



CMS NOTES de la SMC

MESSAGE DU VICE-PRÉSIDENT - Québec

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L'année dernière j'ai écrit à propos de l'Institut des sciences mathématiques (ISM), un réseau formé des six départements de mathématiques du Québec qui offrent un programme de doctorat (Concordia, Laval, McGill, l'Université de Montréal, UQAM, et l'Université de Sherbrooke). Le mandat de l'ISM est de promouvoir la culture mathématique au Québec, d'améliorer la formation en coordonnant les programmes de cycles supérieurs en sciences mathématiques des institutions membres, et de faciliter l'échange des ressources. La réalisation du mandat et le rayonnement de l'ISM dépassent toutes les attentes des fondateurs. Par exemple, il y a quelques années, un mathématicien irlandais qui voulait développer une structure semblable à celle de l'ISM dans la région de Dublin s'est adressé à moi pour se renseigner. Ici au Canada, l'idée de créer ce type de réseau dans d'autres régions du pays, adapté aux situations et aux besoins locaux particuliers, fut abordée lors de la rencontre des dirigeants mathématiques du Canada tenue à BIRS en octobre dernier. Il me semble donc

pertinent de décrire de façon plus détaillée deux des programmes de l'ISM qui pourraient être facilement exportés ailleurs.

Le Colloque panquébécois des étudiants a lieu chaque printemps depuis 1997. Ce colloque, organisé par des étudiants dont la grande majorité provient de l'université hôte, offre plusieurs conférences plénières données par des conférenciers reconnus du Québec et d'ailleurs, ainsi qu'un vaste programme d'exposés par les étudiants. En général, 60 à 80 étudiants y participent. La plupart des participants sont du Québec, mais il y en a toujours quelques-uns des provinces et des états voisins. La conséquence la plus frappante de ces colloques annuels est certainement le sens de communauté qui s'est développé parmi les étudiants gradués du Québec. Cette année les deux colloques qui ont eu lieu démontrent bien ce fait. Le premier s'est déroulé du 14-16 mai à l'Université de Montréal et environ 90 personnes y ont participé. Outre les vingt-six exposés donnés par les étudiants, il y avait des conférences plénières données par Gilles Brassard, Anne Bourlioux, et Andrew Granville de l'Université de Montréal, ainsi que par Nassif Ghossoub et Dale Rolfsen de UBC. Impressionnés par l'expérience et l'accueil chaleureux des organisateurs, les étudiants de l'Université de Sherbrooke participant ont décidé d'organiser leur propre événement intitulé le Colloque ISM sur la route. L'ISM a aussitôt soutenu cette initiative locale, tout comme plusieurs autres organismes (voir

www.espritcartesien.remerciements.php). Ainsi les étudiants ont réussi à amasser le financement nécessaire pour organiser un colloque au mois d'octobre. Cette fois-ci une quarantaine de personnes ont participé dont quatre conférenciers plénières: Michael Barot (UNAM), Joël Foisy (SUNY Potsdam), Jean Goulet (Sherbrooke), et Claude Lebris (Ecole Nationale des Ponts et Chaussées, France).

Une deuxième initiative qui a beaucoup de succès est le programme de Liaison cégep-université. Les étudiants québécois font onze ans d'école primaire et secondaire et deux ans de cégep (collège d'enseignement général et professionnel) avant de poursuivre un programme de premier cycle de trois ans à l'université. Plusieurs cours de calcul, d'algèbre linéaire et de statistique sont donnés par les cégeps. Le programme de liaison crée des liens plus serrés entre les collèges et les universités en organisant des conférences données par des chercheurs universitaires dans les cégeps à l'intention tant des étudiants que des professeurs. Ces conférences donnent un bon aperçu du domaine de recherche du chercheur en traitant des aspects théoriques, des applications et des possibilités de carrière. Chaque année l'ISM sollicite des sujets de conférence qui sont ensuite affichés sur son site web (cette année trente-neuf conférences sont offertes). A partir de cette liste, les cégeps choisissent les conférences qui les

*suite page 14
English page 13*



COLLABORATION

Mathematicians love to get together to discuss their results and exchange ideas. One of the benefits of attending a conference is to meet and discuss with others who work in the same or similar areas. Such efforts lead very often to papers authored in collaboration. Take any journal – you are sure to find in it papers with multiple authors.

The collaboration between G. H. Hardy and J. E. Littlewood is famous. Lasting more than three decades they published more than a hundred papers in analysis and number theory. Steven Krantz relates in his *Mathematical Apocrypha* (see review of this book in the *Notes*, v. 35(7), November 2003) that Hardy and Littlewood had four axioms for their collaboration. 1. When one wrote to the other, it was completely indifferent whether what he was writing was right or wrong. As Hardy put it, otherwise they could not write completely as they pleased, but would have to feel a certain responsibility thereby. 2. When one received a letter from the other, he was under no obligation whatsoever to read it, let alone answer it. They followed this rule strictly. 3. Although it didn't really matter whether they both thought about the same detail, it was preferable if they did not. 4. It was a matter of complete indifference if either one of them made no identifiable contribution to a paper that was to appear under their joint authorship. That way there would never be any priority disputes.

Hardy and Littlewood collaborated with George Polya to produce their classic work *Inequalities*.

Paul Erdős has the reputation of writing more mathematical papers (about 1500) and had more coauthors (almost 500) than any other mathematician in history. As a result, people find it amusing to explore the notion of a researcher's "Erdős number": the number of links in the shortest path between that person and Paul Erdős, where a link consists of a jointly authored paper. Thus almost 500 people have Erdős number 1, and, it turns out, over 5000 have Erdős number 2 (these are the coauthors of Erdős's coauthors).

It happens often that a group of researchers get together and write the results of their deliberations using a pseudonym. The example of Nicholas Bourbaki is well known.

Three mathematicians, Martin Davis, Yuri Matiyasevich and Julia Robinson contributed to the final solution of Hilbert's Problem 10 on the determination of the solvability of a Diophantine equation. The interesting story of how Yuri Matiyasevich collaborated with Julia Robinson is described by the former in *The Mathematical Intelligencer*, vol 14(4), 1992, 38-45.

Sometimes a collaboration begins but doesn't reach fruition. Steven Krantz (*ibid*) relates the following anecdote: Hardy liked to joke about his friends and collaborators. One such was George Polya. Polya once

had a good idea, of which Hardy approved. Afterwards, Polya (by his own telling) did not work sufficiently hard to develop this thought. Hardy was not happy with this. Later, Hardy happened to visit a zoo in Sweden with Marcel Riesz. They saw a bear in a cage that was locked. The bear sniffed at the lock, hit it with his paw, and then turned around growling and walking away. Hardy said, "He is like Polya. He has excellent ideas, but does not carry them out."

NOTES DE LA SMC

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CMS NOTES

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COLLABORATION

Les mathématiciens aiment se retrouver pour discuter de leurs résultats et de leurs idées. Les congrès offrent justement aux participants cette possibilité de rencontrer des collègues et de discuter avec des gens ayant des intérêts de recherche similaires ou connexes aux leurs. Ces rencontres aboutissent souvent à des articles rédigés en collaboration. Toutes les revues publient des articles à auteurs multiples. La collaboration entre G. H. Hardy et J. E. Littlewood est célèbre : pendant plus de trente ans, ils ont cosigné plus d'une centaine d'articles sur l'analyse et la théorie des nombres. Dans son livre *Mathematical Apocrypha* (voir la critique de ce livre dans les *NOTES*, v. 35(7), novembre 2003), Steven Krantz raconte que Hardy et Littlewood avaient quatre axiomes de collaboration. 1. Quand les deux hommes s'écrivaient, le fait que l'un ait tort ou raison n'avait aucune importance. Comme le disait Hardy, il aurait été impossible sinon d'écrire librement et de ne pas ressentir une certaine responsabilité envers l'autre. 2. Lorsque l'un des deux recevrait une lettre de l'autre, il n'avait aucune obligation de la lire, et encore moins d'y répondre. Ils respectaient scrupuleusement cette règle. 3. Même si le fait qu'ils aient pensé au même détail n'avait pas vraiment d'importance, il était

préférable que ça ne se produise pas. 4. Le fait que l'un des deux n'ait pas beaucoup contribué à un article qu'ils cosignaient n'avait aucune importance. Ils évitaient ainsi toute querelle au sujet de la priorité.

Hardy et Littlewood ont collaboré avec George Polya à la production de leur ouvrage classique sur les inégalités.

Paul Erdős est reconnu comme le mathématicien qui a écrit le plus grand nombre d'articles mathématiques (environ 1 500) et qui a collaboré avec le plus grand nombre de personnes (près de 500). Les mathématiciens évoquent parfois à la blague leur « numéro Erdős », soit le nombre de liens (article cosigné) qui sépare une personne de Paul Erdős. Ainsi près de 500 personnes portent le numéro Erdős 1, et plus de 5 000 portent le numéro Erdős 2 (coauteurs des coauteurs d'Erdős).

Il arrive aussi fréquemment qu'une équipe de recherche publie conjointement les résultats de ses membres sous un pseudonyme. L'exemple de Nicholas Bourbaki est bien connu.

Trois mathématiciens (Martin Davis, Yuri Matiyasevich et Julia Robinson)

ont contribué à la solution finale du problème numéro 10 de Hilbert consistant à déterminer la « solubilité » d'une équation diophantienne. Yuri Matiyasevich raconte de façon captivante sa collaboration avec Julia Robinson dans *The Mathematical Intelligencer*, vol 14(4), 1992, 38-45.

Il arrive aussi qu'une collaboration ne produise pas les fruits attendus. Steven Krantz (ibid) raconte l'anecdote suivante : Hardy aimait faire des blagues à propos de ses amis et collaborateurs, dont George Polya. Un jour, ce dernier a eu une bonne idée, que Hardy a approuvée. Après coup, Polya (selon ses dires) n'a pas suffisamment travaillé pour développer son idée, et Hardy n'était pas content. Plus tard, lors d'une visite d'un zoo en Suède en compagnie de Marcel Riesz, Hardy a vu un ours dans une cage verrouillée. L'ours a reniflé la serrure, lui a donné un coup de patte puis s'est retourné en grognant et en tournant en rond dans sa cage. Hardy s'est alors exclamé : « Il est comme George Polya. Il a d'excellentes idées, mais il ne les mène pas jusqu'au bout. »

Letter to the Editors

I enjoyed your Editorial in the December CMS Notes, including the Hardy story. You may enjoy the slight variation I heard from my teacher Lipot Fejer (summability of Fourier series of continuous functions, etc.) who knew Hardy and several of his students in person.

In the first ten minutes of a class Hardy made a statement introduced by "it is obvious that". After the statement he paused, murmuring repeatedly "it is obvious, it is obvious" and continued in increasingly questioning mode "it is obvious?", while starting to write in small letters and symbols on a corner of the blackboard. After a while he walked out of the classroom to his office. But he returned after about half an hour with firm steps to the classroom and the blackboard and stated firmly "it is obvious!" without further comment.

*Janos Aczel
University of Waterloo*

Counting and Configurations: Problems in Combinatorics, Arithmetic, and Geometry

Jiří Herman, Radan Kučera, and Jaromír Šimša (translated by Karl Dilcher)
Princeton University Press 2004 xvii + 204 pages.

Some time ago, I had the pleasure of reviewing (for these Notes [1]) a book entitled “Equations and Inequalities: Elementary Problems and Theorems in Algebra and Number Theory” [3] by the three authors (and translator) listed above. I remarked then that the book under review was a very valuable addition to the problem-solving literature, standing beside the books of Larson [4] and Erickson and Flowers [2] (to which I would now add the excellent, slightly more elementary, book of Krantz [5]) as texts that took the bull by the horns and actually attempted to teach the art of contest-level problems solving methodically. However, consistent with its title, that book did not attempt to cover all types of problems, or even all common types; and I ended that review with the comment that

There is clearly a place—right beside this book on the shelf—for a companion volume (or two) giving problems in linear algebra, calculus, abstract algebra, combinatorics, probability, and geometry the same thorough treatment.

I must here confess to that darkest of reviewing crimes – reviewing a book without reading it in its entirety. I believe to this day that I read all of the main body of the book — at times it was hard to put down — but had I read the introduction really thoroughly, I would have seen that its title in the original Czech was *Metody řešení matematických úloh I*. Yes, Volume I. So the sequel already existed, at least in Czech. I am glad to say that it has since been translated, again by the able Dr. Dilcher, and the second book — published by the CMS as *Counting and Configurations: Problems in Combinatorics, Arithmetic, and Geometry* — is just as good.

Much of what I wrote about its companion volume applies equally here. As before, the book is mostly organized on the basis of a rather detailed taxonomy of problems, with some sections on fundamentals. The three main sections are “Combinatorics”, “Combinatorial Arithmetic”, and “Combinatorial Geometry”. Each of these is broken down into sections, in the first case “Fundamental Rules”, “Standard Concepts”, “Problems with Boundary Conditions”, “Distribution into Bins”, “Proving Identities”, “The Inclusion-Exclusion Principle”, “Basics of Pólya’s Theory of Enumeration”, and “Recursive Methods”.

Then, within each section, subsections deal with topics such as “Problems with Digit Representations”, “Queuing at a Box Office”, “Triangular Arrays”, “The Method of Valuations”, “Problems with Piles of Pebbles”, and “Problems on Nonconvex Polygons”. Most of these subsections would make good self-contained training sessions for a problem-solving team or club.

Unfortunately, the table of contents (and index) does not go down to the subsection level. It might usefully have done so, as many of the subsections are really little chapters on their own and may be read as such.

Even at this low-level, the book is far from “showing us how to do the one with the bathtubs”. Over and over again, the authors show us that a method that a neophyte might think of as a once-off trick is really a flexible and powerful tool. For instance, the familiar proof (via coloring) that a chessboard with two opposite corners removed cannot be covered with 31 dominoes is generalized through three more examples and seven exercises – some quite challenging.

Among the parts that I particularly liked are the section on Pólya’s theory of enumeration — a powerful apparatus, useful in “real mathematics” as well as in problem solving — and the entire chapter on combinatorial geometry, which has often been thought of as a branch of problem solving that cannot easily be taught and must be “learned by osmosis”. But there are too many nice topics in this book to list them all.

The translation is, as before, excellent, by a translator who is a polyglot for a fairly large value of $\pi\omicron\lambda$. Where Czech words appear, (for instance, in some problems that involve arrangements of letters) these have often been left, giving a nice feeling for the book’s European origins. The only oddity that I noticed was the use of “field” for a square of a chessboard – in one problem, involving 25 spiders on a 5x5 chess board, which “all...crawl simultaneously to a neighboring field” my first image was, I admit, of the spiders abandoning the chessboard en masse for a more pastoral and insect-rich environment!

All in all, this is an excellent book, and very nearly what I had in mind when I reviewed the first volume. Of course, there is still room for a third volume on problem solving involving slightly more advanced mathematics! If there happens to be a *Metody řešení matematických úloh III* out there, giving a similar treatment to problems in (say) calculus, linear algebra, and probability theory, it should certainly be translated. If not...

References

- 1 R. J. MacG. Dawson, review of [4] in *CMS Notes* 32 (2000) no. 7 pp 3-4
- 2 M. J. Erickson and J. Flowers, *Principles of Mathematical Problem Solving*, Prentice-Hall, Upper Saddle River, 1999.
- 3 J. Herman, R. Kučera, and J. Šimša, *Equations and Inequalities: Elementary Problems and Theorems in Algebra and Number Theory* (translated by K. Dilcher), Springer, New York, 2000
- 4 L. Larson, *Problem-Solving Through Problems*, Springer, New York, 1983
- 5 S. G. Krantz, *Techniques of Problem Solving*, AMS, Providence, 1997



Valuation Theory and Its Applications, Volumes I and II

edited by F. Victor Kuhlmann, Salma Kuhlmann and Murray Marshall

Fields Institute Communications 32 and 33

AMS 2002 xiii+449 pages and AMS 2003 xi+459 pages

These volumes are devoted to the proceedings of the International Conference and Workshop on Valuation Theory held at the University of Saskatchewan in July and August 1999. The conference and workshop was organized by F.-V. Kuhlmann, S. Kuhlmann and M. Marshall. The main focus of the conference and workshop was on recent progress in valuation theory and its applications in different branches of mathematics.

The two volumes grew as an extended version of talks given at the conference and workshop. They contain research and survey papers on a variety of valuation-theoretic topics which may provide inspiration to a wide range of mathematicians, from graduate students to experts.

Valuation theory was started in 1912 in connection with algebraic number theory by the Hungarian mathematician Josef Kuschak, who formulated the valuation axioms as we have them today. In 1932 Wolfgang Krull gave a more general definition of valuation, which turned out to be applicable in many other mathematical disciplines, thus opening a new era of valuation theory.

Then, in the hands of Zariski, Weil, and others, valuations became a universally applicable tool in algebraic geometry. Later Grothendieck reduced the role of valuations in favor of prime ideals, but valuations never lost their importance in relevant parts of algebraic geometry, e.g. in the resolution of singularities.

If we move to certain fields allied to algebraic geometry we can observe that non-noetherian rings come into focus, and hence most of the usual tools in commutative algebra become blunt.

But here valuations often come up in a natural way and turn out to be helpful. This is true in particular for real algebraic and real analytic geometry, where systems of polynomial inequalities instead of equations are studied. {The reason is simple: Every convex subring of an ordered field is a valuation domain.} Thus the – non-noetherian – theory of valuations is nowadays indispensable in such areas. This has caught the attention of model theorists, and no wonder! The present volumes give ample testimony of all this.



Roughly speaking, one can divide the articles of the two volumes into the following categories:

1. History of valuation theory,
2. Galois Theory,
3. Resolution of singularities, deformations and toric geometry,
4. Real algebraic and rigid analytic geometry,
5. Model theory, o -minimal geometry, Hardy fields,
6. Prüfer and Dedekind domains,
7. Valuation theory and ultrametric space,
8. The noncommutative valuation theory.

It is simply impossible to describe the contents more thoroughly in a few lines, but we mention two articles which have a somewhat singular position in the whole work. Firstly a report by Peter Roquette, “History of valuation theory, Part I”. The author meticulously consulted the original sources including unpublished letters etc. We suspect that the article contains surprises concerning the early history of valuations even for experts in this field. Secondly, an article by Bernard Teissier (vol. II, p.361-459). This is in fact a small book within the big one. And intensive study is made of the connection between valuations, deformations and toric geometry.

Altogether the two volumes give a vivid picture of the current state of the art in valuation theory and its applications.

CMS Prize Lectureships and Awards Programmes Prix et bourses de la SMC

The most up-to-date information concerning all CMS Prize Lectureships & Awards programmes, including complete lists of recipients, can be found at: www.cms.math.ca/Prizes/

Vous trouverez l'information la plus récente sur les prix et bourses de la SMC, y compris les listes de lauréats, sur le site Web suivant : www.cms.math.ca/Prix/

An Introduction to Partial Differential Equations with MATLAB

by Matthew P. Coleman,
Chapman & Hall/CRC 2005 671 pages

This text is an introduction to partial differential equations and Fourier series for students who have had basic courses in multi-variable calculus (through Green's Theorem and the divergence theorems) and ordinary differential equations. It is divided into 11 chapters, covering such topics as "The Big Three PDEs", Fourier series, characteristics, integral transforms, orthogonal polynomials, Sturm-Liouville theory, higher dimensions, nonhomogeneous problems and Green's functions, and numerical methods. An introductory chapter considers such matters as initial and boundary conditions, linear equations and separation of variables. Each chapter is introduced by a "prelude" that describes its content and gives historical background. Each section concludes with a set of exercises, many of which are marked "MATLAB". Programming code is provided for the latter, but the student is assumed to be familiar with the rudiments of the program. Answers to selected exercises are supplied in an appendix, and other appendices are devoted to uniform convergence, termwise differentiation and integration of series, existence and uniqueness theorems, and a catalogue of important PDEs.

Heegner Points and Rankin L-Series

Henri Darmon and Shou-Wu Zhang, editors, MSRI Publications 49, Cambridge 2004 xiii + 367 pages

From the editors' summary: The seminal formula of Gross and Zagier, relating heights of Heegner points to derivatives of the associated Rankin L -Series, has led to many generalizations and extensions, a fertile area that remains active today. This volume, based on the workshop Special Values of Rankin L -Series held at MSRI in December 2001, is a collection of articles written by leading contributors in the field, having the Gross-Zagier formula its avatars as a common unifying theme. It serves as a valuable reference for mathematicians wishing to become better acquainted with the theory of complex multiplication, automorphic forms, the Rankin-Selberg method, arithmetic intersection theory, Iwasawa theory, and other topics related to the Gross-Zagier formula.

Superintegrability in Classical and Quantum Systems

edited by P. Tempestra et al,
CRM Proceedings & Lecture Notes 37
AMS 2004 x+347 pages

Superintegrable systems are integrable systems, both classical and quantum, that have more integrals of motion than degrees of freedom. Such systems have many interesting properties, and were the subject of a workshop at the CRM in 2002, which brought together researchers working in the area of finite-dimensional integrable systems. This volume of proceedings contains 28 papers, offering "complementary points of view on the subject, reflecting the rich gamut of approaches recently proposed in the literature".

Hecke Algebras with Unequal Parameters

by G. Lusztig
CRM Monograph Series 18, AMS 2003, vi+136 pages

This monograph is an expanded version of the author's Aisenstadt lectures given at the CRM in 2002; it includes material from lectures at MIT in 1999.

Hecke algebras arise as endomorphism algebras of representations of groups induced from representations of subgroups. In these lectures the main interest is in reductive algebraic groups over finite or p -adic groups, in which case the algebras are given by explicit generators and relations, in terms of a weighted Coxeter group. In the simplest case, that of "equal parameters", Kazhdan and Lusztig discovered a useful and interesting basis for the algebra, the "KL-basis".

In the present book, Lusztig extends the theory of the KL-basis to algebras with unequal parameters. This leads him to formulate conjectures describing the properties of these Hecke algebras, conjectures which he establishes in particular cases.

Asymptotic Methods in Stochastics: Festschrift for Miklós Csörgő

edited by Lajos Horváth and Barbara Szyszkowicz,
Fields Institute Communications 2004
AMS xiv+530 pages

This volume presents the proceedings of an international conference held at Carleton University in May of 2002, honouring Miklós Csörgő's more than forty years' work in probability and statistics, on the occasion of his 70th birthday.

The 28 papers which make up the volume — of which more than half are survey papers — are organized in eight sections: path properties of stochastic processes; probability theory with applications; complete convergence of renewal counting processes and bootstrap means; weak convergence of random size sums, almost sure stability of weighted maxima; procedures for detecting changes in statistical models; statistical inference; applications to economics; self-normalized partial sums processes. The editors also prepared an extensive résumé of Csörgő's work, *Path Properties of Forty Years of Research in Probability and Statistics: In Conversation with Miklós Csörgő*, which can be found, together with his list of publications, at www.lrsp.carleton.ca.

EARLY BIRD  **LÈVE TOT**
REGISTRATION **INSCRIPTION**

CMS Summer Meeting 2005

May 1, 2005

Réunion d'été 2005 de la SMC

1 mai 2005

Bourses CRSNG - SMC Math à Moscou

Le Conseil de Recherches en Sciences Naturelles et en Génie du Canada (CRSNG) et la Société mathématique du Canada (SMC) offrent des bourses de 10,000 \$ chacune. Les étudiantes ou étudiants du Canada inscrit(e)s à un programme de mathématiques ou d'informatique sont éligibles.

Les bourses servent à financer un trimestre d'études à la petite université d'élite Moscow Independent University.

Programme Math à Moscou
www.mccme.ru/mathinmoscow/

Détails de soumission
www.cms.math.ca/bulletins/Moscou_web/

Pour plus de renseignements veuillez communiquer avec votre département ou la SMC au 613-562-5702.

Deux bourses seront attribuées au concours du printemps

Date limite 30 mars 2005 pour le trimestre d'automne 2005

NSERC - CMS Math in Moscow Scholarships

The Natural Sciences and Engineering Research Council (NSERC) and the Canadian Mathematical Society (CMS) support scholarships at \$10,000 each. Canadian students registered in a mathematics or computer science program are eligible.

The scholarships are to attend a semester at the small elite Moscow Independent University.

Math in Moscow Program
www.mccme.ru/mathinmoscow/

Application details
www.cms.math.ca/bulletins/Moscow_web/

For additional information please see your department or call the CMS at 613-562-5702.

Two scholarships will be awarded in the spring competition.

Deadline is March 30, 2005 to attend the Fall 2005 semester.



NEWS FROM DEPARTMENTS

MOUNT ALLISON UNIVERSITY, SACKVILLE, NB

Mathematics and Computer Science Department

Promotion:

Laurie Ricker

(to Associate Professor; granted tenure; July 2005)

UNIVERSITY OF NORTHERN BRITISH COLUMBIA,

PRINCE GEORGE, BC

Promotion and tenure:

Patrick Montgomery (Associate Professor, July 2005)

Appointment:

Kevin Keen (Assistant Professor, Statistics, 2004-June 2005)

Awards/Distinctions:

Jennifer Hyndman and Lee Keener, recipients of the UNBC Teaching Excellence Award, 2003

Other News: (1) A Math-Physics Symposium, organized by the Mathematics Student Society was held January 12-16, 2004.

(2) We have added the Economics-Mathematics joint major to our degree program pool. (3) Julian Buck (UNBC Silver Medal Award winning undergraduate Math major, now a doctoral student at the University of Oregon) won two NSERC USRA's in a row, working with Sam Walters on Operator Algebra problems.

RYERSON UNIVERSITY, TORONTO, ON

Other News: The department of Mathematics, Physics and Computer Science of Ryerson University will be split into the three component departments as of May 1, 2005. While the new Mathematics department is still a service department, its faculty members look forward to future expansion, particularly in the new Bachelor of Science Program that will be launched in September 2005. www.ryerson.ca/science/index.htm

DALHOUSIE UNIVERSITY, HALIFAX, N.S.

Appointment:

David Iron (Assistant Professor, Applied Mathematics, July 2004).

Resignation:

Shigui Ruan (Professor, Applied Mathematics, August 2004).

Visitors: Edgar Goodaire (Memorial University of Newfoundland, Ring Theory, January - April, 2005); Orin Chein (Temple University, Ring Theory, January - April, 2005).

CONCORDIA UNIVERSITY, MONTREAL, QUEBEC

Appointments: Alexandre Shnirelman (Associate Professor, Fluid Dynamics & Turbulence, July 2004); Wei Sun (Assistant Professor, Statistics, July 2004); Qihe Tang (Assistant Professor, Statistics & Finance, July 2004).

Visitors: A. Berge (Mathematical Education, September 2004 - May 2005); V. Enolskii (Theoretical Physics, Applied Mathematics, September 2004 - May 2005); Y. Hachimori (Elliptic curves, September 2004 - May 2005); C. Nour (Applied Mathematics, January - May 2005); A. Rybak (Mathematical modeling, January - May 2005).

2005 CMS Teaching Excellence Award / Prix d'excellence en enseignement de la SMC 2005



Philip D. Loewen

The winner of the Canadian Mathematical Society's second Excellence in Teaching Award is Dr. Philip Loewen, Professor of Mathematics at the University of British Columbia (UBC). The award will be presented at the Society's 2005 Summer Meeting in Waterloo (June 4 – 6).

Philip Loewen has an incredible record in teaching over many years, resulting in an enormous positive influence on his faculty colleagues, his postdoctoral fellows and graduate students and, most of all, on his undergraduate students.

Loewen's students paint a portrait of a teacher who gives exceedingly clear lectures, motivates students to think deeply and is intensely dedicated to encouraging students to work hard and appreciate the value of Mathematics. Philip Loewen is consistently precise, rigorous, well-organized and richly motivated in his lectures. At the same time he is a magician with words, concepts, ideas and specific topics. His students acknowledge that he is very demanding, requiring that they understand the mathematical concepts and learn how to apply them to practical problems. His lectures are as highly appreciated by the students of the Honours program in Mathematics as by the engineering students. The students' comments include: "his ability to weave additional layers of knowledge into his mathematical tapestry", "He showed us the beauty of maths", "He teaches with vivid descriptions... which come from his enthusiasm for and love of math."

Loewen won UBC's prestigious Killam Teaching Prize in Science for 1999-2000. In autumn 2004, the first year he became eligible again for the competition, his students spontaneously nominated him. The students also report that "Dr. Loewen makes himself readily available to help any who will come to his door. "He has the ability to make a student feel important and empowered in an environment where many undergraduates begin to doubt themselves." Philip Loewen has extensive online resources for his students, including detailed full lecture notes in PDF format. His web notes often contain extra enriching material not covered in the lectures.

Philip Loewen is very involved in promoting high-quality instruction at the largest possible scale: late each summer, he runs an orientation session for mathematics instructors new to UBC. The session brings the newcomers together with senior faculty to describe and discuss some of the mechanics and expectations of teaching at UBC.

Philip Loewen has been active in mathematics education at all levels, from consultation on the secondary school curriculum in British Columbia to supervision of postgraduate students and postdoctoral fellows. He is an active member of the BC Association of Mathematics Teachers (BCAMT) and, until July 2004, he served as a Post Secondary Representative on the Executive of the BCAMT. In 1999-2001 he was involved with the Pacific Institute for Mathematical Sciences

Elementary Grades Mathematics Contest. He often volunteers to help grade papers for the Euclid Mathematics Contest and is involved in issues of Mathematics curriculum development for Grades 11 and 12 with the BC Ministry of Education. He co-chaired a working group on the preparation for university engineering and science courses at the 2003 Canada School Mathematics Forum. He has chaired the Department's Curriculum Committee since 1999 and was the Department Co-op Program Co-ordinator from 1996 to 2002.

Philip Loewen obtained his B.Sc. in Mathematics (Honours) in 1981 from the University of Alberta and then his M.Sc. and Ph.D. from the University of British Columbia in 1983 and 1986, respectively. After completing a NSERC-sponsored postdoctoral fellowship at Centre de Recherches Mathématiques in Montreal and Imperial College of Science and Technology in London, UK, he joined the University of British Columbia in 1987.

Throughout his career Philip Loewen has been an active researcher. In addition to his many research publications, he has written an outstanding advanced textbook on Optimal Control.

Le second Prix d'excellence en enseignement de la Société mathématique du Canada (SMC) est décerné à Philip Loewen, professeur de mathématiques de l'Université de la Colombie-Britannique (UBC). Il recevra son prix à la prochaine Réunion d'été de la SMC, qui se tiendra à Waterloo du 4 au 6 juin 2005.

Menant depuis de nombreuses années une carrière époustouflante dans l'enseignement, Philip Loewen est reconnu pour la grande influence qu'il exerce sur ses collègues, sur les chercheurs postdoctoraux et les étudiants des cycles supérieurs qu'il dirige et surtout, sur ses étudiants de premier cycle.

Les étudiants de Philip Loewen tracent le portrait d'un enseignant réputé pour la clarté de ses cours qui pousse constamment ses étudiants à approfondir leur réflexion, à se dépasser et à apprécier la valeur des mathématiques. Toujours précis, rigoureux, organisé et passionné en classe, il exerce aussi sa magie au contact des mots, des concepts et des idées. S'ils reconnaissent qu'il est très exigeant, qu'il les oblige à comprendre les concepts et à savoir les appliquer à des problèmes pratiques, ses étudiants de la spécialisation en mathématiques et de génie apprécient énormément ses cours, comme en témoignent ces commentaires : « il a le don de tisser tout un amalgame de connaissances en une superbe tapisserie mathématique », « il nous a fait apprécier la beauté des mathématiques », « il emploie toujours des exemples percutants [...], qui témoignent de son enthousiasme et de son amour des mathématiques ».

Philip Loewen a remporté le prestigieux prix Killam d'enseignement en sciences de l'UBC en 1999-2000. À l'automne 2004, à sa première année d'admissibilité au concours, ses étudiants ont spontanément présenté sa candidature à nouveau. Écoutons encore ce que ces derniers avaient à dire : « M. Loewen est toujours prêt à aider

CMS Awards Announcement / Lauréats des Prix de la SMC

quelqu'un qui se présente à son bureau; il a le don d'amener ses étudiants à se sentir importants dans un milieu où bien des étudiants de premier cycle commencent à douter d'eux-mêmes ». Il met en outre à la disposition de ses étudiants toute une collection de ressources sur le Web, y compris toutes ses notes de cours détaillées en format PDF. Ces notes contiennent souvent du matériel d'enrichissement non couvert dans les cours.

Philip Loewen attache une importance particulière à promouvoir l'excellence en enseignement. À la fin de chaque été, il organise une séance d'orientation destinée aux nouveaux professeurs de mathématiques de l'UBC. La séance réunit les nouveaux professeurs et des professeurs expérimentés, qui discutent des méthodes et des attentes au niveau de l'enseignement à l'université.

Philip Loewen est actif dans le milieu de l'éducation mathématique à tous les niveaux, tant comme consultant au sujet des programmes provinciaux de mathématiques du secondaire qu'à la direction d'étudiants aux cycles supérieurs et de chercheurs postdoctoraux. Il est un membre actif de l'Association des enseignants de mathématiques de la C.-B et, jusqu'en juillet 2004, il était le représentant (palier postsecondaire) de cette association. De 1999 à 2001, il a pris part à l'organisation du concours de mathématiques de l'Institut du

Pacifique pour les sciences mathématiques au primaire. Il s'offre aussi souvent pour corriger les examens du concours Euclid et contribue au développement des programmes de mathématiques de 11e et de 12e année en collaboration avec le ministère de l'Éducation de la province. Il a en outre coprésidé un groupe de travail sur la préparation aux études universitaires en génie et en sciences dans le cadre du Forum canadien sur l'enseignement des mathématiques 2003. Il dirige le comité des programmes de son département depuis 1999 et il a coordonné les programmes d'alternance travail-études du département de 1996 à 2002.

Philip Loewen a obtenu son baccalauréat ès sciences avec spécialisation en mathématiques en 1981 de l'Université de l'Alberta, puis sa maîtrise et son doctorat de l'UBC en 1983 et en 1986 respectivement. Après un stage de recherche postdoctorale subventionné par le CRSNG au Centre de recherches mathématiques à Montréal et à l'Imperial College of Science and Technology à Londres, il s'est joint au corps professoral de l'UBC en 1987.

Durant toute sa carrière, Philip Loewen a été un chercheur actif. Outre ses nombreuses publications scientifiques, il a publié un manuel exceptionnel de contrôle optimal avancé.

CALL FOR NOMINATIONS

CJM/CMB - Associate Editors

The Publications Committee of the CMS solicits nominations for TWO Associate Editors for the Canadian Journal of Mathematics (CJM) and the Canadian Mathematical Bulletin (CMB). The appointment will be for five years beginning January 1, 2006. The continuing members (with their end of term) are below.

The deadline for the submission of nominations is April 15, 2005.

Nominations, containing a curriculum vitae and the candidate's agreement to serve, should be sent to the address below.

Address for Nominations / Adresse de mise en candidatures:
Juris Steprans, Chair / Président
CMS Publications Committee / Comité des publications de la SMC
Department of Mathematics, York University
N520 Ross, 4700 Keale Street
Toronto, Ontario M3J 1P3 chair-pubc@cms.math.ca

CURRENT MEMBERS / MEMBRES ACTUELS

CJM Editors-in-Chief / Rédacteurs-en-chef du CJM

Henri Darmon (McGill) 12/2006; Niky Kamran (McGill) 12/2006.

CMB Editors-in-Chief / Rédacteurs-en-chef du BCM

James Lewis (Alberta) 12/2005; Arturo Pianzola (Alberta) 12/2005; Noriko Yui (Queen's) 12/2005.

APPEL DE MISES EN CANDIDATURE

JCM/BCM - Rédacteurs associés

Le comité des publications de la SMC sollicite des mises en candidatures pour DEUX postes de rédacteurs associés du Journal canadien de mathématiques (JCM) et Bulletin canadien de mathématiques (BCM). Le mandat sera de cinq ans et débutera le 1 janvier 2006. La liste des éditeurs qui sont en cours de mandat se trouve ci-dessous.

L'échéance pour proposer des candidats est le 15 avril 2005.

Les mises en candidature, accompagnées d'un curriculum vitae ainsi que du consentement du candidat(e), devrait être envoyées à l'adresse ci-dessous.

Associate Editors / Rédacteurs associés

Steven Boyer (UQAM) 12/2008; Walter Craig (McMaster) 12/2007; Luc Devroye (McGill) 12/2009; George Elliott (Toronto) 12/2005; Anthony Geramita (Queen's) 12/2006; Pengfei Guan (McMaster) 12/2008; Victor Kac (MIT) 12/2006; Stephen Kudla 12/2008; M. Ram Murty (Queen's) 12/2006; Thomas Ransford (Laval) 12/2009; Freydoon Shahidi (Purdue) 12/2005; Ravi Vakil (Stanford University) 12/2009; Maciej Zworski (California - Berkeley) 12/2006.

A REFUGEE CAMP IN THE CITY

Médecins sans frontières (MSF; Doctors Without Borders) was founded in 1971 by some French doctors and journalists to unite “direct medical care with a commitment to bearing witness to and speaking out against the underlying causes of suffering in over 80 countries in the world”. With the financial assistance of the Ontario Trillium Foundation and the Government of Canada International Development Research Centre and the inspiration of a curriculum developed by Massachusetts educator and MSF volunteer, Elizabeth Badger, the Canadian section of MSF has developed an educational kit mainly for secondary use. This treats the situation of refugees and internally displaced persons (IDPs) and touches on many areas of the syllabus. This kit followed a travelling exhibition, *A Refugee Camp in the City*, that visited Halifax, Montreal, Ottawa, Toronto and Vancouver.

A Refugee Camp in the City: On Assignment

English ISBN 0-9733309-0-2 (video), 0-9733309-1-0 (teacher’s guide)

Un camp de réfugiés dans la ville; en reportage

français ISBN 0-9733309-2-0 (vidéo), 0-9733309-3-7 (guide)

The kit consists of a teacher’s guide that outlines 15 lessons and a video cassette with four “cuts”, each running 10-15 minutes. The cuts deal with background information about displaced people, their basic human needs, realities of life in a refugee camp, and health care; they provide information and interviews with MSF personnel, but no direct mathematics. The 60-page guide contains lesson plans and work sheets, subject orientations, expectations and rubrics for evaluation, and an abundant list of resources. Mathematics intervenes in five lessons, but its presence is slight and incidental, and touches hardly at all on the core topics of the secondary curriculum. Let us look at specifics.

Lesson 4 (Finding refuge). The United Nations High Commission for Refugees recommends an allotment of space equal to 3.5 metres squared per refugee. Students are asked to design a model floor plan, particularly if this has to be shared by a family of five, and to calculate how many such allotments their bedrooms could accommodate.

Lesson 5 (Water in camp). While the average Canadian uses 343 litres of water a day, refugees have to make do with five. Students determine how this might be allocated for drinking, cooking, bathing, cleaning and watering vegetable plants.

Lesson 6 (Sanitation in camp). Students are provided with guidelines for distances between shelters and between any two of shelters, latrines and water stations, and are asked to design a camp.

Lesson 7 (Food and nutrition in camp). There are two occasions for the use of mathematics here. Provided with the lesson plan is a “bracelet of life” or *Middle Upper Arm Circumference* (MUAC) that encircles the upper arm to measure the nutritional status of, in particular, children. Four coloured zones on the tape measure indicate

the level of urgency of the child’s needs and students are asked to test themselves. Secondly, a number of camp foods are listed with their calorific, protein and fat contents, and students have to design a menu for a child that provides 1200 calories, 35 grams each of protein and fat, and for an adult that provides 2100 calories.

Lesson 9 (Solutions after the crisis). Students learn that there are about 100 million live landmines in up to 70 countries that have to be deactivated. These account for about three casualties each hour. Students investigate how long it would take to clear landmines in an area the size of their classroom. Here are the instructions:

Divide the space into 1 metre wide lanes.

One person per lane (usually the work is done by two people 20 metres apart) prods the ground gently with a small sharp object (a pencil could be used) at a 30-degree angle every 1.5 to 2 inches across the width of the lane.

The prodder moves up the lane 6-8 inches at a time, prodding across the lane each time. A yardstick can be used across the lane to show how far they have gone.

The prodding is usually done lying on your stomach, using your hand with fingers extended at the top of the yardstick and over the area to be prodded, prodding between the fingers (that is approximately 1.5 to 2 inches).

How long did it take to clear the classroom of landmines? In that time, how many people died or were injured due to a landmine explosion?

The mathematics is quite basic and casual, and, not unreasonably in a publication that is essentially an extended civics lesson, there is no discussion that draws out mathematical ideas or attempts to put them in a broader framework. While the kit is designed for grades 9-12, my estimation of the sophistication of the video and many of the tasks (even apart from the mathematics) is that it would work better at the middle school level.

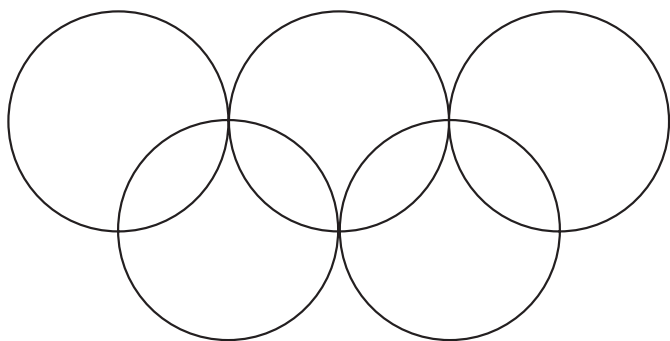
Overall, there is much to be admired and praised in this resource. The *Education Forum* magazine of the Ontario Secondary School Teachers Federation (30:2 (Spring, 2004), 35) notes that “the real brilliance of the kit lies in the guide and its extremely imaginative and detailed lesson plans”. Nevertheless, the use of the material to inform the mathematics curriculum warrants some serious discussion. Without a doubt, mathematics intervenes in virtually every area of human endeavour, often in surprisingly substantive ways, but more often at the level of school arithmetic, naive geometry and mensuration, and substitution into formulae. The impetus behind this kit is commendable and it would be good to redeem its mathematical part with stronger material.

A reader of a draft of this review suggested that the material is best used in non-mathematical classes, with mathematics teachers on hand to advise and give support to their nonmathematical colleagues in handling the mathematical portions.

Accordingly, I would like to challenge my mathematical colleagues. Do you see opportunities in this topic for a deeper application of mathematics, particularly at the secondary level? If so, indicate what the teacher's guide should contain that would bring out the mathematical usage and structure, the ways in which mathematics can illuminate the topic, and both the strengths and weaknesses of mathematics in clarifying the issues and laying the basis for informed decisions. These are dimensions that should be part of any decent secondary curriculum; the trick is to find material that is not just at the elementary level, or is not artificial or superficial.

The Olympic Rings Problem

In a previous issue of the *Notes* (36:6; October, 2004), I presented a problem in the Nordic Kappabel competition that involved filling in nine regions determined by five circles with the digits from 1 to 9 inclusive to make the sum of the numbers within each circle equal.



This drew a letter and an offprint from Jim MacDougall of the University of Newcastle in New South Wales, Australia:

"[I] was interested to see the Olympic Rings problem that appeared in the Kappabel competition. I saw the problem before — March 1999 — on a set of exercises for enrichment classes, prepared by Terry Gagen from U. of Sydney (Australia). After thinking about the problem, I realised it could be cast in graph theoretic terms, and the attached paper was the result. There have now been a number of subsequent papers on 'vertex-magic' labelings of graphs."

The paper, by J.A. MacDougall, Mirka Miller, Slamin, W.D. Wallis and entitled *Vertex-magic total labelling of graphs* appeared in *Utilitas Mathematica* 61 (2002), 3-21. Consider a graph with v vertices and e edges and let $m = v + e$. Assign the integers $1, 2, \dots, m$, inclusive, one to each vertex and one to each edge so that, for each vertex, the sum of the numbers assigned to that vertex and the adjacent edges is a constant k . With S_v the sum of the numbers assigned to the vertices and S_e the sum of the numbers assigned to the edges, one sees that

$$S_v + 2S_e = vk \quad \text{and} \quad S_v + S_e = \binom{m+1}{2}$$

If k is given and the edge labels are known, then the vertex labeling is uniquely determined. However, there may be several labelings of the edges for a given labeling of the vertices. For $n \geq 3$, the n -cycle (polygon) and n -path (line of edges joined by vertices) admit labelings. For cycles, $5v + 3 \leq 2k \leq 7v + 3$ while for paths $5v - 3 \leq 2k \leq 7v - 5$. The Olympic Rings problem is a 5-path case.

Here is a list of the possible n -cycles ($n = 3, 4, 5$) with the value of k followed by the edge labels in order:

(9; 1, 2, 3), (10; 1, 3, 5); (11; 2, 4, 6); (12; 4, 5, 6)

(12; 1, 3, 2, 6), (13; 1, 4, 6, 5), (13; 1, 5, 2, 8), (14; 1, 7, 4, 8),
(14; 3, 4, 8, 5), (15; 3, 7, 6, 8)

(14; 1, 4, 2, 5, 3), (16; 1, 5, 9, 3, 7), (16; 1, 7, 3, 4, 10) .

The n -paths for the same values of n are

(6; 1, 2), (7; 2, 4), (9; 2, 1, 5), (10; 3, 5, 4), (10; 4, 1, 7), (11; 6, 3, 7)

(11; 3, 1, 4, 2), (13; 4, 8, 2, 6), (13; 6, 2, 3, 9), (15; 9, 3, 7, 6) .

The final part of the paper deals with labels of complete bipartite graphs and complete graphs K_n . In the latter case, $v = n$, $e = \binom{n}{2}$ and $n(n^2 + 3) \leq 4k \leq n(n + 1)^2$. After showing that K_n can be labeled when n is odd, the author conjectures that K_n can be labeled for all $n \geq 3$ and that, for $n \geq 5$, there is a labeling for every feasible value of k .

I have described this paper in some detail, as I think that it is a comely piece of mathematics that can be used for investigations by secondary students. Some of the reasoning required is very basic, other results follow from a little digging and recognition of patterns, while still others are genuinely difficult even for seasoned mathematicians. It is unfortunate that graph theory has not been considered as a possible area of study in secondary classes as it seems to embody some of the aspects - problem-solving, applications, investigation and analysis, use of technology - desired by reformers.

Weight loss

Many modern texts for the young contain outrageous mathematical examples. It is perhaps comforting to realize that such daftness is not restricted to the present generation. Recently, a colleague drew my attention to a problem found in the teachers' edition of *Geometry: a modern approach* by Marie S. Wilcox, published in 1968 by Addison-Wesley. The problem apparently does not appear in the students' edition and is described as a "twister" (don't ask me! I don't know what it is doing in a geometry book either).

Mr. Flatell decided that his wife had to go on a diet. He drew up a weight losing program in which she was to lose 3.1 pounds the first month, 4.7 pounds the second month, 16.8 pounds the third month, and 39.3 pounds the fourth month. If Mrs. Flatell weighed 260 pounds at the start of this program, how much would she weigh at the end of five months?

You will observe that no figure is given for the weight loss in the fifth month. Here is the solution, as given in the manual. The weight to be lost each month was calculated by finding one-tenth of the square of the sum of the digits lost the previous month and adding that quantity to the previous month's weight loss. For example, for the second month,

$$(1/10)(3 + 1)^2 = 1.6 ; 1.6 + 3.1 = 4.7 .$$

Thus, in the fifth month Mrs. Flatell should lose 61.8 pounds. She would then weigh 134.3 pounds.

The temptation is to have a good chuckle and move on. However, I wonder whether this problem deserves some closer attention, particularly in our classes of cadet teachers. One of our goals in teacher education should surely be to develop the students' antennae for nonsense of all sorts, and it might be worth seeing what they think of this particular problem. Is it a good or bad problem? Are there any redeeming features? Do you think that the author of the problem

was serious or herself having a little bit of fun? Is the practical setting of the problem just ridiculous, or is it redeemed by its evident absurdity? Putting aside the context, is there an underlying problem of mathematical interest? What would happen if Mrs. Flatell stayed on the diet of a couple more months? Is there a metric version of the problem? What would happen if Mr. Flatell prescribed the first month's loss to more than one place of decimal?

While you are giving your trainees this type of question, you might also try them on the "Captain's age" problem, which is doing the rounds. Apparently, many school students have been given the following problem, *In a certain ship are 20 cows and 12 goats. What is the age of the captain?* Researchers have been disconcerted to find that many students in fact answer the question, often providing the result of 32 years.

An intermediate value theorem for fractions?

A nice investigation for pupils on fractions is suggested by Problem A.1 on the 2004 Putnam Competition, written on December 4. Suppose that we repeatedly toss a coin and keep track of the fraction of heads. Let p/q be a vulgar fraction less than 1. Determine necessary and sufficient conditions on the numerator p and denominator q that, if the fraction of heads is less than p/q at one stage and greater than p/q at a later stage, then it must actually equal p/q at an intermediate stage.

**CMS/CSHPM Summer 2005 Meeting
University of Waterloo
Waterloo, Ontario
June 4-6**

The most up-to-date information for the joint Summer 2005 Meeting of the Canadian Mathematical Society (CMS) and the Canadian Society for History and Philosophy of Mathematics (CSHPM) concerning the programme, scheduling and invited speakers list is available on our website, as well as online registration and abstract submission forms.

www.cms.math.ca/Events/summer05/

The Meeting registration form can also be found in the February 2005 issue of the CMS Notes.

Abstracts will appear on the web site as they become available.

**Réunion d'été 2005 de la SMC
et de la SCHPM
Université de Waterloo
Waterloo (ON)
4-6 juin**

L'information la plus récente de la Réunion d'été 2005 de la Société mathématiques du Canada (SMC) et de la Société canadienne d'histoire et de philosophie des mathématiques (SCHPM), concernant le programme, les horaires et la liste des conférenciers est disponible sur notre site web, ainsi que nos formulaires électroniques d'enregistrement et soumission de résumés.

www.cms.math.ca/reunions/ete05/

Le formulaire d'enregistrement est aussi publié dans les Notes de la SMC de février 2005.

Les résumés de conférences paraîtront sur le site dès qu'ils seront disponibles.

Last year I wrote about the Institut des Sciences Mathématiques (ISM), a network of the Quebec university mathematics departments which offer doctoral programmes (Concordia, Laval, McGill, the Université de Montréal, UQAM, and the Université de Sherbrooke) whose mandate is to promote mathematical culture within Quebec, to strengthen training by coordinating the graduate programs in the mathematical sciences of its member institutions, and to facilitate the exchange of resources. The ISM has succeeded in its mandate and gained a profile to an extent which would have surprised its founders. For instance, I was approached several years ago by an Irish mathematician who was interested in developing a similar structure in the Dublin area. Closer to home, the idea of creating such networks in the other regions of the country, tailored to the particular situation and needs, was discussed at the Canadian mathematical leadership retreat held in BIRS late last October. It seems fitting then to describe in more detail two of the more transportable ISM programmes.

The ISM Quebec Graduate Student Conference has been held each spring since 1997. This conference is organized by students, mostly from the host university, and features a handful of plenary talks by distinguished expositors, some local, some not, as well as a full programme of talks by the students. Typically, some 60-80 students participate, mostly from Quebec, but there is always a contingent from the neighbouring provinces and states.

Perhaps the most striking development coming from these annual conferences is the sense of community which has arisen among the mathematics graduate students in Quebec. This year the two conferences that were held provide a case in point. The first took place May 14-16 at the Université de

Montréal and had close to ninety participants. The twenty-six talks given by the students were complemented by plenary addresses given by Gilles Brassard, Anne Bourlioux, and Andrew Granville of the Université de Montréal, and Nassif Ghossoub and Dale Rolfsen of UBC.

The students from the Université de Sherbrooke who attended were so taken with the experience and the hospitality of the organizers that they decided to reciprocate by organizing a new event entitled the Colloque ISM Sur la Route. The ISM immediately jumped onboard this show of local initiative, as did a host of other parties (cf. <http://www.espritscartesien.com/ism/remerciements.php>), and the funding was in place for a conference which was held in early October. This time there were 40 participants and four plenary speakers: Michael Barot (UNAM), Joël Foisy (SUNY Potsdam), Jean Goulet (Sherbrooke), Claude Lebris (Ecole Nationale des Ponts et Chaussées, France).

Another programme which has done well is the CÉGEP-University Liaison Project. Students in Quebec do eleven years of primary and secondary education and two years of CÉGEP (Collège d'enseignant général et professionnel) before entering a 3-year undergraduate programme at a university. Various calculus, linear algebra, and statistics courses are handled by the CÉGEPs. The liaison programme creates closer ties between the colleges and universities by arranging talks in the CÉGEP's by university researchers which are intended for students and teachers alike. The talks provide insight into the researcher's field, touching on theoretical aspects, applications, and career opportunities.

Every year the ISM solicits titles and abstracts for talks which are posted on its website (there are thirty-nine on this year's

list). The CÉGEP's choose talks that interest them from the list and the ISM makes the arrangements and provides the funds for them to be given. It turns out that word of mouth plays a significant part. It has led my colleague François Bergeron from a talk in Rivière-du-Loup this past October to one next March in the Îles de la Madeleine located in the middle of the Gulf of St. Lawrence. Our postdoctoral fellows have also participated. One year, an adventurous postdoc put in over a thousand kilometers traveling around the province.

The ISM has also profited from initiatives taken on elsewhere in the country. It is in the process of putting together a group of Quebec mathematicians who will produce a French language mathematics magazine containing articles and problems intended for students and teachers at the high school and CÉGEP level. This is an area already covered in English by "π in the Sky", the PIMS high school mathematics magazine. The ISM recognized the need for a French version of "π" and negotiated an agreement with PIMS to share the contents of their respective magazines. The goal is to have the first issue available for the next academic year.

Those who would like to know more about the ISM can write to

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or visit its website at
www.math.uqam.ca/ISM

CMS Prize Lectureships and Awards Programmes Prix et bourses de la SMC

The most up-to-date information concerning all CMS Prize Lectureships & Awards programmes, including complete lists of recipients, can be found at: www.cms.math.ca/Prizes/

Vous trouverez l'information la plus récente sur les prix et bourses de la SMC, y compris les listes de lauréats, sur le site Web suivant : www.cms.math.ca/Prix/

intéressent, tandis que l'ISM coordonne l'événement et fournit tout le financement. Il s'avère que la bouche à l'oreille joue un rôle assez important. Grâce à cela, mon collègue François Bergeron qui a donné une conférence à Rivière-du-Loup au mois d'octobre dernier, en donnera une deuxième au mois de mars aux Îles-de-la-Madeleine, situées en plein milieu du Golfe du Saint-Laurent. Nos stagiaires postdoctoraux y participent également. Une année, un stagiaire aventureux a parcouru plus de mille kilomètres en donnant des conférences autour du Québec.

L'ISM a également profité des initiatives lancées ailleurs dans le pays. En ce moment

l'Institut est en train de mettre sur pied un comité de mathématiciens québécois qui produiront une revue de mathématiques en français à l'intention des étudiants et enseignants de l'école secondaire et du cégep. Cette revue existe déjà en anglais: il s'agit de Pi in the Sky produit par le PIMS. Reconnaissant le besoin d'avoir une revue semblable en langue française, l'ISM a proposé au PIMS de partager le contenu de leurs revues respectives. L'ISM vise à produire un premier numéro dès l'automne prochain.

Ceux ou celles qui aiment plus de renseignements sur l'ISM sont invités à écrire à:

Institut des sciences mathématiques
Université du Québec à Montréal
Case postale 8888, Succursale Centre-Ville
Montréal, Qc, Canada
H3C 3P8

téléphone: (514) 987-3000, poste 1811
télécopieur: (514) 987-8935
ism@math.uqam.ca

ou visiter le site web au
www.math.uqam.ca/ISM.

CANADIAN OPEN MATH CHALLENGE CHAMPIONS

Six students earn top honours and 14 students are provincial champions in the 2004 Canadian Open Mathematics Challenge (COMC). The COMC is organized and administered by the Canadian Mathematical Society (CMS) in collaboration with the Centre for Education in Mathematics and Computing (University of Waterloo). Over 5750 students from all across Canada wrote the ninth Open on November 27, 2004. Students had to solve 12 questions during the two and one-half hour time limit.

"The Canadian Open Mathematics Challenge is designed to motivate students beyond their regular classroom work and provide a mathematics enrichment challenge," said Professor Peter Crippin, University of Waterloo, and Chair of the CMS COMC Committee. "In addition, the Open acts as a qualifying paper for the 2005 Canadian Mathematical Olympiad which will be written on March 30, 2005."

The top six contestants in the 2004 Open are:

Francis Chung, A.B. Lucas Secondary School, London, ON; **Oleg Ivrii**, Don Mills Collegiate Institute, Don Mills, ON; Taotao Liu, Vincent Massey Secondary School, Windsor, ON; **Richard Peng**, Vaughan Road Academy, Toronto, ON; **David Rhee**, McNally Composite High School, Edmonton, AB; and **Geoffrey Siu**, London Central Secondary School, London, ON.

For outstanding performance in the COMC, the top contestants in a region are selected as the Provincial Winners. The 2004 Open Provincial Winners are:

ALBERTA - **David Rhee**, McNally Composite High School, Edmonton; BRITISH COLUMBIA - **Rongtao Dan**, Point Grey Secondary School, Vancouver; MANITOBA - **Yuchen Mu**, St. John's Ravenscourt School, Winnipeg; NEW BRUNSWICK - **Chen Li**, Fredericton High School, Fredericton; NEWFOUNDLAND AND LABRADOR - **Christopher Mong**, Holy Heart of Mary Regional High School, St. John's; NOVA SCOTIA - **Keran Xu**, The Halifax

Grammar School, Halifax; ONTARIO CENTRAL - **Qi Yao**, Glenforest Secondary School, Mississauga; ONTARIO EAST - **Ying Li**, Lisgar Collegiate Institute, Ottawa; ONTARIO METRO - **Oleg Ivrii**, Don Mills Collegiate Institute, Don Mills; ONTARIO NORTH - **Megan Lickley**, Lo-Ellen Park Secondary School, Sudbury; ONTARIO WEST - **Geoffrey Siu**, London Central Secondary School, London; PRINCE EDWARD ISLAND - **Mostafa Fatehi**, Colonel Gray Secondary High School, Charlottetown; QUÉBEC - **Karol Przybytkowski**, Marianopolis College, Montréal; , SASKATCHEWAN - **Jia Xi Sun**, Walter Murray Collegiate Institute, Saskatoon.

"All the winners have done extremely well on a very challenging competition and have demonstrated the essential and creative problem solving skills so essential in today's workplace," said Dr. George Bluman, University of British Columbia and Chair of the CMS Mathematical Competitions Committee. "Students with excellent problem solving skills are vital if Canada is to be competitive in the global marketplace."

Approximately 70 of the top students from the 2004 Canadian Open Mathematics Challenge are being invited to write the 2005 Canadian Mathematical Olympiad (CMO). The CMO is Canada's premier mathematics competition organized and administered by the Canadian Mathematical Society (CMS). "These top students will be busy honing their problem solving skills as they prepare for the 2005 CMO and try to be one of six students who will be chosen to represent Canada at the 2005 International Mathematical Olympiad in Merida, Mexico in July," said Dr. Graham Wright, CMS Executive Director. "These valuable enrichment activities are only possible because of the voluntary help received from many school, college and university teachers."

The 2004 Open results, questions and solutions are available at:

www.cmc.uwaterloo.ca/english/contests/open.shtml

Six élèves ressortent grands gagnants et quatorze autres sont déclarés champions provinciaux à la suite du Défi ouvert canadien de mathématiques (DOCM) 2004, organisé et géré par la Société mathématique du Canada (SMC), en collaboration avec le Centre d'éducation en mathématiques et en informatique (Université de Waterloo). Plus de 5 750 élèves des quatre coins du Canada ont passé l'examen du neuvième DOCM le 27 novembre 2004. Les concurrents devaient répondre à douze questions en deux heures et demie.

« Le DOCM vise à motiver les jeunes ayant participé à des activités d'enrichissement hors du cadre scolaire et désireux de relever un défi mathématique stimulant, affirme Peter Crippin de l'Université de Waterloo, président du Comité du DOCM de la SMC. Le DOCM constitue en outre une épreuve de qualification à l'Olympiade mathématique du Canada, qui aura lieu le 30 mars 2005. »

Voici les six premières positions au DOCM 2004 :

Francis Chung, A.B. Lucas High School, London, ON; **Oleg Ivrii**, Don Mills Collegiate Institute, Don Mills, ON; **Taotao Liu**, Vincent Massey High School, Windsor, ON; **Richard Peng**, Vaughan Road Academy, Toronto, ON; **David Rhee**, McNally Composite High School, Edmonton, AB; **Geoffrey Siu**, London Central High School, London, ON.

Pour leur excellent résultat au DOCM, les meilleurs concurrents d'une région sont déclarés champions provinciaux. Les champions provinciaux du DOCM 2004 sont :

ALBERTA - **David Rhee**, McNally Composite High School, Edmonton; COLOMBIE-BRITANNIQUE - **Rongtao Dan**, Point Grey High School, Vancouver; MANITOBA -- **Yuchen Mu**, St. John's Ravenscourt School, Winnipeg; NOUVEAU-BRUNSWICK -- **Chen Li**, Fredericton High School, Fredericton; TERRE-NEUVE-ET-LABRADOR -- **Christopher Mong**, Holy Heart of Mary Regional High School, St. John's; NOUVELLE-ÉCOSSE - **Keran Xu**, The Halifax Grammar School, Halifax; ONTARIO CENTRE -- **Qi Yao**,

Glenforest High School, Mississauga; ONTARIO EST -- **Ying Li**, Lisgar Collegiate Institute, Ottawa; ONTARIO MÉTRO -- **Oleg Ivrii**, Don Mills Collegiate Institute, Don Mills; ONTARIO NORD - **Megan Lickley**, Lo-Ellen Park High School, Sudbury; ONTARIO OUEST -- **Geoffrey Siu**, London Central High School, London; ÎLE-DU-PRINCE-ÉDOUARD -- **Mostafa Fatehi**, Colonel Gray Secondary High School, Charlottetown; QUÉBEC -- **Karol Przybytkowski**, Collège Marianopolis, Montréal; SASKATCHEWAN -- **Jia Xi Sun**, Walter Murray Collegiate Institute, Saskatoon.

« Ces gagnants ont tous obtenu d'excellents résultats à un concours très exigeant. Ils ont fait preuve de créativité et ont manifesté des compétences en résolution de problèmes indispensables au marché du travail actuel, mentionne George Bluman (UBC), président du Comité des concours mathématiques de la SMC. Le Canada mise sur des élèves possédant d'excellentes aptitudes en résolution de problèmes pour demeurer concurrentiel dans l'économie mondiale. »

Environ 70 des meilleurs concurrents au DOCM 2004 ont été invités à participer à l'Olympiade mathématique du Canada (OMC) 2005. « Ces élèves s'affaireront à perfectionner leurs compétences en résolution de problèmes pour se préparer à l'OMC 2005 et tenter de se tailler une place au sein de l'équipe de six jeunes qui représenteront le Canada à l'Olympiade internationale de mathématiques (OIM) 2005, qui se tiendra en juillet prochain à Merida, au Mexique, affirme M. Graham Wright, directeur administratif de la Société mathématique du Canada. Ces excellentes activités de perfectionnement ne pourraient jamais avoir lieu si ce n'était de la participation bénévole de nombreux enseignants du secondaire, des collèges et des universités du pays. »

Les résultats, les questions et les solutions du DOCM 2004 sont publiés sur le Web au :

Hungarian Mathematical Society.

Conference to commemorate the 125th anniversary of the birth of two outstanding Hungarian mathematicians: Lipót FEJÉR and Frigyes RIESZ, Eger, June 8 - 14, 2005, more details can be found on the conference site of

<http://www.math.u-szeged.hu/confer/fejerriesz/Friesz.htm> and Logic in Hungary, 2005, Conference celebrating the 100th anniversary of László KALMÁR and Rózsa PÉTER, Budapest, August 5 - 11, 2005, more details can be found on the conference site of <http://www.renyi.hu/~1h05/>

"Southern Ontario Matrices and Statistics Days"

University of Windsor

Organized by S. Ejaz Ahmed, A. H. Hussein and George P. H. Styan, University of Windsor (Windsor, Ontario): 9-10 June 2005
There will be keynote, invited and contributed talks. It is expected that travel grants for graduate students will be available.

For further information please visit our Web site www.uwindsor.ca/somsd or contact S. Ejaz Ahmed: seahmed@uwindsor.ca
Webmail: www.uwindsor.ca/math

CALL FOR NOMINATIONS / APPEL DE MISES EN CANDIDATURE

The CMS Research Committee invites 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

2006

Le prix Coxeter-James rend hommage à l'apport exceptionnel à la recherche de jeunes mathématiciens. Il est possible de proposer la candidature d'une personne qui a obtenu son doctorat il y a au plus dix ans. Les propositions pourront être mises à jour et demeureront actives pendant un an, à moins que la mise en candidature originale ne corresponde à la dixième année d'obtention du doctorat. La personne choisie présentera sa conférence à la Réunion d'hiver. Les lettres de mise en candidature devraient inclure les noms d'au moins trois répondants possibles ainsi qu'un curriculum vitae récent, si disponible. Le récipiendaire doit être membre de la communauté mathématique canadienne.

The Coxeter-James Prize Lectureship recognizes young mathematicians who have made outstanding contributions to mathematical research. Nominations may be made up to ten years from the candidate's Ph.D. 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. The selected candidate will deliver the prize lecture at the Winter Meeting. Nomination letters should include at least three names of suggested referees as well as a recent curriculum vitae, if available. The recipient shall be a member of the Canadian mathematical community.

Prix *Jeffery-Williams* Prize Lectureship

2007

Le prix Jeffery-Williams rend hommage à l'apport exceptionnel à la recherche de mathématiciens d'expérience. Les propositions pourront être mises à jour et demeureront actives pendant trois ans. La conférence sera présentée à la Réunion d'été. Les lettres de mise en candidature devraient inclure les noms d'au moins trois répondants possibles ainsi qu'un curriculum vitae récent, si disponible. Le récipiendaire doit être membre de la communauté mathématique canadienne.

The Jeffery-Williams Prize Lectureship recognizes mathematicians who have made outstanding contributions to mathematical research. A nomination can be updated and will remain active for three years. The prize lecture will be delivered at the Summer Meeting. Nomination letters should include three names of suggested referees as well as a recent curriculum vitae, if available. The recipient shall be a member of the Canadian mathematical community.

Prix *Krieger-Nelson* Prize Lectureship

2007

Le prix Krieger-Nelson rend hommage à l'apport exceptionnel à la recherche de mathématiciennes. Les propositions pourront être mises à jour et demeureront actives pendant deux ans. La conférence sera présentée à la Réunion d'été. Les lettres de mise en candidature devraient inclure les noms d'au moins trois répondants possibles ainsi qu'un curriculum vitae récent, si disponible. Le récipiendaire doit être membre de la communauté mathématique canadienne.

The Krieger-Nelson Prize Lectureship recognizes outstanding research by a female mathematician. A nomination can be updated and will remain active for two years. The prize lecture will be delivered at the Summer Meeting. Nomination letters should include three names of suggested referees as well as a recent curriculum vitae, if available. The recipient shall be a member of the Canadian mathematical community.

La date limite pour les mises en candidature est le 30 juin 2005. Faire parvenir vos lettres à l'adresse suivante :
The deadline for nominations is June 30, 2005. Letters of nomination should be sent to the address below.

Finnur Lárusson, Chair/Président
CMS Research Committee / Comité de recherches de la SMC
Department of Mathematics
The University of Western Ontario
London, Ontario N6A 5B7 Canada

The 2005 Krieger-Nelson and Jeffery-Williams Prizes will be presented at the CMS Summer 2005 Meeting in Waterloo, Ontario, June 4 to 6.
Les prix Krieger-Nelson et Jeffery-Williams seront présentés à la Réunion 2005 d'été de la SMC à Waterloo (Ontario) du 4 au 6 juin.

Prix *Adrien-Pouliot* Prize

2005

Nous sollicitons la candidature de personnes ou de groupe de personnes ayant contribué de 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.

Il est possible de renouveler une mise en candidature présentée l'an dernier, pourvu que l'on en manifeste le désir avant la date limite. Dans ce cas, le présentateur n'a qu'à soumettre des documents de mise à jour puisque le dossier original a été conservé. Les mises en candidature doivent parvenir au bureau de la SMC avant le 30 avril 2005. Veuillez faire parvenir vos mises en candidature en six exemplaires 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.

Individuals who made a nomination in 2004 can renew this nomination by simply indicating their wish to do so by the deadline date. Only materials updating the 2004 Nomination need be provided as the original has been retained. Nominations must be received by the CMS Office no later April 30, 2005. 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
577 King Edward
Ottawa, Ontario K1N 6N5

*D*istinguished Service Award / Prix de la SMC pour service méritoire

2005

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.

Nominations should include a reasonably detailed rationale and be submitted by March 31, 2005, 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.

Pour les mises en candidature prière de présenter des dossiers avec une argumentation convaincante et de les faire parvenir, le 31 mars 2005 au plus tard, à l'adresse ci-dessous :

Selection Committee / Comité de sélection
Distinguished Service Award / Prix pour service méritoire
Canadian Mathematical Society / Société mathématique du Canada
577 King Edward
Ottawa, Ontario K1N 6N5

The 2005 Adrien-Pouliot and Distinguished Service Awards will be presented at the CMS Winter 2005 Meeting in Victoria, BC, December 10 to 12.
Les prix pour service méritoire et Adrien-Pouliot seront présentés à la Réunion d'hiver 2005 de la SMC à Victoria, C.-B., du 10 au 12 décembre.

The Department of Mathematics and Statistics at Memorial University of Newfoundland invites applications for an NSERC University Faculty Award (UFA) directed at increasing the representation of Women and Aboriginal Peoples in Science and Engineering. A successful candidate will be appointed as a regular tenure-track faculty member at the Assistant Professor level in the Department of Mathematics and Statistics, starting September 1, 2006. A PhD in Mathematics or Statistics with evidence of outstanding research and excellent teaching is required. All areas of Pure and Applied Mathematics and Statistics will be considered. Duties will include teaching at the graduate and undergraduate levels.

Review of applications will begin June 1, 2005, and continue until a candidate is identified for submission to NSERC by October 15, 2005. Candidates should submit a Curriculum Vitae, a description of research interests. They should also arrange for the names and addresses of three referees be sent to:

Interim Head of Department
VPA-MAST-2004-002
Department of Mathematics & Statistics
Memorial University of Newfoundland
St. John's, NL, A1C 5S7 Canada
E-mail: mathstat@math.mun.ca / Internet: www.math.mun.ca

You MUST use the code **VPA-MAST-2004-002** on all correspondence. You MUST also indicate the appropriate discipline; Applied Mathematics, Pure Mathematics, or Statistics.

Memorial University is the largest university in Atlantic Canada. As the province's only university, Memorial plays an integral role in the educational and cultural life of Newfoundland and Labrador. Offering diverse undergraduate and graduate programs to almost 18,000 students, Memorial provides a distinctive and stimulating environment for learning in St. John's, a very safe, friendly city with great historic charm, a vibrant cultural life, and easy access to a wide range of outdoor activities.

In accordance with NSERC UFA eligibility requirements only Canadian citizens and permanent residents of Canada should apply. Partners of candidates for positions are invited to include their resume for possible matching with other job opportunities.

CALL FOR NOMINATIONS

CMS Notes - Editors-in-Chief

The term of office of the present Editors-in-Chief of the CMS Notes, R. Dawson and S. Swaminathan will end December 31, 2005.

The Publication Committee of the CMS invites applications for the next Editor(s)-in-Chief to serve for a five or three year term. Applications should consist of a formal letter of application and a curriculum vitae.

Applications and/or comments should be sent by April 15, 2005 to the address below:

APPEL DE MISES EN CANDIDATURE

Notes de la SMC - Rédacteurs-en-chef

Le mandat des rédacteurs-en-chef actuels des Notes de la SMC, R. Dawson et S. Swaminathan, prendra fin le 31 décembre 2005.

Le Comité des publications de la SMC sollicite les mises en candidature pour le prochain rédacteurs-en-chef pour un mandat de trois ou cinq ans. Les mises en candidature doivent inclure une lettre formelle et un curriculum vitae.

Les candidatures et/ou commentaires devraient être acheminés, avant le 15 avril 2005 à:

Address for Nominations / Adresse de mise en candidatures:
Juris Steprans, Chair / Président
CMS Publications Committee / Comité des publications de la SMC
Department of Mathematics, York University
N520 Ross, 4700 Keale Street
Toronto, Ontario M3J 1P3
chair-pubc@cms.math.ca

ETHICAL GUIDELINES OF THE CANADIAN MATHEMATICAL SOCIETY

Many learned and professional societies have adopted ethical guidelines, decades ago in some cases. The CMS has a wide scope of activities, comparable to a number of these societies, and the Executive Committee considered it advisable for internal and external purposes to follow suit. Among societies with which the CMS is more closely related, the American Mathematical Society adopted ethical guidelines in 1995 (with revisions adopted in January 2004), and the Statistical Society of Canada is in the process of consulting its membership on a draft set of ethical guidelines.

In April 2004, the Executive Committee of the CMS appointed an ad hoc committee consisting of Chandler Davis, Christiane Rousseau and Jon Thompson to consider the matter and recommend a course of action. The committee reviewed ethical guidelines of several organizations, including the AMS, the AAUP, the SSC and various professional bodies. It was concluded that the AMS guidelines were among the best written, as well as the most appropriately constructed for our purposes. The committee also gave serious consideration to drafting a set of guidelines afresh, but ultimately concluded that much of the wording of the AMS document was particularly apt and could not be significantly improved. Thus the committee recommended adapting the AMS guidelines to CMS purposes.

The preamble to the AMS guidelines refers to matters specific to the AMS, such as its statement of goals and its Committee on Professional Ethics, so that a preamble to any CMS guidelines requires somewhat different wording. Also, in the political and economic circumstances currently evolving, the committee concluded that it would be appropriate to give more prominent mention to academic freedom and the need to resist secrecy demands, as well as the need to be vigilant regarding potential sources of conflict of interest.

A draft submitted by the ad hoc committee was discussed by the Executive Committee in October 2004 and approved in principle as a basis for discussion by the Board. The

Board discussed the draft in December 2004 and gave approval in principle, subject to the understanding that several suggestions by Board members be addressed, and that a revised draft then be made available to the CMS membership at large for comment, with a view to consideration by the Board in June 2005 for final approval.

The comments by Board members were principally directed to matters of equality of opportunity and non-discrimination. The draft below incorporates these concerns by including new wording suggested by members of the Committee on Women in Mathematics.

It should be understood that a document of this kind is necessarily organic and will require amendments from time to time, in light of experience. This was the situation with the AMS document, recently amended in light of cases arising in the period since it was first adopted.

Members of the CMS are invited to review the draft (reproduced below) and to send comments to the CMS office (director@cms.math.ca) by May 15, 2005. The comments will be considered by the ad hoc committee and a further draft will be prepared for discussion by the Executive Committee and the Board in their meetings scheduled for early June 2005. For members' convenience, this draft is also posted on the CMS website (www.cms.math.ca).

DRAFT 23 January 2005

NOTE: The following draft set of Ethical Guidelines is an adaptation of the Ethical Guidelines of the American Mathematical Society in the form adopted by the Council of the AMS in January 2004 (with revisions from the original form adopted in January 1995) and published in the Notices of the AMS June/July 2004, pp. 675-7 (web-posted at <http://www.ams.org/secretary/ethics.html>). The AMS has been consulted and has agreed to this use of its Ethical Guidelines by the CMS. We acknowledge and thank the AMS.

The preamble and section A of this draft make very significant use of the preamble and section II of the AMS document. However,

the preamble in the draft is written so as to be in accordance with structures and by-laws of the CMS. Section A of the draft covers additional matters reflecting concerns of national or international interest not addressed in the corresponding section II of the AMS guidelines. Sections B, C and D in the draft are sections I, IV and III, respectively, of the AMS document in their entirety, with no wording changes.

ETHICAL GUIDELINES OF THE CANADIAN MATHEMATICAL SOCIETY

The Society's By-Laws state:

The goal of the Canadian Mathematical Society is to promote and advance the discovery, learning and application of mathematics.

To assist in these activities and in the preservation of that atmosphere of mutual trust and ethical conduct required for science to prosper, the Society has adopted ethical guidelines on [XXX]. These guidelines reflect its expectations of behaviour for its members, and for all individuals and institutions in the wider mathematical community, including those engaged in the education or employment of mathematicians or in the publication of mathematics.

These guidelines are not a complete expression of the principles that underlie them. They are not meant to be a complete list of all ethical issues. They will be modified and amplified by events and experience. They are guidelines, not a collection of rigid rules. The Society cannot enforce these guidelines, and it cannot substitute for individual responsibility or for the responsibility of the mathematical community at large.

Concerns regarding alleged violations of the guidelines, including but not limited to requests for assistance from members of the Society who believe themselves injured in their capacity as mathematicians by violations of the guidelines, may be brought to the Executive Committee of the Society. The Executive Committee shall determine appropriate ways to review and address the concerns, which may include establishing an

ad hoc committee to investigate and make recommendations. In cases where action is considered appropriate, the Executive Committee may bring recommendations to the Society's Board of Directors.

A. Social Responsibility

The Society promotes mathematical research together with its unrestricted dissemination, and to that end encourages all to engage in this endeavor.

Mathematical ability must be respected wherever it is found, without regard to race, gender, ethnicity, age, sexual orientation, religious belief, political belief, disability, or any other individual characteristic prohibited as a basis for discrimination by federal or provincial human rights legislation in Canada. Harassment or demeaning treatment of colleagues and students is inconsistent with these Ethical Guidelines, and anyone witnessing such behaviour has the obligation to intervene. Ethical behaviour means ensuring that all members of the mathematical community are given fair recognition for their work, with regard to career opportunities and advancement. It also means that members of governing boards, conference organizers and others serving in positions of responsibility should endeavour to ensure that the choice of plenary speakers for conferences, as well as choices for all other professional opportunities, reflect the demographic balance of the community they represent.¹

Mathematicians in universities should uphold and defend academic freedom. All mathematicians should strive for openness in communicating results of research. This may require explaining or advocating openness against secrecy demands from public-sector or private-sector employers or funding agencies. Even a researcher who has accepted limitations in regard to publication retains rights of authorship, which should be defended.

When mathematical work may affect the public health, safety or general welfare, or results in identification of risk to public health, safety or general welfare, it is the responsibility of mathematicians to disclose the implications of their work to their employers and to the public, if necessary.

Should this bring retaliation, the Society will examine the ways in which it may want to help the whistle-blower, particularly when the disclosure has been made to the Society.

The growing importance of mathematics in society at large and of public or private funding of mathematics may increasingly place members of the mathematical community in conflicts of interest. The appearance of bias in reviewing, refereeing, or funding decisions, or in consulting activities, must be scrupulously avoided, particularly where decisions may affect one's own research, that of colleagues or of one's students, or may affect the public interest. When conflicts of interest occur, one should withdraw from the decision-making process.

The growing importance of mathematics may increasingly lead to calls upon the Society or individual members to comment publicly on the meaning or uses of mathematical results. Members and officers are encouraged to respond to such calls, as well as to initiate public discussion, to ensure that the public has the benefit of accurate information.

Confidentiality is often prescribed in regard to letters of assessment of individuals, or in reviews of programs or departments. A recommendation accurately reflecting the writer's views is often given only on the understanding that it be kept confidential; therefore, a request for a recommendation must be assumed to carry an implicit promise of confidentiality, unless there is a statement to the contrary. Similarly, a referee's report is normally provided with the understanding that the name of the writer be withheld from certain interested parties, and the referee must be anonymous unless otherwise indicated in advance. The writer of the recommendation or report must respond fairly and keep confidential any privileged information, personal or mathematical, that the writer receives. If the requesting individual, institution, agency or company becomes aware that confidentiality or anonymity can not be maintained, that should be immediately communicated.

Where choices must be made and conflicts are unavoidable, as with editors or those who

decide on appointments or promotions or research grants, it is essential to keep careful records that would demonstrate the process was indeed fair when inspected at a later time.

The confidentiality of unfinished work submitted to appointment or promotion committees, or to external evaluators, should be respected unless these materials have previously been made public, and no persons serving in such capacities may appropriate to themselves ideas in work submitted to them or do anything that would impair the rights of authors to the fruits of their labors. Students' research work known only to their advisors and a limited group of colleagues should similarly be respected.

No one should be exploited by the offer of a temporary position at an unreasonably low salary and/or an unreasonably heavy work load.

B. Research and Presentation

The knowing presentation of another person's mathematical discovery as one's own constitutes plagiarism and is a serious violation of professional ethics. Plagiarism may occur for any type of work, whether written or oral and whether published or not.

The correct attribution of mathematical results is essential, both because it encourages creativity, by benefiting the creator whose career may depend on the recognition of the work and because it informs the community of when, where, and sometimes how original ideas entered into the chain of mathematical thought. To that end, mathematicians have certain responsibilities, which include the following:

- To endeavor to be knowledgeable in their field, especially about work related to their research;
- To give appropriate credit, even to unpublished materials and announced results (because the knowledge that something is true or false is valuable, however it is obtained);
- To use no language that suppresses or improperly detracts from the work of others;
- To correct in a timely way or to withdraw

work that is erroneous.

A claim of independence may not be based on ignorance of widely disseminated results. On appropriate occasions, it may be desirable to offer or accept joint authorship when independent researchers find that they have produced identical results. All the authors listed for a paper, however, must have made a significant contribution to its content, and all who have made such a contribution must be offered the opportunity to be listed as an author. Because the free exchange of ideas necessary to promote research is possible only when every individual's contribution is properly recognized, the Society will not knowingly publish anything that violates this principle, and it will seek to expose egregious violations anywhere in the mathematical community.

To claim a result in advance of its having been achieved with reasonable certainty injures the community by restraining those working toward the same goal. Publication of the full details of results that are announced must not be unreasonably delayed.

C. Publications

Editors are responsible for the timely refereeing of articles and must judge articles by the state of knowledge at the time of submission. Editors should accept a paper for publication only if they are reasonably certain the paper is correct.

The contents of a submitted manuscript should be regarded by a journal as privileged information. If the contents of a paper become known in advance of publication solely as a result of its submission to or handling by a journal, and if a later paper based on knowledge of the privileged information

is received anywhere (by the same or another journal), then any editor aware of the facts must refuse or delay publication of the later paper until after publication of the first – unless the first author agrees to earlier publication of the later paper.

At the time a manuscript is submitted, editors should notify authors whenever a large backlog of accepted papers may produce inordinate delay in publication. A journal may not delay publication of a paper for reasons of an editor's self interest or of any interest other than the author's. The published article should bear the date on which the manuscript was originally submitted to the journal for publication, together with the dates of any revisions. Editors must be given and accept full scientific responsibility for their journals; when a demand is made by an outside agency for prior review or censorship of articles, that demand must be resisted and, in any event, knowledge of the demand must be made public.

Both editors and referees must respect the confidentiality of materials submitted to them unless these materials have previously been made public, and above all may not appropriate to themselves ideas in work submitted to them or do anything that would impair the rights of authors to the fruits of their labors. Editors must preserve the anonymity of referees unless there is a credible allegation of misuse.

All mathematical publishers, particularly those who draw without charge on the resources of the mathematical community through the use of unpaid editors and referees, must recognize that they have made a compact with the community to disseminate information, and that compact

must be weighed in their business decisions.

The Society will not take part in the publishing, printing or promoting of any research journal where there is some acceptance criterion, stated or unstated, that conflicts with the principles of these guidelines. It will promote the quick refereeing and timely publication of articles accepted to its journals.

D. Education and Degrees

Holding a Ph.D. degree is virtually indispensable to an academic career in mathematics and is becoming increasingly important as a certificate of competence in the wider job market. An institution granting a degree in mathematics is certifying that competence and must take full responsibility for it by insuring the high level and originality of the Ph.D. dissertation work, and sufficient knowledge by the recipient of important branches of mathematics outside the scope of the thesis. When there is evidence of plagiarism it must be carefully investigated, even if it comes to light after granting the degree, and, if proven, the degree should be revoked.

Mathematicians and organizations involved in advising graduate students should fully inform them about the employment prospects they may face upon completion of their degrees.

Footnote

¹ *Nothing in these Ethical Guidelines is intended to preclude or limit either the operation of bona fide positive action programs approved or established by federal or provincial government agencies to increase opportunities for designated groups in Canada, or measures to provide recognition of distinguished contributions by members of the mathematical community from historically under-represented groups.*

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

PRINCIPES DE DÉONTOLOGIE DE LA SOCIÉTÉ MATHÉMATIQUE DU CANADA

Plusieurs sociétés savantes et professionnelles ont adopté des principes déontologiques, et dans certains cas, cela fait déjà quelques dizaines d'années. Par exemple, l'American Mathematical Society (AMS), l'une des sociétés avec lesquelles la SMC entretient des relations étroites, a adopté de tels principes en 1995 (et les a modifiés en 2004). De même, la Société statistique du Canada (SSC) a entrepris un processus de consultation de ses membres sur une version préliminaire de ses principes déontologiques. Comme certaines de ces sociétés, la SMC couvre un large éventail d'activités, et son comité exécutif estime qu'il serait judicieux d'entreprendre cet exercice compte tenu des besoins internes et externes de la Société.

En avril 2004, le comité exécutif de la Société a mis sur pied un comité spécial composé de Chandler Davis, de Christiane Rousseau et de Jon Thompson pour examiner la question en vue de formuler des recommandations. Aussi le comité a-t-il étudié les principes déontologiques de plusieurs organismes, dont l'AMS, l'AAUP et la SSC, ainsi que ceux de divers groupes professionnels. Le comité a conclu que les principes de déontologie de l'AMS étaient parmi les mieux écrits et les plus appropriés aux besoins de la Société. Les membres du comité ont également étudié de près la possibilité de rédiger les principes de déontologie sans s'appuyer sur aucun autre. Mais ils en sont arrivés à la conclusion que le document de l'AMS convenait particulièrement bien et ne pouvait pas être tellement mieux. Par conséquent, le comité recommande d'adapter les principes de déontologie de l'AMS aux besoins de la SMC.

Le préambule des principes déontologiques de l'AMS renvoie à des éléments propres à cette association, tels que l'énoncé de ses objectifs et son comité de déontologie. Les principes de déontologie de la SMC devront donc être formulés un peu différemment. De plus, compte tenu de la conjoncture politique et économique actuelle, le comité estime qu'il serait approprié d'insister sur la liberté universitaire, la nécessité de s'opposer aux clauses de confidentialité et l'importance d'être vigilant en ce qui a trait aux sources potentielles de conflit d'intérêts.

En octobre 2004, le comité exécutif a examiné

la version préliminaire que lui avait présentée le comité spécial, puis l'a approuvée en principe et l'a présentée au conseil d'administration pour discussion. En décembre 2004, le conseil d'administration l'a à son tour étudiée et approuvée en principe à condition que les suggestions apportées par plusieurs de ses membres soient évaluées et qu'une version révisée soit ensuite présentée à l'ensemble des membres de la Société en vue d'obtenir des commentaires, et qu'elle soit présentée à nouveau au conseil en juin 2005 pour approbation finale.

Les commentaires des membres du conseil d'administration portaient principalement sur les questions d'égalité des chances et de non-discrimination. Aussi, la version préliminaire présentée ci-dessous comporte-t-elle des modifications qui tiennent compte des préoccupations soulevées par des membres du Comité des femmes en mathématiques.

Il convient de préciser qu'un tel document est nécessairement évolutif et qu'il devra être modifié de temps en temps en fonction des situations. Ce fut notamment le cas de l'AMS, qui a dû modifier ses principes de déontologie récemment en raison de circonstances survenues après l'adoption initiale de ses principes.

Les membres de la SMC sont invités à examiner la version préliminaire (reproduite ci-dessous) et à envoyer leurs commentaires au bureau de la Société (directeur@cms.math.ca) avant le 15 mai 2005. Le comité spécial étudiera les commentaires, puis le comité exécutif préparera une autre version qui sera présentée au conseil d'administration à sa réunion prévue pour le début juin 2005. Les membres peuvent également avoir accès à la version préliminaire publiée sur le site Internet de la SMC (www.cms.math.ca).

VERSION PRÉLIMINAIRE

Le 23 janvier 2005

REMARQUE : La version préliminaire des principes déontologiques qui suit est une adaptation des principes de déontologie de l'American Mathematical Society (AMS), tels qu'approuvés par le Conseil de l'AMS en janvier 2004 (après les modifications apportées à la première version adoptée en janvier 1995)

et publiés dans Notices of the AMS, numéro juin/juillet 2004, p. 675-677 (accessibles sur Internet à <http://www.ams.org/secretary/ethics.html>). L'AMS a été consultée et accepte que la SMC utilise ses principes de déontologie. La SMC lui en est reconnaissante et la remercie.

Le préambule et la section A de la présente version préliminaire des principes de déontologie reprennent en grande partie le préambule et la section II du document de l'AMS. Le préambule de la version préliminaire est néanmoins rédigé de façon à respecter la structure et les règlements administratifs de la SMC, et la section A couvre d'autres questions d'intérêt national ou international qui ne sont pas présentes dans la section II des principes de l'AMS. Les sections B, C et D de la version préliminaire correspondent respectivement aux sections I, IV et III du document de l'AMS desquels rien n'a été changé.

PRINCIPES DE DÉONTOLOGIE DE LA SOCIÉTÉ MATHÉMATIQUE DU CANADA

Les règlements administratifs de la SMC indiquent que :

la Société mathématique du Canada s'est donnée pour objectif de promouvoir et de favoriser la découverte et l'apprentissage des mathématiques, et les applications qui en découlent.

La SMC a adopté des principes déontologiques le [XXX] dans le but de favoriser ses objectifs ainsi que le maintien d'une atmosphère de confiance mutuelle et de conduite éthique nécessaire à l'essor de la science. Ces principes de déontologie reflètent les attentes de la Société envers ses membres en matière de comportement, mais également envers toute personne ou tout établissement de la grande communauté mathématique, notamment ceux qui jouent un rôle dans la formation ou l'emploi des mathématiciens, ou encore dans la publication mathématique.

Les présents principes de déontologie ne traduisent pas en détails les principes sous-jacents et ne constituent pas une liste exhaustive de toutes les questions de déontologie. Ils seront modifiés et développés en fonction des événements et des situations qui surviennent. De fait, ils sont davantage un cadre de référence qu'une

série de règles strictes. Par ailleurs, la SMC ne peut imposer le respect de ces principes, et ceux-ci ne peuvent se substituer à la responsabilité des personnes ou de la grande communauté mathématique.

Toute question concernant une violation présumée des principes de déontologie, y compris sans toutefois s'y limiter les demandes d'aide de la part de membres qui estiment que leurs compétences à titre de mathématiciens sont touchées par la violation des principes déontologiques, doit être présentée au comité exécutif de la SMC. Celui-ci déterminera la manière appropriée d'étudier la question, par exemple en mettant sur pied un comité spécial chargé de faire enquête et de formuler des recommandations. Dans le cas où il semble opportun de prendre des mesures, le comité exécutif peut présenter des recommandations au conseil d'administration de la Société.

A. Responsabilité sociale

La SMC vise à promouvoir la recherche en mathématiques ainsi que sa diffusion sans restriction. Dans cette optique, elle encourage tout le monde à participer à cette entreprise.

Les compétences mathématiques de toute personne doivent être respectées sans distinction de sa race, de son sexe, de son origine ethnique, de son âge, de son orientation sexuelle, de ses croyances religieuses, de ses opinions politiques, d'une incapacité ou de toute autre caractéristique personnelle faisant l'objet d'une discrimination interdite en vertu de la loi fédérale ou provinciale sur les droits de la personne en vigueur au Canada. Toute forme de harcèlement ou d'humiliation de collègues ou d'étudiants contrevient aux principes de déontologie, et quiconque est témoin d'un tel comportement se doit d'intervenir. Un comportement éthique consiste à faire en sorte que tout membre de la communauté mathématique jouisse de perspectives de carrière et de promotion qui expriment une juste reconnaissance de son travail. Cela signifie également que les membres de conseils d'administration, les personnes chargées d'organiser des conférences et toute autre personne occupant un poste de responsabilité doivent veiller à ce que le choix de conférenciers pléniers, ou de toute autre personne pour assumer des fonctions professionnelles, reflète l'équilibre démographique de la communauté qu'ils représentent.¹

Les mathématiciens qui travaillent dans le milieu universitaire doivent défendre la liberté universitaire. Ils doivent faire preuve d'ouverture dans la communication des résultats de leurs recherches, ce qui peut supposer d'expliquer ou de défendre le principe d'ouverture dans des cas où des employeurs des secteurs public ou privé, ou des organismes de financement, exigent une clause de confidentialité. Même un chercheur qui a accepté de publier selon certaines limitations détient des droits de paternité, ce qui doit être défendu.

Lorsque des travaux mathématiques peuvent affecter la santé, la sécurité ou le bien-être général du public, ou permettre de déceler un risque pour la santé, la sécurité ou le bien-être général du public, le mathématicien a la responsabilité de divulguer les résultats de ses recherches à son employeur ainsi qu'à la population en général, si cela est nécessaire. Si des représailles sont dirigées contre le dénonciateur, la SMC étudiera la manière dont elle entend l'aider, en particulier si la divulgation a été faite auprès de la Société.

L'importance croissante des mathématiques pour la société en général et du financement public ou privé de ce domaine peut placer les membres de la communauté mathématique dans des situations de conflit d'intérêts, et ce, de plus en plus souvent. Toute apparence de parti pris lors de la révision, de l'évaluation ou du financement d'une décision, ou lors d'une consultation, doit être scrupuleusement évitée, en particulier si la décision peut avoir des incidences sur ses propres recherches, ou sur celles de collègues ou d'étudiants, ou si elle peut être d'intérêt public. En situation de conflit d'intérêts, une personne doit se retirer du processus décisionnel.

L'importance grandissante des mathématiques peut amener de plus en plus souvent la Société ou un de ses membres à se faire solliciter pour commenter publiquement la signification ou l'utilisation de résultats mathématiques. La SMC encourage ses membres et son personnel à répondre à cette forme de sollicitation et même à lancer des discussions sur la scène publique pour permettre à la population en général de bénéficier d'information à jour.

La confidentialité est souvent requise dans le cas d'une lettre d'évaluation personnelle ou de

l'examen d'un programme ou d'un département. Il arrive souvent qu'une personne n'accepte de faire une recommandation où elle exprime clairement son point de vue qu'à condition que la recommandation demeure confidentielle. Aussi, une demande de recommandation doit-elle comporter une promesse implicite de respect de la confidentialité, sauf indication contraire. De même, le rapport d'un comité de lecture est normalement rédigé de manière à ce que le nom de l'auteur soit retiré de certaines parties du texte et en conservant l'anonymat de l'évaluateur, sauf indication contraire mentionnée à l'avance. Le rédacteur de la recommandation ou du rapport doit répondre avec équité et préserver la confidentialité de tout renseignement privilégié, personnel ou mathématique, qu'il a en sa possession. Dans le cas où une personne, un établissement, une agence ou une entreprise fait une demande et apprend par la suite que la confidentialité ou l'anonymat ne peuvent être respectés, la situation doit être dénoncée immédiatement.

Si des choix doivent être faits qui mènent inévitablement à un conflit d'intérêts, avec un rédacteur en chef par exemple, ou encore avec ceux qui décident des nominations, des promotions ou des subventions de recherche, il est essentiel de conserver dans un dossier les renseignements permettant de démontrer plus tard que le processus était juste.

La confidentialité de travaux non terminés soumis à un comité responsable des nominations ou des promotions, ou à un évaluateur externe, doit être respectée, à moins que les résultats aient déjà été divulgués publiquement. Aucune personne affectée à ces fonctions ne peut s'approprier les idées des travaux qui lui sont soumis ou ne peut faire quoi que ce soit qui porte atteinte au droit de l'auteur de jouir du fruit de son travail. Les recherches d'étudiants connues seulement de leurs directeurs ou superviseurs et d'un nombre limité de collègues doivent être traitées de la même façon.

Il n'est pas permis d'exploiter quelqu'un en lui offrant un emploi temporaire à un salaire beaucoup trop bas ou en exigeant de lui une charge de travail excessive.

B. Recherche et divulgation

Une personne qui divulgue délibérément une découverte mathématique d'un autre cher-

cheur comme si elle était la sienne commet un acte de plagiat, ce qui constitue une violation grave de l'éthique professionnelle. Le plagiat s'applique aux travaux de tout genre, à l'écrit comme à l'oral, qu'ils soient publiés ou non.

Une attribution juste des résultats mathématiques est essentielle pour deux raisons : elle encourage la créativité, puisqu'elle permet au chercheur dont la carrière peut dépendre de la reconnaissance de son travail de bénéficier des avantages, et elle renseigne la communauté sur le moment, l'endroit et parfois la manière dont les idées originales entrent dans la chaîne de la pensée mathématique. Dans cette optique, les mathématiciens ont certaines responsabilités, notamment celles :

- de s'efforcer d'être reconnus dans leur champ d'activités, en particulier grâce aux travaux liés à leur recherche;
- d'accorder le crédit aux bonnes personnes, même pour des travaux qui ne sont pas encore publiés et dont les résultats sont annoncés (parce qu'il est valable de savoir qu'une chose est vraie ou fausse, peu importe comment l'information a été obtenue);
- de ne pas utiliser un langage qui entrave le travail des autres ou qui lui porte atteinte de façon inappropriée;
- de corriger à temps les travaux et de retirer ceux qui comportent des erreurs.

On ne peut invoquer l'ignorance de résultats largement divulgués pour prétendre à l'indépendance. En certaines occasions, il peut être préférable d'offrir ou d'accepter une paternité conjointe si des chercheurs indépendants estiment être arrivés à des résultats identiques. Tous les auteurs d'un article doivent cependant avoir apporté une contribution significative au contenu, et tous ceux qui ont apporté une telle contribution doivent avoir la possibilité d'être nommés dans la liste des auteurs. Comme un échange des idées nécessaires à la promotion de la recherche n'est possible que si la contribution de chaque personne est justement reconnue, la SMC ne publiera rien, en toute connaissance de cause, qui puisse violer ce principe et tentera de dénoncer les violations graves à toute la communauté mathématique.

Le fait d'annoncer des résultats avant d'être raisonnablement certain que les travaux sont

terminés porte atteinte à la communauté, car cela empêche les autres chercheurs qui poursuivent les mêmes objectifs de continuer leurs travaux. On ne doit pas retarder indûment la publication de résultats détaillés déjà annoncés.

C. Publication

Les rédacteurs en chef sont responsables d'évaluer les articles rapidement et de les juger selon l'état des connaissances au moment de la soumission. Ils ne doivent accepter de publier que les articles dont ils sont raisonnablement certains de l'exactitude.

Le contenu d'un texte soumis à une revue scientifique doit être considéré par celle-ci comme de l'information privilégiée. Si le contenu de l'article est connu avant d'être publié, pour la seule raison d'avoir été soumis à la revue ou que celle-ci le possède, et si un autre article qui se fonde sur l'information privilégiée est soumis à n'importe quelle revue (la même ou une autre), un rédacteur en chef mis au fait de la situation doit refuser le deuxième article ou en retarder la publication jusqu'à ce que le premier soit publié, à moins que l'auteur du premier article n'accepte de publier le deuxième à l'avance.

Au moment où il reçoit les articles, le rédacteur en chef doit aviser les auteurs si un grand nombre d'articles déjà acceptés risque de causer un délai anormalement long avant la publication du leur. Une revue ne peut retarder la publication d'un article en raison du seul intérêt du rédacteur en chef ou de tout autre intérêt que celui de l'auteur. L'article publié doit comporter la date du manuscrit soumis pour publication et toutes les dates des révisions. Le rédacteur en chef doit assumer et accepter l'entière responsabilité scientifique au nom de sa revue. Si une agence externe demande de réviser ou de censurer l'article, cette demande doit être réfutée et ne doit pas être divulguée publiquement.

Le rédacteur en chef et l'évaluateur doivent respecter la confidentialité de l'article qui leur est soumis, à moins que son contenu n'ait déjà été rendu public. De plus, ils ne peuvent surtout pas s'approprier les idées contenues dans les articles qui leur sont soumis ni faire quoi que ce soit qui porte atteinte au droit de l'auteur de jouir du fruit de son travail. Le rédacteur en chef doit préserver l'anonymat de

l'évaluateur, sauf en cas d'allégation crédible d'utilisation abusive.

Tout éditeur du domaine des mathématiques, en particulier ceux qui comptent sur des ressources bénévoles de la communauté mathématique, comme des rédacteurs en chef et des évaluateurs, doit reconnaître son engagement envers la communauté à diffuser l'information. De plus, cet engagement doit avoir du poids dans ses décisions commerciales.

La SMC ne prendra pas part à la publication, à l'impression ou à la promotion de toute revue scientifique qui a établi des critères d'admissibilité, explicites ou implicites, qui entrent en conflit avec ses principes de déontologie. La Société fera la promotion des pratiques efficaces d'évaluation et de la publication rapide des articles qui sont présentés aux équipes de rédaction de ses revues.

D. Formation et diplômes

Être titulaire d'un doctorat est pratiquement indispensable pour poursuivre une carrière universitaire en mathématiques et devient un critère de plus en plus important sur le marché du travail comme garantie de compétence. Un établissement qui décerne un grade en mathématiques certifie ces compétences et doit en assumer l'entière responsabilité en assurant un niveau élevé et une certaine originalité des thèses de doctorat, et en fournissant aux étudiants des connaissances suffisantes dans les principaux domaines des mathématiques, en dehors du domaine d'étude principal de la thèse. En cas de plagiat, une enquête doit être menée même si la situation est dévoilée après la collation des grades. Si le plagiat est prouvé, le diplôme doit être révoqué.

Les mathématiciens ou établissements qui dirigent des étudiants aux cycles supérieurs doivent informer ces derniers de façon détaillée des perspectives d'emploi qui les attendent à la fin de leurs études.

Note

¹ *Il n'y a rien dans les présents principes de déontologie qui ne vise à empêcher ni à limiter soit la mise en oeuvre de programmes positifs entrepris de bonne foi et approuvés ou établis par des agences fédérales ou provinciales en vue d'accroître les possibilités pour certains groupes désignés au Canada, soit les mesures visant à faire reconnaître les contributions remarquables de membres de la communauté mathématique appartenant à des groupes historiquement sous-représentés.*

FIRST ANNOUNCEMENT

RENAISSANCE BANFF



THE EIGHTH ANNUAL INTERNATIONAL

BRIDGES CONFERENCE

+

COXETER DAY

JULY 31 - AUGUST 3, 2005

MATHEMATICAL CONNECTIONS IN ART, MUSIC, AND SCIENCE

THE BANFF CENTRE, BANFF, ALBERTA, CANADA

In 2005 the Bridges Conference will come to Canada for the first time. The Banff Centre is a centre for the arts and mountain culture, beautifully located in the Canadian Rockies.

Renaissance Banff brings together mathematicians, scientists, artists, educators, musicians, writers, computer scientists, architects, sculptors, quilters and weavers, playwrights, photographers, mathematical model builders in a lively atmosphere of mutual exchange and encouragement.

- mathematics and visualization
- mathematics and art in the classroom
- computer generated and assisted art
- gallery displays of visual art
- working sessions with artists
- invited presentations
- mathematics in music
- ethno-mathematics
- symmetry and tilings
- musical/theatrical presentations
- contributed talks
- exhibits gallery

The fourth day of the conference is COXETER DAY, dedicated to celebrating the life of the late H.S.M. (Donald) Coxeter and his enduring legacy to art, artists, and recreational mathematicians.

Contributed papers are welcome. For information on preparing submissions please consult the Bridges website below. Deadline February 1, 2005

The papers of Renaissance Banff will be published as a PROCEEDINGS distributed at the conference.

<http://www.sckans.edu/~bridges> OR <http://pims.math.ca/RenaissanceBanff>

The conference is sponsored by The Banff Centre, The Canadian Mathematical Society, and the Pacific Institute for the Mathematical Sciences.



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CALENDAR OF EVENTS / CALENDRIER DES ÉVÉNEMENTS

MARCH 2005		MARS	MAY 2005		MAI
19-20	28th Annual Texas PDE Conference (University of Texas, Pan American, Edinburg, TX) www.math.panam.edu/txpde05/		15-21	43rd International Symposium on Functional Equations (Batz-sur-Mer, France) Nicole.Belluot@ec-nantes.fr , romanger@us.edu.pl	
21-25	Workshop on $N=1$ Compactifications (Fields Institute, Toronto, ON) abrand@fields.utoronto.ca		22-25	ICCS 2005: International Conference on Computational Science, Advancing Science through Computation (Atlanta, GA) ICCS2005@mathcs.emory.edu	
21-25	Extensions of Hilbert's Tenth Problem, AIM Research Conference Center, Palo Alto, CA) www.aimath.org/ARCC/workshops/Hilberts10th/		27-31	Annual meeting of the Canadian Mathematics Education Study Group - Ottawa University www.cmesg.math.ca Rencontre annuelle du Groupe canadien d'études en didactique des mathématiques - Université d'Ottawa www.gcedm.math.ca	
28-Apr 1	Workshop on String Phenomenology (The Perimeter Institute, Waterloo, ON) abrand@fields.utoronto.ca		31-June 4	2nd Conference on Analysis and Probability on Fractals (Cornell University, Ithaca, N.Y.) www.math.cornell.edu/Colloquia/fractals.html	
28-Apr 1	Topology and Geometry of the moduli space of curves (AIM Research Conference Center, Palo Alto, CA) http://aimath.org/ARCC/workshops/modspacecurves.html		JUNE 2005		JUIN
			1-5	Stochastic Modelling in Financial Mathematics (CRM, Montreal, Quebec) crm@ere.umontreal.ca	
			4-6	CMS/CSHPM 2005 Summer Meeting / Réunion d'été 2005 de la SMC/SCHPM (University of Waterloo) meetings@cms.math.ca	
APRIL 2005		AVRIL	7-17	Fields Institute Summer School on Operator Algebras (University of Ottawa, Ottawa, ON) www.fields.utoronto.ca/programs/scientific/04-05/opalg_school/	
1-2	The Sixth Annual Colloquiumfest, Research Unit Algebra and Logic (University of Saskatchewan, Saskatoon, SK) http://math.usask.ca/~marshall/collfest.html		9-10	Southern Ontario Matrices and Statistics Days (University of Windsor, Windsor, Ontario) seahmed@uwindsor.ca	
6-10	Extracting Macroscopic Information from Molecular Dynamics (CRM, Montreal, Quebec) crm@ere.umontreal.ca		10-12	Groups, Rings and Algebras, a Conference in honour of Donald S. Passman (University of Wisconsin, Madison, WI) http://condor.depaul.edu/~chin/dsp.htm	
			19-July 8	Random Processes, random matrices and integrable systems (CRM short program) Centre de recherches mathématiques, Université de Montreal, Montreal, Quebec) crm@ere.umontreal.ca	
27-May 1	Multiscale Modelling in Solids (CRM, Montreal, Quebec) crm@ere.umontreal.ca		20-July 15	Clay Mathematics Institute Summer School: Ricci Flow, 3-Manifolds and Geometry (including Perelman's recent work) (MSRI, Berkeley, CA) www.claymath.org/summerschool	
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2-6	Workshop on Gravitational Aspects of String Theory (Fields Institute, Toronto, ON) abrand@fields.utoronto.ca		4-7	The 6th Iberoamerican Conference on Topology and its Applications, CITA 2005 (Puebla, Mexico) http://docencia.izt.uam.mx/cita	
11-14	MITACS 6th Annual Conference, Mathematics of Energy (University of Calgary, Calgary, AB) www.mitacs.ca/AC2005/		4-8	Eighth International Symposium on Generalized Convexity and Monotonicity (Insubria University, Varese, Italy) www.eco.unin-subria.it/gcm8	
			4-8	Conference on Universal Algebra and Lattice Theory (University of Szeged, Hungary) www.math.u-szeged.hu/conf/algebra	
13-14	6th Mississippi State-UAB Conference on Differential Equations & Computational Simulations; Dedicated to Louis Nirenberg's 80th birthday and Klaus Schmitt's 65th birthday (Mississippi State University, Mississippi State, MS) www.msstate.edu/dept/math/de2005/		10-13	The 20th Summer Conference on Toplogy and its Applications (Denison University, Granville, OH) sumtopo2005@denison.edu	
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13-15	Frontiers in Applied and Computational Mathematics, All Areas of Applied Mathematics (New Jersey Institute of Technology, Newark, New Jersey, USA). suttons@adm.njit.edu ; www.math.njit.edu/Events/FACM05/		18-22	VI Brazilian Workshop on Continuous Optimization (West Side Hotel Residence, Goiania, Brazil) vibwco@mat.ufg.br	
14-15	Conference in honor of Heydar Radjavi's 70th Birthday (Hotel Golf, Bled, Slovenia) Damjana.Kokol@FMF.Uni-Lj.SI , www.law05.si/hrc/		25-30	International Conference on Difference Equations, Special Functions and Applications (Munich, Germany) www-m6.ma.tum.de/~ruffing/Conference2005/	

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15-21	ICMI Study15; The Professional Education and Development of Teachers of Mathematics (Aguas de Lindoia, Sao Paulo, Brazil) dball@umich.edu		OCTOBER 2005		OCTOBRE
31-Aug 5	Bridges: Mathematica Connections in Art, Music and Science (The Banff Centre, Banff, AB) www.sckans.edu/~bridges/ , rsaranghi@towson.edu		17-21	Nonlinear Parabolic Problems (Helsinki, Finland) www.math.helsinki.fi/research/FMSvisitor0506	
AUGUST	2005	AOÛT	DECEMBER	2005	DÉCEMBRE
17-21	Third Pacific Rim Conference on Mathematics, All Areas of Mathematics (Fudan University, Shanghai, China). c1zhou@fudan.edu.cn www.prcm3.fudan.edu.cn/		10-12	CMS 2005 Winter Meeting / Réunion d'hiver 2005 de la SMC (University of Victoria) meetings@cms.math.ca	
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			2-6	Eighth IMS North American New Researchers Conference (Minneapolis, Minnesota) galin@stat.umn.edu	

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