing myself to the lecture framework model. A potential disaster had to occur first.

### **The best thing I ever did that I will never do again.**

Stop reading this article before you get to the italicized paragraph. Pretend you are a student in one of my classes. Go find a friend and have them read the paragraph out loud and write down what you hear. Stop reading NOW!

*Consider the field of rational numbers adjoin the cube root of two. We have the degree of  $\mathbb{Q}$  adjoin the cube root of two over the rationals is three as the minimal polynomial for the cube root of two over the rationals is  $x^3 - 2$  and the degree of  $x^3 - 2$  over the rationals is three.*

I did this dictation exercise at the Sharing Mathematics conference and had people share what they managed to write down. Here are some samples illustrating the types of things that were written.

- Consider the field of rational numbers adjoining  $\sqrt[3]{2}$ . We have a degree of 2 adjoined  $\sqrt[3]{2} = 3$  is the minimal polynomial
- Let  $F = \{a + b\sqrt[3]{2} + c\sqrt[3]{4} \mid a, b, c \in \mathbb{Q}\}$
- Consider  $\mathbb{Q}[\sqrt[3]{2}]$ , rationals adjoin cube root of two. We have the degree of  $\mathbb{Q}[\sqrt[3]{2}]:\mathbb{Q} = 3$  as minimal polynomial is  $x^3 - 2$

In order to get anything written down at the conference I had to repeat myself several times, spell the word "adjoin", and re-explain what I wanted them to do. We gave up before anyone really had the dictation done correctly. What was the point of this exercise? This was one of the first techniques I tried in a fourth-year course. The conference participants experienced the very real bewilderment that sometimes happens to students in my classes.

Very early on I had a class of three very bright students in a January semester. My hands had just deteriorated badly and I did not know what I was going to do. I walked into class on the first day and we talked about how to run the course. They had all had an algebra class with me before so felt comfortable with the basic vocabulary, me and each other. We decided that I would dictate, one of them would stand at an overhead and write notes that we could all see and that the other two would take notes as normal. The role of the student at the overhead was rotated through the three students during the semester. I learned that mathematics was a visual medium. We all learned to laugh.

I quickly learned that I needed to verbalize symbols in much the same way as using voice-recognition software.

If I wanted  $\left[ \mathbb{Q}(\sqrt[3]{2}) : \mathbb{Q} \right]$  I had to say

*Open square bracket, capital Q, open paren, the number the cube root of two, close paren, colon, capital Q, close square bracket.*

I would then tell them how a mathematician would read that notation and for the rest of that lecture period I could speak that particular notation like a mathematician.

As the overhead note-taker gained experience I was able to speak more and more like a mathematician. However, to my surprise, as the note-taker position rotated, I had to train each student to cope with just listening to me and having nothing to look at to provide clues about what to write. The students did not learn to listen from watching each other do it, they had to experience it themselves.

For those of you wondering what I intended in the dictation exercise, here is what I would have written while saying those words:

Consider the field  $\mathbb{Q}\sqrt[3]{2}$ . We have  $\left[ \mathbb{Q}(\sqrt[3]{2}) : \mathbb{Q} \right] = 3$  as the minimal polynomial for  $\sqrt[3]{2}$  over  $\mathbb{Q}$  is  $x^3 - 2$  and  $\deg_{\mathbb{Q}}(x^3 - 2) = 3$ .

### Final Thoughts

I ended my talk at the Sharing Mathematics conference with the above questions.

*What is one outrageous thing you would like to try in a classroom?*

*What would you get out of it? What would the students get out of it?*

Suggestions included doing yoga, going on field trips, doing treasure hunts, writing poetry, performing plays, and lecturing with music in the background. At least one person had used music as background while students were working on problems. Magic tricks such as Jim Totten's ability to turn his pants inside out were also suggested. Keeping students interested and engaged was the theme of the answers.

Once I lost my inhibitions about what teaching could be I became willing to try just about anything. My students have introduced new mathematics in the middle of plays; performed musicals about how to study; created mathematical games; painted tessellations; written and recited poetry; and learned a lot of mathematics. I am still trying to figure out how to teach group theory through dance. If you have ideas, let me know.



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## CALL FOR NOMINATIONS 2010 Doctoral Prize

The CMS Doctoral Prize recognizes outstanding performance by a doctoral student. The prize is awarded to the person who received a Ph.D. from a Canadian university in the preceding year (January 1st to December 31st) and whose overall performance in graduate school is judged to be the most outstanding. Although the dissertation will be the most important criterion (the impact of the results, the creativity of the work, the quality of exposition, etc.) it will not be the only one. Other publications, activities in support of students and other accomplishments will also be considered.

Nominations that were not successful in the first competition, will be kept active for a further year (with no possibility of updating the file) and will be considered by the Doctoral Prize Selection Committee in the following year's competition.

The CMS Doctoral Prize will consist of an award of \$500, a two-year complimentary membership in the CMS, a framed Doctoral Prize certificate and a stipend for travel expenses to attend the CMS meeting to receive the award and present a plenary lecture.

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Candidates must be nominated by their university and the nominator is responsible for preparing the documentation described below, and submitting the nomination to the address below. No university may nominate more than one candidate and the deadline for the receipt of nominations is **January 31, 2010**.

The documentation shall consist of:

- A curriculum vitae prepared by the student.
- A resumé of the student's work written by the student and which must not exceed ten pages. The resumé should include a brief description of the thesis and why it is important, as well as of any other contributions made by the student while a doctoral student.
- Three letters of recommendation of which one should be from the thesis advisor and one from an external reviewer. A copy of the external examiner's report may be substituted for the latter. More than three letters of recommendation are not accepted.

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La SMC a créé ce Prix de doctorat pour récompenser le travail exceptionnel d'un étudiant au doctorat. Le prix sera décerné à une personne qui aura reçu son diplôme de troisième cycle d'une université canadienne l'année précédente (entre le 1er janvier et le 31 décembre) et dont les résultats pour l'ensemble des études supérieures seront jugés les meilleurs. La dissertation constituera le principal critère de sélection (impact des résultats, créativité, qualité de l'exposition, etc.), mais ne sera pas le seul aspect évalué. On tiendra également compte des publications de l'étudiant, de son engagement dans la vie étudiante et de ses autres réalisations.

Les mises en candidature qui ne seront pas choisies dans leur première compétition seront considérées pour une année additionnelle (sans possibilité de mise à jour du dossier), et seront révisées par le comité de sélection du Prix de doctorat l'an prochain.

Le lauréat du Prix de doctorat de la SMC aura droit à une bourse de 500 \$. De plus, la SMC lui offrira l'adhésion gratuite à la Société pendant deux ans et lui remettra un certificat encadré et une subvention pour frais de déplacements lui permettant d'assister à la réunion de la SMC où il recevra son prix et présentera une conférence.

### Candidatures

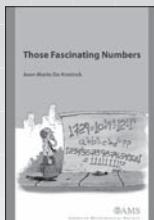
Les candidats doivent être nommés par leur université; la personne qui propose un candidat doit se charger de regrouper les documents décrits aux paragraphes suivants et de faire parvenir la candidature à l'adresse ci-dessous. Aucune université ne peut nommer plus d'un candidat. Les candidatures doivent parvenir à la SMC au plus tard le **31 janvier 2010**.

Le dossier sera constitué des documents suivants :

- Un curriculum vitae rédigé par l'étudiant.
- Un résumé du travail du candidat d'au plus dix pages, rédigé par l'étudiant, où celui-ci décrira brièvement sa thèse et en expliquera l'importance, et énumérera toutes ses autres réalisations pendant ses études de doctorat.
- Trois lettres de recommandation, dont une du directeur de thèse et une d'un examinateur de l'extérieur (une copie de son rapport serait aussi acceptable). Le comité n'acceptera pas plus de trois lettres de recommandation.

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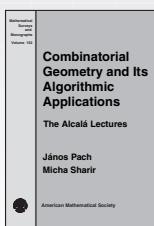
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Translated by Jean-Marie De Koninck

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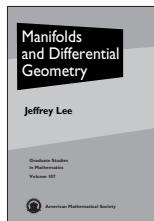
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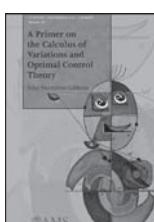
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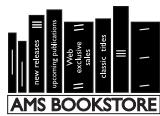
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consider "How are we doing?" and "Can we sustain ourselves for the next five years and beyond?" More than ten years ago, when Kathy Heinrich was the CMS President, the CMS undertook a major organizational review involving multiple task forces and years to complete – and that review has sustained the CMS very well. The net result is that today the CMS has a fairly mature understanding of itself and the challenges it faces. Today however, both the environment and the state of mathematics have changed to the point where CMS needs to revisit where it is going and how it expects to get there. This is by no means a suggestion for another major review, but rather, a kind of organizational 'checkup' — taking a bit of time to pause and reflect on the health of the CMS.

How well is the current business model sustaining the CMS? How well are the members being served? How well is the

CMS addressing the issues of retaining and growing CMS membership? How well is the CMS strengthening and expanding partnerships and sponsorships? And how well is the CMS addressing the emerging opportunities of the electronic publishing environment?

In any consideration of these types of questions by the CMS Executive and Board, it would be very helpful to know how members of the mathematics community currently feel about the CMS, what it is doing, and what it needs to do. To this end, I would invite you to share with me your thoughts about what to make of the CMS today and what to make of the CMS tomorrow. Please feel free to call me (613-733-2662 ext. 721) or e-mail me ([director@cms.math.ca](mailto:director@cms.math.ca)) directly with your views. And I look forward to being able to meet and personally hear from many of you.

## EMPLOYMENT OPPORTUNITY



Fields Institute, Toronto, Canada  
**Postdoctoral Fellowships**

**Description:** Applications are invited for postdoctoral fellowship positions for the 2010-2011 academic year. The 2010 (Fall) Thematic Program on Asymptotic Geometric Analysis will take place at the Institute July to December 2010 and the 2011 (Winter/Spring) Thematic Program on Dynamics and Transport in Disordered Systems will take place at the Institute from January to June 2011.

The fellowships provide for a period of engagement in research and participation in the activities of the Institute. In addition to regular postdoctoral support, one visitor for each six-month program will be awarded the Institute's prestigious Jerrold E. Marsden Postdoctoral Fellowship.

Applicants seeking postdoctoral fellowships funded by other agencies (such as NSERC or international fellowships) are encouraged to request the Fields Institute as their proposed location of tenure, and should apply to the Institute for a letter of invitation.

**Eligibility:** Qualified candidates who will have recently completed a PhD in a related area of the mathematical sciences are encouraged to apply.

**Deadline:** December 15, 2009 although late applications may be considered.

**Application Information:** Please consult [www.fields.utoronto.ca/proposals/postdoc.html](http://www.fields.utoronto.ca/proposals/postdoc.html)

*The Fields Institute is strongly committed to diversity within its community and especially welcomes applications from women, visible minority group members, Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to the further diversification of ideas.*

# DU BUREAU DU DIRECTEUR ADMINISTRATIF

## QUE PENSER DE TOUT CELA

Tout nouvellement arrivé à la SMC de l'extérieur du milieu mathématique et universitaire, j'ai passé mes premières semaines à me familiariser avec la Société. Je suis à la fois épater du large éventail d'activités de la SMC et de leur portée, tout en ne sachant tout à fait encore comment m'y retrouver.

Les activités de la SMC touchent tous les membres de la communauté mathématique. La SMC tient ses Réunions nationales semestrielles, où elle a présenté à ce jour des centaines de conférences et de communications de toutes sortes. La SMC dirige un vaste programme de publication : revues scientifiques, magazines, bulletin et monographies. La SMC décerne des prix d'excellence en recherche, en publication, en éducation et pour service méritoire. La SMC finance des bourses d'excellence et des bourses de son fonds de dotation. La SMC gère des camps mathématiques nationaux et régionaux, ainsi que le Défi ouvert canadien de mathématiques. Et la SMC sélectionne, forme et appuie les membres de l'équipe canadienne à Olympiade internationale de mathématiques. Toute une présence pancanadienne!

Les activités de la SMC sont à l'image de la communauté mathématique canadienne. La SMC collabore avec les instituts mathématiques régionaux (AARMA, CRM, Fields, PIMS). La SMC travaille avec les universités, collèges et cégeps. La SMC collabore avec le gouvernement fédéral et les gouvernements provinciaux, ainsi que d'autres partenaires de recherche comme la Station internationale de recherche de Banff et le Réseau MITACS. La SMC est dirigée par un grand conseil d'administration national et de nombreux comités permanents. Les membres de la SMC viennent de partout au Canada. Tout un engagement de la communauté!

Les activités de la SMC reçoivent l'appui du secteur privé et du secteur public. La SMC bénéficie du soutien financier de la Financière Sun Life, de la Fondation philanthropique Pétrolière Impériale, du CRSNG et de la Fondation Harold Crabtree. Le Groupe Financier Banque TD, la Fondation RBC, le groupe de la Banque nationale, Nelson Education, COM DEV, le Fonds Samuel Beatty et d'autres partenaires privés accordent également leur appui à la SMC. La SMC reçoit de nombreux dons personnels privés. La SMC reçoit des subventions des gouvernements fédéral, provinciaux et territoriaux. Et près de 1 000 membres donnent leur appui à la SMC. Tout un vote de confiance!

Vous ne serez donc pas étonnés de m'entendre dire que la SMC est une association nationale crédible et vigoureuse. Malheureusement, dans le contexte actuel, cela ne suffit pas en soi à assurer le succès d'une organisation.

Dans le contexte économique actuel, les organismes publics et privés sont forcés de repenser et de justifier leur

façon de fonctionner. Ils réévaluent la viabilité de leur modèle d'affaires. Ils repensent les valeurs essentielles qu'ils proposent à leurs clients en se demandant si elles tiennent toujours la route, non seulement sur le plan de la logique, mais aussi de la concurrence. Ils se demandent s'ils doivent continuer de faire ce qu'ils ont toujours fait, ce qu'ils doivent améliorer, ce qu'ils doivent cesser de faire ou ce qu'ils doivent plutôt commencer à faire. Et ils doivent trouver réponse à ces questions difficiles tout en surmontant les obstacles sectoriels et technologiques qui se dressent sur leur chemin.

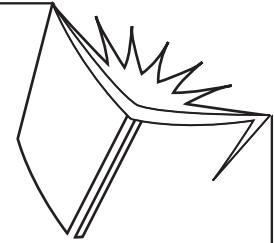
Comme tous ces organismes, la SMC doit, elle aussi, se poser des questions : « Comment allons-nous? » et « Pouvons-nous subvenir à nos besoins pour les cinq prochaines années et plus? » Il y a plus de dix ans, sous la présidence de Kathy Heinrich, la SMC a entrepris un vaste examen de ses pratiques organisationnelles qui a sollicité de multiples groupes de travail et duré des années. Cet examen a très bien assuré la viabilité de la SMC. Le résultat net de cet exercice est que la SMC a une bonne compréhension de ce qu'elle est et des difficultés qu'elle a à surmonter. Aujourd'hui toutefois, les contextes économique et mathématique ont tous deux changé, au point où la SMC est à nouveau forcée de revoir ses objectifs et les moyens qu'elle doit mobiliser pour les atteindre. Je ne suggère aucunement un autre examen approfondi de nos activités, mais plutôt de prendre le pouls de notre association, de prendre un moment pour réfléchir à la santé de la SMC.

Notre modèle d'affaires actuel correspond-il bien aux besoins de la SMC? Les membres sont-ils bien servis? La SMC arrive-t-elle bien à retenir ses membres et à en recruter de nouveaux? La SMC réussit-elle bien à renforcer et à enrichir les rapports qu'elle entretient avec ses partenaires et ses commanditaires? La SMC saisit-elle toutes les occasions qui se présentent à elle en matière de publication électronique?

Le comité exécutif et le conseil d'administration de la SMC se pencheront bientôt sur toutes ces questions et vous seraient très reconnaissants de leur dire, en tant que membres de la communauté mathématique, ce que vous pensez de la SMC, de ses activités et de ce qu'elle devrait faire. Je vous invite donc à me faire part de vos réflexions et opinions sur la situation actuelle et sur l'avenir de la SMC. N'hésitez surtout pas à m'appeler (613-733-2662, poste 721) ou à m'écrire ([directeur@smc.math.ca](mailto:directeur@smc.math.ca)) pour me faire part de votre perspective directement. J'espère avoir l'occasion de vous parler et de vous rencontrer personnellement en grand nombre.

# CONCORDIA UNIVERSITY

## Tenure-track Position in Mathematics



The Department of Mathematics and Statistics at Concordia University in Montreal, Quebec, invites applications for one tenure-track appointment in Mathematics. Of particular interest are candidates having an outstanding research record in one or more of the areas of Geometric Analysis, Algebraic Geometry, Differential Geometry and related fields of application. The research expertise of the candidate should interface well with existing research strengths in Mathematics within the Department which include the areas of Analysis, Group Theory, Mathematical Physics and Number Theory. Applicants should have a PhD degree, a strong research record, and demonstrated interest/experience in teaching both at the undergraduate and graduate levels.

Applications must consist of a cover letter, a current curriculum vitae, copies of recent publications, a statement of teaching philosophy/interests, a statement of research achievements, and evidence of teaching effectiveness. Candidates must also arrange to have three letters of reference sent directly to:

Dr. Y.P. Chaubey, Chair  
Department of Mathematics and Statistics  
Concordia University  
1455 de Maisonneuve Blvd.  
Montreal, Quebec H3G 1M8  
Canada  
[chair@mathstat.concordia.ca](mailto:chair@mathstat.concordia.ca)  
<http://www.mathstat.concordia.ca>

Subject to budgetary approval, we anticipate filling this position, normally at the rank of Assistant Professor, for July 1, 2010. Unless otherwise stipulated in the descriptions on our website, candidates should have a PhD. Review of applications will begin immediately and will continue until the position is filled. **All applications should reach departments no later than November 2, 2009.** All inquiries about the position should be directed to Dr. Chaubey ([chair@mathstat.concordia.ca](mailto:chair@mathstat.concordia.ca)). For additional information, please visit our website at <http://artsandscience1.concordia.ca/>

*All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents of Canada will be given priority. Concordia University is committed to employment equity.*



# RÉUNION D'HIVER SMC 2009 CMS WINTER MEETING

December 5 - 7 décembre Windsor (Ontario)  
[www.cms.math.ca](http://www.cms.math.ca)



The Canadian Mathematical Society (CMS) ([www.cms.math.ca](http://www.cms.math.ca)) and the University of Windsor ([www.uwindsor.ca/math](http://www.uwindsor.ca/math)) invite the mathematical community to the 2009 CMS Winter Meeting. The program will include ten plenary, prize and public lectures, and a wide variety of sessions.

All scientific talks and social events will take place at the Hilton Hotel and the adjoining Radisson Hotel; the registration desk will be located in the Riverfront Club Room of the Hilton Hotel.

Host / Hôte  
University of Windsor

Meeting Directors / Directeurs de la réunion  
Dan Britten (Windsor, [britten@uwindsor.ca](mailto:britten@uwindsor.ca)),  
Ejaz Ahmed (Windsor, [seahmed@uwindsor.ca](mailto:seahmed@uwindsor.ca))

La Société mathématique du Canada (SMC) ([www.smc.math.ca](http://www.smc.math.ca)) et l'Université de Windsor ([www.uwindsor.ca/math](http://www.uwindsor.ca/math)) invitent la communauté mathématique à la Réunion d'hiver 2009 de la SMC. Au programme : dix conférences (plénières, publique et de lauréats) ainsi qu'une grande diversité de sessions.

Toutes les activités scientifiques et sociales se dérouleront aux hôtels Hilton et Radisson (adjacents); la table d'inscription sera située dans la salle Riverfront Club du Hilton.

## Prizes and Awards / Prix

Coxeter-James Prize – Patrick Brosnan (UBC)  
Doctoral Prize – Mark Braverman (Toronto)  
Adrien Pouliot Prize – Walter Whiteley (York)  
G. de B. Robinson Award – TBD

## Public Lecture / Conférence publique

Alan H. Schoenfeld (Berkeley)

## Plenary Speakers / Conférenciers pléniers

Jonathan Borwein (SFU)  
Anthony To-Ming Lau (Alberta)  
Naomi Leonard (Princeton)  
Nancy Reid (Toronto)  
Christine Shoemaker (Cornell)  
David Vogan (MIT)

## SESSIONS

**Banach Algebras and Abstract Harmonic Analysis**  
**Algèbres de Banach et analyse harmonique abstraite**  
Org: Zhiguo Hu, Mehdi Monfared (Windsor)

**Complex Analysis**  
**Analyse complexe**  
Org: André Boivin, Tatyana Foth (Western)

**Convex and Variational Analysis**  
**Analyse convexe et variationnelle**

Org: Heinz Bauschke, Shawn Wang (UBC Okanagan)

**Exact and Approximate Methods for**

**Nonlinear Differential Equations**

Méthodes exactes et approximatives pour la résolution

des équations différentielles non-linéaires

Org: Alexei F. Cheviakov, George W. Patrick (Saskatchewan)

**History and Philosophy of Mathematics**

**Histoire et philosophie des mathématiques**

Org: Tom Archibald (SFU)

**Lie Algebras and Representation Theory**

**Algèbres de Lie et théorie des représentations**

Org: Nicolas Guay (Alberta), Michael Lau (Windsor)

**Lie Groups and Automorphic Forms**

**Groupes de Lie et formes automorphiques**

Org: Hadi Salmasian, Wai Ling Yee (Windsor)

**Mathematical Models in Environmental Sciences**

**Modèles mathématiques en sciences environnementales**

Org: Rick Caron (Windsor)

**Mathematical Statistics**

**Statistiques mathématiques**

Org: Jiahua Chen (UBC), Chi Song Wong (Windsor)

**Mathematics Education**

**Éducation mathématique**

Org: Dragana Martinovic (Windsor)

**Matrix Theory and Statistics**

**Théorie matricielle et les statistiques**

Org: Ejaz Ahmed, Abdul Hussein (Windsor)

**Measure, Probability, and Stochastic Processes**

**Mesure, probabilité et processus stochastique**

Org: Severien Nkurunziza, Tim Traynor (Windsor)

# RÉUNION D'HIVER SMC 2009 CMS WINTER MEETING

## Non-Linear Control Theory

### Théorie de contrôle non-linéaire

Org: Andrew Lewis, Abdol-Reza Mansouri (Queen's)

## Number Theory

### Théorie des nombres

Org: Kevin Hare (Waterloo), Soroosh Yazdani (McMaster)

## Operator Algebras

### Algèbres d'opérateurs

Org: Mitja Mastnak (Saint Mary's), Dilian Yang (Windsor)

## Real and Complex Singularities

### Singularités en analyse réelle et complexe

Org: Janusz A. Adamus (Western)

## Recent Trends in Discrete Geometry

### Tendances récentes de la Géométrie discrète

Org: Károly Bezdek (Calgary), Antoine Deza (McMaster)

## Contributed Papers

### Communications libres

Org: to be determined / à venir

## Business Meetings

Executive Committee: December 3

Development Group: December 4

Board of Directors: December 4

## Social Events

Reception: December 4, Hilton, Riverfront Club

Banquet: December 6, St. Clair's Centre

Student Social : December 5

## Registration

Please register online at [www.cms.math.ca](http://www.cms.math.ca). Payment may be made by cheque (Canadian or US dollars), or by VISA or MasterCard. Receipts will be provided at the meeting.

## Abstract Submission

For abstracts of talks to be published on-line and in the meeting programme, they have to be submitted by October 15, 2009, using the on-line form. The organizers appreciate the cooperation of all speakers in observing this important deadline.

## Contributed Papers Submission

Papers of 20 minutes duration are invited. For an abstract to be eligible, the abstract must be submitted online by October 15, 2009.

## Accommodation

Group code: Canadian Mathematical Society, ZAQ

Booking deadline: November 6, 2009

## Hilton Hotel Windsor

277 Riverside Drive West, Windsor, Ontario,

Tel: 1-519-973-5555, Fax: 1-519-973-1600

Rate: \$119 per night (plus applicable taxes)

## Radisson Riverfront Hotel Windsor

333 Riverside Drive West, Windsor Ontario

Reservations: 1-800-267-9777 toll free

Tel: 1-519-977-9777 Fax: 1-519-977-1411

Rate: \$109 per night (plus applicable taxes)

## Séances de travail

Comité exécutif : 3 décembre

Groupe de développement : 4 décembre

Conseil d'administration : 4 décembre

## Activités sociales

Reception : 4 décembre, Hilton, Riverfront Club

Banquet: December 6, St. Clair's Centre

Student Social: 5 décembre

## Inscription

Veuillez inscrire en ligne au [www.smc.math.ca](http://www.smc.math.ca). Nous acceptons les paiements par chèque (dollars CAN ou US), VISA ou MasterCard. Les reçus seront remis sur place.

## Envoi de résumés

Pour pouvoir publier votre résumé en ligne et dans le programme de la Réunion, nous devons le recevoir au plus tard le 15 octobre 2009. Veuillez utiliser le formulaire électronique. Les organisateurs remercient les conférenciers de bien vouloir respecter cette importante échéance.

## Communications libres

Nous lançons un appel de communications libres de 20 minutes chacune. Les résumés devront nous parvenir au plus tard le 15 octobre 2008 Veuillez utiliser le formulaire électronique.

## Hébergement

Code de groupe : Canadian Mathematical Society, ZAQ

Date limite de réservation : 6 novembre 2009

## Hôtel Hilton, Windsor

277 Riverside Drive West, Windsor, Ontario,

Tél. : 1-519-973-5555, Fax : 1-519-973-1600

Tarif : 119 \$ la nuit (plus taxes)

## Hôtel Radisson Riverfront, Windsor

333 Riverside Drive West, Windsor Ontario

Réservations : 1-800-267-9777 sans frais

Tél. : 1-519-977-9777 Fax : 1-519-977-1411

Tarif : 109 \$ la nuit (plus taxes)

# RÉUNION D'HIVER SMC 2009 CMS WINTER MEETING

## Travel

Transportation from Detroit Airport to the Hilton Hotel in Windsor: Robert Q provides ground transportation from Detroit airport to the Holiday Inn in Windsor. The cost for the shuttle is \$42. Conference participants will receive a 15% discount. Please mention the discount code #1982 when you make your advance reservation. Reservations can be made online or by calling 1-800-265-4948. From the Holiday Inn, one can take a taxi to the Hilton Hotel for approximately \$10.

The cost for a taxi from Detroit airport to the Hilton Hotel in Windsor will be about \$80 to \$120. The driving distance between Detroit airport and the Hilton Hotel is about 45 km; please allow at least 30 minutes for the border crossing.

A taxi fare from the Windsor airport to downtown costs approximately \$25.

## Sponsors

- CRM
- The Fields Institute
- MITACS
- PIMS

## Déplacements

Transport de l'aéroport de Détroit à l'hôtel Hilton de Windsor : L'entreprise Robert Q offre un service de navette de l'aéroport de Détroit au Holiday Inn de Windsor, au coût de 42 \$. Les participants à la Réunion recevront une réduction de 15 % en précisant le code no 1982 au moment de la réservation. Réservations en ligne ou au téléphone au 1-800-265-4948. À partir du Holiday Inn, un taxi vous mènera au Hilton pour environ 10 \$.

Le trajet en taxi de l'aéroport de Détroit au Hilton coûte entre 80 \$ et 120 \$. Environ 45 km séparent l'aéroport de Détroit du Hilton; prévoir au moins 30 minutes pour traverser la frontière.

Le trajet en taxi de l'aéroport au centre-ville coûte autour de 25 \$.

## Commanditaires

- CRM
- Institut Fields
- MITACS
- PIMS

THURSDAY/JEUDI December 3 décembre	SATURDAY/SAMEDI December 5 décembre	SUNDAY/DIMANCHE December 6 décembre	MONDAY/LUNDI December 7 décembre
18:30-22:00 Executive Committee Meeting Réunion du Comité exécutif (Hilton Hotel, Trillium Suite)	8:00 – 16:30 <b>Registration/Inscription</b> 9:30 – 16:00 <b>Exhibits/Expositions</b>	8:00 – 16:30 <b>Registration/Inscription</b> 9:30 – 16:00 <b>Exhibits/Expositions</b>	8:00 – 16:00 <b>Registration/Inscription</b>
	8:15 – 8:30 <b>Opening/Ouverture</b>	8:00 – 10:00 <b>Scientific Sessions</b>	8:00 – 9:30 <b>Scientific Sessions</b>
	8:30 – 9:15 <b>David Vogan</b> <b>Plenary Lecture</b>		9:30 – 10:15 <b>Christine Schoemaker</b> <b>Plenary Lecture</b>
	9:30-10:00 Break / Pause	10:00-10:30 Break / Pause	10:15-10:30 Break / Pause
FRIDAY/VENDREDI December 4 décembre	10:00 – 11:30 <b>Scientific Sessions</b>	10:30 – 11:15 <b>Nancy Reid</b> <b>Plenary Lecture</b>	10:30 – 11:15 <b>Naomi Leonard</b> <b>Plenary Lecture</b>
11:00 AM – 13:00 Development Group Luncheon Lunch du groupe de développement (Hilton Hotel, Ontario Room)	11:30 – 12:15 <b>Walter Whiteley</b> <b>Adrien Pouliot Award Lecture</b>	11:30 – 12:15 <b>Mark Braverman</b> <b>Doctoral Prize Lecture</b>	11:30 – 12:15 <b>Patrick Brosnan</b> <b>Coxeter-James Prize Lecture</b>
13:30 – 18:30 Board of Directors Meeting Réunion du conseil d'administration (Hilton Hotel, Ontario Room)	12:30 – 14:00 Lunch Break	12:30 – 14:00 Lunch Break	
	13:00-14:00 Student Seminar: Getting Published TBC		
	14:00-15:00 <b>Scientific Sessions</b>	14:00-15:00 <b>Scientific Sessions</b>	14:00-16:30 <b>Scientific Sessions</b>
	15:00 – 15:45 <b>Jonathan Borwein</b> <b>Plenary Lecture</b>	15:00 – 15:45 <b>Anthony To-Ming Lau</b> <b>Plenary Lecture</b>	
	Break / Pause		
	16:00 – 18:00 <b>Scientific Sessions</b>	16:00 – 17:30 <b>Scientific Sessions</b>	
18:30-20:00 <b>Welcome Reception</b> <b>Réception d'accueil</b>	18:00-19:00 <b>Alan H. Schoenfeld</b> <b>Public Lecture</b>	18:30 - 19:00 <b>Reception (cash bar)</b> <b>Réception (bar payant)</b>	19:00 – 22:00 <b>Banquet</b>
	19:00-20:00 <b>Reception / Réception</b>		
	20:00-22:00 <b>Student Social</b>		

(updated September 30, 2009)

# RÉUNION D'ÉTÉ SMC 2010 CMS SUMMER MEETING

## CALL FOR SESSIONS

We welcome and invite proposals for sessions for this meeting in Fredericton, New Brunswick (June 4-6, 2010). Proposals should include a brief description of the focus and purpose of the session, the expected number of the talks, as well as the organizer's name, complete address, telephone number, e-mail address, etc. All sessions will be advertised in the CMS Notes, on the web site and, if possible, in the Notices of the AMS and in publications of other societies. Speakers will be requested to submit abstracts, which will be published on the web site and in the meeting program. Those wishing to organize a session should send a proposal to the Meeting Directors by the deadline below.

**Deadline:** October 31, 2009

## Meeting Directors / Directeurs de la Réunion :

Dr. Hugh Thomas  
hthomas@unb.ca, T. 506-458-7331  
Dr. Barry Monson  
bmonson@unb.ca, T. 506-453-4768

## Local Arrangements / Logistique locale

Dr. Maureen Tingley  
tingleym@unb.ca, T. 506-458-7343

## The following sessions have been confirmed for this conference:

### Les sessions suivantes ont été confirmées :

#### Algebraic Combinatorics

#### Combinatoire algébrique

Org: Li Li, Alex Yong (Illinois - Urbana-Champaign)

#### Algebraic Geometry, Non-commutative Algebra and Derived Categories

#### Géométrie algébrique, algèbre non commutative et catégories dérivées

Org: Colin Ingalls (UNB)

#### Discrete Geometry

#### Géométrie discrète

Org: Barry Monson (UNB), Egon Schulte (Northeastern)

#### Error Control Codes, Information Theory, and Applied Cryptography

#### Codes de contrôle d'erreurs, théorie de l'information et cryptographie appliquée

Org: Tim Alderson (UNB - Saint John)

#### Geometric and Combinatorial Aspects

#### of Convex Optimization

#### Aspects géométriques et combinatoires de l'optimisation convexe

Org: David Bremner (UNB)

## APPEL DE SESSIONS

Nous vous invitons à proposer des sessions pour la réunion qui se tiendra à Fredericton (Nouveau-Brunswick) du 4 au 6 juin 2010. Votre proposition doit inclure une brève description de l'orientation et des objectifs de la session, le nombre de communications prévues et leur durée, ainsi que le nom, l'adresse complète, le numéro de téléphone, l'adresse courriel et les autres coordonnées de l'organisateur. Toutes les sessions seront annoncées dans les Notes de la SMC, sur le site web et, si possible, dans le Notices de l'AMS et les publications d'autres sociétés. Les conférenciers devront présenter un résumé qui sera publié sur le site web et dans le programme de la Réunion. Toute personne qui souhaiterait organiser une session est priée de faire parvenir une proposition aux directeurs de la Réunion avant la date limite indiquée ci-dessous.

**Date limite :** 31 octobre 2009

## Plenary Lectures / Conférences plénierées

Gerda de Vries (Alberta)  
Idun Reiten (Norwegian Univ. of Science and Technology)  
Gunther Uhlmann (Washington)  
Henri Moscovici (Ohio State)  
Kristin Schleich (UBC)

#### Geometric Topology

#### Topologie géométrique

Org: Ryan Budney (Victoria), Andy Nicas (McMaster)

#### Graph Theory

#### Théorie des graphes

Org: Shannon Fitzpatrick (UPEI)

#### Inverse Problems in Partial Differential Equations

#### Problèmes inverses pour les équations aux dérivées partielles

Org: Adrian Nachman (Toronto)

#### Mathematical Ecology and Epidemiology

#### Ecologie mathématique et épidémiologie

Org: Lin Wang, James Watmough (UNB)

#### Mathematical Physics

#### Physique mathématique

Org: Jack Gegenberg, Viqar Husain (UNB)

#### Mathematics Education

#### Éducation mathématique

Org: Alyssa Sankey (UNB)

## RÉUNION D'ÉTÉ SMC 2010 CMS SUMMER MEETING

Noncommutative Geometry  
Géométrie non commutative  
Org: Bahram Rangipour (UNB)

Representation Theory of Algebras  
Théorie des représentations des algèbres  
Org: Ibrahim Assem (Sherbrooke), Thomas Brüstle (Sherbrooke; Bishop's), Shiping Liu (Sherbrooke)

Spectral Methods in the Analysis of Differential Equations  
Méthodes spectrales en analyse des équations différentielles  
Org: Almut Burchard, Marina Chugunova (Toronto)

Stability in Nonlinear Partial Differential Equations  
Stabilité pour les équations aux dérivées partielles nonlinéaires  
Org: Stephen Gustafson (UBC); Dmitry Pelinovsky (McMaster)

Tensor Categories  
Catégories tensorielles  
Org: Robert Paré (Dalhousie)

Contributed Papers  
Communications libres  
Org: TBD

### CMS Excellence in Teaching Award for post-secondary undergraduate teaching in Mathematics

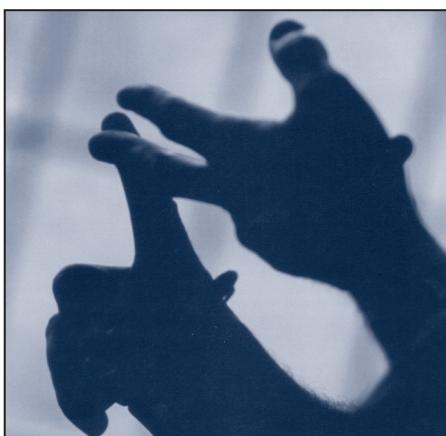
### Prix d'excellence en enseignement de la SMC pour l'enseignement collégial et de premier cycle universitaire en mathématiques

Recognizing sustained and distinguished contributions in undergraduate teaching. Full-time university, college, two-year college, or CEGEP teachers in Canada with at least five years teaching experience at their current institution can be nominated.

For details regarding nomination procedure, please visit:

[www.cms.math.ca/Prizes](http://www.cms.math.ca/Prizes)  
or  
<http://hed.nelson.com>

Deadline for nomination:  
November 15, 2009



Ce prix récompense des contributions exceptionnelles et soutenues en enseignement. Il s'adresse aux professeures et professeurs d'université, de collège ou de cégep au Canada ayant au moins cinq ans d'expérience dans leur institution présente.

Pour les détails sur la procédure de mise en candidature voir :

[www.smc.math.ca/Prix](http://www.smc.math.ca/Prix)  
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<http://hed.nelson.com>

Date limite pour soumettre une candidature :  
15 novembre 2009

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\* \* \*

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**CALL FOR NOMINATIONS  
CANADIAN MATHEMATICAL BULLETIN  
EDITORS-IN-CHIEF**

The term of office of the present Editors-in-Chief of the Canadian Mathematical Bulletin will end December 31, 2010. The Publications Committee of the CMS invites nominations for the next Editors-in-Chief to serve for a five year term.

Applications should consist of a formal letter of application and include the following:

- A curriculum vitae
- An expression of views of the publication indicating if any changes in direction or policy are contemplated
- Since editorial responsibilities often necessitate a lessening of responsibilities in an individual's normal work, applicants should indicate that they have the support of their university department and, in particular, of their head of department.

Any input from the mathematical community concerning this important selection process is welcome. Applications (with supporting material) and/or comments should be sent electronically to the e-mail address below. The deadline for the receipt of applications is **November 30, 2009**.

**APPEL DE MISES EN CANDIDATURE  
BULLETIN CANADIEN DE MATHÉMATIQUES  
ÉDITEURS-EN-CHEF**

Le mandat des rédacteurs-en-chef actuels du Bulletin canadien de mathématiques prendra fin le 31 décembre 2010. Le Comité des publications de la SMC sollicite des mises en candidatures pour les prochains rédacteurs-en-chef pour un mandat de cinq ans.

Les mises en candidature doivent inclure une lettre formelle et les éléments suivants:

- Un curriculum vitae
- L'expression de votre opinion sur la publication indiquant si des changements de directions ou de politiques sont envisagés
- Puisque les responsabilités de rédaction nécessitent souvent une réduction dans la charge normale de travail, les candidats devraient indiquer qu'ils(elles) ont l'appui de leur département et en particulier, de leur chef de département.

Les commentaires de la communauté mathématique au sujet de cette importante sélection sont bienvenus. Les mises en candidatures (avec matériel à l'appui) et/ou commentaires devraient être acheminés électroniquement à l'adresse courriel ci-dessous. L'échéance pour la réception des mises en candidature est **le 30 novembre 2009**.

Address for Nominations / Addresse de mise en candidatures :

**Professor Matthias Neufang, Chair / Président**  
CMS Publications Committee  
[chair-pubc@cms.math.ca](mailto:chair-pubc@cms.math.ca)

**CURRENT CJM/CMB EDITORIAL BOARD  
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Gordon Slade (UBC) to/à 31/12/2013  
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Ravi Vakil (Stanford) to/à 31/12/2009  
Vinayak Vatsal (UBC) to/à 31/12/2013  
Jie Xiao (Memorial) to/à 31/12/2013

« David est un enseignant exceptionnel, tant dans une classe qu'à l'extérieur, et qui a ses étudiants à cœur. En tant qu'enseignante, je m'efforce de suivre son modèle. Il a une influence immense et positive sur la vie des étudiants de Trent depuis de nombreuses années, et cette influence s'étend désormais à de nombreux autres étudiants grâce à son manuel », témoigne Joy Morris, ancienne étudiante de David devenue professeure agrégée à l'Université de Lethbridge.

L'excellence en enseignement du professeur Poole lui a valu de nombreuses récompenses : le prix Symons de l'Université Trent (1995); un prix de l'Union des associations des professeurs des universités de l'Ontario (2002); un prix 3M (2003); le Prix de leadership professoral (Ontario, 2007) ainsi que plusieurs autres prix d'excellence en enseignement. Il a prononcé de nombreuses conférences sur l'enseignement des mathématiques, notamment la conférence John F. Randolph à la section Seaway de l'AAM (Mathematical Association of America) en 2005.

David Poole a fait ses études de premier cycle à l'Université Acadia, et ses études supérieures à l'Université McMaster, où il a obtenu son doctorat en mathématiques en 1984. Il enseigne à l'Université Trent depuis, où il est maintenant professeur de mathématiques. Il a été directeur du département de mathématiques de 1996 à 2000, et de 2001 à 2003. De 2002 à 2007, à titre de vice-doyen des arts et des sciences (à l'enseignement et à l'apprentissage), il était chargé de nombreux centres (Instructional Development Centre, Academic Skills Centre, Trent Centre for Community-Based Education), des technologies d'aide à l'enseignement et de la politique d'intégrité de l'Université.

En recherche, le professeur Poole s'intéresse à la théorie des anneaux, aux mathématiques discrètes et à l'enseignement des mathématiques. Il est l'auteur du manuel *Linear algebra: A Modern Introduction* (Brooks/Cole), qui en est à sa deuxième édition et qui est utilisé dans des universités et collèges du monde entier.

### CALL FOR NOMINATIONS EDITOR-IN-CHIEF

### APPEL DE MISES EN CANDIDATURE RÉDACTEUR-EN-CHEF

#### **Crux Mathematicorum with Mathematical Mayhem (CRUX with MAYHEM)**

The term of office of the present Editor-in-Chief of CRUX with MAYHEM will end December 31, 2010. The Publications Committee of the CMS solicits nominations for an Editor-in-Chief for CRUX with MAYHEM. The appointment will be for five years beginning January 1, 2011.

The deadline for the submission of nominations is **November 30, 2009**. Nominations, containing a curriculum vitae and the candidate's agreement to serve should be sent electronically to the e-mail address below.

Le mandat de rédacteur-en-chef actuel prendra fin le 31 décembre 2010. Le comité des publications de la SMC sollicite des mises en candidature pour un poste de rédacteur-en-chef de «CRUX with MAYHEM». Le mandat sera de cinq ans et débutera le 1er janvier 2011.

L'échéance pour proposer des candidat(e)s est **le 30 novembre 2009**. Les mises en candidature, accompagnées d'un curriculum vitae ainsi que du consentement du candidat(e), devraient être envoyées électroniquement à l'adresse courriel ci-dessous.

Address for Nominations / Adresse de mise en candidatures :

**Professor Matthias Neufang.** Chair / Président  
CMS Publications Committee / Comité des publications de la SMC  
[chair-pubc@cms.math.ca](mailto:chair-pubc@cms.math.ca)

# CALENDAR OF EVENTS / CALENDRIER DES ÉVÉNEMENTS

OCTOBER	2009	OCTOBRE	JANUARY	2010	JANVIER
9 - 13	Rational Curves and A1 homotopy theory (American Inst. of Math, Palo Alto, CA) <a href="http://aimah.org/ARCC/workshops/a1homotopy.html">http://aimah.org/ARCC/workshops/a1homotopy.html</a>		25-29	Metamaterials: applications, analysis and modeling (UCLA, Los Angeles, CA) <a href="http://www.ipam.ucla.edu/programs/meta2010/">www.ipam.ucla.edu/programs/meta2010/</a>	
12-16	Algebra, Geometry, and Mathematical Physics 5th Baltic-Nordic Workshop (Bedlewo, Poland) <a href="http://www.agmf.astralgo.eu/bdl109/">www.agmf.astralgo.eu/bdl109/</a>				
14-17	Integers Conference 2009 (Univ. of West Georgia, Carrollton, GA) <a href="http://www.westga.edu/~math/integersconf2009">www.westga.edu/~math/integersconf2009</a>		18 - 19	February Fourier Talks 2010 (Univ. of Maryland, College Park, MD) <a href="http://www.norbertwiener.umd.edu/FFT/FFT10/index.html">www.norbertwiener.umd.edu/FFT/FFT10/index.html</a>	FÉVRIER
NOVEMBER	2009	NOVEMBRE	22-26	Statistical and Learning Theoretic Challenges in Data Privacy (UCLA, Los Angeles, CA) <a href="http://www.ipam.ucla.edu/programs/data2010/">www.ipam.ucla.edu/programs/data2010/</a>	
2-6	Combinatorics: topics in graphs and hypergraphs (UCLA, Los Angeles, CA) <a href="http://www.ipam.ucla.edu/programs/cmaws3/">www.ipam.ucla.edu/programs/cmaws3/</a>				
6-10	XV Conference on Mathematics, Informatics and Related Fields (Hotel Energetyk, Naleczow, Poland) <a href="http://ptm.prz.rzeszow.pl/konferencja/">http://ptm.prz.rzeszow.pl/konferencja/</a>		8-12	AIM Workshop: Mock Modular Forms in Combinatorics and Arithmetic Geometry (AIM, Palo Alto, CA) <a href="http://www.aimath.org/ARCC/workshops/mockmodular.html">www.aimath.org/ARCC/workshops/mockmodular.html</a>	MARS
9	IAM-PIMS-MITACS Distinguished Colloquium -Theory and Modeling of Reactive Events University of British Columbia <a href="http://www.iam.ubc.ca/collog/">www.iam.ubc.ca/collog/</a>				
23-27	Mathematics and Astronomy (CSIC, Madrid, Spain) <a href="http://www.astromath2009.com">www.astromath2009.com</a>		2-5	Eighth Joint International Meeting of the AMS and the Sociedad Matemática Mexicana Berkeley, California <a href="http://www.ams.org/amsmtgs/2172_program.html">www.ams.org/amsmtgs/2172_program.html</a>	JUIN
29-Dec.4	7th Southern Hemisphere Conference on the Teaching and Learning of Undergraduate Mathematics and Statistics (Gordons Bay, South Africa) <a href="http://www.delta2009.co.za">www.delta2009.co.za</a>		4-6	2010 CMS Summer Meeting University of New Brunswick Fredericton, NB <a href="http://www.cms.math.ca/Events">www.cms.math.ca/Events</a>	
30-Dec.4	MSRI Upcoming Workshops: Tropical Structures in Geometry & Physics (Berkeley, CA) <a href="http://www.msri.org">www.msri.org</a>		13-18	48th International Symposium on Functional Equations (Batz-sur-Mer, France) <a href="mailto:nicole.belluot@ec-nantes.fr">nicole.belluot@ec-nantes.fr</a>	
DECEMBER	2009	DÉCEMBRE	28-July2	The Józef Marcinkiewicz Centenary Conference (Poznańoznań, Poland) <a href="http://www.jm100.amu.edu.pl">www.jm100.amu.edu.pl</a>	
5 - 7	CMS Winter Meeting 2009, Host: University of Windsor Hilton Hotel, Windsor (ON) <a href="http://www.cms.math.ca/Events/winter09/">www.cms.math.ca/Events/winter09/</a>				
14-17	The Joint Conference of ASCM 2009 and MACIS 2009 (JAL Resort Sea Hawk Hotel, Fukuoka, Japan) <a href="http://gcoe.math.kyushu-u.ac.jp/ascm-macis2009/ascm-macis2009@math.kyushu-u.ac.jp">http://gcoe.math.kyushu-u.ac.jp/ascm-macis2009/ascm-macis2009@math.kyushu-u.ac.jp</a>				
16-20	First Joint International Meeting of the AMS and the Korean Mathematical Society Seoul, Korea <a href="http://www.kms.or.kr/kmsams/">www.kms.or.kr/kmsams/</a>				
17-21	14th Asian Technology Conference in Mathematics (Beijing, China) <a href="http://www.mathandtech.org">www.mathandtech.org</a>				
JULY	2010	JUILLET			
			26-Aug16	Topics in Noncommutative Geometry (Universidad Buenos Aires, Argentina) <a href="http://cms.dm.uba.ar/Members/gcorti/workgroup.GNC/3EIL">http://cms.dm.uba.ar/Members/gcorti/workgroup.GNC/3EIL</a>	
AUGUST	2010	AOÛT			
			19-27	ICM 2010 - International Congress of Mathematics Hyderabad, India <a href="http://www.icm2010.org.in/">www.icm2010.org.in/</a>	

**CALL FOR NOMINATIONS  
2010 David Borwein  
Distinguished Career Award**

The David Borwein Distinguished career award recognizes mathematicians who have made exceptional, broad, and continued contribution to Canadian mathematics.

A complete nomination dossier consists of:

- A signed nomination statement from a present or past colleague, or collaborator (no more than three pages) having direct knowledge of the nominee's contribution;
- a short curriculum vitae, no than five pages;
- Two to four letters of support in addition to the nomination;
- Other supporting material may be submitted, no more than 10 pages.

A nomination can be updated and will remain active for three years. Six copies of the complete nomination dossier must arrive at the CMS Executive Office no later than **November 15, 2009**.

**APPEL DE MISES EN CANDIDATURE  
Prix David-Borwein de mathématicien  
émérite pour l'ensemble d'une  
carrière 2010**

Le prix David-Borwein de mathématicien émérite pour l'ensemble d'une carrière rend hommage à un mathématicien qui a fait une contribution exceptionnelle et soutenue aux mathématiques canadiennes.

Le dossier de candidature comprendra les éléments suivants :

- une lettre de mise en candidature signée par un collègue ou un collaborateur actuel ou des années passées (trois pages maximum) qui connaît très bien les réalisations de la personne proposée;
- un bref curriculum vitae, maximum de cinq pages;
- de deux à quatre lettres d'appui, en plus de la mise en candidature;
- tout autre document pertinent, maximum de 10 pages.

Toute mise en candidature est modifiable et demeurera active pendant trois ans. Le dossier complet, en six exemplaires, doit parvenir au bureau administratif de SMC au plus tard **le 15 novembre 2009**.

**Selection Committee / Comité de sélection**

**David Borwein Distinguished Career Award / Prix David Borwein pour carrière distinguée  
Canadian Mathematical Society / Société mathématique du Canada  
105-1785 Alta Vista Dr., Ottawa, ON K1G 3Y6**

## **Tarifs et horaire 2009 Rates and deadlines**

Deadlines for receipt of material are as follows / Les dates limites pour la réception des annonces sont les suivantes

Issue date/ date de parution	Content deadline / Date limite pour contenu		
February / février March / mars April / avril May / mai September / septembre October / octobre November / novembre December / décembre		December 1 / le 1 décembre January 15 / le 15 janvier February 15 / le 15 février March 15 / le 15 mars July 15 / le 15 juillet August 15 / le 15 août September 15 / le 15 septembre October 15 / le 15 octobre	
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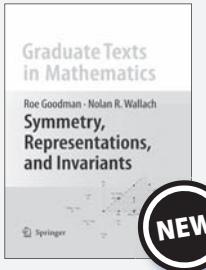
For more than 4 pages, or for the printing and inserting of camera ready material, please send a sample to the CMS Notes for a quote.

Surcharges apply for prime locations - contact [notes-ads@cms.math.ca](mailto:notes-ads@cms.math.ca). Subscription to the Notes is included with the CMS membership. For non-CMS members, the subscription rate is \$75 (CDN) for subscribers with Canadian addresses and \$75 (US) for subscribers with non-Canadian addresses.

Pour plus de 4 pages, ou pour l'impression et l'inclusion d'une copie prête à la reproduction, veuillez envoyer un exemple aux Notes de la SMC afin d'obtenir un estimé.

Des suppléments sont applicables pour des places de choix - communiquer avec [notes-ads@smc.math.ca](mailto:notes-ads@smc.math.ca). L'adhésion à la SMC comprend l'abonnement aux Notes de la SMC. Le tarif d'abonnement pour les non-membres est de 75 \$ CDN si l'adresse de l'abonné est au Canada et de 75 \$ US si l'adresse est à l'étranger.

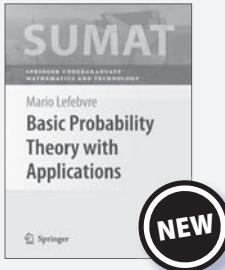
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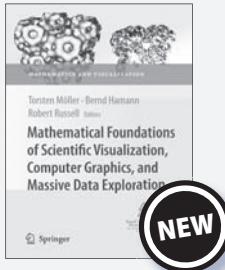
2009. XX, 716 p. 10 illus. (Graduate Texts in Mathematics, Volume 255)  
Hardcover

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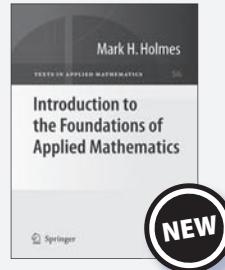
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