CMS NOTES de la SMC

IN THIS ISSUE
DANS CE NUMÉRO

FROM THE PRESIDENT'S DESK

Anthony Lau, *University of Alberta*

The Canadian Mathematical Society is starting a new era without Graham Wright.

I would like to start by thanking Graham Wright for his 30 years of devotion to the Canadian Mathematical Society. Graham continued to act till the end of 2009 as an "Executive Consultant" to help ensure a smooth transition. We wish Graham a wonderful second life in retirement.

The second Joint Meeting of the CMS and the Sociedad Matematica Mexicana (SMM) was hosted by PIMS and took place on the campus of the University of British Columbia from August 13 to 15, 2009. There were 230 participants, including 110 from Mexico. The plenary speakers were James Arthur (University of Toronto), Onsimo Hernandez-Lerma (CINVESTAV) Niky Kamran (McGill University), Rachel Kuske (University of British Columbia) José Seade (UNAM), and Alberto Verjovsky (UNAM-Cuernavaca).

There were 10 special sessions in Algebra, Algebraic Geometry and Singularity Theory, Analysis, Combinatorics and Graph Theory, Diffferential Geometry, Dynamical Systems, Optimization and Approximation, Partial Differential Equations, Probability, and Topology.

Despite unexpected visa issues, the meeting was well attended and both communities had the opportunity to strengthen their collaborations. The quality of the speakers and the sessions was high, and there was great enthusiasm at the meeting. I would like to thank all members of the Scientific Program Committee (Alejandro Adem (UBC - PIMS), Walter Craig (McMaster), Andrew Granville (Montreal), Fernando Brambila (SMM & UNAM), Isidoro Gitler (CINVESTAV), and Jose Seade (UNAM)) and to the staff at PIMS and the CMS for making it a successful meeting.

The next joint meeting is scheduled for 2012 in Mexico and the location has yet to be determined. These joint CMS/SMM meetings are on an alternating three-year cycle.

The CMS Winter Meeting 2009, hosted by the University of Windsor, was a great success with over 360 participants. This conference covered a broad cross-section of the Canadian mathematical sciences community. There were 6 plenary speakers, including one public lecture, 3 prize speakers and 16 special sessions in mathematics, statistics and mathematics education.

At this Meeting, we celebrated the winners of the following prizes: Walter Whiteley (York) - Adrien Pouliot Award, Patrick Brosnan (UBC) - Coxeter-James Prize, Mark Braverman (Toronto) - Doctoral Prize, Vladimir Manuilov (Moscow State) and Klaus Thomsen (Aarhus) - G. de B. Robinson Award, and Christiane Rousseau (Montréal) - Graham Wright Award for Distinguished Service. Congratulations to all of you! All prizes and awards were presented during the Banquet on December 6.

I would like to express my gratitude to the sponsors of this Meeting: CRM, the Fields Institute, MITACS, PIMS and the University of Windsor.

The Scientific Directors Dan Britten and Ejaz Ahmed, from the University of Windsor, had worked very hard to put together an attractive and varied program and they deserve our considerable thanks. Such a meeting requires much dedication and drive and would not have been possible without the hard work of the meeting directors, the session organizers and especially the CMS staff.

Jacques Hurtubise, Johan Rudnick and I were invited to attend the Second Canadian Mathematics Retreat at BIRS (October 16-18, 2009) This meeting was a follow-up to the first meeting held in March 2005 organized by Nassif Ghoussoub, Director of BIRS. The meeting sought to address the challenges and opportunities facing mathematics in Canada, especially with respect to the interests of governments, funding agencies, universities, and the mathematics community as a whole. Discussions included topics such as: the state of the mathematics community; what big ideas are possible for the mathematics community; the

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EDITORIAL / ÉDITORIAL

by/par Srinivasa Swaminathan
Dalhousie University, Halifax

Exam Blues

This editorial is written on a flight from London to Boston. Sitting across me is a young Chinese woman reading assiduously a sheaf of typed pages with her lap top open. She said that she is preparing for final exams in Economics and Political Science soon after arrival. At this time (December) many students all over the country will be in this situation, studying hard, working late hours and losing sleep. Most of them may not do well not because they do not know the answers well but because they are tired and their minds are agitated.

Are exams the best way of assessing students? Can students avoid stress and strain of preparing for exams at the last minute? These and similar questions have been answered in different ways in journals like Mathematical Gazette, American Mathematical Monthly, Two-year College Journal, etc. Presidential addresses at various conferences have discussed such problems. G. H. Hardy worked hard to eliminate the Wrangler rankings and suggested reforms for Tripos exams of the Cambridge University early in the last century. At that time three hour exams were scheduled in succession, allowing little time for students to review the portions concerned. It is reported that at the end of the ordeal students became nervous wrecks!

Professors and instructors are busy at this time with the chores of invigilation and marking. Some of them do sympathize with the plight of students and yet say, 'that is the way it has been; we all went through it.' I have known professors who, at the graduate level, do not hold exams during some of their courses; they just grade students on their work in assigned projects. Such an evaluation procedure works well in courses for gifted students.

These thoughts run through my mind as I watch the woman peering through her pages with a determination to do well in her exams. I asked her if she had any Math exam. She replied that she went through those 'hard' ones in earlier years.

Academic examinations are defined to be tests which aim to determine the ability of a student. Whether this aim is achieved is hard to determine.

Le blues des examens

Au moment d'écrire ces lignes, je suis dans un avion entre Londres et Boston. De l'autre côté de l'allée est installée une jeune Chinoise qui lit avec attention un paquet de feuilles imprimées, son ordinateur portable sur les genoux. Elle prépare ses examens finals en économie et en science politique, m'explique-t-elle. À cette période de l'année (on est en décembre), de nombreux étudiants de tout le pays seront dans la même situation : ils étudient jusqu'au petit matin et manquent de sommeil. Un bon nombre d'entre eux ne réussiront pas très bien, non pas faute de connaître les réponses, mais parce qu'ils sont trop fatigués et stressés, de corps comme d'esprit.

Un examen est-il la meilleure façon d'évaluer un étudiant? Les étudiants peuvent-ils éviter la tension et le stress causés par la préparation d'examens à la dernière minute? Des questions de ce genre ont fait l'objet de réponses diverses dans des revues comme Mathematical Gazette, American Mathematical Monthly, Two-year College Journal, etc., et les présidents d'associations ont souvent abordé ces thèmes dans les conférences inaugurales de congrès. G. H. Hardy a déployé beaucoup d'énergie pour éliminer le classement Wrangler et a suggéré des réformes des célèbres épreuves mathématiques de l'Université Cambridge (Mathematical Tripos) au début du XXe siècle. À cette époque, les étudiants passaient une série d'examens de trois heures chacun, ce qui leur laissait peu de temps pour revoir la matière. On dit qu'à la fin de cette épopée, les étudiants étaient complètement à bout de nerfs!

Les professeurs et les enseignants aussi sont occupés durant cette période, à surveiller et à corriger les examens. Certains sympathisent avec les doléances des étudiants, mais ajoutent que « ça se passe ainsi depuis toujours », et que « tout le monde est passé par là ». Je connais des professeurs qui ne donnent pas d'examens dans certains de leurs cours aux cycles supérieurs; ils notent plutôt les étudiants d'après leurs travaux. Ce mode d'évaluation est bien adapté aux cours destinés aux étudiants doués.

Je pense à tout cela en regardant l'étudiante chinoise, qui lit ses notes avec détermination pour bien réussir ses examens. Je lui demande si elle a des examens de mathématiques. Elle me répond qu'elle a déjà fait ces examens difficiles les premières années.

Les examens théoriques sont des tests qui visent à déterminer la capacité d'un étudiant. Il est toutefois difficile de déterminer si cet objectif est vraiment atteint.

Representation Theorems in Hardy Spaces

by Javad Mashreghi, London Mathematical Society Student Texts #74 Cambridge University Press, Cambridge, U.K.

384 pp, $141.95CDN, ISBN 978-0521517683

Reviewed by Peter Rosenthal, University of Toronto

"Representation Theorems in Hardy Spaces" by Javad Mashreghi, London Mathematical Society Student Texts 74, Cambridge University Press, Cambridge, U.K.

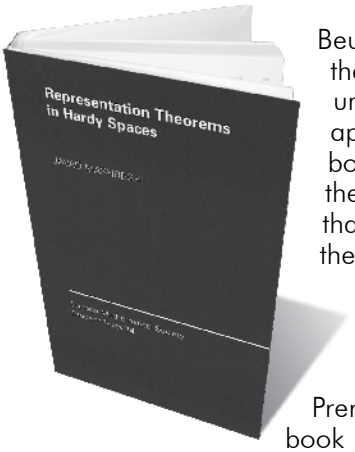
The Hardy spaces are Banach spaces of analytic functions, and thus their study involves both functional analysis and classical function theory. The resulting interplay between these subjects has led to a number of very beautiful theorems.

There are lots of Hardy spaces. The most familiar are those consisting of functions analytic on the open unit disk, for which there is a Hardy space H^p for each real number p greater than or equal to 1, as well as for p equal to infinity. The latter is simply the collection of bounded analytic functions, while the other H^p's consist of analytic functions for which there is a bound on all the integrals of the absolute values of their p^{th} powers on circles of radius less than 1 centred at 0. There are corresponding Hardy spaces of functions analytic on the open upper half plane (and even on more general domains, though such are much less studied). The Hardy spaces were introduced almost a century ago, and have been active areas of research ever since.

The word "Representation" in the title is not used in the algebraic sense, as in representations of groups or algebras; it refers to integral representations and factorizations of harmonic and analytic functions. There is a great deal that is known about the functions that are elements of the Hardy spaces and the harmonic functions that are their real parts, and most of what is known is discussed in the book under review. The fundamental results, such as Blaschke products, the Poisson Integral Formula, the inner-outer factorization and the Herglotz Representation Theorem, are all here. But the book also contains much more. There is a detailed study of conjugate functions, including the theorem of Marcel Riesz. The Riesz-Thorin Interpolation Theorem is treated, as are several related results. There is an extensive discussion of properties of the Hilbert Transform.

Some of the properties of functions in the Hardy spaces of the half plane can be derived from the more-familiar corresponding theorems in the case of the disk, using a conformal map of the one domain onto the other. The author prefers a more direct approach to the half-plane case, and thus relies on properties of the Fourier transform, which are developed from scratch.

Potential purchasers should be warned about what is not in this book. There have been numerous applications of these results to the structure of operators on Hilbert space (H^2 is a Hilbert space), such as the study of Toeplitz operators and



Beurling's theorem describing the invariant subspaces of the unilateral shift. None of these applications are discussed in the book under review. However, there are a number of other texts that do cover such material, and the more classical topics that are included here are certainly enough to fill a book (this one has 372 pages).

Prerequisites for reading this book are modest: basic courses in real and complex analysis suffice. There is even an appendix outlining the measure theory that is required.

I don't think that this book would be easy independent reading for most students. However, a good instructor could use it as the basis for an interesting course. Mathematicians working on related topics should find it a useful reference for statements and proofs of many of the classical results related to the Hardy spaces.

There are a large number of interesting exercises, varying in difficulty, some of which are accompanied by useful hints. Anyone teaching a course that includes Hardy spaces would find it a good source for homework problems.

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Topics in Graph Theory: Graphs and Their Cartesian Product

by Wilfried Imrich, Sandi Klavžar and Douglas F. Rall
A K Peters, Wellesley, MA, 2008
240 pp $90.50CDN, ISBN 978-1568814292

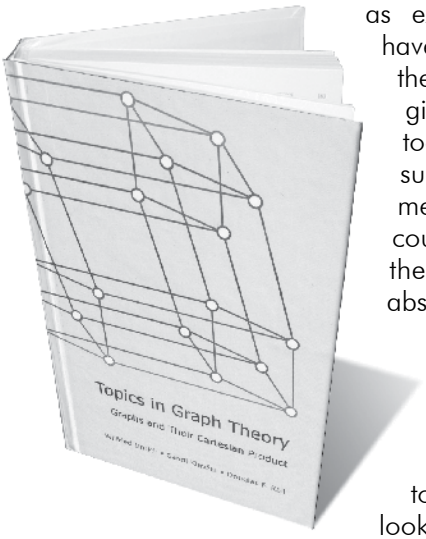
Review by Neil McKay, Dalhousie University

The product of simple graphs G and H is a simple graph whose vertex set is the Cartesian product of the vertex sets, $V(G)$ and $V(H)$, and whose edges are determined by the edges in G and H – how exactly depends on which graph product. Depending on who you ask, the number of different graph products may vary greatly, yet there are also some that appear quite frequently. One very common product is the Cartesian product, which is the focus of the book *Topics in Graph Theory: Graphs and Their Cartesian Product* by Imrich, Klavžar and Rall. In the Cartesian product two vertices (u, v) and (u', v') are adjacent if $u = u'$ and v is adjacent to v', or if u is adjacent to u' and $v = v'$. For example, the Cartesian product of K_2 with K_2 is C_4, which motivates the alternate name box product as well as the notation $G\square H$ for the Cartesian product of graphs G and H.

Every graph is trivially isomorphic to the Cartesian product of itself with the graph with one vertex. However, examples of non-trivial Cartesian products are plentiful as well. Some of the families of Cartesian products mentioned in this book are prisms, hypercubes, Hamming graphs, grid graphs, torus graphs and boxes. There are also families of graphs such as the (Tower of) Hanoi graphs, partial hypercubes and trees, that occur as subgraphs of Cartesian products.

This book brings together many tools and topics through the theme of Cartesian products. Standard graph theory topics covered include Hamiltonicity, line graphs, vertex, edge and other colourings, connectivity, domination, independence, planarity and crossing number. In many cases, such as connectivity, there are very strong results for Cartesian products relating graph invariants of the factors to the invariant of the product. On the other hand, there is an open conjecture (Vizing's Conjecture) from more than forty years ago, which states that the product of the domination numbers of the factors of a product is a lower bound for the domination number of the product, and this bound is not thought even to be a good lower bound. Also covered within are topics from the particular viewpoint of the Cartesian product: automorphisms, distinguishing number, prime factorizations, subgraphs and containment, cancelation, and recognition algorithms. There are yet other topics covered in graph theory, and some parts touching on codes and complexity, but I will not list them.

Almost every lemma and theorem in the book has a complete and understandable proof, as even the proofs that are left as exercises to the reader have hints or solutions in the appendix. The proofs given use a wide variety of tools seen in graph theory, such as the probabilistic method, higher algebra and counting methods. Graph theory proofs are often absorbed more easily with the aid of well-crafted, insightful diagrams accompanying arguments, and this book always seemed to have the figure I was looking for.



Topics in Graph Theory is very readable from start to finish. That is, the book is an enjoyable read from chapter to chapter; and each chapter is well-written. This is quite impressive as the authors have prioritized the breadth of topics covered. This book has eighteen chapters, almost all on different topics. In each chapter, by presenting the theory while focusing on the Cartesian product, the authors hold the readers interest and attention.

This book serves active and aspirant researchers with a particular interest in Cartesian products. It does not pretend to be a survey of the work on Cartesian products, but it does cover material from over fifty years ago (a fairly long time for graph theory) and includes results from papers published in the book's publication year. Also, each chapter starts with a succinct introduction to the topic of that chapter, which lends itself to be very useful in reading just one chapter - either for the first time or coming back to it as a reference. On the other hand, the first two authors have a book *Product Graphs: Structure and Recognition* (Wiley, 2000) on graph products in general, which is a more comprehensive reference book for graph products.

Where this book really excels is in the setting of a topics course (the title is quite apt). The omission of introductory material, such as definitions, increases readability and is suited to the level of the intended reader, one who already has some familiarity with graph theory. Each chapter provides a new window into graph theory and is backed up by at least eight exercises at the end of the chapter. As well, for every exercise there is either a substantial hint or solution given at the back of the book. In total, this book has over 200 such exercises ranging in difficulty from trivial to challenging. This book could also serve as a secondary text and exercise source for an instructor teaching a first or second course in graph theory.

BRIEF BOOK REVIEWS

by Keith Johnson
Dalhousie University, Halifax

Proofs and Other Dilemmas: Mathematics and Philosophy

Edited by Bonnie Gold and Roger A. Simons, MAA, Washington DC, 2008, 320 pp., $53.95US, ISBN 978-0-88385-567-6

Telling a working mathematician that there is a subject called the philosophy of mathematics is unlikely to elicit surprise however asking what questions such a subject is currently concerned with might draw a blank look. This book provides some answers. Sixteen essays by both mathematicians and philosophers on topics such as the implications of computer assisted proofs and the likely future of mathematics are combined with less familiar ones such as the social constructivist view of mathematics (roughly that what counts as mathematics is determined by consensus within a community). There are also groups of essays on the nature of mathematical objects ("when are two objects equal") and on applications (a philosophical view of probability).

Groups on Symmetries – From Neolithic Scots to John McKay

Edited by John Harnad and Pavel Winternitz, CRM Proceedings and Lecture Notes, AMS, Providence RI, 2009, 366 pp, ISBN 978 0 8218 4481 6

For four decades John McKay of Concordia University has been at the forefront of research in group theory and allied topics. In April 2007 a conference at the CRM took place to honour his many contributions. The resulting proceedings contain articles introducing some of the topics in which John has been prominent. One of these, whimsically titled monstrous moonshine, concerning the connection between representations of the largest of the sporadic simple groups and certain j-series originated with an observation of McKay's. Another is the McKay correspondence which relates certain group representations to graph theory. There are also articles on geometry, number theory and on an icosahedral sculpture which the participants assembled during the conference.

One to Nine – the Inner Life of Numbers

by Andrew Hodges, WW Norton and co., NYNY, 2008, 330 pp, $15.95US, ISBN 978-0-393-33723-5

This compendium of numerical lore is from the author of the popular biography "Alan Turing: the Enigma". The title, which echos that of Constance Reid's 1956 classic "From zero to Infinity" describes the organizing theme of the book. Each of the digits 1 to 9 is used as the point of departure for a loosely linked selection of anecdotes, essays and digressions on things numerical. For example two touches on mirror symmetry, right and wrong, exponential growth (powers of 2) and the second law of thermodynamics while five includes magic squares, Fibonacci and the golden mean, and Penrose tilings. The topics are far ranging with bits from most of the natural sciences and lots of geometry and number theory. Almost all would be accessible and interesting to a good upper year undergraduate and all but one are clearly presented. The one exception is a few pages on using twistor geometry to interpret some results in modern physics where Hodges expertise on the topics leads him to overestimate his audiences' sophistication.

Motives and Algebraic Cycles – A Celebration in Honour of Spencer Bloch

by Rob de Jen and James Lewis Eds., Fields Institute Communications #56, American Mathematical Society, Providence RI, 2009, 336 pp., ISBN 978-0-8218-4494-6

K-theory originated with Grothendieck's study of vector bundles over algebraic varieties and quickly expanded to give new results in topology, algebra and number theory. One of the mathematicians most prominent in this development in algebraic geometry and connections with physics is Spencer Bloch and, in March 2007, a conference honouring him was held at the Fields Institute. The proceedings of this conference contain both new research results in areas pioneered by Bloch and also some survey articles on the current state of these areas. Notable among the valuable papers in this volume are one by V. Kumar Murty considering Bloch's notion of semiregularity for Abelian varieties and one by Victor Snaith using Adams operations to obtain results in motivic stable homotopy.

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RECHERCHÉS : Livres pour critiques littéraires

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Would you like to see it reviewed in the CMS Notes? If so, please arrange to have a review copy sent to our Book Review Editor.

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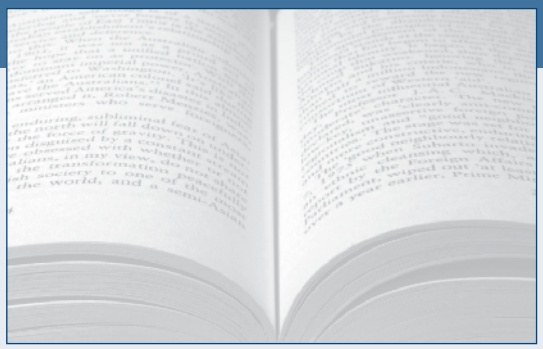


Prix Adrien-Pouliot 2009 Adrien Pouliot Award

Walter Whiteley (York University)

Walter Whiteley and Anthony Lau

Professor Whiteley is one of a handful of Canadian mathematicians whose work is grounded in the mathematics education literature and who is a contributor to international math education studies. The award also acknowledges his leadership and influence in the development of mathematics education. At the centre of his work, both in mathematics research and in education, is geometry, whether it be the rigidity of buildings or the flexibility of proteins, and his passion for this wonderful and tragically neglected subject gives focus and energy to his work.

Drawing on the rich variety of geometric experiences and the teaching of geometry to future and in-service teachers, Professor Whiteley has made a noteworthy and influential contribution to research and development of tasks in visual reasoning (broadly and within mathematics) as well as in the teaching and learning of geometry. Currently, he is leading a working group within the Canadian Mathematics Education Forum on Early Years Geometry – working to rebuild geometry education from the early years on up.

Recently Professor Whiteley collaborated on the development of a new BSc/BA major 'Mathematics for Education' for students preparing for concurrent or consecutive education programs. This innovative program provides a common core curriculum, a rich background in pure, applied mathematics and statistics, as well as courses identified as key elements of the pre-service preparation in Mathematics for Teaching Geometry, History of Mathematics, and an integrative capstone course on Topics in Mathematics Education.

At a provincial level, Professor Whiteley chaired the Council of Ontario Universities task force on the recent revisions of the Ontario Mathematics Curriculum and he followed this with a term as a Director of the Ontario Association of Mathematics Education. Recently he hosted a one day workshop on Bridging from Mathematics to Mathematics Education, and continues to work towards strong collaborations between mathematics departments and faculties of education.

Professor Whiteley received his honours B.Sc. in 1966 from Queen's University. He completed his Ph.D. at the Massachusetts Institute of Technology in 1971. In 1972 he joined the Mathematics Department at Champlain Regional College (CEGEP) in St. Lambert, Quebec. Subsequently, in 1992, he moved to the Department of Mathematics and Statistics at York University, where he is currently a Professor of Mathematics and Statistics. Dr. Whiteley is the recipient of the 2003 University-Wide Teaching Award for Senior Faculty at York University.

Le professeur Whiteley est l'un des rares mathématiciens canadiens qui porte ses intérêts de recherche sur l'enseignement des mathématiques et qui contribue à des études internationales dans ce domaine. Ce prix souligne également son rôle de chef de file et son influence dans le domaine. Tant en recherche qu'en éducation, ses travaux portent essentiellement sur la géométrie, qu'il s'agisse de la solidité des bâtiments ou de la souplesse des protéines. Sa passion pour ce sujet merveilleux et malheureusement négligé guide tous ses travaux et leur insuffle une énergie nouvelle.

Puisant à même une grande variété d'expériences géométriques et son expérience en enseignement de la géométrie à des enseignants ou futurs enseignants, Walter Whiteley a grandement influencé la recherche-développement de tâches en raisonnement visuel (en général et en mathématiques) et en enseignement de la géométrie. En ce moment, il dirige un groupe de travail du Forum canadien sur l'enseignement des mathématiques portant sur l'enseignement précoce de la géométrie, et qui vise à réintroduire l'enseignement de la géométrie dès les premières années d'école.

Dernièrement, il a participé à la création d'une nouvelle majeure (B.Sc./B.A., Mathématiques pour l'enseignement) destinée aux étudiants qui se préparaient à un programme combiné ou consécutif en enseignement. Ce programme innovateur est composé d'un tronc commun, d'un riche contenu en mathématiques pures et appliquées et en statistique, de cours de mathématiques jugés importants à la formation à l'enseignement de la géométrie et de l'histoire des mathématiques, ainsi que d'un cours cadre d'intégration sur les thèmes en enseignement des mathématiques.

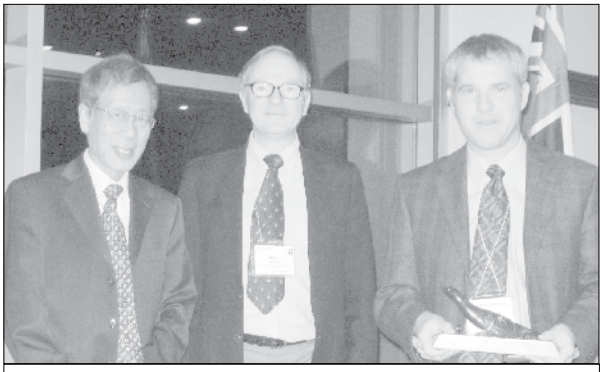
Au niveau provincial, le professeur Whiteley a présidé un groupe de travail du Conseil des universités de l'Ontario sur les récents changements apportés aux programmes de mathématiques de l'Ontario. Il a par la suite assuré un mandat en tant que directeur de l'Association ontarienne pour l'enseignement des mathématiques. Dernièrement, il a organisé un atelier d'une journée sur la transition entre les mathématiques et l'enseignement des mathématiques, et il continue de promouvoir la collaboration étroite entre les départements de mathématiques et les facultés d'éducation.

Le professeur Whiteley a obtenu un B.Sc. avec spécialisation de l'Université Queen's en 1966, et son doctorat du Massachusetts Institute of Technology en 1971. Il s'est joint au Département de mathématiques du Collège régional Champlain, campus de St-Lambert (Québec), en 1972. En 1992, il est passé au Département de mathématiques et de statistique de l'Université York, où il est maintenant professeur titulaire de mathématiques et de statistique. En 2003, l'Université York lui a décerné un prix d'excellence en enseignement.

Prix Coxeter-James 2009 Coxeter-James Prize

Patrick Brosnan, University of British Columbia

Patrick Brosnan is a young mathematician of unusual breadth, depth and scope; his work has had significant impact in several areas of mathematics, including motives, algebraic cycles, Hodge theory, algebraic groups, algebraic combinatorics, analytic number theory and mathematical physics.



Anthony Lau, David Brydges and Patrick Brosnan

Brosnan was born in Philadelphia, Pennsylvania in 1968 and grew up in Corpus Christi, Texas. He obtained a Bachelor of Arts degree from Princeton University in 1991 and a Ph.D. from The University of Chicago in 1998, studying algebraic cycles under the supervision of Spencer Bloch. Prior to joining the University of British Columbia, he held positions at Northwestern University, Max-Planck-Institut für Mathematik in Bonn, the University of California Irvine, the University of California Los Angeles, the State University of New York at Buffalo, and the Institute for Advanced Study in Princeton.

In a 2003 Duke Mathematical Journal paper with P. Belkale, Brosnan disproved the so-called "spanning tree" conjecture of the 1998 Fields medalist M. Kontsevich. The conjecture, which was motivated by research by the physicists D. Broadhurst and D. Kreimer into the number theoretical properties of Feynman amplitudes, was supported by a substantial body of empirical evidence. The work of Belkale and Brosnan was, consequently, entirely unexpected; and it has had a strong impact on the field.

Recently Brosnan has made important contributions to the theory of essential dimension. Brosnan's idea to extend the notion of essential dimension to the setting of algebraic stacks paved the way for wide-ranging applications of stack-theoretic methods which ultimately led to a number of striking developments. One of the applications, to appear in a joint Annals of Mathematics paper with Z. Reichstein and A. Vistoli, is an unexpectedly strong lower bound on the Pfister number of a quadratic form with trivial discriminant and Hasse-Witt invariant.

In a different direction, Brosnan and G. Pearlstein have recently made important contributions to Hodge theory. In another paper that will appear in the Annals, they show that a non-trivial admissible normal function on a curve can have only finitely many zeros. Normal functions are part of a conjectured program to prove the Hodge conjecture, one of the outstanding open problems in mathematics.

Patrick Brosnan est un jeune mathématicien dont l'unicité se démarque par ses vastes et profondes connaissances dans plus d'un champ d'application. Sa recherche a eu un impact majeur notamment dans les domaines tels que la théorie des motifs, les cycles algébriques, la théorie de Hodge, les groupes algébriques, la combinatoire algébrique, la théorie analytique des nombres et la physique mathématique.

Brosnan est né à Philadelphie (Pennsylvanie) en 1968 et a grandi à Corpus Christi (Texas). Il a obtenu un baccalauréat ès arts de l'Université de Princeton en 1991 et son doctorat de l'Université de Chicago en 1998, étudiant les cycles algébriques sous la supervision de Spencer Bloch. Avant de joindre l'Université de la Colombie-Britannique, il a occupé des postes à l'Université Northwestern, Max-Planck-Institut für Mathematik à Bonn, l'Université de Californie à Irvine, l'Université de Californie à Los Angeles, l'Université de l'État de New York à Buffalo, et l'Institut pour l'étude avancée (IAS) de Princeton.

Dans un article publié dans le Duke Mathematical Journal en 2003 et élaboré conjointement avec P. Belkale, Brosnan a réfuté la conjecture «spanning tree » de M. Kontsevich, un lauréat de la médaille Fields 1998. La conjecture, qui fut motivée par la recherche des physiciens D. Broadhurst et D. Kreimer dans les propriétés analytiques des nombres des amplitudes de Feynman, était soutenue par des preuves empiriques considérables. Le travail de Belkale et Brosnan fut, par conséquent, entièrement inattendu et a un impact majeur dans ce domaine de recherche.

Récemment, Brosnan a fait des contributions importantes à la théorie de la dimension essentielle. L'idée de Brosnan d'élaborer une extension de la notion de la dimension essentielle aux champs algébriques a préparé le terrain pour des applications variées à la théorie des champs algébriques qui ont mené à plusieurs développements intéressants. Une des applications, dans un article à paraître dans les Annals of Mathematics, élaboré conjointement avec Z. Reichstein et A. Vistoli, est une limite inférieure inopinément forte sur le nombre de Pfister d'une forme quadratique avec un discriminant dégénéré et un invariant de Hasse-Witt.

Dans une autre veine, Brosnan et G. Pearlstein ont récemment apporté des contributions importantes à la théorie de Hodge. Dans un autre article qui paraîtra dans les Annals of Mathematics, ils montrent qu'une fonction non triviale, normale et admissible sur une courbe admet un nombre fini de zéros. Les fonctions normales font partie d'une démarche conjecturée pour démontrer la conjecture de Hodge, un des grands problèmes non résolus en mathématiques.

Prix de doctorat 2009 Doctoral Prize

Mark Braverman, University of Toronto

Anthony Lau, David Brydges and Mark Braverman

Mark Braverman's work is motivated by questions on how computability and complexity theory affects our understanding of real-world phenomena. The main part of his thesis contains ground-breaking work on the computability and complexity of Julia sets. An early version of some of his results appeared in the Journal of the AMS (joint with Michael Yampolsky). He has worked on projects in a wide range of areas of mathematics and computer science including stochastic processes, algorithms, game theory, machine learning, computer-aided verification and automated image processing. More recently, he has also worked on derandomization, pseudorandomness, and applications of information theory to communication complexity. Braverman's work has opened up new avenues of research in dynamical systems and computer science, and will be of lasting significance to both fields.

Mark Braverman won a gold medal at the 2000 International Mathematical Olympiad. He received his B.A. in Mathematics with Computer Science at Technion, in Israel. After studying mathematics at Yale, he completed a Ph.D. in computer science at the University of Toronto under the supervision of Stephen Cook. After postdoctoral work at Microsoft Research, New England, Braverman will take up a tenure line position at the University of Toronto in July 2010, jointly in mathematics and computer science.

Le travail de Mark Braverman est motivé par les questions sur l'impact de la théorie de la calculabilité et de la complexité sur notre compréhension des phénomènes de la vie réelle. La partie principale de sa thèse constitue une percée dans la compréhension de la calculabilité et de la complexité des ensembles de Julia. Une version préliminaire de certains de ses résultats est apparue dans le journal de l'AMS (avec Michael Yampolsky). Il a travaillé sur des projets qui couvrent une grande variété de domaines en mathématiques et en informatique comme les processus stochastiques, les algorithmes, la théorie des jeux, l'apprentissage automatique, la vérification informatique et l'imagerie automatisée. Plus récemment, il a travaillé aussi sur la dérandomisation, le pseudo-hasard et les applications de la théorie de l'information à la complexité de la communication. Le travail de Braverman a ouvert de nouveaux horizons de recherche dans les systèmes dynamiques et en informatique et aura une importance durable dans ces deux domaines.

Mark Braverman a gagné une médaille d'or à l'Olympiade Internationale de Mathématiques. Il a reçu son Baccalauréat en mathématiques et informatique à Technion, en Israël. Après l'étude des mathématiques à Yale, il a complété son doctorat en informatique à l'Université de Toronto sous la direction de Stephen Cook. Après un stage postdoctoral à Microsoft Research, New England, Braverman occupera un poste permanent en mathématiques et informatique à l'Université de Toronto en juillet 2010.

CALL FOR SITES
DEMANDES DE PROPOSITIONS D'EMPLACEMENTS

Interested in hosting a CMS Meeting?
The CMS Research Committee invites proposals from heads of departments interested in hosting a CMS Meeting. The winter meeting sites are confirmed to December 2010, the summer meeting sites are confirmed to June 2012.

Vous aimeriez accueillir une Réunion de la SMC?
Le Comité de la recherche de la SMC lance un appel de propositions aux chefs de départements intéressés à accueillir une Réunion de la SMC. Les hôtes des Réunions d'hiver sont confirmés jusqu'en décembre 2010, et ceux des Réunions d'été, jusqu'en juin 2012.

Dr. David Brydges, Chair
CMS Research Committee / Comité de recherches de la SMC
Department of Mathematics, University of British Columbia
121-1984 Mathematics Rd
Vancouver, British Columbia V6T 1Z2

Prix G. de B. Robinson 2009 G. de B. Robinson Award

Vladimir Manuilov, Moscow State University and Klaus Thomsen, Aarhus University

The 2009 G. de B. Robinson Prize is awarded to V. Manuilov and K. Thomsen for their paper "On the lack of inverses to C*–extensions related to property T groups" (Canadian Mathematical Bulletin 50 (2007), no. 2, 268-283).

Vladimir Manuilov and Klaus Thomsen

The Connes-Higson construction [A. Connes and N. Higson, C. R. Acad. Sci. Paris Sér. I Math. 311 (1990), no. 2, 101–106] is one of the most fundamental constructions of E-theory. In E-theory, utilizing the notion of asymptotic morphism, an extension is viewed as trivial when it is asymptotically split, and as semi-invertible when its direct sum with some other extension is trivial. In earlier work [J. Funct. Anal. 213 (2004), no. 1, 154–175], V. Manuilov and K. Thomsen show that when dealing with a suspension, every extension is semi-invertible.

The authors are able to modify an example investigated by S. Wassermann [Ann. of Math. (2) 134 (1991), no. 2, 423–431] to get an extension which is not invertible up to homotopy. This paper then provides the first example of a C*–algebra for which the semigroup of homotopy classes of extensions is not a group.

Vladimir Manuilov was born in Kishinev, USSR, in 1961 and obtained his Diploma in Mathematics in 1983 and his Ph.D. degree from Moscow State University in 1987, under the supervision of Alexander Mishchenko. He obtained a second higher doctoral degree in 2000, also from Moscow State University. He began teaching at the same university in 1995 and became a full professor in 2003. Vladimir Manuilov has lectured and worked in several other universities, particularly at the Harbin Institute of Technology (China). Two graduate students have obtained their Ph.D. degrees under Manuilov's supervision. He is also the author of 50 publications, including a monograph, with E. Troitsky, entitled "Hilbert C*–modules" which was published by the AMS in 2005. His main area of research has been on K-theory of C*–algebras. His collaboration with Klaus Thomsen on asymptotic homomorphisms and extensions of C*-algebras started in 1998 and has resulted in a series of 13 joint papers.

Klaus Thomsen received his Ph.D. from the University of Aarhus in 1985 and has been an Associate Professor since 1988. His main interests are in operator algebras and dynamical systems, and, in particular, the interplay between these two areas. On a more personal level he is married and the proud father of two sons and a daughter.

Le prix G. de B. Robinson 2009 est attribué à V. Manuilov et K. Thomsen pour leur article « On the lack of inverses to C*–extensions related to property T groups » (Bulletin Canadian de mathématiques 50 (2007), no. 2, 268-283).

La construction de Connes-Higson [A. Connes et N. Higson, C. R. Acad. Sci. Paris Série I Math. 311 (1990), no. 2, 101–106] est une des constructions fondamentales de la E-théorie. En ce qui concerne l'utilisation de la notion de morphisme asymptotique en E-théorie, une extension est considérée comme triviale lorsqu'elle est asymptotiquement scindée et comme semi-inversible lorsque sa somme directe avec une autre extension est triviale. Dans un autre ouvrage [J. Funct. Anal. 213 (2004), no. 1, 154–175], V. Manuilov et K. Thomsen montrent que lorsqu'il s'agit d'une suspension, chaque extension est semi-inversible.

Les auteurs ont été capables de modifier un exemple de S. Wassermann [Ann. of Math. (2) 134 (1991), no. 2, 423–431] pour obtenir une extension qui n'est pas inversible modulo une homotopie. Cet article fournit alors le premier exemple d'une C*–algèbre pour laquelle le semi-groupe des classes des homotopies des extensions n'est pas un groupe.

Vladimir Manuilov est né à Kishinev, URSS, en 1961 et a obtenu son diplôme de premier cycle en mathématiques en 1983 et son doctorat de l'Université de l'Etat de Moscou en 1987, sous la surveillance d'Alexandre Mishchenko. Il a obtenu un deuxième doctorat plus distingué en 2000, aussi de l'Université de l'Etat de Moscou. Il a commencé à enseigner à la même université en 1995 et est devenu professeur titulaire en 2003. Vladimir Manuilov a enseigné et travaillé dans plusieurs autres universités, en particulier à l'Institut de Technologie de Harbin (Chine). Deux étudiants de troisième cycle ont obtenu leurs diplômes doctoraux sous la surveillance de Manuilov. Il est également l'auteur de 50 publications, y compris une monographie, avec E. Troitsky, intitulé « Hilbert C*-modules » qui a été édité par l'American Mathematical Society en 2005. Son principal domaine de recherche est la K-théorie des C*–algèbres. Sa collaboration avec Klaus Thomsen sur des homomorphismes asymptotiques et des extensions des C*–algèbres a débuté en 1998 et a produit 13 publications conjointes.

Klaus Thomsen a obtenu son doctorat de l'Université d'Aarhus en 1985 et a été professeur agrégé depuis 1988. Ses principaux intérêts sont en algèbres d'opérateurs et les systèmes dynamiques, et, en particulier, l'interaction entre ces deux domaines. Sur un plan plus personnel, il est marié et heureux père de deux fils et une fille.

Prix Graham Wright pour service méritoire 2009 Graham Wright Award for Distinguished Service

Christiane Rousseau, Université de Montréal

Anthony Lau, Jacques Hurtubise, Christian Rousseau and Graham Wright

As President of the CMS from 2002 to 2004, Professor Rousseau displayed decisive leadership during a challenging time of reorganization for the society. She had earlier served as CMS Vice-President for Quebec. In 2000, she coordinated the campaign "Operation Metro 2000" during the World Mathematical Year 2000, making Montreal the first city in the world with mathematics posters in its subway. As Chair of the CMS International Affairs committee, she spearheaded an initiative to increase the presence of Canadian lecturers at the International Congress of Mathematicians (ICM 2010). She was Co-chair of the 2003 Canadian Mathematics Education Forum in Montreal, an event which brought to the forefront the issue of mathematics education in aboriginal communities, and whose success led to two subsequent fora in Toronto and Vancouver. She was the organizer for the Canadian side of the first Canada-France mathematics meeting in Toulouse in 2004, and helped assemble the mathematical community for the very large second Canada-France Mathematics Congress in Montreal in 2008. For the latter, she represented the CMS as a member of the scientific program committee and also served as local organizer. She coordinated two recent Canadian bids, attempting to bring the International Congress of Mathematicians back to Canada (the second prepared jointly with Bruno Rémillard).

This aligns with her numerous mathematical outreach activities, ranging from delivering lectures in schools and cegeps, to organizing student conferences, math camps or public lectures, all of which aim to stimulate public or student engagement with mathematics.

Christiane Rousseau recently led one of Canada's major mathematics research institutes as Interim Director of the Centre de recherches mathématiques (CRM). She joined the faculty at the Université de Montréal in 1979, and has served a term as Chair of the Department of Mathematics and Statistics. In 1999 she won the Abel Gauthier prize of the Association Mathématique du Quebec (AMQ).

Professor Rousseau is a distinguished mathematical researcher, working in the field of dynamical systems, with numerous publications in leading scientific journals. Her well received monograph Mathematics and Technology (co-authored with Yvan Saint-Aubin), describes a strikingly broad set of case-studies of the applications of mathematics, in a manner highly accessible to students.

Professor Rousseau's accomplishments span all aspects of her profession. Her dedication to the mathematical community and her outstanding efforts on behalf of mathematics make her an ideal recipient of the Society's highest award for service.

En tant que présidente de la SMC de 2002 à 2004, Christiane Rousseau a exercé un leadership déterminant durant une période cruciale de réorganisation de la Société. Auparavant, elle avait occupé le poste de vice-présidente pour le Québec. En 2000, elle a coordonné la campagne Opération Metro 2000 dans le cadre de l'année internationale des mathématiques (2000), ce qui a fait de Montréal la première ville au monde à avoir des affiches sur les mathématiques dans son métro. En tant que présidente du Comité des affaires internationales de la SMC, elle a mené une initiative visant à accroître la présence canadienne parmi les conférenciers au Congrès international des mathématiciens (CIM 2010). Elle a également coprésidé le Forum canadien sur l'enseignement des mathématiques 2003 tenu à Montréal, congrès qui a fait ressortir la problématique de l'enseignement des mathématiques dans les communautés autochtones, et dont la réussite a mené à la tenue de deux autres forums, l'un à Toronto, l'autre à Vancouver. Elle a aussi été l'organisatrice de la partie canadienne du premier congrès de mathématiques Canada-France à Toulouse en 2004, et elle a rassemblé la communauté mathématique pour accueillir un second congrès franco-canadien d'une grande ampleur à Montréal en 2008. À cette occasion, elle a également représenté la SMC en tant que membre du Comité du programme scientifique et organisatrice locale. Elle a en outre récemment coordonné deux fois la candidature du Canada visant à accueillir de nouveau au Canada le Congrès international des mathématiciens (la seconde fois avec Bruno Rémillard).

Ces activités s'ajoutent aux nombreuses activités d'éducation mathématique auxquelles elle a touché, qu'il s'agisse de conférences dans des écoles et des cégeps, de colloques étudiants et de camps mathématiques ou de l'organisation de conférences publiques, toutes des activités visant à stimuler l'intérêt du public et des étudiants pour les mathématiques.

Récemment, Christiane Rousseau a dirigé l'un principaux instituts mathématiques du pays en tant que directrice intérimaire du Centre de recherches mathématiques (CRM). Elle s'est jointe au corps professoral de l'Université de Montréal en 1979, où elle a assuré la direction du Département de mathématiques et de statistique pendant un mandat. En 1999, elle a reçu le prix Abel-Gauthier de l'Association mathématique du Québec (AMQ).

Christiane Rousseau est une chercheuse émérite qui travaille dans le domaine des systèmes dynamiques et qui compte à son actif de nombreuses publications dans de grands journaux scientifiques. Son ouvrage Mathématiques et Technologie (avec Yvan Saint-Aubin), louangé par la critique, décrit un très large éventail d'applications mathématiques d'une façon très accessible pour les étudiants.

Ses réalisations couvrent tous les aspects de sa profession. Son attachement envers la communauté mathématique et son travail exceptionnel pour la cause des mathématiques en font une lauréate de choix pour le prix de service méritoire le plus prestigieux de la Société.

Concordia University, Montreal, QC

Promotions: Chantal David (Full Professor, June 1, 2009); Adrian Iovita (Full Professor, Jun. 1, 2009).

Appointments: Nadia Hardy (Assistant Professor, tenure track, Mathematics Education, Jul. 1, 2009); Alexander Hariton (Research Assistant Professor, Sep. 1, 2009, Mathematical Physics); Naamane Laib (Research Associate Professor, June 29, 2009, Statistics); Karol Palka (Research Assistant Professor, Sep. 1, 2009, Algebraic Geometry and String Theory); Aleix Prats Ferrer (Research Assistant Professor, Sep. 1, 2009, Mathematical Physics); Subrata Shyam Roy (Research Assistant Professor, Sep. 1, 2009, Mathematical Physics); Victor Enolskii (Visiting Scholar, Mathematical Physics, Sep. 1, 2009).

Retirements: William Byers (Professor, Dec. 31, 2008); Joel Hillel (Professor, Jun. 1, 2009).

Visitors: Isiaka Aremua (Benin, Math Physics & Differential Geometry, Sep. 1, 2009-Feb. 28, 2010); Christian Klein (France, Mathematical Physics, Sep. 14-18, 2009); Peter Pfaffelhuber (U.S.A., Probability Theory, Sep. 3,4,14, & 16, 2009); Glenn Stevens (U.S.A., Number Theory, Oct. 29-Nov. 27, 2009); Tirthankar Bhattacharya (India, Mathematical Physics, Sep. 20-27, 2009); Xiaoyong Wu (Canada, Statistics, Oct. 15-Nov. 15, 2009).

University of Guelph, Guelph ON

Promotions: Monica Cojocaru (Associate Professor, Jul. 1, 2008); Jack Weiner, (Professor, Jul. 1, 2008); Allan Willms (Associate Professor, Jul. 1, 2009); Gerarda Darlington (Professor, Jul. 1, 2009).

Appointments: Zeny Feng (Assistant Professor, Statistics, May 2008); Bei Zeng, (Assistant Professor, Mathematics, Sep. 2010).

Resignations: Antoine Mellet; Ulrich Horst.

Awards/Distinctions: Chris Bauch (Early Researcher Award, 2008); David Kribs (NSERC Accelerator supplement, 2008); Herb Kunze (Ontario Confederation of University Faculty Associations Teaching Award, 2008); Monica Cojocaru (Canada-US Fulbright Visiting Research Chair, to be held in Winter 2010 at UC Santa Barbara).

McMaster University, Hamilton, ON

Promotions: Bartosz Protas (Assistant Professor, Jul. 1, 2009).

Resignation: Romyar Sharifi.

Awards/Distinctions: Faculty: Lia Bronsard (Krieger-Nelson Prize, 2010); Walter Craig (Killam Research Fellowship, 2010 & 2011); Postdoctoral Fellow: Raluca Eftimie (CAIMS Cecil Graham Doctoral Dissertation Award, 2009).

University of Windsor, Windsor, ON

Other News: S. Ejaz Ahmed: Named a Fellow of the American Statistical Association in Aug. 2009.

University of New Brunswick, Saint John, NB

Appointments: George Stoica (Chair of Mathematical Sciences Department, Aug. 1, 2009).

Resignation: Keith De'Bell (Jul. 31, 2009).

University of Saskatchewan, Saskatoon, SK

Appointments: Salma Kuhlmann (Adjunct Professor, July 1, 2009 to Jun. 30, 2014, Pure Mathematics); Lisa Lix (Associate Member, Sep. 2008 to Jun. 2013, Interdisciplinary: Statistics, Psychology, Human Ecology); Cristina Stoica (Adjunct Professor, Sep. 2009 to Jun. 2013, Applied Mathematics).

Visitors: Marina Tvalavadze (Memorial University, PIMS Post-doctoral Fellowship, Pure Math, Sep. 1, 2009 to Aug. 31, 2010); Guichang ZHANG (Shandong University (China), Probability and Statistics - Queuing Theory, Sep. 1, 2009 to Aug. 31, 2010); Peter Miller (University of Michigan, Applied Math, Sep. 19 - 23, 2009): Hans Lundmark (Linkoping University (Sweden), Applied Math, Aug. 20, 2009 to Sep. 10, 2009); Josnei Antonio Novacoski (University of Sao Paolo (Brazil), Pure Math, Oct. 8, 2009 to Nov. 6, 2009); Michael Brannan (Queen's University, Pure Math, Nov. 13-19, 2009); Mahya Ghandehari (University of Waterloo, Pure Math, Oct. 24, 2009 to Nov. 29, 2009).

Université de Sherbrooke, Sherbrooke (Québec)

Retraite : Pedro Morales (professeur , septembre 2009).

Visiteurs : Djilali Ait Aoudia (postdoc, statistique, janvier à juin 2009); David Smith (postdoc, algèbre, janvier à août 2009); Julie Dionne (postdoc, algèbre, janvier à avril 2009);Grégoire Dupont (postdoc, algèbre et géométrie, depuis septembre 2009);Marju Purin (Syracuse, algèbre, avril à juin 2009);Marie Denis (Montpellier, statistique, mai à juillet 2009);Juan Carlos Bustamante (Quito, algèbre, juin à août 2009); Diane Castonguay (Goias, algèbre, juillet à août 2009);Patrick Le Meur (Cachan, algèbre, juin à août 2009); Christian Klein (Bourgogne, mathématique physique, septembre 2009); Liang Wang (Northwestern Polytechnical University, statistique, novembre 2009).

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 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'addresse suivante : notes-lettres@smc.math.ca.

EDUCATION NOTES

By John Grant McLoughlin *and* Jennifer Hyndman
University of New Brunswick *University of Northern British Columbia*

Welcome to the first column of the Education Notes section of the CMS Notes under our co-editorship. Your comments, suggestions, and contributions are encouraged. Please write to John (johngm@unb.ca) or Jennifer (hyndman@unbc.ca) with your ideas.

Here we present the plenary talk by Harley Weston offered at *Sharing Mathematics: A Tribute to Jim Totten*, a conference mentioned in some recent issues. Harley Weston is a Professor Emeritus at University of Regina and the 2008 recipient of the Adrien Pouliot Award. Outreach, teaching, and mathematical problem solving were the three focal points in honouring Jim Totten's work. Harley's talk focuses attention on Math Central (mathcentral.uregina.ca) as an example of outreach.

Some Initiatives at Math Central

Harley Weston, University of Regina

Personal note

It was an honour to be asked to speak at this celebration of the life of Jim Totten. I first met Jim in September of 1967 when he was a student in my Point Set Topology class in his last year of undergraduate studies. I have followed his career over the years and in particular his outreach activities. He will be missed by his colleagues and the many students whose lives he touched.

An overview of Math Central

Math Central (mathcentral.uregina.ca) is a bilingual mathematics education website that was initiated in September 1995 by three faculty members at the University of Regina, Denis Hanson of the Department of Mathematics and Statistics, Vi (Mhairi) Maeers from the Faculty of Education, and myself. Initial support was received from the Government of Saskatchewan and the University of Regina. Subsequently in 2005 the Imperial Oil Foundation granted five years of funding to maintain and expand the site.

A number of services are available on Math Central.

The Resource Room

The Resource Room is a collection of teaching resources for mathematics teachers. The resources are in a database that can be searched by keyword or browsed by curriculum strand. For example, a search for the keyword *aboriginal* brings up a number of items, the most recent of which is a collection of ideas for lessons focused on the atlatl, an ancient weapon.

Quandaries and Queries

This is the most active part of the site. Quandaries and Queries receives mathematics questions from students, teachers, parents and the general public. Approximately 2000 questions arrive per year, 60% from the US, 12% from Canada and the remainder from people in other parts of the world who can ask their questions in either English or French. Responses to the questions are generated by university faculty, university students, teachers and others. These responses, which are stored in a searchable database, usually consist of hints, a solution to a similar problem or some other technique which attempts to lead the questioner to his or her own solution. As expected most of the questions come from students, approximately 60%, but a surprise has been that almost 20% come from the general public. Some of these questions could be classified under the heading of general mathematical literacy, for example questions about percentages, the number of cubic yards of concrete needed to pour a driveway and lottery questions. Many however are more sophisticated such as scheduling foursomes for a golf vacation, calculating the area of an odd shaped lot and helping an artist in the design of a three dimensional geometric object.

Mathematics with a Human Face

Mathematics with a Human Face is a joint project with Judith McDonald from Washington State University and partly funded by an Endowment Grant from the Canadian Mathematical Society. The first phase was to produce a poster and website to illustrate the richness and diversity of careers of mathematicians. The poster titled Mathematicians@Work has been distributed to schools, science centres and libraries across the country and through the website to teachers around the world. Mathematicians continue to be added to the website but the poster is "sold out" and plans are underway to produce a second version. The second phase of the Human Face project was the production of a brochure on careers of mathematicians to be distributed at teachers' conferences, meetings of school counselors, enrichment/outreach activities and similar events. The third phase is to have an aboriginal focus and is the subject of one of the new initiatives at Math Central in the summer of 2009.

Problem of the Month

In 2000 the Problem of the Month was initiated by Chris Fisher and Claude Tardif. For nine months of the year a challenge problem is presented in English, French and Spanish. Submitted solutions are posted at the beginning of each subsequent month.

Math Beyond School

Math Beyond School is a collection of articles highlighting places where mathematics is used in non-school situations. It is an attempt to address the question "When will I ever use this?" The database can be browsed by title or grade level and searched by keyword. This section of Math Central will contain the second new initiative in the summer of 2009.

Outreach

The outreach database is a joint initiative with the Canadian Mathematical Society. It is an attempt to list all mathematics outreach activities across the country. In March 2009 a brochure highlighting this database was produced and is being distributed at teachers' conferences, enrichment/outreach activities and similar events across the country.

New Initiatives in the Summer of 2009

Mathematics and Indigenous People

This is the beginning of phase three of the Human Face project. The objective is to produce mathematics teaching resources based on conversations and interviews with individuals from the aboriginal community and the mathematical ideas that appear in their work, art, culture, recreation and everyday lives. The resources will be primarily for children in lower grades who are more apt to listen and watch than read and thus the individual profiles will be primarily in audio and video formats. Whenever possible the featured aboriginal people will include elementary school children. The mathematical topics identified through the interviews will be developed into teaching resources for use by teachers and students. To date three interviews/activities have been captured and preparation of the video clips and teaching resources are being prepared.

Tipi Raising with Glen Anaquod

The video clips are a demonstration of a tipi raising done with a group of grade five and six students from an inner-city school in Regina. Elder Glen Anaquod led the students through the tipi raising and shared with the students some traditional Saulteaux teachings.

Birch Bark Biting with Rosella Carney

Birch bark biting is an art form produced by folding a paper-thin sheet of birch bark and placing a design on it through perforating the birch bark by biting. The artist, Rosella Carney, is a Cree woman from La Ronge, Saskatchewan. Rosella is also a Cree language instructor and her interview included a discussion of the number words in Cree.

Figure 1

Figure 1: A birch bark biting depicting bees around a flower. Rosella Carney

An Interview with Cassandra Opikokew

Cassandra Opikokew graduated from the School of Journalism at the University of Regina at the Spring convocation in 2009. She talks about her experiences as a journalism student and her early years in Meadow Lake, Saskatchewan.

Industrial Problem Solving Workshop

Each year the Pacific Institute for the Mathematical Sciences (PIMS) holds an Industrial Problem Solving Workshop (IPSW). The aim of IPSW is to create a mutually beneficial link between researchers in industry and academic mathematicians. Research workers with industrial and commercial concerns are invited to present one of their current technical problems. Leading specialists from the academic community study these problems in teams during the week-long workshop, and present the results of their study back to the industrial participants at the end of the week. During the week preceding the IPSW, PIMS hosts the Graduate Industrial Mathematics Modelling Camp (GIMMC). The purpose of the camp is to mentor graduate students in mathematical modelling methods by experts in the field. The mentors are experienced in industrial mathematics and work in either an academic or an industrial setting.

In the summer of 2009, a student was hired to attend the 2009 IPSW and GIMMC to observe the problems being presented and mathematical techniques used to approach the problems. Once the modelling camp and workshop are completed, the student will write a description of some of the problems presented and mathematical techniques used, at a level that can be understood by a high school student. These descriptions will appear in the Math Beyond School section of Math Central.

Conclusion

The resources and services on Math Central continue to grow. Students, teachers, parents and the public are encouraged to use what is there and make suggestions for expansion and improvements.

50TH INTERNATIONAL MATH OLYMPIAD REPORT

By Dorette Pronk
Dalhousie, Halifax

Although their backgrounds and training opportunities in the past may have been very diverse, this year's IMO team fostered a true team spirit from the first day of the summer training camp. It was a great pleasure to be the leader of a diverse yet cohesive team whose members knew how to brainstorm together, solve problems, and challenge each other.

50th International Math Olympiad Team Members and Leaders

This year's students were Yu (Robin) Cheng (Pinetree Secondary School, Coquitlam, British Columbia); Jonathan Schneider (University of Toronto Schools, Toronto, Ontario); XiaoLin (Danny) Shi (Sir Winston Churchill High School, Calgary, Alberta); Hunter Spink (Western Canada High School, Calgary, Alberta); Chen Sun (A.B. Lucas Secondary School, London, Ontario); and Chengyue (Jarno) Sun (Western Canada High School, Calgary, Alberta); selected from among more than 200,000 students in grades 7 to 12 (plus CEGEP) who participated in local, provincial and national mathematics contests. Some of them have only recently immigrated to Canada while others were born in this country or moved here a long time ago.

We started this year's summer training camp at the University of Calgary. As in years past Bill Sands had done a wonderful job as our host in organizing our rooms in the residence and our meals on campus. Adrian Tang did a great job in assisting him in this, particularly with organizing off-campus meals. Adrian was also of invaluable assistance in providing and choosing problems for the mock Olympiads, making sure that the students would find new challenges at each mock Olympiad. Even though he was supposed to remain focused on writing his thesis, it was clear that Adrian was not going to miss this camp, and the students definitely benefited from his input on various levels. Other leaders for this camp were Christopher Small, as IMO Committee Chair; David Arthur, as Deputy Leader; and, Jacob Zimmerman, as Deputy Leader Observer. This was our last year with Graham Wright as Executive Director of the CMS and we took our time to express our gratitude to him for all the work he has put into the organization and funding of the IMO training and participation by Canadian high school students over the years. We were probably the last team to be sent off by Graham, but one never knows…

After the send-off reception, the team left for Banff, driven by Adrian Tang. Our training in Banff was held at the BIRS Center, which is part of the Banff Center. The next day we were joined by a group of sleepy Mexican students. The Mexican team had arrived at 1 AM, but managed to make it to the classroom before the Canadians.

It was again a real treat to be doing mathematics in such a beautiful environment, with buffet meals three times a day. To balance those meals we had to make sure that besides mathematics there was also time scheduled for running, swimming, basketball, and hiking. However, many times the students were so engaged in the problems they were solving or discussing that it was hard to convince them that it was time for other activities such as meals and sports. We had a mock competition every other day so that the students were getting more familiar with the stress accompanying a competition setting and learned to write in the rigorous style demanded by the IMO.

During our time in Banff we did not only conquer math problems. We also organized two hikes to experience some real mountain peaks. Our first hike was from Lake Louise up to the Lake Agnes Tea House. The trail mix that Brenda, the BIRS station manager, had so generously supplied to us was shared with the mountain chipmunks who rewarded us by posing for some very cute pictures. Our second hiking trip was under the guidance of Peter Svengrowski, a member of the Calgary Math Department. We hiked up Johnston Canyon to the inkpots. Although some people at the bottom of the trail claimed that a grizzly bear had been spotted close to the inkpots, our team did not see it, which is probably just as well.

As the team leader, I had the privilege of leaving early for Germany to help select the problems for the contest from the shortlist prepared by the German committee. After a long but uneventful journey I arrived at the airport in Bremen without my box of Cruxes to give away, but that was only convenient. Now the airline would bring them to the hotel and I would not need to carry them anymore. A group of leaders from other countries had already gathered in the lobby and as I joined them we were taken to our bus by a couple of friendly math graduate students from Jacobs University Bremen. The bus took us to our place of seclusion, the Atlantic Hotel Sail City in Bremerhaven, next to the estuary of the river Weser in the harbour area on the North Sea.

From then on the chair of the jury, Prof. Dr. Hans-Dietrich Gronau (and his bell) ensured that everything was organized with academic timing. Upon arrival at the hotel he supplied us personally with a shortlist and informed us that he had ordered the rainy windy weather outside so that we could spend our time solving these problems before we would get solutions the next afternoon. There was a great atmosphere of discussing problems and brainstorming about leads to solutions among the leaders, just as I had observed among our team members in Canada.

We received the solutions the next afternoon together with our forms for the "Beauty Contest". No, we were not voting for the most handsome leader or observer, but rather for the difficulty and beauty of the proposed problems. We had been supplied with a set containing some truly remarkable problems, and we realized that we had to be careful that this would not become a competition with only hard problems, especially given the fact that we had several countries that would be participating for the very first time. I think that we did succeed in doing this, although problem number 6 turned out to be much harder for the students than most of us leaders had anticipated.

After we had chosen the problems there was the joy of deciding on the final wording. Problem number one went through a complete transformation from beginning as a problem about gifts being given to certain people to becoming a pure algebra problem. Some people, including myself, regretted this change as it made the problem easier and less interesting. Other problems, such as number six about the grasshopper, required creative translations into the languages of countries where people are not familiar with grasshoppers.

This was my first year as team leader and it was a great opportunity to meet with leaders from other countries and discuss the issues they face in training their IMO-teams and in teaching mathematics in general. Several leaders from countries in the Middle East and in Africa asked to stay in touch so that they might be able to obtain more training materials as well as continue our discussions on how to train their students more effectively and how to keep them motivated.

There are no easy solutions to these issues. For some countries the question is how to keep students motivated and involved when there is no running water on the campus and there may just be more urgent things on their minds.

We also talked about the low number of female students involved in these competitions. Is there a cultural problem, do girls not feel welcome? Some of the South American leaders comment that girls are well represented and perform very well at the competitions for younger students, but when they grow older they seem to have too many other interests

to invest the time in continued training. I would still like to see more on this, since it has always been my impression that our contestants for the IMO are involved in many other things besides mathematics.

The entertainment during the opening ceremonies featured break dancing by "The Breakmathix" as well as mathematical entertainment by Prof. Dr. Albrecht Beutelspacher on "Calculating without a calculator". Angela Merkel, the Chancellor of the Federal Republic of Germany, who was once a successful IMO-participant herself, welcomed us to the land of Euler and Gauss by video address. Another essential part of the opening ceremonies is always the parade of the teams. In total there were 565 contestants from 104 countries.

There were a couple of moments that deserved a special round of applause. The youngest contestant was Raúl Chávez Sarmiento from Peru, at the age of 11. The United Arab Emirates team were noted not only for being the country's first appearance at an IMO, but also by being all female. This year there were 59 female contestants, bringing that number over the 10% mark for the first time in history.

The next day was the first day of the actual competition. Our math Olympians were spending their four and a half hours working on the first three problems. There were an unusually high number of questions for the jury, mostly related to notation that involved a subscript of a subscript in a problem about sequences. (We had discussed this issue the day before, but all alternatives seemed to be more confusing.) On the evening of the first day it was with great anticipation that I picked up the work of our students. Each one of them had performed well on the first two problems and made at least one useful observation for problem number 3. Moreover, Robin had made a serious attempt at solving this problem which ended up earning him 3 points and Danny had an almost complete solution for 6 points.

After we had answered the students' questions on the second day it was time for us to leave our lovely 5 star hotel with the amazing view over the harbour and join the students in their residence at Jacobs University. It was a bit of a shock for some to return to eating cafeteria food and sleeping in bedrooms without air conditioning, and with mosquitoes. However, being able to interact easily with the students and discuss their solutions in more detail was definitely worth it. And the coffee shop right next to the entrance to the campus took care of the needed caffeine at just about any time of the day.

The on-campus area where the coordinators were located was strictly off-limits for contestants. Most of our conversations with the coordinators proceeded as expected. They were very grateful when we provided a diagram to accompany a fairly creative geometry solution that had been presented without a single diagram (we shall not mention names) and we were grateful for the time we had spent talking with the students and studying their solutions.

However, one of our students ended up consistently receiving lower marks than what we had expected. We knew that he had understood the problems and their solutions, but unfortunately his solutions are written in such a sloppy way that they do not convince the coordinators, especially on the easier problems. This is a lesson to take home for future teams and their leaders: if a problem is hard, there is an IMO tradition of not subtracting marks if small details are missing; however, if a problem is relatively easy, such as number 1 this year, the coordinators may require that every detail be there in order to deserve a 7.

On the third day, we celebrated the fact that this is the 50th IMO. The first IMO was organized in Romania in 1959; it has been held every year since with the exception of one year. To celebrate this milestone the German organizers invited six former IMO gold medalists who have gone on to illustrious mathematical careers: Béla Bollobás, Timothy Gowers, László Lovász, Stanislav Smirnov, Terence Tao (who won his IMO gold medal at age 13 and received the Fields medal at age 31), and Jean-Christophe Yoccoz.

Our excursion the next day took us to the island of Wangerooge, one of the places Gauss used to make his measurements to determine the curvature of the earth. Our train was welcomed on the island by people waving at us and applauding, and at the end they serenaded us. The students participated in a Sudoku scavenger hunt that involved clues from all over the island. One of the final solutions? Mathematigerin ("female math tiger", but sounding very close to "female mathematician" in German), the name of the mascot of the German team.

On the last day, the long awaited medal ceremonies took place. There were three exceptional individual performances. Makoto Soejima (Japan) and Dongyi Wei (China) were tied for first place with perfect scores of 42; Lisa Sauermann (Germany) scored 41.

The medals at each IMO are awarded in such a way that half of the contestants receive medals and the proportions are, gold : silver : bronze = 1 : 2 : 3. This year the cutoffs were 32 points for Gold, 24 for Silver and 14 for Bronze. This meant that our students received the following medals: Danny received gold, Robin, Hunter and Chen silver, and Jonathan and Jarno bronze. Jarno's bronze medal was so close to silver… he had 23 points.

Just like the Olympics, the IMO is an individual contest, but informally team scores are added up and are the subject of keen rivalry. This year's winner was, as usual, China, with Japan in an unprecedented second place. Russia was third, with the two Koreas fourth and fifth, and the United States sixth. Both Koreas had three gold medalists and were called to the stage together to receive their awards. This evoked a large round of applause.

Canada ended in 18th place with 158 points in total, first among the Commonwealth countries and a single point ahead of the United Kingdom. Australia followed in 23rd place.

All this would not have been possible without the sponsorship of the Imperial Oil Foundation, the Canadian Mathematical Society, and many other sponsors from academia, government and business.

RÉUNION D'ÉTÉ SMC 2010 CMS SUMMER MEETING

June 4 - 6, 2010
University of New Brunswick - Fredricton
www.cms.math.ca/Events

The Canadian Mathematical Society (CMS) and the University of New Brunswick - Fredericton invite the mathematical community to the 2010 CMS Summer Meeting. The program will include ten plenary and prize lectures, and a wide variety of sessions.

All scientific talks and social events will take place at the University of New Brunswick in Fredericton; the registration desk will be located in the lobby of 'Head Hall'.

La Société mathématique du Canada (SMC) et l'Université du Nouveau-Brunswick à Fredericton invitent la communauté mathématique à la Réunion d'été 2010 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 à l'Université du Nouveau-Brunswick. le kiosque d'inscription principal sera situé dans l'entrée du pavillon 'Head Hall'.

Scientific Directors / Directeurs scientifiques
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

Plenary Lectures / Conférences plénières
HEA Eddy Campbell (UNB)
Gerda de Vries (Alberta)
Idun Reiten (Norwegian Univ. of Science and Technology)
Gunther Uhlmann (Washington)
Henri Moscovici (Ohio State)
Kristin Schleich (UBC)

Public Lecture / Conférence publique
Jason Brown (Dalhousie)

The following sessions have been confirmed for this conference:
Les sessions suivantes ont été confirmées :

Algebraic Combinatorics
Combinatoire algèbrique
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)

Geometric Topology
Topologie géométrique
Org: Ryan Budney (Victoria), Andy Nicas (McMaster)

Graph Theory
Théorie des graphes
Org: Stephen Finbow (St. Francis Xavier), Shannon Fitzpatrick (UPEI)

Group Actions and Their Invariants
Actions de groupes et leurs invariants
Org: HEA Eddy Campbell (UNB), Jianjun Chuai (MUN), David Wehlau (RMC; Queen's)

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 Perspectives on Quantum Theory and Gravity
Perspectives mathématiques sur la théorie quantique et la gravitation
Org: Jack Gegenberg, Viqar Husain (UNB)

Mathematics Education
Éducation mathématique
Org: Alyssa Sankey (UNB)

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

Wednesday | Mercredi June 2 juin	**Friday | Venredi** June 4 juin	**Saturday | Samedi** June 5 juin	**Sunday | Dimanche** June 6 juin
18:30-22:00 Executive Committee Meeting	8:00 – 16:00 - **Registration** 9:30 – 16:00 - **Exhibits**	8:00 – 16:00 - **Registration** 9:30 – 16:00 - **Exhibits**	8:00 – 14:00 - **Registration**
	8:15 – 8:30 **Opening/Ouverture**	8:00 – 10:00 **Scientific Sessions**	8:00 – 9:30 **Scientific Sessions**
	8:30 – 9:15 **Plenary Lecture**		9:30 - 10:15 **Plenary Lecture**
	9:30 - 10:00 Break	10:00 - 10:30 Break	10:15 - 10:30 Break
Thursday | Jeudi June 3 juin	10:00 – 11:30 **Scientific Sessions**	10:30 – 11:15 **Plenary Lecture**	10:30 – 11:15 **Plenary Lecture**
11:00 AM – 13:00 Development Group Luncheon (UNB) 13:30 – 18:30 Board of Directors Meeting (UNB)	11:30 – 12:15 **Prize Lecture**	11:30 – 12:15 **Prize Lecture**	11:30 – 12:15 **Prize Lecture**
	12:30 – 14:00 Break Student Panel	12:30 – 14:00 Break CMS AGM	12:30 – 14:00 Break
	14:00-15:00 **Scientific Sessions**	14:00-15:00 **Scientific Sessions**	14:00-16:30 **Scientific Sessions**
	15:00 – 15:45 **Plenary Lecture**	15:00 – 15:45 **Plenary Lecture**	
	15:45 – 16:00 Break		
	16:00– 18:00 **Scientific Sessions**	16:00 – 17:30 **Scientific Sessions**	
18:00-19:00 **Jason Brown and Band** **Public Lecture**		18:30 - 19:00 **Reception (cash bar)**	
19:00-20:30 **Nelson Education Reception**		19:00 – 22:00 **Banquet**	(updated January 2, 2010)

ANNOUNCEMENT

A Celebration of Mathematics and the 40th Anniversary of Jeffery Hall
May 14-15, 2010

In the post-Sputnik era, Canada and the United States faced an immense challenge to bring the scientific research levels of both nations to a higher standard. In the mathematical field, this challenge was met in Canada by several mathematicians, the most notable being Professor R.L. Jeffery of Queen's University. By strengthening the Canadian Mathematical Society and by organizing the summer research seminars held at Queen's University during the 1950's and 1960's, Professor Jeffery was instrumental in raising the level of mathematical research in Canada. Jeffery Hall, which presently houses the Department of Mathematics and Statistics at Queen's University, is named after him. This building was 40 years old in October, 2009.

The world now faces a similar challenge to the one Professor Jeffery faced in the 1950's. To keep the importance of mathematical research in the forefront of our scientific consciousness, as well as to commemorate the 40th anniversary of Jeffery Hall and honour Professor Jeffery, the Department of Mathematics and Statistics at Queen's University is planning a two-day celebration from May 14-15, 2010. Several presentations are planned. Professor Sir David Cox of the University of Oxford, Professor Hale Trotter of Princeton University and Professor Gerhard Frey of the University of Duisburg, Essen have already agreed to speak. A lecture surveying the development of research in mathematics in Canada, as well as R.L. Jeffery's role in the Canadian Mathematical Society, is also planned. It is anticipated that this celebration will galvanize and reinforce the mathematical talent in Canada to meet the present scientific and technological challenges. It is expected that many alumni and others will attend.

If you would like to be put on the mailing list to receive more information, please write to:

by mail: Dr. A. M. Herzberg FRSC
Department of Mathematics
Queen's University
Kingston, Ontario
K7L 3N6

by e-mail: Miss A. Burns burnsa@queensu.ca

FROM THE PRESIDENT'S DESK *continued*

state of the institutes; unique challenges for small universities; the future of MITACS and BIRS; relations with NSERC; and the impact of NSERC program changes on mathematical research.

I would like to welcome our 4 new Vice Presidents: Cathy Baker (Mount Allsion), Pengfei Guan (McGill), Micheal Lamoureux (Calgary) and Kumar Murty (Toronto).

At the end of December we had 897 individual members, up from 868 a year ago. We also had 62 institutional members, bringing our total to 959, which is close to our membership target of 1,000 by the end of the year. So if you are not yet a member, please join us. If you are a member, please convince a colleague to join.

Over the next six months the Society will be sponsoring a review of the state of mathematics in Canada. The ad hoc committee is still being formed and it will be chaired by Jacques Hurtubise, our president elect. The remit of the committee will be fairly wide, covering teaching, research, outreach, institutional issues and our country's position on the international scene. Submissions and comments are welcome from members of the Society; please send them to Johan Rudnick, Executive Director of CMS: jrudnick@cms.math.ca or Jacques Hurtubise: Jacques.hurtubise@mcgill.ca

In 2010, the CMS Summer Meeting will be held in Fredericton, New Brunswick. The 2010 Winter Meeting will be hosted by the University of British Columbia. I look forward to seeing many of you there.

As my term as president of the Canadian Mathematical Society will come to an end in June, I would like to welcome our new President-Elect Jacques Hurtubise (McGill University) who will take over as President on July 1, 2010. I am certain that the Society will greatly benefit from his leadership.

I would like to thank all members of the Society, executives, and members of the board for their warm support.

I would also like to thank all the staff of the CMS office for their hard work and for their patience and understanding during the past two years. Thank you!!!

Wish you all a very Happy New Year!

CALL FOR NOMINATIONS / APPEL DE MISES EN CANDIDATURE

Prix Adrien-Pouliot Award 2010

Nous sollicitons la candidature de personnes ou de groupe de personnes ayant contribué d'une façon importante et soutenue à des activités mathématiques éducatives au Canada. Le terme « contributions » s'emploie ici au sens large; les candidats pourront être associés à une activité de sensibilisation, un nouveau programme adapté au milieu scolaire ou à l'industrie, des activités promotionnelles de vulgarisation des mathématiques, des initiatives, spéciales, des conférences ou des concours à l'intention des étudiants, etc.

Les candidatures doivent nous être transmises via le « Formulaire de mise en candidature » disponible au site Web de la SMC : www.cms.math.ca/Prix/info/ap. Pour garantir l'uniformité du processus de sélection, veuillez suivre les instructions à la lettre. Toute documentation excédant les limites prescrites ne sera pas considérée par le comité de sélection.

Des exemplaires des dossiers de candidature des personnes non retenues pour le prix Adrien-Pouliot sont conservés au bureau administratif pendant trois ans (deux concours après la mise en candidature initiale). Il est donc possible de renouveler une candidature en manifestant simplement son intérêt à cet égard avant la date limite, et en n'envoyant que les documents qui ont changé depuis l'année précédente. Les dossiers de candidature doivent parvenir au bureau de la SMC en six exemplaires, au plus tard le **30 avril 2010**, à l'adresse ci-dessous.

Nominations of individuals or teams of individuals who have made significant and sustained contributions to mathematics education in Canada are solicited. Such contributions are to be interpreted in the broadest possible sense and might include: community outreach programmes, the development of a new program in either an academic or industrial setting, publicizing mathematics so as to make mathematics accessible to the general public, developing mathematics displays, establishing and supporting mathematics conferences and competitions for students, etc.

Nominations must be submitted using the Nomination Form available from the CMS Web site at: www.cms.math.ca/Prizes/info/ap. To assure uniformity in the selection process, please follow the instructions precisely. Documentation exceeding the prescribed limits will not be considered by the Selection Committee.

Copies of applications for those nominees not selected for the Adrien Pouliot Award are maintained at the Executive Office for a period of three years (two more competitions from the time of the original nomination). In this case individuals can have their nomination renewed by simply indicating their wish to do so by the deadline date, and only updated materials need be provided. Nominations must be received. Nominations must be received by the CMS Office no later **April 30, 2010**. Please send six copies of each nomination to the address given below.

The Adrien Pouliot Award / Le Prix Adrien-Pouliot
Canadian Mathematical Society / Société mathématique du Canada
105-1785 Alta Vista Drive
Ottawa, ON K1G 3Y6 Canada

Graham Wright Award for Distinguished Service
Prix Graham-Wright pour service méritoire 2010

In 1995, the Society established this award to recognize individuals who have made sustained and significant contributions to the Canadian mathematical community and, in particular, to the Canadian Mathematical Society. The award was renamed in 2008, in recognition of Graham Wright's 30 years of service to the Society as the Executive Director and Secretary.

Nominations should include a reasonably detailed rationale and be submitted by **March 31, 2010**, to the address below.

En 1995, la Société mathématique du Canada a créé un prix pour récompenser les personnes qui contribuent de façon importante et soutenue à la communauté mathématique canadienne et, notamment, à la SMC. Ce prix était renommé à compter de 2008 en hommage de Graham Wright pour ses 30 ans de service comme directeur administratif et secrétaire de la SMC.

Pour les mises en candidature prière de présenter des dossiers avec une argumentation convaincante et de les faire parvenir, le **31 mars 2010** au plus tard, à l'adresse ci-dessous :

Selection Committee / Comité de sélection
Graham Wright Award for Distinguished Service / Prix Graham-Wright pour service méritoire
Canadian Mathematical Society / Société mathématique du Canada
105-1785 Alta Vista Drive
Ottawa, ON K1G 3Y6 Canada

DU BUREAU DU PRÉSIDENT

La Société mathématique du Canada entre dans une nouvelle ère, sans la présence de Graham Wright.

J'aimerais d'abord remercier Graham Wright de ses 30 années de service dévoué envers la Société mathématique du Canada. Graham est demeuré à la SMC jusqu'à la fin de 2009 en tant que consultant, pour veiller à ce que la transition se fasse en douceur. Nous lui souhaitons tous une merveilleuse retraite.

Le PIMS a accueilli le deuxième congrès conjoint de la SMC et de la Société mexicaine de mathématiques (SMM), qui s'est tenu à l'Université de la Colombie-Britannique du 13 au 15 août 2009. Quelque 230 personnes y ont participé, dont 110 du Mexique. James Arthur (Université de Toronto), Onsimo Hernandez-Lerma (CINVESTAV), Niky Kamran (Université McGill), Rachel Kuske (Université de la Colombie-Britannique), José Seade (UNAM) et Alberto Verjovsky (UNAM-Cuernavaca) étaient les conférenciers pléniers.

Dix sessions spéciales étaient au programme, sur les thèmes suivants : algèbre; géométrie algébrique et théorie des singularités; analyse; combinatoire et théorie des graphes; géométrie différentielle; systèmes dynamiques; optimisation et approximation; équations différentielles partielles; probabilités; topologie.

Malgré des problèmes de visa inattendus, la Réunion a enregistré une bonne participation, et les deux communautés ont eu l'occasion de renforcer leurs collaborations. Les conférences et les sessions étaient de haut niveau, et le congrès a suscité un grand enthousiasme. J'aimerais remercier tous les membres du Comité du programme : Alejandro Adem (UBC – PIMS), Walter Craig (McMaster), Andrew Granville (Montréal), Fernando Brambila (SMM et UNAM), Isidoro Gitler (CINVESTAV) et Jose Seade (UNAM), de même que le personnel du PIMS et de la SMC, qui ont fait de ce congrès un succès.

Le prochain congrès conjoint est prévu en 2012 au Mexique, à un endroit qui reste à déterminer. Ces rencontres SMC/SMM ont lieu tous les trois ans, en alternance entre les deux pays.

La Réunion d'hiver 2009 de la SMC, tenue à l'Université de Windsor, a également connu un franc succès. Plus de 360 personnes y ont participé. Cette rencontre a réuni un auditoire très représentatif de la communauté mathématique canadienne. Six conférences plénières étaient au programme, dont une conférence publique, trois conférences de lauréats et seize sessions en mathématiques, en statistique et en enseignement des mathématiques.

Lors de cette Réunion, nous avons félicité les lauréats des prix suivants : Walter Whiteley (York) - prix Adrien-Pouliot; Patrick Brosnan (UBC) - prix Coxeter-James; Mark Braverman (Toronto) - Prix de doctorat; Vladimir Manuilov (U. d'État de Moscou) et Klaus Thomsen (Aarhus) - prix G. de B. Robinson; Christiane Rousseau (Montréal) - prix Graham-Wright pour service méritoire. Félicitations à toutes ces personnes! Tous les prix ont été remis lors du banquet le 6 décembre.

Mes sincères remerciements aux commanditaires de cette Réunion : le CRM, l'Institut Fields, le Réseau MITACS, le PIMS et l'Université de Windsor.

Les directeurs scientifiques, Dan Britten et Ejaz Ahmed (Windsor), ont travaillé d'arrache-pied pour nous offrir un programme attrayant et varié. Ils méritent ainsi nos plus sincères remerciements. Une rencontre de cette envergure exige un dévouement et une vigueur sans pareil, et n'aurait jamais vu le jour sans le travail assidu des directeurs de la Réunion, des organisateurs de sessions et particulièrement du personnel de la SMC.

Jacques Hurtubise, Johan Rudnick et moi-même avons été invités à la deuxième retraite canadienne de mathématiques à la Station de recherche internationale de Banff (SRIB), du 16 au 18 octobre 2009. Cette rencontre était le suivi d'une première rencontre tenue en mars 2005 et organisée par Nassif Ghoussoub, directeur de la SRIB. L'objectif de la rencontre était de discuter des difficultés auxquelles est confrontée la communauté mathématique canadienne et des possibilités qui s'offrent à elle, en particulier en ce qui concerne les intérêts des gouvernements, des organismes subventionnaires, des universités et de la communauté mathématique dans son ensemble. Les discussions ont notamment porté sur : la situation de la communauté mathématique; les grandes avenues possibles pour la communauté mathématique; la situation des instituts; les difficultés propres aux petites universités; l'avenir du MITACS et de la SRIB; les relations avec le CRSNG; les répercussions des changements apportés aux programmes de recherche mathématique du CRSNG.

J'aimerais par ailleurs souhaiter la bienvenue à nos quatre nouveaux vice-présidents : Cathy Baker (Mount Allsion), Pengfei Guan (McGill), Micheal Lamoureux (Calgary) et Kumar Murty (Toronto).

À la fin de décembre, la SMC comptait 897 membres à titre individuel, comparativement à 868 l'année précédente. Si nous ajoutons à cela 62 membres institutionnels, nous arrivons à un total de 959, ce qui nous rapproche de notre cible de 1 000 pour la fin de l'année. Si vous n'êtes pas encore membre de la SMC, devenez-le sans tarder! Si vous êtes déjà des nôtres, tentez de convaincre un collègue de faire de même.

Au cours des six prochains mois, la Société parrainera un examen de la situation des mathématiques au Canada. Le comité est en formation, mais on sait qu'il sera présidé par Jacques Hurtubise, notre président élu. Le mandat du comité sera assez large : il touchera l'enseignement, la recherche, la sensibilisation aux mathématiques, les enjeux des établissements et la position du Canada sur la scène internationale. Le comité accepte volontiers les mémoires et les commentaires de la part des membres de la Société; il suffit de les faire parvenir à Johan Rudnick, directeur administratif de la SMC (jrudnick@smc.math.ca), ou à Jacques Hurtubise (Jacques.hurtubise@mcgill.ca).

DU BUREAU DU PRÉSIDENT *suite*

En 2010, la Réunion d'été de la SMC se tiendra à Frédericton (Nouveau-Brunswick), et la Réunion d'hiver, à l'Université de la Colombie-Britannique. J'espère vous voir ou vous revoir en grand nombre à ces occasions.

Mon mandat à la présidence de la Société mathématique du Canada se terminant en juin, ¡'aimerais souhaiter la bienvenue à notre nouveau président, Jacques Hurtubise (Université McGill), qui prendra la relève à compter du 1er juillet 2010. Il ne fait nul doute à mon esprit que la Société bénéficiera grandement de ses qualités de dirigeant.

J'adresse également mes sincères remerciements à tous les membres de la Société ainsi qu'aux membres du Comité exécutif et du Conseil d'administration, pour leur appui chaleureux.

J'aimerais aussi remercier le personnel du bureau de la SMC de tout le travail accompli durant l'année ainsi que de sa patience et de sa compréhension durant les deux dernières années. Merci!!!

Sur ce, je vous souhaite à tous une bonne année 2010!

CALL FOR NOMINATIONS / APPEL DE MISES EN CANDIDATURE

The CMS Research Committee is inviting nominations for three prize lectureships. These prize lectureships are intended to recognize members of the Canadian mathematical community.

Le Comité de recherche de la SMC lance un appel de mises en candidatures pour trois de ses prix de conférence. Ces prix ont tous pour objectif de souligner l'excellence de membres de la communauté mathématique canadienne.

Prix Coxeter-James Prize Lectureship — 2011

The Coxeter-James Prize Lectureship recognizes young mathematicians who have made outstanding contributions to mathematical research. The selected candidate will deliver the prize lecture at the Winter Meeting.

The recipient shall be a member of the Canadian mathematical community. Nominations may be made up to ten years from the candidate's Ph.D: researchers having their PhD degrees conferred in 2000 or later will be eligible for nomination in 2010 for the 2011 Coxeter-James prize. A nomination can be updated and will remain active for a second year unless the original nomination is made in the tenth year from the candidate's Ph.D.

Le prix Coxeter-James rend hommage aux jeunes mathématiciens qui se sont distingués par l'excellence de leur contribution à la recherche mathématique. La personne choisie prononcera sa conférence à la Réunion d'hiver.

Cette personne doit être membre de la communauté mathématique canadienne. Les candidats sont admissibles jusqu'à dix ans après l'obtention de leur doctorat : ceux qui ont obtenu leur doctorat en 2000 ou après seront admissibles en 2010 pour le prix Coxeter-James 2011. Toute mise en candidature est modifiable et demeurera active l'année suivante, à moins que la mise en candidature originale ait été faite la 10e année suivant l'obtention du doctorat.

Prix Jeffery-Williams Prize Lectureship — 2012

The Jeffery-Williams Prize Lectureship recognizes mathematicians who have made outstanding contributions to mathematical research. The prize lecture will be delivered at the Summer Meeting. The recipient shall be a member of the Canadian mathematical community. A nomination can be updated and will remain active for three years.

Le prix Jeffery-Williams rend hommage aux mathématiciens ayant fait une contribution exceptionnelle à la recherche mathématique. La personne choisie prononcera sa conférence à la Réunion d'été. Cette personne doit être membre de la communauté mathématique canadienne. Toute mise en candidature est modifiable et demeurera active pendant trois ans.

Prix Krieger-Nelson Prize Lectureship — 2012

The Krieger-Nelson Prize Lectureship recognizes outstanding research by a female mathematician. The prize lecture will be delivered at the Summer Meeting. The recipient shall be a member of the Canadian mathematical community. A nomination can be updated and will remain active for two years.

Le prix Krieger-Nelson rend hommage aux mathématiciennes qui se sont distinguées par l'excellence de leur contribution à la recherche mathématique. La lauréate prononcera sa conférence à la Réunion d'été. La lauréate doit être membre de la communauté mathématique canadienne. Toute mise en candidature est modifiable et demeurera active pendant deux ans.

The deadline for nominations is **June 30, 2010**. Nominations and reference letters should be submitted electronically, preferably in PDF format, by the appropriate deadline, to **research-prizes@cms.math.ca**.

La date limite de mises en candidature est le **30 juin 2010**. Veuillez faire parvenir les mises en candidature et lettres de référence par voie électronique, de préférence en format PDF, avant la date limite à : **prix-recherche@smc.math.ca**

Nominators should ask at least three referees to submit letters directly to the Chair of the CMS Research Committee by September 30, 2010. Some arms length referees are strongly encouraged. Nomination letters should list the chosen referees, and should include a recent curriculum vitae for the nominee, if available.

Les proposants doivent faire parvenir trois lettres de référence au président du Comité de recherche de la SMC au plus tard le 30 septembre 2010. Nous vous incitons fortement à fournir des références indépendantes. Le dossier de candidature doit comprendre le nom des personnes données à titre de référence ainsi qu'un curriculum vitae récent du candidat ou de la candidate, dans la mesure du possible.

Chair / Président | Research Committee / comité de recherches | CMS Prize Lectureships / Prix de conférence de la SMC
Department of Mathematics, University of British Columbia, 121-1984 Mathematics Rd., Vancouver, BC V6T 1Z2

CALENDAR OF EVENTS / CALENDRIER DES ÉVÉNEMENTS

FEBRUARY 2010 FÉVRIER

11-16 Topology, Geometry, and Dynamics: Rokhlin Memorial.
(St Petersburg, Russia)
www.pdmi.ras.ru/EIMI/2010/tgd/

18-19 February Fourier Talks 2010
(Univ. of Maryland, College Park, MD)
www.norbertwiener.umd.edu/FFT/FFT10/index.html

22-26 Magma 2010 Conference on p-adic L-functions,
(CRM, Montreal, QC)
www.crm.umontreal.ca

22-26 Statistical and Learning Theoretic Challenges in Data Privacy
(UCLA, Los Angeles,CA)
www.ipam.ucla.edu/programs/data2010/

26-28 Workshop on Lie Theory and its Applications
(Fields Institute event at Carleton University)
www.fields.utoronto.ca/programs/scientific/09-10/lietheory

MARCH 2010 MARS

8-12 Workshop on Graphs and Arithmetic (CRM, Montreal, QC)
www.crm.umontreal.ca

8-12 AIM Workshop: Mock Modular Forms in Combinatorics and Arithmetic Geometry (AIM, Palo Alto, CA)
www.aimath.org/ARCC/workshops/mockmodular.html

22-26 Computer Methods for L-functions and Automorphic Forms
(CRM, Montreal, QC)
www.crm.umontreal.ca

27-29 Boise Extravaganza in Set Theory (Boise, Idaho)
http://diamond.boisestate.edu/~best/

APRIL 2010 AVRIL

16 The Nathan and Beatrice Keyfitz Lectures in Mathematics and the Social Sciences, Robert C. Merton, Harvard Business School
(Fields Institute event at the University of Toronto)
www.fields.utoronto.ca/programs/scientific/keyfitz_lectures/merton.html

19-23 Counting Points: Theory, Algorithms and Practice,
(CRM, Montreal, QC)
www.crm.umontreal.ca

MAY 2010 MAI

3-7 Second International Workshop on Zeta Functions in Algebra and Geometry (Universitat de les Iles Balears, Palma de Mallorca, Spain)
www.singacom.uva.es/oldsite/seminarios/cartel/jpg

5-8 23rd International Workshop on Description Logics (DL2010)
(Fields Institute event at the University of Waterloo)

7-10 Connections in Geometry and Physics 2010 (Perimeter Institute for Theoretical Physics, Waterloo, ON)
www.math.uwaterloo.ca/~gap

31-Jun 4 Harmonic Analysis Retrospective Meeting
(Fields Institute)

JUNE 2010 JUIN

2-5 Eighth Joint International Meeting of the AMS and the Sociedad Matemática Mexicana, Berkeley, California
www.ams.org/amsmtgs/2172_program.html

3-5 Chico Topology Conference (Chico, CA)
www.csuchico.edu/~tmattman/CTC.html

4-6 **2010 CMS Summer Meeting**
University of New Brunswick, Fredericton, NB
www.cms.math.ca/Events/summer10/

8-9 Clay Research Conference (IHP, Paris, France)
www.claymath.org

10-12 Geometric and Probabilistic aspects of General Relativity
(University of Strasbourg, France)
franchi@math.u-strasbg.fr

13-18 48th International Symposium on Functional Equations
(Batz-sur-Mer, France)
nicole.belluot@ec-nantes.fr

14-17 Fourth Annual International Conference on Mathematics & Statistics
(Athens, Greece)
www.atiner.gr/docs/Mathematics.htm

17-19 14th International Congress on Insurance: Mathematics and Economics
(Fields Institute at the University of Toronto)

20-25 Analysis, Topology and Applications 2010 (Vrnjacka Banja, Serbia)
www.tfc.kg.ac.rs/ata2010

28-July2 The Józef Marcinkiewicz Centenary Conference
(Poznanoznan, Poland)
www.jm100.amu.edu.pl

JULY 2010 JUILLET

5-9 Iwasawa 2010 Conference
(Fields Institute)
www.fields.utoronto.ca/programs/scientific/10-11/iwasawa

7-10 Eleventh International Conference on p-adic Functional Analysis
(Université Blaise Pascal, Les Cezeaux, Aubière, France)
Alain.escassut@math.univ-bpclermont.fr

26-Aug16 Topics in Noncommutative Geometry
(Universidad Buenos Aires, Argentina)
http://cms.dm.uba.ar/Members/gcorti/workgroup.GNC/3EIL

AUGUST 2010 AOÛT

9-13 Workshop on Fluid Motion Driven by Immersed Structures
(Fields Institute)
www.fields.utoronto.ca/programs/scientific/10-11/fluid_motion/

15-19 Geometric, Asymptotic, Combinatorial Group Theory with Applications (CRM, Montreal, QC)
www.crm.umontreal.ca

Atlantic Association for Research in the Mathematical Sciences

AARMS SUMMER SCHOOL 2010

The ninth annual Summer School sponsored by the Atlantic Association for Research in the Mathematical Sciences (AARMS) will take place at the University of New Brunswick in Fredericton, New Brunswick, Canada from **July 11 through August 7, 2010**. The school, which offers courses in the mathematical sciences and their applications, is intended for graduate students and promising undergraduate students from all parts of the world. Each participant will be expected to register for two courses, each with five ninety-minute lectures per week. These are graduate courses, approved by the University of New Brunswick, and we will facilitate transfer credits to the extent possible.

For 2010, the following courses are planned:

Biostatistics, by Christian Boudreau, University of Waterloo and Hyun Ja Lim, University of Saskatchewan.

Noncommutative Geometry, by Masoud Khalkhali, University of Western Ontario.

Noncommutative Algebraic Geometry, by Michael Wemyss, Mathematical Institute, University of Oxford.

Riemannian Geometry, by Eric Wollgar, University of Alberta.

For more information, or to express interest in attending, send e-mail to Barry Monson (***bmonson@unb.ca***) and/or visit the school's website: ***http://www.aarms.math.ca/summer***.

Tarifs et horaire 2010 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	December 1 / le 1 décembre
March/April / mars/avril	January 28 / le 28 janvier
June / juin	March 30 / le 30 mars
September / septembre	June 30 / le 30 juin
October/November / octobre/novembre	August 30 / le 30 août
December / décembre	September 29 / le 29 septembre

Net rates / tarifs nets	Institutional Members / Library Membres institutionnels / Bibliothèques	Corporate Members Membres Organisationels	Others/Autres
Full page / page complète	260.00	485.00	645.00
3/4 page	240.00	445.00	595.00
1/2 page	160.00	295.00	395.00
1/4 page	95.00	175.00	235.00
Back cover	325.00	615.00	815.00
Inserts	195.00	375.00	495.00

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Des suppléments sont applicables pour des places de choix - communiquer avec `notes-ads@smc.math.ca`. L'adhesion à la SMC comprend l'abonnement aux Notes de la SMC.
Le tarif d'abonnement pour les non-membres est de 80 $ CDN si l'adresse de l'abonné est au Canada et de 80 $ US si l'adresse est à l'étranger.

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