



CMS

NOTES

de la SMC

Volume 30

No. 4

May / mai 1998

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**FROM THE PRESIDENT'S DESK**



*Katherine Heinrich*

*(See page 8 for French version)*

The upcoming CMS summer meeting will be held June 13-15 in Saint John, New Brunswick and hosted by the University of New Brunswick (Saint John). As usual the programme looks excellent with ten sessions (*Category Theory, Convex Geometry, Discrete Mathematics, Education - Mathematicians Teaching Statistics, Low Dimensional Topology, Operator Theory, Relativity and Geometry, Contributed Talks on Reform Calculus, Graduate Student Seminar, and Contributed Papers*) which promise a broad range of topics. I hope that many of you will be able to be there. And this comment could well mean more than you think. Consider the following from a recent article in the *Globe and Mail*: "Mitch Mocle has a conference in Saint John. So he flew to St. John's, collected his luggage and told the taxi, "Take me to the Hilton."

If you haven't spotted the problem now, you've got company. "Ain't no Hilton on the Rock, boy," the taxi driver told him. "Are you sure you aren't supposed to be in Saint John, New Brunswick?" So again, here's hoping to see you in Saint John, New Brunswick.

At the December meeting in Victoria, we reported that the International Mathematical Union had invited Canada to be considered for "promotion" from Level 4 to Level 5 (the IMU's highest level). The invitation came not to the CMS but to NRC which is responsible for paying Canada's IMU dues. I am now very pleased to report that after some consideration NRC has accepted the invitation. On our behalf, Jim Timourian has sent a package of information (based on the documentation prepared for the NSERC reallocation exercise) to the IMU describing the mathematical strengths in Canada. We are optimistic that the IMU will make a decision prior to or during the International Congress of Mathematicians in Berlin this August.

Canada has five voting representatives to the IMU and this year they are Don Dawson (Director, Fields Institute), Peter Fillmore (Past-president, CMS), Nassif Ghoussoub (Director, Pacific Institute for the Mathematical Sciences), Jacques Hurtubise (Directeur-adjoint, Centre de recherches mathématiques and Vice-president, CMS), and Nicole Tomczak-Jaegermann (University of Alberta).

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*CMS NOTES*  
*NOTES DE LA SMC*

The *CMS Notes* is published by the Canadian Mathematical Society (CMS) eight times a year (February, March, April, May, September, October, November, and December).

**Editors-in-Chief**

Peter Fillmore  
S. Swaminathan

**Managing Editor**

Graham P. Wright

**Contributing Editors**

*Education:* Harvey Gerber  
notes-education@cms.math.ca  
*Meetings:* Monique Bouchard  
notes-meetings@cms.math.ca  
*Research:* Chris D. Godsil  
notes-research@cms.math.ca

**Editorial Assistant**

Jeannine LeBlanc

The Editors welcome articles, letters and announcements, which should be sent to the *CMS Notes* at:

Canadian Mathematical Society  
577 King Edward  
P.O. Box 450, Station A  
Ottawa, Ontario, Canada K1N 6N5  
Telephone: (613) 562-5702  
Facsimile: (613) 565-1539  
E-mail: notes-articles@cms.math.ca  
notes-editors@cms.math.ca  
Web site: www.cms.math.ca

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**ISSN: 1193-9273**

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**EDITORIAL**



*Peter Fillmore*

This month's letter from President Kathy Heinrich includes several points that we want to underline. To begin with, a number of pieces of good news for Canadian mathematics (the budget increase for NSERC, the invitation to the MITACS network to submit a full proposal, the move of Canada's IMU membership to the top category) presages, we trust, a favourable outcome in the upcoming NSERC reallocation exercise. While this is important to our community, it is noteworthy that the very poor result of the first reallocation was not quite the disaster that many feared. Our research continues to enrich mathematics and our discipline continues to attract talented young people.

A broad selection of this research will be displayed at the summer meeting this June in Saint John. We hope that many members will take the opportunity to become acquainted with this interesting old city. Located at the mouth of the splendid Saint John River, on the Bay of Fundy, its name derives from Samuel de Champlain's visit in 1604 on the feast day of St. John the Baptist, June 24th. The city was founded by Loyalist refugees from the American Revolution who arrived in 1783. The end of the age of sail, Confederation and a disastrous fire in 1877 caused growth to stagnate for some decades, but today Saint John has begun its third century by celebrating its past and building for its future with

enhanced recreational and educational facilities.

Our next issue will appear in September; in the meantime we wish our readers a good summer.

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**Stop the Press**

We have just been informed by the IMU Secretariat that the motion to move Canada's membership from Group IV to Group V (the most active category) has been approved by the membership. This compliment, coming from the international mathematical community, is good news indeed.

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**Putnam Competition**

The results of last December's William Lowell Putnam Competition have been announced. The competition, which began in 1938, is designed "to stimulate healthful rivalry in mathematical studies in the colleges and universities of the United States and Canada". A total of 2510 students and teams from 313 institutions participated in the competition. The Questions Committee was headed by Richard Guy, University of Calgary.

The five winning teams were from Harvard, Duke, Princeton, M.I.T. and Washington University (St. Louis). The next five teams received honourable mention and were, in alphabetical order, Cal. Tech., Harvey Mudd, Stanford, Toronto, and Waterloo. The members of the Toronto team were Adrian Corduneanu, Edward Leung and Ryan O'Donnell. The University of Waterloo team members were Donny Cheung, Richard Hoshino and Derek Kisman.

Other highly-ranked individuals from Canadian institutions were Frédéric Latour (Waterloo), Cyrus Hsia (Toronto), Alan Martin (Ottawa) and Keven Purbhoo (Waterloo). The 205 top-ranked students included 34 from Canadian colleges and universities.

## THE FUTURE OF MATHEMATICAL PUBLISHING

Rob Kirby, University of California at Berkeley

*Editor's note: The following is the text of a recent letter from the author to Elsevier Science.*

I am a mathematician (in particular a topologist) writing to you about scientific publishing (particularly in math, and more particularly about your journal *Topology*). During the past year I have been gathering information, thinking, and writing about the high cost of commercial math journals and alternative methods of publication. Let me explain my view of the future of math publishing and how it relates to Reed Elsevier.

The latest issue of *Topology* shows that it takes, on the average, about two years from the time a paper is submitted to the time it is published. This is typical in mathematics, and probably hasn't changed much in decades.

Thus, in order to disseminate their mathematics quicker and to establish priority, mathematicians send out preprints. Mathematicians want to receive preprints so as to keep up with the field without having to wait for the journal to appear years later. For these reasons the preprints are crucial to our profession. The journals are crucial because of their role in refereeing, vouching for the worth of a paper, and as an archive.

By now, almost all mathematicians produce  $\text{\TeX}$  versions of their papers, and distribute an electronic preprint. This makes distribution easy, and it would be still easier if mathematicians were more willing to standardize their personal versions of  $\text{\TeX}$ .

What I would like to see happen, and is beginning to happen, is the following: there would exist preprint servers in each subfield of mathematics (a subfield being 2 to 5% of math, defined in a natural way, for example mine would be low dimensional topology). Once an author has produced a suitable  $\text{\TeX}$  version of a paper, he/she would send it to one or more preprint servers which would list the paper on-

line for eternity. I could go to a server that interested me and ask for a specific paper, or all papers by a certain author, or all papers in a certain subject since a certain date, or all papers with certain code words; I might have a subscription which sends me an abstract each time a paper is listed.

Such a system has the following advantages: (1) assuming almost all mathematicians join this system, I have quick and efficient access to papers that interest me, which I can peruse on my computer screen and print if I wish (contrast this with waiting for publication and then hoping my library subscribes so that I can laboriously xerox page by page); (2) I can easily distribute my own papers to any interested reader (contrast this with duplicating a paper preprint, stuffing envelopes and addressing, and then missing part of my interested audience).

Such preprint servers already exist. One in high energy physics is working splendidly, run by Paul Ginsparg at Los Alamos National Lab. Some servers exist in math, and we are in the midst of organizing a more coherent system to cover all of math, done through Ginsparg's operation. I think we are off to a good start in "Geometric Topology" (see <http://front.math.ucdavis.edu/>).

These preprint servers are only meant to be a better way of maintaining the old preprint system. It is still vitally important, in my opinion, that we mathematicians retain our tradition of having papers refereed and accepted (or rejected) by journals of varying reputation. This should continue, and can also be done electronically. We have started an electronic journal, *Geometry & Topology*, based at the University of Warwick (see <http://www.maths.warwick.ac.uk/gt/>).

It is free, at least in the foreseeable fu-

ture. It is off to an excellent start with a large distinguished board of editors and standards at least that of *Topology*. We expect to offer a paper subscription at a very low price, determined by the cost of a commercial printer using our  $\text{\TeX}$  files. Of course, there are the hidden subsidies to G&T by Warwick, such as supporting the computers that G&T uses and some time by the editors.

Where do the commercial publishers come into this picture? We mathematicians write and  $\text{\TeX}$  our papers, we referee and edit for the journals, and we are well paid by our universities for these tasks. We then turn over the papers, with copyright, to the publishers who add relatively little value in producing the paper volume from our  $\text{\TeX}$  files, and who then turn around and sell the journal to the university libraries at what is, in some cases at least, an exorbitant price.

Last spring, I collected some data on prices of journals which can be found at <http://math.berkeley.edu/~kirby/journals.html> in the appendices. The data is given in price per page and price per 10,000 characters. The latter is more accurate, but the former is easier to understand. Briefly, an efficient and cost conscious journal like the *Pacific Journal of Math* can be sold at about 13 cents/page. It is a non-profit company, with only minor subsidies from a few universities, and a 40+ year history of low costs and good mathematics.

Perhaps the three most prestigious math journals are the *Annals of Math* (Princeton Univ. Press) published at 15 cents/page, the *Journal of the American Math Society* at 15 cents/page also, and *Inventiones Mathematicae* (Springer) at 110 cents/page.

Your journal *Topology* costs us 81 cents/page. Berkeley subscribes to 13 of your math journals, and the average

cost is 73 cents/page, ranging from a high of 135 cents/page for *Nonlinear Analysis* to a low of 47 cents/page for *Linear Algebra and its Applications*. Wolters Kluwer averages 67 cents/page for 5 journals.

Springer averages 82 cents/page, Academic Press 40 cents/page, and Birkhäuser 68 cents/page, for comparison. The non-profits are usually less.

So this brings me to the main point of this letter. I read in yesterday's *New York Times* about Reed Elsevier expanding dramatically and having high margins in its scientific publishing. Yet it looks to me as though you are on your way out in scientific publishing, at least in math. How can you stay in business offering a topology journal at 81 cents/page when you have competitors offering roughly the same product at under 20 cents/page? What's going on here?

I know part of the answer. There is a time lag. Your prices have been going up steeply in recent years. Mathematicians pay little attention to these things for we subscribe to few journals as individuals and in those cases get much lower prices if our libraries also subscribe. Our librarians have noticed the higher prices, but it has taken a while for them to get our attention. But many of us have woken up by now. (Furthermore, publishers added much more value in the old days of typesetters and galley proofs.)

But now that we are awake, we also notice the alternatives. In my field, we have a free electronic journal and are on the way to having a preprint server. By the time our library decides on which journals to subscribe to this summer, I expect that much (most?) topology will be on the preprint server, some good topology papers will have shifted away

from *Topology* to lower cost journals, and I will be able to recommend to my library that they drop *Topology* (and I will, alas, drop my personal subscription). Perhaps this will be delayed a year. When Berkeley drops *Topology*, and editors, referees and authors begin to desert *Topology*, how long will it continue to exist?

An interesting issue here is copyright. I understand that, at the moment, you allow authors to list their paper on their web site, but do not allow (once the copyright form has been signed) authors to put their papers on preprint servers. I'm not surprised at this restriction, given what I wrote in the last paragraph. But why should authors give up the right to use a preprint server when it is obviously so much in their interest that everyone use preprint servers? You might win that battle if *Topology* were unique enough, but if you demand a restrictive copyright, authors are likely to go to your competitors.

So you see boom and I see bust. Your markets in other areas such as law may be in good shape; things vary widely between academic disciplines. But I think I know math pretty well, and I don't see much of a future for high cost commercial publishers.

But I would be sorry to see *Topology* disappear. It's an old friend. I published my thesis there in 1967. From my desk I see all the back issues, and know many papers therein. The editors at Oxford are friends and have worked hard from the beginning to make *Topology* a journal of stature. But all that sentiment can't overcome a price that's too large by a factor of 4.

It is presumptuous of me to tell you how to run your business, but here are a few possibilities anyway.

I'd guess that you could cut the price of *Topology* in half, and probably more, and still make a profit. After all, there are economies of scale and you have much experience and a tradition to help. American automobile manufacturers who thought they were pretty efficient in the 70's found they could double their efficiency when they ran into Japanese competition. Also, you apparently have high profit margins in scientific publishing which could come down some.

Announcing a price cut to 40 cents/page, with promised cuts in the future, would probably save *Topology*, at least for quite a while. But this doesn't seem too likely when I read about 3 to 5 year contracts with 9.5% increases locked in, and only some electronic enhancements to offer us (those electronic enhancements look modest compared to what we are doing ourselves with preprint servers and electronic journals that are free).

Best thing for us would be for you to simply give the journal *Topology* to its editors in Oxford, to run as a non-profit as the *Pacific Journal* is. All you'd get is some good will from topologists.

I think that proceeding as you are will just run journals like *Topology* into the ground. There may be profits there for another few years. But then all that remains is ill will from some academics who didn't want a favorite journal to die.

I'd also encourage you to talk to us. We mathematicians produce the math for your journals, and we urge (so far) our libraries to buy your journals. Of course it is costly in time to talk to us. I will circulate this letter to other mathematicians, and will be happy to circulate your reply in the same way. That is one way to reach us.

## 1996/97 CMS Annual Report

The CMS Annual Report to Members, in English, is available on Camel at [www.cms.math.ca/Reports/](http://www.cms.math.ca/Reports/). Copies can be obtained from the CMS Executive Office upon request. A brochure highlighting the major activities will be available in both French and English in the near future.

## AWARDS / PRIX

### 1997 U.K.-Canada Rutherford Lecturer



*Cameron Stewart*

Professor Cameron Stewart was appointed the 1997 U.K.-Canada Rutherford Lecturer by the Royal Society of Canada. Professor Stewart is the first mathematician to be selected for this honour, and he gave a series of lectures on number theory in the U.K. in the fall.

*(continued from page 1)*

Nicole is also one of four resident Canadians who have been invited to make a presentation at ICM '98. The others are James Arthur (Toronto), Bernard Hodgson (Laval), and Stevo Todorovic (Toronto).

In addition, several Canadian mathematicians now residing outside Canada have also been invited to speak.

Another group of Canadian mathematicians recently recognized are the CMS prize lecturers for the next year. Selected by the Research Committee, they are Henri Darmon (McGill), who will give the CMS 1998 Coxeter-James Lecture at the Winter '98 meeting at Queen's, John Friedlander (Toronto) who will give the CMS 1999 Jeffery-Williams Lecture at the Summer '99 meeting at Memorial, and Nicole Tomczak-Jaegermann (Alberta) who will give the CMS 1999 Krieger-Nelson Lecture also at the Summer '99 meeting. And just in case everyone

hasn't already heard, the Publications Committee selected Jason Levy (Ottawa) as the recipient of the CMS G. de B. Robinson Award for 1997, recognizing his paper, "A Note on the Relative Trace Formula" which appeared in the *Canadian Mathematical Bulletin*, Volume 38, 1995. This award was presented to Jason on April 22, 1998 by the Chair of the Publications Committee, James Mingo, at a lecture and ceremony at the University of Ottawa.

Mathematics is also recognised every time we publicly tell more of the story of mathematics: its greatest achievements, its anecdotes and its personalities. This is especially so when the telling is done in a way that is accessible to those without an extensive mathematics background. Last month I was told four times in two days about "Life by Numbers" a new PBS seven-part series scheduled to premiere on April 8th. In the words of the host Danny Glover, "You might not realize it, but mathematics can unlock incredible power. ... You can use it to make your dreams become reality. Mathematics is a powerful tool for exploring life on Earth ... and discovering our place in the universe." Keith Devlin, Dean of Science at Saint Mary's College of California and a former editor of Mathematical Association of America newsletter *FOCUS*, has been involved in the project for the last three years and says, "The overriding goal was to reach out to the millions of people, of all ages, who think they hate mathematics and, even worse, think it has no relevance to their lives. No-one who watches this series will ever again think like that!" The episodes are: A New Age; Chances of a Lifetime; Patterns of Nature; Seeing is Believing; Shape of the World; The Numbers Game; and Making a Difference. The related web site is [www.mathlife.com](http://www.mathlife.com). By the time you read this several episodes will have been shown. Hopefully it will have proven to be as interesting and exciting as described.

The CMS, through its sponsorship

and support of mathematics competitions (most notably the Open and the Olympiads) ensures a broad recognition of mathematics among those who have been directly involved in the competitions and those who have read about the success of the students. The Asian Pacific Mathematics Olympiad was written in March. I was fortunate to meet two of the three BC students invited to compete, when they came to campus to write the exam. This is one of the examinations that aids our Olympiad committees in their selection of Canada's team to the IMO, which this year will be held in Taiwan (July 10-21). Before heading off to Taiwan the Canadian team will be training in Calgary. Thanks to the University of Calgary, PIMS and those who will be helping with the training for their support of the 1998 IMO Training Camp which is being organised by Bill Sands (Calgary). On this topic I would also like to acknowledge the very gracious letters I have received from the winners of the 1997 Pouliot Award (Ed Anderson, Donald Attridge, Ronald Dunkley and Ronald Scoins all of the University of Waterloo) thanking us for our recognition of their many years of work to support mathematics competitions in Canada.

As well as receiving letters, I have also been writing some. On behalf of the CMS, I wrote recently to the Honorable Paul Martin, Minister of Finance, commending him on bringing forward a budget that recognised the importance of education and research to Canada's future prosperity. Under this budget NSERC funding has been restored to its '94/95 level and modest increases are forecast for the next two years. You will no doubt have read of the many federal initiatives aimed at supporting students; the most highly profiled of course being the Millennium Fund. Let's hope that this year's focus on research and education is indicative of a long-term federal commitment.

From our perspective this was cer-

tainly a timely addition to NSERC's budget, not only with respect to the re-allocations exercise, but also in light of the fact that the joint submission "Mathematics of Information Technology and Complex Systems" from the Fields Institute, the Centre de recherches mathématiques and the Pacific Institute for the Mathematical Sciences has been recommended by the NCE committee as one of eleven letters of intent (chosen from 75) invited to submit a full proposal for funding. This is an extraordinary venture for mathematics and mathematicians in Canada and thanks go to all those who have been involved in the preparation of the proposal.

In response to information that Canada planned to withdraw its support from NATO science program, I wrote to the Honorable Lloyd Axworthy, indicating the long-term support this has provided to mathematics in Canada and expressing our deep concern regarding the proposed withdrawal of funding. I believe many others also wrote. The current rumour is that the decision has been reversed, but we await a formal announcement. Hopefully we will have news of this prior to the Saint John meeting.

One group that will be present in Saint John is our new committee chairs. Although they were appointed effective December 1997, the bulk of their work will begin this June as most of them chair their first meetings. Many thanks to our new chairs for taking on this extra responsibility. They are Morris Orzech (Education), Gordon Mason (Finance), David Poole (Human Rights), Peter Fillmore (International Affairs), Ken Davidson (Nominating) and Jamie Mingo (Publications). Thanks also for jobs well done to the chairs they replaced: Eric Muller (Education), Richard Kane (Finance), Steve Kirkland (Human Rights), Jim Timourian (International Affairs), Edgar Goodaire (Nominating) and Tom Salisbury (Publications). And of course, let's not forget those who continue in their roles as chair: Bob Rosebrugh (Electronic

Services), Michel Racine (Government Policy), Cam Stewart (Research), Pat Stewart (Olympiads) and Shelly Wismath (Women in Mathematics). Many thanks to all of you, and to the many members of your committees and sub-committees.

The CMS Committee on Women in Mathematics has now established an e-mail list to promote discussion between women mathematicians. For further information please contact Shelly Wismath: (**chair-wmc@cms.math.ca**) or Nathalie Sinclair: (**sinclair@cecm.sfu.ca**).

I also take this opportunity to remind everyone of "A Celebration of Women in the Mathematical, Statistical and Computer Sciences" which takes place at the University of Waterloo, May 22-23, 1998. Find out more about it from the web-site: **<http://www.math.uwaterloo.ca/~cwim>** or e-mail **[cwim@math.uwaterloo.ca](mailto:cwim@math.uwaterloo.ca)**.

Planning for the future of the CMS continues. At the Board meeting in June 1998, the Board will consider (for approval) a three-part document describing a process for planning. First, there is a replacement of our existing mission statement. The replacement consists of a goal for the Society and a "statement of purpose" comprised of four equally important issues that define us and our activities. Second is a description of three Task Forces which, while initially established by the Board independent of this planning proposal, will provide valuable input to the overall picture of the Society. They are included for completeness. The third is a proposal for the establishment of a further five task forces. Reports from all task forces will be presented to the Executive which, using them as a basis, will then have the challenge of drafting a plan for the Society to be presented to the Board for approval in December 2000. These documents can be found on camel at: **[www.cms.math.ca/Projects/](http://www.cms.math.ca/Projects/)**. Input from CMS members will be sought at all stages. In particular, your input is sought now (just e-mail me **hein-**

**rich@cs.sfu.ca**). All comments are very much welcomed.

Another item on the web that I would like to draw your attention to is the 1996-97 CMS Annual Report to members at (**[www.cms.math.ca/Reports/](http://www.cms.math.ca/Reports/)**) which was approved last December. Efforts are now underway to produce a brochure highlighting the major events of the year. This brochure will be available in both French and English and will be used in our promotion materials.

This is the last president's letter I will write. My term is about to end and on June 14th, Richard Kane (University of Western Ontario) begins his two-year term as President (I will continue on the Executive for one more year as Past-president). It has been interesting, challenging, frustrating, hard work and above all rewarding. With its amazing band of dedicated and enterprising staff and volunteers, the CMS continually moves forward - always stretching itself to the limit in its efforts to support and promote mathematics and mathematicians. Thank you for all the support and advice you have given me during the last two years. And yes, I know that one never really leaves - there are always projects and committees underway and a constant need for volunteers (new and recycled).

### Rapport annuel de la SMC 1996/97

Les membres peuvent maintenant consulter la version anglaise du rapport annuel de la SMC sur Camel, à l'adresse suivante : **[www.cms.math.ca/Reports/](http://www.cms.math.ca/Reports/)**. On peut également s'en procurer des exemplaires en communiquant avec le bureau administratif de la SMC. Une brochure faisant état de nos principales réalisations sera publiée très bientôt, en anglais et en français.

## Mathematics Through the Prism of the Fields Medals

Review by N.J. Hitchin, Oxford University

Reprinted with permission from the London Mathematical Society Newsletter, March 1998.

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### Modern Mathematics in the Light of the Fields Medals

by Michael Monastyrsky. A.K. Peters, 1996, 167 pp, US\$35.00.

### Fields Medallists' Lectures

edited by Sir Michael Atiyah and Daniel Iagolnitzer. World Scientific, 1997, 650 pp, £60 hb, £33 pb.

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“Have you heard that XXXX is going to get a Fields Medal?” “Is he really under 40?” It has come to that stage in the familiar four-year cycle, with departments and nations eagerly hoping to enhance their mathematical prestige by claiming allegiance to one of the next winners. With the Congress of Berlin fast approaching this summer, what better time than to publish a book about the Fields Medallists? Indeed, what better time than to publish two?

What we have, however, are two very different offerings, which have different aims. The *Fields Medallists' Lectures* provides a compilation of reprinted material giving a profile of the work of 22 of the 38 recipients of the award since its beginning in 1936. In many cases this consists of first the appreciation of the medallist's work given at the appropriate International Congress, and then the plenary talk offered by the mathematician himself. But that 40 years old cut-off, which one imagines occasionally presents the committee with some problems, is addressed too. In principle the Fields Medal is intended to encourage young mathematicians to continue in their good work, and not, as the Nobel Prize often does, to reward a scientist for achievements in the past. So in this volume the citation and lecture is followed by a mathematical paper which often shows the subsequent development of the individual concerned.



Thus we see Novikow, rewarded in 1970 for this work in topology, represented by a paper on integrable systems, or Mumford making his journey from algebraic geometry in 1974 to pattern recognition today. What results is a 632 page volume which one eagerly dips into knowing the individual and not the work, or vice-versa.

Monastyrsky's book is quite different. It is short enough and readable enough to sit down and consume in one go. Here we run through the achievements of all prizewinners through the context of their subject at the time. More is said of the status and history of their area of mathematics at the time of their seminal contributions, and the author freely discusses his own interpretation of where the subject has gone since. The treatment is thankfully not carried out chronologically, but organized into major areas together with a mixed bag of individualists at the end.

What results, as Freeman Dyson writes in his foreword, is a “road map to the territory of mathematics with the Fields Medals as a convenient set of nodal points”. The book nevertheless also contains a potted history of the origin of the medal (how many of us know that the designer of the medal, Tate Mackenzie, also sculpted the war memorial soldier in Cambridge

whose tin hat conveniently points the way from the station to Mill Lane?), of the work of John Fields in overcoming political prejudice in establishing the 1924 Congress in Toronto to include representatives of Germany and their First World War allies, and of the reverse prejudice some 50 years later in trying to get proper Soviet representation.

In fact the birth of this book was a short history of the Fields Medals, banned at the time, written in Russia when Margulis was prevented from attending the 1978 Congress to collect his prize. The subsequent rewriting, translating and updating means that there are a few minor inconsistencies such as the author making a prophecy about the Kyoto conference on page 5 and describing its fulfilment on page 123. Nevertheless, this book provides an entertaining and readable introduction to a large cross-section of modern mathematics.

It is, however, to the *Lectures* that one must return to get a personal view of the Fields Medal and its effect on the winner. Instead of a mathematical paper, René Thom has contributed an autobiography.

Here he asserts (after modestly claiming that work of others which fol-

*(continued on page 10)*

## DU BUREAU DE LA PRÉSIDENTE

(voir à la page 1 pour la version anglaise)

La prochaine Réunion d'été de la SMC aura lieu du 13 au 15 juin à Saint John (ou Saint-Jean), au Nouveau-Brunswick, à l'invitation de l'Université du Nouveau-Brunswick, campus de Saint John. Comme toujours, le programme composé de dix sessions semble excellent (*Théorie des catégories, Géométrie convexe, Mathématiques discrètes, Éducation - Des mathématiciens qui enseignent la statistique, Topologie en basses dimensions, Théorie des opérateurs, Relativité et géométrie, Séance ouverte sur la réforme du calcul différentiel et intégral, Séminaire pour étudiants diplômés et Communications libres*) et couvrira un large éventail de sujets. J'espère que nous vous y accueillerons en grand nombre. Attention, ce commentaire est plus porteur de sens que vous ne le croyez... À preuve, cet extrait d'un article paru récemment dans le *Globe and Mail* : «Mitch Mocle doit assister à un congrès à Saint John. Il s'envole donc vers St. John's, récupère ses bagages et dit au chauffeur de taxi : "Conduisez-moi au Hilton." Si vous ne voyez pas ce qui cloche, vous n'êtes pas le seul. "Y'a pas de Hilton sur l'île, m'sieur, répond le chauffeur. Êtes-vous sûr que vous n'êtes pas supposé être à Saint John, au Nouveau-Brunswick?"» Alors, je le répète, au plaisir de vous accueillir en grand nombre à Saint John, au Nouveau-Brunswick.

Lors de la dernière Réunion d'hiver, tenue à Victoria, nous avons annoncé que l'Union mathématique internationale (UMI) avait invité le Canada à demander une «promotion», soit à passer du niveau 4 au niveau 5 (le plus haut échelon de l'UMI). L'invitation n'est pas parvenue à la SMC, mais plutôt au CNRC, qui paie les droits de participation du Canada à l'UMI. J'ai maintenant le plaisir de vous annoncer qu'après réflexion, le CNRC a

accepté l'invitation. En notre nom, Jim Timourian a fait parvenir à l'UMI une trousse d'information (constituée à partir de la documentation relative à l'exercice de réallocation du CRSNG) où sont décrites les forces du Canada en mathématiques. Nous avons bon espoir que l'UMI prendra une décision avant ou pendant le Congrès international des mathématiciens (CIM), qui aura lieu à Berlin en août.

Le Canada compte cinq représentants aptes à voter au sein de l'UMI. Cette année, ces représentants sont : Don Dawson (directeur de l'Institut Fields), Peter Fillmore (président sortant de la SMC), Nassif Ghossoub (directeur du Pacific Institute for the Mathematical Sciences (PIms)), Jacques Hurtubise (directeur-adjoint du Centre de recherches mathématiques et vice-président de la SMC) et Nicole Tomczak-Jaegermann (Université de l'Alberta). Nicole est aussi au nombre des quatre résidents canadiens invités à présenter une communication au CIM 98. Les trois autres sont James Arthur (Toronto), Bernard Hodgson (Laval) et Stevo Todorcevic (Toronto).

Plusieurs autres mathématiciens canadiens qui habitent maintenant à l'étranger ont également été invités à prendre la parole.

Le travail d'un autre groupe de mathématiciens canadiens a aussi été récompensé dernièrement. En effet, le Comité de la recherche a choisi les lauréats des prix de la CMS pour l'an prochain : Henri Darmon (McGill), lauréat du Prix Coxeter-James 1998 de la SMC, prononcera une conférence à la Réunion d'hiver de 1998, qui aura lieu à l'Université Queen's; John Friedlander (Toronto), lauréat du Prix Jeffery-Williams 1999 de la SMC, donnera une conférence à la Réunion d'été de 1999, qui aura lieu à l'Université Memorial, et Nicole Tomczak-Jaegermann (Alberta), lauréate du Prix Krieger-Nelson

1999 de la SMC, prendra la parole à l'occasion de la Réunion d'été de 1999. Et pour ceux et celles qui ne seraient pas encore au courant, le Comité des publications a choisi Jason Levy (Ottawa) comme lauréat du Prix G. de B. Robinson 1997 de la SMC, pour son article intitulé «A Note on the Relative Trace Formula», qui a paru dans le *Bulletin canadien de mathématiques*, volume 38 (1995). Le président du Comité des publications, James Mingo, a remis ce prix à Jason le 22 avril 1998, à l'occasion d'une conférence et d'une cérémonie organisées à l'Université d'Ottawa.

Une autre façon de faire reconnaître notre discipline consiste à «raconter» les mathématiques, ses grandes réalisations, ses anecdotes et l'histoire de ses personnalités. C'est particulièrement vrai lorsque le sujet est rendu accessible aux personnes ayant des connaissances mathématiques restreintes. Le mois dernier, on m'a parlé quatre fois en deux jours de l'émission *Life by Numbers*, la nouvelle série de la chaîne PBS en sept épisodes, dont la première devait être présentée le 8 avril. Comme le dit l'animateur Danny Glover, «vous ne vous en rendez peut-être pas compte, mais les mathématiques constituent une source de puissance incroyable. [...] Elles peuvent vous permettre de réaliser vos rêves. Les mathématiques sont un instrument puissant qui nous aide à explorer la vie sur Terre [...] et à découvrir notre place dans l'univers.» Keith Devlin, doyen de la faculté des sciences du Collège Saint Mary's en Californie et ancien rédacteur en chef du bulletin de la Mathematical Association of America intitulé *FOCUS*, participe au projet depuis trois ans. Il affirme que «l'objectif principal du projet consiste à sensibiliser les millions de personnes de tout âge qui croient détester les mathématiques ou, pire encore, qui pensent pouvoir très bien vivre en se passant des mathématiques. Les



télespectateurs qui regarderont cette série ne pourront plus jamais faire une telle affirmation!» Les épisodes s'intitulent : A New Age; Chances of a Lifetime; Patterns of Nature; Seeing is Believing; Shape of the World; The Numbers Game; Making a Difference. La série a même son site Web : **www.mathlife.com**. Au moment où vous lisez ces lignes, plusieurs épisodes auront été présentés. J'espère qu'ils seront aussi intéressants et stimulants qu'on le prédisait.

En commanditant et en soutenant les concours de mathématiques (particulièrement le Défi et les olympiades), la SMC assure une vaste reconnaissance des mathématiques auprès de ceux et celles qui sont directement liés aux concours et ceux qui ont été informés du succès des élèves. L'Olympiade mathématique Asie-Pacifique a eu lieu en mars dernier. J'ai eu la chance de rencontrer deux des trois élèves de la Colombie-Britannique invités au concours, à leur arrivée sur le campus où se donnait l'examen. Cet examen compte parmi les épreuves sur lesquelles se basent nos comités des olympiades pour choisir les membres de l'équipe qui représentera le Canada à l'OIM, qui aura lieu cette année à Taiwan (du 10 au 21 juillet). Avant de s'envoler pour Taiwan, l'équipe canadienne s'entraînera à Calgary. Un grand merci à l'Université de Calgary, au PIm et à tous ceux qui participeront à l'entraînement des jeunes, pour leur aide en vue du camp d'entraînement préparatoire à l'OIM 1998, organisé cette année par Bill Sands (Calgary). À ce sujet, j'aimerais également remercier les lauréats du Prix Adrien-Pouliot 1997 (Ed Anderson, Donald Attridge, Ronald Dunkley et Ronald Scoins, tous de l'Université de Waterloo) pour leurs très belles lettres, dans lesquelles ils nous remercient d'avoir reconnu leurs nombreuses années de travail à la cause des concours de mathématiques au Canada.

En plus de recevoir des lettres, j'en ai aussi rédigé quelques-unes. Au nom

de la SMC, j'ai écrit à l'honorable Paul Martin, ministre des Finances, pour le féliciter d'avoir adopté un budget qui reconnaît l'importance de l'éducation et de la recherche pour la prospérité du Canada. Le financement du CRSNG est revenu à son niveau de 94-95, et l'on prévoit de faibles augmentations au cours des deux prochaines années. Vous êtes sans doute au courant des nombreuses initiatives de soutien aux étudiants proposées par le fédéral, dont la plus prestigieuse est assurément le Fonds du millénaire. Espérons que l'engagement de cette année envers la recherche et l'éducation est signe d'un engagement à long terme du gouvernement fédéral.

Cette augmentation du budget du CRSNG arrive à point pour nous, non seulement en prévision de l'exercice de réallocation, mais aussi parce que la proposition du projet «Mathematics of Information Technology and Complex Systems», présentée conjointement par l'Institut Fields, le Centre de recherches mathématiques et PIm, est l'une des onze propositions (sur 75) qui ont été retenues par le comité du CNRC et pour lesquelles les proposeurs ont été invités à présenter une demande de financement complète. Il s'agit là d'une entreprise extraordinaire pour les mathématiques et les mathématiciens au Canada, et nous devons remercier toutes les personnes qui ont participé à la rédaction de la proposition.

En guise de réponse à la rumeur selon laquelle le Canada pourrait cesser de financer le programme scientifique de l'OTAN, j'ai écrit à l'honorable Lloyd Axworthy pour lui faire part de nos inquiétudes à cet égard et lui expliquer que ce programme assurait le soutien à long terme des mathématiques au Canada. Je crois que plusieurs autres personnes lui ont aussi écrit à ce sujet. Selon les rumeurs, la décision aurait été renversée, mais nous attendons toujours la nouvelle officielle. Nous espérons en savoir davantage avant la Réunion de Saint John.

À la Réunion d'été de Saint John,

nous aurons l'occasion d'accueillir plusieurs nouveaux présidents de comité. Même s'ils sont en poste depuis décembre 1997, le gros de leur travail commencera en juin, car la plupart d'entre eux présideront alors leur première réunion. Merci beaucoup à nos nouveaux présidents d'avoir accepté ces responsabilités supplémentaires. Voici la liste des nouveaux présidents : Morris Orzech (Éducation), Gordon Mason (Finances), David Poole (Droits de la personne), Peter Fillmore (Affaires internationales), Ken Davidson (Mises en candidature) et Jamie Mingo (Publications). Je tiens également à remercier de leur bon travail les présidents qu'ils remplacent : Eric Muller (Éducation), Richard Kane (Finances), Steve Kirkland (Droits de la personne), Jim Timourian (Affaires internationales), Edgar Goodaire (Mises en candidature) et Tom Salisbury (Publications). N'oublions pas non plus les présidents qui demeurent en poste : Bob Rosebrugh (Services électroniques), Michel Racine (Politique gouvernementale), Cam Stewart (Recherche), Pat Stewart (Olympiades) et Shelly Wismath (Femmes en mathématiques). Un gros merci à vous tous et aux nombreux membres de vos comités et sous-comités.

Le Comité pour les femmes en mathématiques a maintenant sa propre liste de diffusion, qui servira à favoriser les échanges entre mathématiciennes. Pour de plus amples renseignements, communiquez avec Shelly Wismath (**chairwmc@cms.math.ca**) ou Nathalie Sinclair (**sinclair@cecm.sfu.ca**).

J'aimerais également profiter de l'occasion pour vous rappeler que l'activité «A Celebration of Women in the Mathematical, Statistical and Computer Sciences» se tiendra à l'Université de Waterloo les 22 et 23 mai prochains. Pour plus de détails, visitez le site de l'événement **http://www.math.uwaterloo.ca/~cwim** ou écrivez aux responsables par

courriel à l'adresse suivante : [cwim@math.uwaterloo.ca](mailto:cwim@math.uwaterloo.ca).

Les travaux entourant la planification de l'avenir de la SMC se poursuivent. À sa réunion de juin 1998, le Conseil étudiera (à des fins d'approbation) un document en trois parties décrivant un processus de planification. La première partie se veut une nouvelle version de notre énoncé de mission actuel. Elle comprend l'objectif de la société et un «énoncé d'intention», contenant quatre points d'égale importance qui définissent la Société et ses activités. La deuxième est une description de trois groupes de travail qui, même si leur création n'était pas liée à ce processus de planification, seront fort utiles à la Société dans son ensemble. Nous avons inclus cette description à titre informatif. Quant à la troisième, il s'agit d'une proposition portant sur la création de cinq autres groupes de travail. Les rapports de chaque groupe seront présentés au Comité exécutif qui, à partir de ces

documents, aura la délicate tâche de rédiger le plan d'action de la Société. Nous ferons ensuite approuver ce plan par le Conseil en décembre 2000. Il est possible de consulter ces documents sur camel, à l'adresse suivante : [www.cms.math.ca/Projects/](http://www.cms.math.ca/Projects/). Les membres de la SMC seront consultés à toutes les étapes du processus, et nous avons particulièrement besoin de votre opinion en ce moment même (vous n'avez qu'à m'écrire à [heinrich@cs.sfu.ca](mailto:heinrich@cs.sfu.ca)). Tous vos commentaires seront grandement appréciés.

Toujours du côté du Web, j'aimerais attirer votre attention sur le rapport annuel 1996-1997 de la SMC, à l'adresse ([www.cms.math.ca/Reports/](http://www.cms.math.ca/Reports/)), qui a été approuvé en décembre dernier. Nous travaillons en ce moment à la production d'une brochure faisant état des grandes réalisations de l'année. Nous la publierons dans les deux langues officielles et l'utiliserons comme document promotionnel.

Vous lisez en ce moment ma dernière «lettre de la présidente». En effet, mon mandat tire à sa fin, et c'est Richard Kane (Western Ontario) qui assurera la présidence à partir du 14 juin, pour une durée de deux ans (je ferai partie du Comité exécutif pendant une autre année, à titre de présidente sortante). Mes deux années à la présidence furent intéressantes, stimulantes, frustrantes, exigeantes et, par dessus tout, gratifiantes. Appuyée par un groupe épataant d'employés et de bénévoles dévoués et dynamiques, la SMC ne cesse de progresser et multiplie continuellement ses efforts pour soutenir et promouvoir les mathématiques et les mathématiciens. Je vous remercie de l'appui et des conseils que vous m'avez fournis au cours des deux dernières années. Et oui, je sais qu'on ne quitte jamais complètement. Ce ne sont pas les projets ni les comités qui manquent, et on a toujours besoin de bénévoles, qu'ils soient nouveaux ou «recyclés».

(continued from page 7)

lowed his own award-winning contributions was "greater in depth and sagacity") that "the Fields Medal meant for me a certain fragility, which the fu-

ture was to make even more visible". That "fragility" translated itself into a complete change of direction, as he abandoned cobordism theory to throw himself into what is now called catas-

trophe theory. No doubt the award of the medal is a key event in the mathematical lives of all recipients, but for few can it have been so pivotal as this.

## Category Theory Workshop

In conjunction with the Category Theory Symposium at the CMS 1998 Summer Meeting, there will be a workshop on the *Applications of Category Theory to Computer Science*, directed towards graduate students and young researchers.

Dates: 8-12 June 1998

Location: Mount Allison University, Sackville NB

Instructors: M. Barr (McGill) and R.F.C. Walters (Sydney).

Residence accommodation will be available at Mount Allison University. To preregister or for more information, send email to: [ct95@mscs.dal.ca](mailto:ct95@mscs.dal.ca) with subject heading 'workshop'. The workshop is sponsored by The Fields Institute for Research in Mathematical Sciences and AARMS, The Atlantic Association for Research in the Mathematical Sciences.

### NOTICE / AVIS

The Executive Office will be closed for two weeks this summer: **August 17 to the 28th inclusive.**

Le Bureau d'administration sera fermé pour deux semaines cette l'été : **du 17 au 28 août.**

**CMS 1998 Summer Meeting  
University of New Brunswick  
(Saint John)  
Saint John, New Brunswick  
June 13-15, 1998**

**Fourth Announcement**

Please refer to the Second Announcement in the February/March issue of the *CMS Notes* for more complete information on the scientific, education and social programmes. This announcement features the updated timetable and any changes to the programmes previously announced. The most up-to-date information concerning the programmes, including scheduling, is available at the following world wide web address:

<http://www.camel.math.ca/CMS/Events/summer98/>

Meeting registration forms and abstract forms for contributed papers may be found in the February/March issue of the *CMS Notes*.

**Programme Updates**

There are no programme updates to report.

**Acknowledgements**

The CMS wishes to thank the Centre de recherches mathématiques and The Fields Institute for their financial support of scientific sessions at this meeting.

**Réunion d'été 1998 de la SMC  
Université du Nouveau-Brunswick  
(Saint John)  
Saint John, Nouveau-Brunswick  
du 13 au 15 juin 1998**

**Quatrième annonce**

Veillez consulter la deuxième annonce dans le numéro de février/mars des *Notes de la SMC* pour obtenir de l'information détaillée sur les programmes scientifique et pédagogique, et les activités sociales. La présente annonce contient l'horaire et tous les changements aux programmes annoncés précédemment. Vous trouverez l'information la plus récente sur les programmes, y compris les horaires, à l'adresse Web suivante:

<http://www.camel.math.ca/CMS/Events/summer98/>

The CMS wishes to acknowledge the contribution of the Meeting Committee in presenting exciting scientific, educational and social programmes. Thanks are also extended to members of the host department who have taken time from their regular duties to help out.

**Meeting Committee**

*Meeting Director:* Robert Rosebrugh (Mount Allison), *Local Arrangements Committee Chair:* Abraham Punnen (UNBSJ), *Category Theory:* Richard Wood (Dalhousie), *Convex Geometry:* A.C. Thompson (Dalhousie), *Discrete Mathematics:* Katherine Heinrich and Brian Alspach (SFU) and Abraham Punnen (UNBSJ), *Education - Mathematicians teaching statistics:* Maureen Tingley and Barry Monson (UNBF), *Graduate Seminar:* Jennifer Mills (UNBSJ), *Low Dimensional Topology:* Jack Gegenberg (UNBF), *Operator Theory:* Heydar Radjavi (Dalhousie), *Relativity and geometry:* Jacques Hurtubise and Niky Kamran (McGill), *Other members:* Joan Adams (UNBSJ), Monique Bouchard (CMS) – Ex-officio, Mohammad Hamdan (UNBSJ), Jon Thompson (UNBF), G.P. Wright (CMS) – Ex-officio.

**Items also published with this announcement**

List of speakers and titles of talks  
Updated Timetable - block schedule

**In the next issue of the *CMS Notes***

First Announcement  
CMS 1998 Winter Meeting (Queen's University)

Un formulaire d'inscription et un formulaire de résumé pour communications libres étaient inclus dans le numéro de février/mars des *Notes de la SMC*.

**Changements au programme**

Il n'y a aucun changement au programme.

**Remerciements**

La SMC désire remercier le Centre de recherches mathématiques et l'Institut Fields d'avoir contribué financièrement aux séances scientifiques de la Réunion.

La SMC tient à remercier le Comité des Réunions, qui a contribué à l'organisation des activités scientifiques et sur l'éducation, ainsi que des activités sociales. Merci également à toutes les personnes du département hôte qui ont empiété sur leurs heures de travail habituelles pour nous venir en aide.

## Comité des Réunions

*Directeur de la Réunion* : Robert Rosebrugh (Mount Allison), *Président du Comité local de logistique* : Abraham Punnen (UNBSJ), *Théorie des catégories* : Richard Wood (Dalhousie), *Géométrie convexe* : A.C. Thompson (Dalhousie), *Mathématiques discrètes* : Katherine Heinrich et Brian Alspach (SFU), et Abraham Punnen (UNBSJ), *Éducation - Des mathématiciens qui enseignent la statistique* : Maureen Tingley et Barry Monson (UNBF), *Séminaire pour étudiants diplômés* : Jennifer Mills (UNBSJ), *Topologie en basses dimensions* : Jack Gegenberg (UNBF), *Théorie des opérateurs* : Heydar Radjavi (Dalhousie), *Relativité et géométrie* : Jacques Hurtubise et Niky Kamran (McGill),

*Autres membres* : Joan Adams (UNBSJ), Monique Bouchard (SMC) – membre d'office Mohammad Hamdan (UNBSJ), Jon Thompson (UNBF), G.P. Wright (SMC) – membre d'office.

## Documents publiés avec cette annonce

Liste des conférenciers avec titres de conférences  
Horaire révisé

## Dans le prochain numéro des *Notes de la SMC* :

Première annonce de la  
Réunion d'hiver 1998 de la SMC (l'Université Queen's)

## SCHEDULED SPEAKERS / CONFÉRENCIERS PRÉVUS

Here is a list of the scheduled speakers, along with the titles of their talks where available. Abstracts for all talks may be found at the following world wide web page after May 1:

<http://www.camel.math.ca/CMS/Events/summer98/>

Voici les conférenciers prévus, ainsi que les titres de leurs conférences. Les résumés pour tous les conférences seront disponibles à l'adresse Web suivante après le 1er mai :

<http://www.camel.math.ca/CMS/Events/summer98/>

### JEFFERY-WILLIAMS LECTURE CONFÉRENCE JEFFERY-WILLIAMS

**George Elliott** (University of Toronto and University of Copenhagen) *C\*-algebras — the first fifty years*

**Erwin Lutwak** (Polytechnic University, Brooklyn) *The Minkowski problem after 100 years — lots of new questions*

**Stephen H. Schanuel** (SUNY at Buffalo) *Objective number theory*

### KRIEGER-NELSON LECTURE CONFÉRENCE KRIEGER-NELSON

**Catherine Sulem** (University of Toronto) *Nonlinear Schrödinger equation and wave collapse*

### SPECIAL SESSIONS / SÉANCES SPÉCIALES

**Category Theory / Théorie des catégories**  
(Org: Richard Wood)

### PUBLIC LECTURE CONFÉRENCE PUBLIQUE

**F. William Lawvere** (SUNY at Buffalo) *Everyday physics of extended bodies or why functionals need analyzing*

**Michael Barr** (McGill University) *\*-autonomous categories*

**Marta Bunge** (McGill University) *Covering toposes with singularities*

**Peter Freyd** (Philadelphia, Pennsylvania)

**André Joyal** (Université du Québec à Montréal)

### PLENARY SPEAKERS CONFÉRENCIERS PRINCIPAUX

**Kenneth R. Davidson** (University of Waterloo) *Polynomially Bounded Operators*

**F. William Lawvere** (SUNY Buffalo) *Are homotopy types the same as infinitesimal skeleta?*

**Michael Makkai** (McGill University) *Weak higher dimensional categories: a progress report*

**Detlef Gromoll** (SUNY, Stony Brook) *Metric foliations and nonnegative curvature*

**Susan Niefeld** (Union College) *Monoidal (bi)categories, bi-modules, and adjunctions*

**Robert Paré** (Dalhousie University) *Functorial finite differences*

**Joan Wick Pelletier** (York University) *Points and simplicity in quantaes*

**Walter P. Tholen** (York University) *Topology based on maps*

**Myles Tierney** (Rutgers University) *Some remarks on torsors*

**Robert F.C. Walters** (Sydney) *Bicategories of processes*

### Convex Geometry / Géométrie convexe

(Org: A.C. Thompson)

**Lynn Batten** (University of Manitoba) *Linear binary codes of minimum distance*

**András Bezdek (joint work with Ferenc Fodor)** (The Mathematical Institute of the Hungarian Acad. of Sci., Budapest) *On fat polygons and polyhedra*

**Ted Bisztriczky** (University of Calgary) *A construction for periodically-cyclic Gale  $2m$ -polytopes*

**J. Bracho** (Nat. University Mexico)

**Beifang Chen** (Hong Kong University) *Minkowski algebra of convex sets*

**Robert Dawson** (Saint Mary's University) *A generalized face number for regular hyperbolic honeycombs*

**Boris Dekster** (Mount Allison University) *A version of the illumination problem*

**Robert Erdahl** (Queen's University) *Dicings, zonotopes, and Voronoi's conjecture on parallelhedra*

**Richard J. Gardner** (Western Washington University) *Discrete tomography - a brief survey of recent results*

**Paul Goodey and Gaoyong Zhang** (University of Oklahoma) *Inequalities between projection functions of convex bodies*

**Eric L. Grinberg** (Temple University and Polytechnic University) *Operational properties of the cosine transform*

**Peter M. Gruber** (University of Technology, Vienna) *Optimal arrangements of points on Riemannian 2-manifolds and applications*

**Daniel Klain** (Georgia Technical University) *An Euler relation for valuations on polytopes*

**Alexander Koldobsky** (University of Texas at San Antonio) *A functional analytic approach to the Busemann-Petty problem on sections of convex bodies*

**Włodzimierz Kuperberg** (Auburn University, U.S.A.) *Packing space with congruent convex cones*

**Ted Lewis** (University of Alberta) *An Apollonius theorem for convex sets*

**Barry Monson** (University of New Brunswick) *Realizations of regular toroidal maps*

**Konstantin Rybnikov** (Queen's University) *Oriented matroids from liftings and stresses*

**Rolf Schneider** (Albert-Ludwigs-Universität) *Convex bodies in singular relative positions*

**Rick Vitale** (University of Connecticut) *Intrinsic volumes and Gaussian random processes*

**Elizabeth Werner and M. Meyer** (Case Western Reserve) *Santaló regions and polytopes*

**Gaoyong Zhang** (Polytechnic University) *The  $p$ -Minkowski problem of polytopes*

### Operator Theory / Théorie des opérateurs

(Org: Heydar Radjavi)

**Hari Bercovici** (Indiana University) *Norm ideal perturbations of commuting self-adjoint operators*

**Man-Duen Choi** (University of Toronto) *Can an acute-angled cone be embedded in a right-angled cone?*

**Kenneth R. Davidson** (University of Waterloo) *Nevanlinna-Pick interpolation for non-commutative analytic Toeplitz algebras*

**Allan Donsig** (University of Nebraska) *Algebraic isomorphisms of limit algebras*

**Roman Drnovšek** (University of Ljubljana) *On reducibility of semigroups of compact quasinilpotent operators*

**Douglas Farenick** (University of Regina) *Extremal matrix states on operator systems*

**Don Hadwin** (University of New Hampshire) *Finitely strongly reductive operators*

**Michael P. Lamoureux** (University of Calgary)

**Leo Livshits** (Colby College, Maine) *Locally linearly dependent spaces of matrices*

**Victor Lomonosov** (Kent State University) *Density theorems in Banach algebras*

**Gordon MacDonald** (University of Prince Edward Island) *Principal-ideal bands*

**Laurent W. Marcoux** (University of Alberta) *Unitarily invariant linear spaces in  $C^*$ -algebras*

**Matjaž Omladič** (University of Ljubljana, Slovenia) *Irreducible semigroups with multiplicative spectral radius*

**Mihai Putinar and Harold S. Shapiro** (University of California at Santa Barbara) *The Friedrichs operator of a planar domain*

**Peter Rosenthal** (University of Toronto) *Orbit-reflexivity versus orbit-transitivity*

**Peter Semrl** (University of Maribor, Slovenia) *Elementary operators*

**Ahmed Ramzi Sourour** (University of Victoria) *Lie isomorphisms between nest algebras*

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**Relativity and Geometry**  
**Relativité et géométrie**

(Org: Jacques Hurtubise and Niky Kamran)

**Roger Bielawski** (Max-Planck-Institut fuer Mathematik, Germany) *Complete  $T^n$ -invariant hyperkähler  $4n$ -manifolds*

**Charles P. Boyer** (University of New Mexico) *Contact geometry and Einstein manifolds*

**A. Coley** (Dalhousie University)

**Andrew Dancer** (McMaster University) *Einstein metrics of cohomogeneity one*

**Paul Ehrlich** (University of Florida) *Bochner's technique for compact Lorentzian manifolds (after A. Romero and M. Sanchez)*

**Conrad Hewitt** (St. Jerome's University, Waterloo) *Three dimensional symmetry groups in cosmology*

**T. Ilmanen** (Max Planck Institute, Leipzig)

**Marek Kossowski** (University of South Carolina) *Characteristic classes for pseudo Riemannian manifolds with volume-resolvable metric singularities*

**Hans-Peter Künzle** (University of Alberta)  *$SU(n)$ -Einstein-Yang-Mills fields in spherically symmetric and cosmological space-times*

**R. McLenaghan** (University of Waterloo)

**Rob Milson** (McGill University) *Realization of reflection quotients by singular metrics*

**Maung Min-oo** (McMaster University) *Mass, scalar curvature and  $K$ -area*

**B. Tupper** (University of New Brunswick)

**John Wainwright** (University of Waterloo)

**McKenzie Y. Wang** (McMaster University) *The cohomogeneity one Einstein equations*

**Gilbert Weinstein** (University of Alabama at Birmingham)

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**Low Dimensional Topology**  
**Topologie en basses dimensions**  
(Org: Jack Gegenberg)

**Steven Braham** (Simon Fraser University)

**John M. Bryden** (University of Calgary) *3-Manifold invariants associated to topological quantum field theories*

**Steve Carlip** (University of California at Davis) *Einstein manifolds, spacetime foam, and the cosmological constant*

**Lisa Jeffrey** (McGill University) *Holomorphic bundles and the Verlinde formula*

**Nabil Sayari** (Université du Québec à Montréal) *The reducibility of surgered 3-manifolds and great Scharlemann cycles*

**Denis Sjerve** (University of British Columbia) *Genus 0 actions on Riemann surfaces and spherical space forms*

**Peter Zvengrowski** (University of Calgary) *Diagonal formulae in group cohomology*

**Discrete Mathematics**  
**Mathématiques discrètes**

(Org: Brian Alspach, Katherine Heinrich  
and Abraham Punnen)

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**Jason Brown** (Dalhousie University) *Roots of chromatic polynomials*

**Ramaswamy Chandrasekaran** (The University of Texas at Dallas) *Nonnegative integer solutions to linear systems*

**Karen L. Collins** (Wesleyan University) *Symmetry breaking in graphs*

**Shannon Fitzpatrick** (University of New Brunswick) *The isometric path number of a graph*

**Gregory Gutin** (Brunel, The University of West London) *Polynomially searchable sets of tours for the travelling salesman problem: theoretical and experimental results*

**Bert Hartnell** (Saint Mary's University) *The watchman's walk problem*

**Penny Haxell** (University of Waterloo) *Packing and covering triangles in dense graphs*

**Santosh Kabadi** (University of New Brunswick) *Delta-matroid theory*

**Richard Nowakowski** (Dalhousie University) *Multiplicative measures on graphs*

**Suzanne Seager** (Mount Saint Vincent University) *Variants of competition graphs*

**Karen Seyffarth** (University of Calgary) *Small cycle double covers of line graphs*

**Nabil Shalaby** (Memorial University of Newfoundland) *Skolem sequences: survey and new results*

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**Education / Éducation**  
**Mathematicians Teaching Statistics**  
**Des mathématiciens qui enseignent la statistique**  
(Org: Barry Monson and Maureen Tingley)

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**Robert Dawson** (Saint Mary's University) *How I learned to teach statistics*

**David Hamilton** (Dalhousie University)

**Maureen Tingley** (University of New Brunswick - Fredericton)

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**Graduate Student Seminar**  
**Séminaire pour étudiants diplômés**  
(Org: Jennifer Mills)

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**Xiaomin Bao** (University of Manitoba) *A note on the blocking sets in  $S(3,6,22)$  and  $S(4,7,23)$*

**Michelle Davidson** (University of Manitoba) *Skew  $k$ -arc and codes*

**Shaun Fallat** (College of William and Mary) *Maximum determinant of  $(0,1)$ -matrices with certain constant row and column sums*

**Ziuzhan Guo** (York University) *Remarks on descent theory*

**Ali Mahvidi** (University of Toronto) *Invariant subspaces of composition operators*

**Rubén A. Martínez-Avedaño** (University of Toronto) *Some spectral properties of Hankel operators*

**Paddy McCrudden** (Macquarie University, Australia) *Representations of quantum categories*

**Mark Weber** (Macquarie University, Australia) *Characterising strong monoidal functors*

**Khalid El Yassini** (Université de Sherbrooke) *A two parameter mixed penalty algorithm for linear programming*

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**Contributed Papers / Communications Libres**

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**Bruce Cloud** (Brock University) *Composition operators and their commutants*

**Daniel Turcotte** (Ryerson Polytechnic University) *Propagation of involutive properties of analytic functions with values in complex unital Banach algebras with involutions*

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**Planning: The Future of the CMS**

A draft proposal, in English, is available on Camel at [www.cms.math.ca/Projects/](http://www.cms.math.ca/Projects/) and comments are invited. Copies can also be obtained from the CMS Executive Office upon request. The final proposal, as approved by the Board of Directors, will be made available in both English and French.







## Report of the 6th Annual CMS Survey of the Mathematics Profession and 2nd Annual Survey of the Statistics Profession in Canada

Government Policy Committee  
Comité des politiques gouvernementales

### Introduction

The CMS began its annual survey of the mathematics profession in Canada with the twin objectives of finding out something about mathematics students and about faculty positions in Canadian universities. The information is obtained from mathematical science departments in the universities of Canada.

This is the second year the CMS and the Statistical Society of Canada agreed to conduct a joint survey. A committee consisting of two members of each society developed the questionnaire.

Questionnaires for the 1996 Survey were sent to 70 departments that offer degree programs in pure and applied mathematics and in statistics (including biostatistics, epidemiology, and similar programs). They were not sent to separate departments of Computing Science, but were sent to departments which combine mathematics and/or statistics with computer science in a single department. Replies were received from 46 units.

Last year, 46 units also replied, however only 41 departments responded both years. This should be kept in mind when making comparisons with last year.

The principal data are given in the next section. More detailed information about responses is available from Monique Bouchard (Canadian Mathematical Society, 577 King Edward, Suite 109, Ottawa, Ontario K1N 6N5, email: mbouch@cms.math.ca). The Appendices list the units which responded to the questionnaire and those people who received doctoral degrees at responding institutions during the period September 1, 1995 to August 31, 1996.

The Committee is grateful to the office of the CMS for producing the questionnaire in both French and English, for mailing the questionnaire, and for collecting the replies. The processing of the questionnaires was done by the Edgett Statistical Laboratory at Queen's University. The final analysis was compiled by Kathryn Hare, University of Waterloo, member of the Government Policy Committee.

### Data

#### I Supply Side Data

##### A. Undergraduate (September 95 - August 96)

Undergraduate studies are organized in such a variety of ways that it is very difficult to devise a questionnaire which will provide detailed information about the many programs in which

students are enrolled. Further thought should be given on how to best collect pertinent information.

It is also true that departments often have much less information about their undergraduates than about their graduate students. Indeed, two reporting departments, with undergraduate programs, gave no data on their undergraduate students.

When reading the numbers of students who are reported in computer science programs, the reader should remember that separate departments of computer science were not included in the Survey.

The first question asked for the number of undergraduate students who graduated in some program in the mathematical sciences in 1995-96 and then asked about the nature of the program. We also asked for a breakdown by sex. The totals were:

Female: 617 Male: 945 Total: 1591

while the numbers graduating in various programs were as in the following table:

Program completed	Female	Male	Total
Pure and Applied	289	371	660
Statistics	121	108	229
Computer Science	52	221	273
Actuarial Science	73	102	175
Other	43	97	140

The totals are less than the numbers given in question 1 because some departments did not give a breakdown by area.

##### B. Master's Students (September 95 - August 96)

Of the 46 responding units, 36 have Master's programs. The number of students obtaining Master's degrees in the period September 1995 to August 1996 were:

Female: 83 Male: 165 Total: 248

The comparable figures in last year's report were 77 and 171 for a total of 248 as well.

The next question asked into which broad category the degree recipient's topic would most easily fit. The results are:

Field of Master's degree	Female	Male	Total
Pure Mathematics	18	45	63
Applied Mathematics	13	44	57
Statistics	38	55	93
Biostatistics	2	0	2
Computer Science	0	7	7
Other	11	10	21

The last question asked where the students in the preceding table went. The responses were:

<b>Destination after Master's degree</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Graduate school in Canada	24	60	84
Graduate school in U.S.A.	3	10	13
Graduate school in other country	2	3	5
Work force in Canada	29	51	70
Work force outside Canada	7	6	13
Unemployed	2	2	4
Other	0	2	2
Don't know	16	31	47

**C. Doctoral Students (September 1995 - August 1996)**

Of the 46 responding units, 34 offer a doctoral degree in some area. The numbers of students obtaining Ph.D. degrees in this period at these units were:

Female: 21 Male: 83 Total: 104

The corresponding numbers in last year's report were 25 and 77 for a total of 102.

The next question asked for the broad category into which doctoral dissertations fell. The results were:

<b>Area of dissertation</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Pure Mathematics	6	37	43
Applied Mathematics	7	20	27
Statistics	6	20	26
Biostatistics	0	1	1
Other	2	5	7

The last question about Ph.D. students asked what the degree recipients above are doing now. The responses were as follows:

<b>Destination of Ph.D. recipient</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Working at Canadian university	7	15	22
Working at U.S. university	1	4	5
Working at university elsewhere	5	10	15
Working at other post-secondary institution	0	4	4
Postdoctoral fellow	0	10	10

(Continued) <b>Destination of Ph.D. recipient</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Working for business in Canada	1	9	10
Working for government in Canada	0	1	1
Working for business or gov't outside Canada	1	5	6
Unemployed	1	3	4
Other	2	4	6
Don't know	3	18	21

**II Demand Side Data**

When asked how many academic appointments were made in the period September 1995 to August 1996, the responses were:

Female: 22 Male: 59 Total: 81

The corresponding responses last year were 18 and 88.3 for a total of 106.3.

Respondents were asked to categorize these appointments. The responses were as follows:

<b>Type of appointment</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
Tenured or tenure track position	5	12	17
Postdoctoral fellow	9	26	35
Other appointment, reduced teaching duties	4	4	8
Other appointment, normal teaching duties	4	9	13
Other categories	0	8	8

When asked how many people vacated full-time tenure track positions during the same period the responses were:

Female: 2 Male: 51 Total: 53

and when asked how many of the above positions were to be filled before September 1998 the responses totalled 21.

When asked how many vacancies in tenure track positions are anticipated in the period September 1996 to August 1997, the responses totalled 50.5.

Last year's figures were: 49 vacated positions, 17 of which were expected to be filled, and 33.5 anticipated vacancies in the 95/96 year.

Finally, heads of departments were asked to categorize hiring prospects for their departments for the next five years. The responses with last year's for comparison were:

	<u>1996</u>	<u>1995</u>
Very optimistic:	2	2
Cautiously optimistic:	19	12
Cautiously pessimistic:	12	12
Bleak:	13	18

Departments were asked to give the number of regular full-time members in September 1996, broken down by sex and rank and to classify them as mathematicians or statisticians. The totals are given in the next table (with 1995 totals for comparison.)

#### Mathematicians

Rank	Female	Male	Total 1996	Total 1995
Professor	15	430.5	445.5	461.9
Associate Professor	33	241.6	274.6	251
Assistant Professor	19.5	69	88.5	91.3
Lecturer	5	13	18	20

#### Statisticians

Rank	Female	Male	Total 1996	Total 1995
Professor	5	108	113	104
Associate Professor	10	71.6	81.6	84
Assistant Professor	8	25	33	43.5
Lecturer	0	3	3	3

One goal of the survey is to provide departments with useful information. Any suggestions on ways to improve this would be appreciated by the committee.

## APPENDIX I

*Units responding* (For those departments that offer graduate programs, the numbers of students receiving Master's degrees and doctoral degrees in 1995-96 are shown in bold face at the end of the entry.)

### Alberta:

University of Alberta,  
Department of Mathematical Sciences **(8,7)**  
University of Calgary,  
Department of Mathematics & Statistics **(6,1)**  
University of Lethbridge,  
Department of Mathematics & Statistics

### British Columbia:

Simon Fraser University,  
Department of Mathematics & Statistics **(8,4)**  
University of British Columbia,  
Department of Mathematics **(6,7)**  
University of British Columbia,  
Department of Statistics **(5,0)**  
University of Victoria,  
Department of Mathematics & Statistics **(4,0)**

### Manitoba:

University of Manitoba,  
Department of Applied Mathematics **(0,1)**  
University of Manitoba,  
Department of Mathematics & Astronomy **(2,2)**  
University of Manitoba,  
Department of Statistics **(6,0)**  
University of Winnipeg,  
Department of Mathematics & Statistics

### New Brunswick:

Université de Moncton,  
Département de mathématiques et de statistique  
University of New Brunswick, Fredericton,  
Department of Mathematics & Statistics **(1,0)**

### Newfoundland:

Memorial University of Newfoundland,  
Department of Mathematics & Statistics **(1,2)**

### Nova Scotia:

Acadia University,  
Department of Mathematics  
Dalhousie University,  
Dept. of Mathematics, Stats & Computing Science **(13,3)**  
Mount St-Vincent University,  
Department of Mathematics  
St. Francis Xavier University,  
Department of Mathematics & Computer Science  
University College of Cape Breton,  
Department of Mathematics & Natural Sciences

### Ontario:

Brock University,  
Department of Mathematics  
Carleton University,  
Department of Mathematics & Statistics **(11,7)**  
Lakehead University,  
Department of Mathematical Sciences **(6,4)**  
Queen's University,  
Department of Mathematics & Statistics **(6,4)**  
University of Guelph,  
Department of Mathematics & Statistics **(11,4)**  
University of Ottawa,  
Department of Mathematics **(11,2)**  
University of Toronto,  
Department of Mathematics **(17,4)**  
University of Toronto,  
Department of Statistics **(11,1)**  
Trent University,  
Department of Mathematics **(1,0)**

University of Waterloo,  
 Department of Combinatorics & Optimization (4,4)  
 University of Waterloo,  
 Department of Pure Mathematics (4,1)  
 University of Waterloo,  
 Department of Statistics (13,11)  
 University of Western Ontario,  
 Department of Applied Mathematics (3,5)  
 University of Western Ontario,  
 Department of Mathematics (2,1)  
 University of Windsor,  
 Department of Mathematics & Statistics (3,1)  
 Wilfrid Laurier University,  
 Department of Mathematics

### Prince Edward Island:

University of Prince Edward Island,  
 Department of Mathematics & Computer Science

### Quebec:

Concordia University,  
 Department of Mathematics (5,2)  
 École Polytechnique de Montréal,  
 Dép. de mathématique et de génie industriel (11,4)  
 McGill University,  
 Department of Mathematics & Statistics (10,5)  
 McGill University,  
 Department of Epidemiology & Biostatistics (15,8)  
 Université Laval,  
 Département de mathématiques et de statistiques (17,6)  
 Université de Montréal,  
 Département de mathématiques et de statistique (20,7)  
 Université de Sherbrooke,  
 Département de mathématique et d'informatique (10,0)

### Saskatchewan:

University of Regina,  
 Department of Mathematics & Statistics (1,0)  
 University of Saskatchewan,  
 Department of Mathematics & Statistics (0,0)

## APPENDIX II

Here are the doctoral degrees granted at responding institutions during the period of September 1, 1995 to August 31, 1996.

### ALBERTA

University of Alberta  
 Department of Mathematical Sciences

**Naser S. ABD-RABOU**, *On some tests for the change point problem* (Cairo University)

**Assia BARABANOVA**, *Nonlocal partial differential equations*

**Petr HABALA**, *Hereditary properties of infinite-dimensional Banach spaces* (University of Texas)

**Petr HAJEK**, *Higher order smoothness in Banach spaces* (Universidad Complutense de Madrid)

**Kirill KOPOTUN**, *Shape preserving approximation* (Vanderbilt University)

**Moxun TANG**, *Uniqueness theorems of positive radial solutions for quasilinear elliptic equations*

**Wee-Kee TANG**, *Smoothness and convexity in Banach spaces*

University of Calgary  
 Department of Mathematics & Statistics

**I LAGU**, *Interpolation on Algebraic Hypersurfaces*

### BRITISH COLUMBIA

Simon Fraser University  
 Department of Mathematics & Statistics

**Heinz BAUSCHKE**, *Projection Algorithms and Monotone Operators*

**Roy MALTBY**, *Pure Product Polynomials of small norm*

**Chandanie PERERA**, *Statistical Analysis of Thermoluminescence Experiments for Sedimentary Dating*

**Helen VERRALL**, *Perfect sets of Euler tours of complete graphs*

University of British Columbia  
 Department of Mathematics

**Vaughn ANDERSON**, *A Lift of the Chern-Simons Functional and Its Application to Equivariant Floer Homology*

**Patrick DORAN-WU**, *Extension of Lie's Algorithm; A Potential Symmetries classification of PDE's*

**Susan HAIGH**, *Non-symmetric Holmboe Waves*

**Ping LIN**, *Regularization methods for differential equations and their numerical solutions*

**Miquel LOPEZ**, *Path Properties and Convergence of Interacting Superprocesses*

**Alexander MOGILNER**, *Modelling Spatio-Angular Patterns in Cell Biology*

**Alexander R. PRUSS**, *Symmetrization, Green's Functions, Harmonic Measures and Difference Equations*

**Lynn VAN COLLER**, *Qualitative analyses of ecological models-an automated dynamical systems approach*

### MANITOBA

University of Manitoba  
 Department of Mathematics and Astronomy

**Xuesi JIN**, *Uniform Asymptotic Expansion of Meixner Polynomials*

**Hamid-Reza FARAHDI**, *Isomorphisms Involutions on the Banach Algebras Associated with Locally Compact Groups*

**NEWFOUNDLAND**

**Memorial University of Newfoundland**  
**Department of Mathematics & Statistics**

**Duzhong WANG**, *Units of Integral Semigroup Rings*  
**Xiaosong YAN**, *Quantifications of Random Variables*

**NOVA SCOTIA**

**Dalhousie University**  
**Department of Mathematics, Statistics and Computing**  
**Science**

**Robert van den HOOGEN**, *Qualitative Analysis of Cosmological Models* (St. Francis Xavier University)

**Xaowei LI**, *Estimation of Variance Components with Missing Data* (Syracuse University)

**Francisco MARMOLEJO**, *Ultraproducts and Continuous Families of Models* (Ciudad Universitaria, Mexico)

**ONTARIO**

**Carleton University**  
**Department of Mathematics & Statistics**

**Soroush ALIMORADI**, *Some Contributions to L-estimation in Linear Regression and Auto-Regression Model* (Isfahan University of Technology)

**José Andres CORREA**, *Weighted Approximation & Contiguous Weak Convergence of Parameters-estimates Empirical Processes with Applications to Change-point Analysis*

**Geneviève GAUTHIER**, *Multilevel Bilinear System of Stochastic Differential Equations* (Université de Montréal)

**Guillaume LEDUC**, *Superprocesses: Construction and Characterization* (Université du Québec à Montréal)

**Frantisek MARKO**, *Quasi-Hereditary Algebras and Their Borel Subalgebras* (University of Ottawa)

**Mehdi TABATABAEY**, *Preliminary Test Approach Estimation: Regression Model with Spherically Symmetric Errors* (Ferdowsi University)

**Hao WANG**, *Interacting Branching Particle Systems and Superprocesses*

**Yu WANG**, *The p-Median Problem and the Uncapacitated Facility Location Problem*

**Wesley YUNG**, *Contributions to Poststratification in Stratified Multistage Samples* (Statistics Canada)

**Queen's University**  
**Department of Mathematics & Statistics**

**Sylvia MONSON**, *Comparisons of Clique Covering Numbers and Clique Partition Numbers* (Queen's University)

**Wei TANG**, *Statistical Estimation of Micro-displacement in Biomechanics*

**Kevin VANDER MEULEN**, *Covers and Decompositions of Graphs by Complete Multipartite Subgraphs* (Redeemer College)

**Hongfan YU**, *The Orbits of Dynamical Systems and Some Related Nonlinear Analysis Methods*

**University of Guelph**  
**Department of Mathematics & Statistics**

**David DEWSNAP**, *Orbitally Convex Functions* (Emory and Henry College)

**Stephen GIAMANDI**, *The Solution Set of an  $O(n^3)$  by  $O(n^4)$  Constrained Linear System Projected onto an  $m > (n-1)!$  Faceted  $n!$  Extreme Point Polytope* (University of Guelph)

**Daniel RYAN**, *Bias of Autoregressive Estimators in the Presence of Model Misspecifications* (Australian Institute of Marine Science)

**Kaijun ZHAN**, *Theory and Applications of Strangely Coupled Nonlinear Oscillators* (University of Toronto)

**University of Western Ontario, Middlesex College**  
**Department of Mathematics**

**Wenfeng GAO**, *Galois Groups of the Maximal 2-Extension of a Field*

**University of Toronto**  
**Department of Mathematics**

**Karl DePAEPE**, *Primitive Effective Pairs of Lie Algebras* (University of Toronto)

**Lucia JUNQUEIRA**, *Preservation of Topological Properties by Forcing and by Elementary Submodels* (Instituto de Matematica-USP)

**Randall PYKE**, *Time Periodic Solutions of Non-Linear Wave Equations* (Courant Institute NYU)

**Ulrich SCHANZ**, *On the Evolution of Gravity-Capillary Waves in Three Dimensions* (Sailfish Systems Ltd.)

**University of Waterloo**  
**Department of Statistics**

**D. Gregory ANGLIN**, *A Statistical Programming Environment for Modelling Counting Processes*

**Adam W. KOLKIEWICZ**, *m-Estimation for Autoregression Processes with Stable Innovations*

**Michael E. LEWIS**, *Exploratory Analysis of the Shape of Two-Dimensional Images*

**Wenlian LI**, *Algorithmic Construction of Optimal Balanced Designs*

**Xianglin LI**, *An Estimating Function Approach to Credibility Theory*

**M. Taher MIRNAZARI**, *Optimal Design of Experiments: Criterion-Robustness and Censored Data*

**Philip R. MOORHEAD**, *Cost-Driven Parameter Design*

**Claude NADEAU**, *Inference for Point Processes through Estimating Functions*

**A. Hoque SHARIF**, *Generalized Recursions for Total Claims Distribution*

**Suwanee SURASIENGSUNK**, *HIV/AIDS Modeling in Thailand: Insurance Risk*

**Edward SUSKO**, *Nonparametric Maximum Likelihood Estimation for Mixture Models*

**University of Waterloo  
Department of Pure Math**

**James MCCARRON**, *Residual Nilpotence and One Relator Groups*

**University of Western Ontario, Western Science Centre  
Department of Applied Mathematics**

**M. DAVIDSON**, *Deterministic and Spatial Limits on Randomness* (Universität Bern)

**A.K. KOLAKOWSKA**, *Relativistic Variational Calculations for the Helium-Like Systems* (University of Western Ontario)

**D.J. MOSELEY**, *Computational Solution of Inverse Problems with Simulated Annealing*

**PRATIBHA**, *Maple Tools for Hydrodynamic Interaction Problems*

**Y. WU**, *Langevin Simulations of First-Order Phase Transitions in Fluids and Materials*, Greydanus, Boeckh Associates Inc.

**University of Windsor  
Department of Mathematics & Statistics**

**Jianlin GUO**, *Flow and Stability Problems of Double-Diffusive Convection in Porous media*

**QUEBEC**

**Concordia University  
Department of Mathematics & Statistics - Loyola**

**Weiming LI**, *A Reliability & Validity Study of Randomized Response Technique & its Alternative: Group Response Technique* (University of Ottawa)

**Kourosh ADL ZARABI**, *Existence & Properties of Absolutely Continuous Invariant Measures for Higher Dimensional Transformations*

**École Polytechnique de Montréal  
Département de mathématiques et génie industriel**

**Guy BLAISE/Douanya NGUETSE**, *Application de la logique probabiliste à la fiabilité des réseaux électriques et des systèmes de barrages*

**Hugues DELMAIRE**, *Design d'implantation d'usine: Décomposition par une approche génétique*

**Pontien MBARAGA**, *Problèmes de tournées de véhicules sur des réseaux en arbre*

**Pierre TRAN**, *Simulation numérique de remplissages viscoélastiques*

**McGill University  
Department of Mathematics & Statistics**

**R. MILSON**, *Multi-dimensional Lie-algebraic operators*

**H. PEDERSEN**, *Uniform estimates of polynomials by Logarithmic sums*

**J. OTTO**, *Complexity doctrines*

**X. ZHANG**, *Harmonic functions and sets of Determination*

**J. ZHAO**, *Natural theory of nonlinear shells*

**Université Laval  
Département de mathématiques et de statistique**

**Abdelhaq KHOUDRAJI**, *Contributions à l'étude des coupes et à la modélisation de valeurs extrêmes bivariées*

**Omar KIHHEL**, *Groupe des unités pour une famille infinie d'extensions diédrales de degré 10 sur  $\mathbb{Q}$ , famille de courbes elliptiques et équations diophantiennes*

**Manon MALLET**, *Traitement de l'hétérogénéité des probabilités de capture dans le modèle de Peterson*

**Abderrahmane OUKIT**, *Étude théorique et résolution numérique des équations de von Karman*

**Lakndar RAGOUB**, *Sur quelques problèmes à frontières libres de type elliptique*

**Shuang-Shuang ZHANG**, *A propos du procédé d'analyse hiérarchique*

**Université de Montréal  
Département de mathématiques et de statistique**

**Mustapha AIT ABDELMALEK**, *Étude des raffinements successifs de gradations et contractions toroidales et contractions toroidales de  $SL(3, \mathbb{C})$  et son application sur le comportement des opérateurs de Casimir de  $SL(3, \mathbb{C})$*

**Claude BERNIER**, *Représentation des solutions et contrôle d'équations différentielles stochastiques*

**Seddik CHACRONE**, *Théorie du potentiel et approximation complexe*

**Mathieu DUFOUR**, *Sur la décomposition d'un graphe complet en arbres isomorphes*

**Mohamed A. OULD BEDDI**, *Sur les extensions essentielles finies des groupes abéliens sans torsion*

**Mihaela RADULESCU**, *Méthodes de l'analyse non lisse pour les inclusions différentielles dans les espaces de dimensions infinie*

**Bogdan SZCZEPARA**, *Minimal Clones Generated by Groups*

## CALL FOR NOMINATIONS / APPEL DE CANDIDATURES

### **Coxeter-James Jeffery-Williams Krieger-Nelson Prize Lectureships**

The CMS Research Committee is inviting nominations for three prize lectureships.

The Coxeter-James Prize Lectureship recognizes outstanding young research mathematicians in Canada. The selected candidate will deliver the prize lecture at the Winter 1999 Meeting in Montreal, Quebec. Nomination letters should include at least four names of suggested referees.

The Jeffery-Williams Prize Lectureship recognizes outstanding leaders in mathematics in a Canadian context. The prize lecture will be delivered at the Summer 2000 Meeting in Hamilton, Ontario. Nomination letters should include three names of suggested referees.

The Krieger-Nelson Prize Lectureship recognizes outstanding female mathematicians. The prize lecture will be delivered at the Summer 2000 Meeting in Hamilton, Ontario. Nomination letters should include three names of

suggested referees.

The deadline for nominations is **September 1, 1998**. Letters of nominations should be sent to:

**Kumar Murty**  
**CMS Research Committee**  
**Department of Mathematics**  
**University of Toronto**  
**Toronto, Ontario M5S 3G3**  
**Email: murty@math.toronto.edu**

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### **Prix de conférence Coxeter-James Jeffery-Williams Krieger-Nelson**

Le Comité de recherche de la SMC invite les mises en candidatures pour les trois prix de conférence de la Société, la Conférence Coxeter-James, la Conférence Jeffery-Williams et la Conférence Krieger-Nelson.

Le prix Coxeter-James rend hommage à l'apport exceptionnel des jeunes mathématiciens au Canada. Le candidat choisi présentera sa conférence lors de la réunion d'hiver 1999 à Montréal (Québec). Les lettres de mises en candidatures devraient

inclure les noms d'au moins quatre répondants possibles.

Le prix Jeffery-Williams rend hommage à l'apport exceptionnel des mathématiciens d'expérience au Canada. La Conférence sera présentée lors de la réunion d'été 2000 à Hamilton (Ontario). Les lettres de mises en candidature devraient inclure les noms d'au moins trois répondants possibles.

Le prix Krieger-Nelson rend hommage à l'apport exceptionnel des mathématiciennes au Canada. La Conférence sera présentée lors de la réunion d'été 2000 à Hamilton (Ontario). Les lettres de mises en candidatures devraient inclure les noms d'au moins trois répondants possibles.

La date limite pour les mises en candidatures est **le 1 septembre 1998**. Les lettres de mises en candidatures devraient être envoyées à :

**Kumar Murty**  
**Comité de recherche de la SMC**  
**Department of Mathematics**  
**University of Toronto**  
**Toronto, Ontario M5S 3G3**  
**Courriel : murty@math.toronto.edu**

## CALL FOR SITES / DEMANDES DE PROPOSITIONS D'EMPLACEMENTS

### **Interested in hosting a CMS Meeting?**

The summer and winter meeting sites are confirmed to the year 2000 (see Calendar of Events). The CMS Research Committee invites requests from departments interested in hosting a CMS Meeting for 2001 onwards. The head of the department should write to:

Cameron Stewart  
 Chair - CMS Research Committee  
 Department of Pure Mathematics  
 University of Waterloo  
 200 University Avenue West  
 Waterloo, Ontario N2L 3G1 Canada  
 Tel: (519) 885-1211, ext. 5567  
 Email: chair-res@cms.math.ca

### **Êtes-vous intéressés à être l'hôte d'une réunion de la SMC?**

Les lieux des réunions d'été et d'hiver sont confirmés jusqu'à l'an 2000 (voir le calendrier des événements). Le Comité de la recherche de la SMC invite les départements intéressés à tenir l'une de ces réunions en 2001 ou plus tard à le lui faire savoir. Les chefs de département intéressés doivent faire parvenir leur demande à :

Cameron Stewart  
 Président du Comité de la recherche de la SMC  
 Département de mathématiques pures  
 Université de Waterloo  
 200 University Avenue West  
 Waterloo, Ontario N2L 3G1 Canada  
 Tél. : (519) 885-1211, poste 5567  
 courriel : pres-res@smc.math.ca



## CALL FOR SESSIONS

Additional self-supported sessions play an important role in the success of the Society's semi-annual meetings. The CMS welcomes and invites proposals for self-supported sessions for Summer 1999 (Memorial University of Newfoundland) and Winter 1999 (Université de Montréal).

Proposals should include a brief description of the focus and purpose of the session, the number and expected length of the talks, as well as the organizer's name, complete address, telephone number, e-mail address, etc. Although such sessions would not usually have a plenary speaker, any special situations are left to the discretion of the Meeting Director.

These additional sessions will be incorporated with the other sessions, time blocks allocated by the Meeting Director and advertised in the *CMS Notes*, on *Camel* and, if possible, in the *Notices of the AMS* and in publications of other societies. Speakers in these additional sessions will be requested to submit abstracts which will be published in the meeting programme.

The following provides information on the sessions confirmed to date, together with the names and addresses of the respective Meeting Directors.

**Those wishing to organize a session should send a proposal to the appropriate Meeting Director by the following deadlines:**

*Summer 1999: June 30, 1998*

*Winter 1999: October 15, 1998*

### Summer 1999

(partial list)

#### Combinatorics and its applications

Nabil Shalaby, Memorial and  
Doug Stinson, Nebraska-Lincoln

#### Contributed papers

Bruce Watson, Memorial and  
Hermann Brunner, Memorial

#### Harmonic analysis

Kathryn Hare, Waterloo

#### Numerical analysis and applications of evolution equations with delays

Hermann Brunner, Memorial and  
Terry Herdman, Virginia Polytechnic Institute and State University

#### Perspectives in ring theory

Eric Jespers, Memorial and  
Edgar Goodaire, Memorial

#### Representation theory

A. Broer, Montreal

#### What mathematical competitions do for mathematics

Bruce Shawyer, Memorial and  
Edgar Williams, Memorial

#### Meeting Director:

*Hermann Brunner*

Department of Mathematics and Statistics  
Memorial University of Newfoundland  
St. John's, Newfoundland  
Canada A1C 5S7  
Tel: (709) 737-7904  
Fax: (709) 737-3010  
e-mail: hbrunner@morgan.ucs.mun.ca

### Winter 1999

(partial list)

#### Algebraic and geometric methods in differential equations: the 20th century in celestial mechanics and one century of work on Hilbert's 16th problem

Christiane Rousseau, Montreal and  
Angelo Mingarelli, Carleton

#### Analysis of group theories and applications

Michel Grundland, UQTR and  
George Bluman, UBC

#### Combinatorial algebra, group representations and Macdonald polynomials

François Bergeron, UQAM and  
Nantel Bergeron, York

#### Mathematical genetics and genomics

Sabin Lessard, Montreal and  
David Sankoff, Montreal

#### Meeting Director:

*Michel Delfour*

Département de Mathématiques et de Statistique  
Université de Montréal  
C.P. 6128, Succursale Centre-ville  
Montréal, Québec  
Canada H3C 3J7  
Tel: (514) 343-7265  
Fax: (514) 343-2254  
Email: delfour@crm.umontreal.ca

## APPEL AUX COMMUNICATIONS

Les sessions autofinancées contribuent de plus en plus au succès des réunions semi-annuelles de la Société. La SMC encourage ces initiatives et invite les organisateurs(trices) potentiel(les) à soumettre leurs projets pour ce type de sessions à l'occasion des réunions d'été 1999 (Université Memorial à Terre-Neuve) et d'hiver 1999 (Université de Montréal).

Les projets doivent inclure une brève description du thème et de la motivation de la session, le nombre et la durée des communications prévues, ainsi que le nom et les coordonnées physiques et électroniques de l'organisateur(trice). Ces sessions ne comprennent pas normalement de conférence plénière. Les situations particulières sont laissées à la discrétion du directeur de la réunion.

Ces sessions additionnelles feront partie du programme. Leur horaire sera établi par le directeur de la réunion, et elles seront publicisées dans les *Notes de la SMC*, sur *Camel* et, si possible, dans les *Notices de l'AMS* et les publications d'autres sociétés. Les conférenciers devront soumettre un résumé de leur communication, que paraîtra dans le programme de la réunion.

Voici la liste des sessions déjà approuvées, ainsi que le nom et les coordonnées du directeur de chaque réunion.

**Toute personne désireuse d'organiser une session doit faire parvenir un projet au directeur de la réunion visée avant les dates suivantes :**

*été 1999* : le 30 juin 1998

*hiver 1999* : le 15 octobre 1998

### Été 1999

(liste partielle)

#### Les méthodes combinatoires et leurs applications

Nabil Shalaby, Memorial et  
Doug Stinson, Nebraska-Lincoln

#### Communications libres

Bruce Watson, Memorial et  
Hermann Brunner, Memorial

#### Analyse harmonique

Kathryn Hare, Waterloo

#### Analyse numérique et applications des équations d'évolution avec retard

Hermann Brunner, Memorial et  
Terry Herdman, Virginia Polytechnic Institute and State University

#### Les perspectives de la théorie des anneaux

Eric Jespers, Memorial et  
Edgar Goodaire, Memorial

#### Théorie des représentations

A. Broer, Montréal

#### Ce que les compétitions mathématiques apportent aux mathématiques

Bruce Shawyer, Memorial et  
Edgar Williams, Memorial

#### Directeur de réunion :

*Hermann Brunner*

Department of Mathematics and Statistics  
Memorial University of Newfoundland  
St. John's, Newfoundland  
Canada A1C 5S7  
Tél : (709) 737-7904  
Télec : (709) 737-3010  
Courriel : hbrunner@morgan.uccs.mun.ca

### Hiver 1999

(liste partielle)

#### Méthodes algébriques et géométriques en équations différentielles : la mécanique céleste au 20<sup>e</sup> siècle et un siècle de travail sur le 16<sup>e</sup> problème de Hilbert

Christiane Rousseau, Montréal et  
Angelo Mingarelli, Carleton

#### Analyse des théories de groupes et applications

Michel Grundland, UQTR et  
George Bluman, UBC

#### Combinatoire algébrique, représentations des groupes et polynômes de Macdonald

François Bergeron, UQAM et  
Nantel Bergeron, York

#### Génétique et génomique mathématiques

Sabin Lessard, Montréal et  
David Sankoff, Montréal

#### Directeur de réunion :

*Michel Delfour*

Département de Mathématiques et de Statistique  
Université de Montréal  
C.P. 6128, Succursale Centre-ville  
Montréal, Québec  
Canada H3C 3J7  
Tél : (514) 343-7265  
Télec : (514) 343-2254  
Courriel : delfour@crm.umontreal.ca









## WHO'S WHO? / QUI EST QUI?

### EXECUTIVE COMMITTEE / COMITÉ EXÉCUTIF

#### **President / Président**

*Katherine Heinrich (Simon Fraser)* (604)291-3925 [heinrich@cs.sfu.ca](mailto:heinrich@cs.sfu.ca)

#### **President-Elect / Président-élu**

*Richard Kane (Western)* (519)679-2111 ext. 6516 [rkane@julian.uwo.ca](mailto:rkane@julian.uwo.ca)

#### **Vice-Presidents / Vice-présidents**

*Lynn Batten (Manitoba)* (204)474-8703 [batten@cc.umanitoba.ca](mailto:batten@cc.umanitoba.ca)

*Eddy Campbell (Queen's)* (613)545-2428 [eddy@mast.queensu.ca](mailto:eddy@mast.queensu.ca)

*Jacques Hurtubise (McGill)* (514)398-3816 [hurtubis@math.mcgill.ca](mailto:hurtubis@math.mcgill.ca)

*Richard Wood (Dalhousie)* (902)494-3326 [rjwood@mscs.dal.ca](mailto:rjwood@mscs.dal.ca)

#### **Executive Director and Secretary / Directeur administratif et secrétaire**

*Graham P. Wright (Ottawa)* (613)562-5800 ext. 3528 [gpwright@cms.math.ca](mailto:gpwright@cms.math.ca)

#### **Treasurer / Trésorier**

*F. Arthur Sherk (Toronto)* (416)226-4768 [sherk@math.toronto.edu](mailto:sherk@math.toronto.edu)

### CMS STANDING COMMITTEE CHAIRS / PRÉSIDENT(E)S DE COMITÉS DE LA SMC

#### **Education Committee / Comité d'éducation**

*Morris Orzech (Queen's)* (613)545-2436 [orzechm@mast.queensu.ca](mailto:orzechm@mast.queensu.ca)

#### **Electronic Services Committee / Comité des services électronique**

*Robert Rosebrugh (Mt. Allison)* (506)364-2538 [rrosebrugh@mta.ca](mailto:rrosebrugh@mta.ca)

#### **Finance Committee / Comité des finances**

*Gordon Mason (UNB)* (506)453-4768 [gmason@unb.ca](mailto:gmason@unb.ca)

#### **Fund Raising Committee / Comité pour la collecte des fonds**

*Katherine Heinrich (Simon Fraser)* (604)291-3925 [heinrich@cs.sfu.ca](mailto:heinrich@cs.sfu.ca)

#### **Government Policy Committee / Comité sur les politiques gouvernementales**

*Michel Racine (Ottawa)* (613)562-5800 ext. 3512 [mracine@uottawa.ca](mailto:mracine@uottawa.ca)

#### **Human Rights Committee / Comité des droits de la personne**

*David Poole (Trent)* (705)748-1358 [dpoole@trentu.ca](mailto:dpoole@trentu.ca)

#### **International Affairs Committee / Comité des affaires internationales**

*Peter Fillmore (Dalhousie)* (902)494-2385 [fillmore@mscs.dal.ca](mailto:fillmore@mscs.dal.ca)

#### **Mathematical Olympiads Committee / Comité des olympiades mathématiques**

*Patrick Stewart (Dalhousie)* (902)494-8855 [stewart@mscs.dal.ca](mailto:stewart@mscs.dal.ca)

#### **Nominating Committee / Comité des mises en candidature**

*Kenneth Davidson (Waterloo)* (519)888-4081 [krdavidson@math.uwaterloo.ca](mailto:krdavidson@math.uwaterloo.ca)

#### **Publications Committee / Comité des publications**

*James Mingo (Queen's)* (613)545-2444 [mingoj@mast.queensu.ca](mailto:mingoj@mast.queensu.ca)

#### **Research Committee / Comité de recherche**

*Cameron Stewart (Waterloo)* (519)885-1211 ext. 5567 [cstewart@watserv1.uwaterloo.ca](mailto:cstewart@watserv1.uwaterloo.ca)

#### **Committee on Women in Mathematics / Comité des femmes en mathématiques**

*Shelly Wismath (Lethbridge)* (403)329-2529 [wismaths@cs.uleth.ca](mailto:wismaths@cs.uleth.ca)

## MATH CONNECTION

**New CMS Members**  
**Nouveaux membres de la SMC**  
**May 17 to November 21, 1997**  
**Du 17 mai au 21 novembre 1997**

We are pleased to welcome the following as new members to the Canadian Mathematical Society

Nous sommes heureux de souhaiter la bienvenue aux nouveaux membres de la Société mathématique du Canada.

Taher Abualrub (Iowa City, U.S.A.)  
 Lekraj Beedassy (Marseille, France)  
 Denise DLYC Cheung  
 (Scarborough, Canada)  
 Galyna Feshchenko  
 (Montréal, Canada)  
 Alexandru E. Ghitzia  
 (Montréal, Canada)  
 Stephen Locke (Boca Raton, U.S.A.)  
 University of New Brunswick  
 (New Brunswick, Canada)  
 Vivian V. Pinto (Luxembourg)  
 Randall M. Pyke (New York, U.S.A.)  
 Kim Young Rock (Seoul, Korea)  
 Raphael A. Vega  
 (Colorado Springs, U.S.A.)  
 Platonov Vladimir (Waterloo, Canada)  
 Michael V. Zarb (Toronto, Canada).

### News from Departments

**Brock University:** Professor Hichem Ben-el-Mechaiekh has been promoted to full Professor.

The Mathematical Association of America has awarded a Certificate of Meritorious Service to Professor Howard Bell.

**University of Waterloo:** Alexandru Nica (Ph.D. California, Berkeley) has been appointed Assistant Professor, working in Operator Algebras.

A Celebration of Women in the Mathematical, Statistical and Computer Sciences will be held May 22 to 23, 1998 at the University of Waterloo. Plenary talks will be given by Dr. M. Klawe, Dr. N. Reid and Dr. L. Keshet.

The Canadian Symposium on Abstract Harmonic Analysis will meet May 3 to 4, 1998.

**Carleton University:** The following professors will retire effective July 1, 1998: Professor V. Dlab, Professor J. E. Graham, and Professor M. Rahman.

**McGill University:** 'A Day of Geometry' was held on March 24, 1998 organized by the Department of Mathematics and Statistics (P. Russell) and CRM. The speakers were: M. Miyanishi (Osaka), S. Boyer (UQAM), B. Broer (Montréal), K. Masuda (Himaji Inst. of Tech), J. Hurtubise (McGill) and T. Sugie (Shiga).

**Queen's University:** Professors Dom de Caen, Ernst Kani and Jamie Mingo were promoted to full Professor.

The following appointments were made: Tamas Linder (Communications and Information Theory), Andrew Lewis (Non-Linear Control Theory).

Professor Duncan Murdoch resigned to take up a position at the University of Western Ontario in the Department of Statistics.

Professor Ram Murty was awarded a Killam Research Fellowship, and a distinguished lectureship at Brown University.

Professor A.J. Coleman will be 80 years old in May.

**Saint Mary's University:** Professor Larry Hughes has resigned.

**Université de Moncton:** Dr. Paul

Deguire has been promoted to Professor, effective July 1, 1998.

Dr. Claude Gauthier will be on sabbatical in 98-99, visiting the University of Montreal, Laval and some other institutions.

Dr. Francois Soler, former chair of the Department, passed away on March 7, 1998 after a long illness.

Dr. Thu Pham-Gia, present chair, has been awarded the 1996 Thomas L. Saaty Prize for his paper entitled, "Some applications of the Lorenz Curve in Decision Analysis published in 1997".

Dr. Samuel Gaudet presented a lecture on Mathematics and Music at the Université de Moncton and a special talk on the same topic on the National CBC program AS IT HAPPENS.

**McMaster University:** Andrew Dancer has been promoted to Associate Professor (tenure), Shui Feng to Associate Professor (tenure) and Matthew Valeriote to full Professor.

Nicholas Kevlahan is to be appointed Assistant Professor effective July 1, 1998.

We have the following new post-doctoral appointments effective July 1, 1998: D. Gunderson (Combinatorics), Maria Gordina (Analysis), Igor Belegradek (Geometry/Topology), Jeffrey Boland (Geometry/Topology), Susan Goldstine (Number Theory, Britton PDF), Eric Derbez (Probability), Deguang Han (Analysis), David Pierce (Algebra/Logic), Alexander Teplyaev (Math. Physics), Xue-Feng Yang (Applied Math), and Meijun Zhu (Analysis).

Professor S.G. Mohanty is to retire June 30, 1998.

### Planification : l'avenir de la SMC

Une ébauche de proposition, en version anglaise, est désormais accessible sur Camel, à l'adresse suivante : [www.cms.math.ca/Projects/](http://www.cms.math.ca/Projects/). Nous vous incitons à nous transmettre vos commentaires sur ce document. On peut également s'en procurer des exemplaires en communiquant avec le bureau administratif de la SMC. La proposition finale, telle qu'approuvée par le Conseil d'administration, sera ensuite publiée en anglais et en français.



### The New Zealand Mathematical Society (Inc.)

The following is to inform you about the change of Officers of the New Zealand Mathematical Society (Inc.):

<b>NZMS Council</b>	<b>Term on Council</b>
Prof. Rob Goldblatt (PRESIDENT) Victoria University of Wellington	1996 - 2000
Prof. Douglas Bridges (Immediate Past Pres.) The University of Waikato	1994 - 1998
Dr. Stephen Joe (SECRETARY) The University of Waikato	1995 - 1998
Dr. Mick Roberts (TREASURER) Wallaceville Animal Research Centre	1997 - 1000
Assoc. Prof. Rick Beats University of Canterbury	1996 - 1999
Prof. Mike Henry (Newsletter Editor) Massey University	1995 - 1998
Dr. Vivien Kirk University of Auckland	1996 - 1999
Dr Dennis McCaughan University of Otago	1997 - 1000
Dr. Robert McLachlan Massey University	1996 -1999

Other positions of responsibility in the NZMS:

Dr. John Shanks – Membership Secretary (University of Otago), Professor Mike Henry – Newsletter Editor (Massey University), Dr. Peter Renaud – Legal Advisor (University of Canterbury), Professor John Harper – Archivist (Victoria University of Wellington), and Dr. David McIntyre – Visitor Liaison and Publications Convener (University of Auckland).

All the other Council members and Officers of the Society are unchanged.

I would also like to take the opportunity to advise you that the Web pages of the Society have shifted. The Society home page is now at: **www.math.waikato.ac.nz/NZMS/NZMS.html**.

Correspondence for the NZMS should normally be sent to: Dr. Stephen Joe, Department of Mathematics, The University of Waikato, Private Bag 3105, Hamilton, New Zealand, phone: (7) 856 2889 X8363, fax: (7) 838 4666, email: **Stephan @ math.waikato.ac.nz**.

### Australian Mathematical Society

Below you will find a fee schedule for 1998 along with a list of Society committee members for 1998.

#### 1998 Subscriptions :

Ordinary Member .....	\$A 70.00
Reciprocal Member .....	\$A 35.00

Retired Member .....	\$A 17.50
Sustaining Member .....	\$A 140.00
Reduced Rate Member .....	\$A 17.50
ANZIAM .....	\$A 7.00
Institutional Member .....	\$A 916.00
Life Membership at Retirement for Members over 55 years of age .....	\$A 225.00

#### Journal Cost

	Orginary Member	Sustaining Member	Reciprocal Member	Reduced Rate and Retired Member
: Journal Series A	\$A 38.00	\$A 38.00	\$A 38.00	\$A 19.00
Journal Series B	\$A 32.00	\$A 32.00	\$A 32.00	\$A 16.00
The Bulletin	\$A 35.00	\$A 35.00	\$A 35.00	\$A 17.50

### Members of the Council 1997/1998

President - Professor A.J. Van der Poorten (FAustMS) (Macquarie University); Vice-Presidents - Professor W.R. Bloom (FAustMS) (Murdoch University); Professor I.H. Sloan, University of New South Wales; Secretary - Professor D. Elliott (FAustUS) (University of Tasmania); Treasurer - Dr. A. Howe (Australian National University).

#### Editors 1997/1998

Gazette - Professor T.M. Mills (La Trobe University at Bendigo), and Mr. B.R. Benjamin (University of South Australia); Journal Series A - Dr. J.R.J. Groves (University of Melbourne), and Professor

C.F. Miller III (University of Melbourne); Bulletin - Professor M. Cowling (University of New South Wales); Journal Series B - Associate Professor C.E.M. Pearce (FAustUS) (University of Adelaide); Journal Series B (Electronic) - Professor A.J. Roberts (University of Southern Queensland); Australian Mathematical Society Lecture Series - Professor J.H. Loxton (Macquarie University); Electronic Site - Dr. I.R. Doust (MAustMS) (University of New South Wales).

For more information write to the Australian Mathematical Society, Department of Mathematics, Australian National University, ACT 0200 Australia, or telephone: (02) 6279 8922, fax: (02) 6279 8923, or email: **Val.Pearson@maths.anu.edu.au**.



### David F. Paget (1943 - 1997)

David Paget was born in London in 1943 and, after completing an Honours Mathematics degree at the University of Southampton migrated, in 1965, to New

Zealand where he taught at St. Paul's Collegiate School in Hamilton. In 1967 he came to the University of Tasmania (Australia) where he enrolled for a Ph.D. and wrote a thesis entitled "Generalized Product Integration". Since 1971 he was a much valued staff member of the Mathematics Department at the University of Tasmania, receiving accelerated promotion to Senior Lecturer in 1986.

It was in 1988 that David became involved with the Mathematics Olympiad Competition when it was held for the first time in Canberra as part of Australia's 200th birthday anniversary celebrations. For eight years after that David was involved with the Maths Olympiad Competition as

Australia's team leader, coach and trainer and he took the Australian team to Beijing, Uppsalla, Moscow, Istanbul, Hong Kong and Toronto. In recognition of his outstanding work, early in 1997 David received the prestigious B.H. Neumann award "for his significant contribution to the enrichment of mathematics learning in Australia".

David died on the 30th November 1997 after a two year battle with cancer. He is survived by his wife Leone, two sons and two daughters.

*Source: David Elliott, Department of Mathematics, University of Tasmania, Tasmania, Australia*

#### Memorial University of Newfoundland Department of Mathematics and Statistics

Applications are invited for a tenure track position in Mathematics at the Assistant Professor level, with primary research interest in combinatorics. The appointment will commence September 1, 1998. A Ph.D. and proven ability for research and effective teaching are required.

Applications, marked REF: MS/COMB/98, with complete curriculum vitae, a statement of present research and teaching interests, and the names and mailing/e-mail addresses of at least three referees should be sent to:

#### MS/COMB/98 Department of Mathematics and Statistics Memorial University of Newfoundland St. John's, Newfoundland A1C 5S7 Canada

The closing date for receipt of applications is **May 31, 1998** or until the position is filled.

Memorial University is committed to the principle of equity in employment. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

## CALENDAR OF EVENTS / CALENDRIER DES ÉVÉNEMENTS

### MAY 1998

**11–15** 66e Congrès de l'Acfas (Université Laval, Québec)  
*Acfas: [congres@acfas.ca](mailto:congres@acfas.ca)*

**21–25** The 26th Annual Canadian Operator Theory and Operator Algebras Symposium / Le 26ième Symposium Canadien sur la Théorie des Opérateurs et des Algèbres d'Opérateurs (University of Alberta)

*L. Marcoux: <http://www.math.ualberta.ca/~lmarcoux/spots.html>*

**22–23** A Celebration of Women in the Mathematical, Statistical and Computer Sciences (University of Waterloo)

*Daniel Piché: <http://www.math.uwaterloo.ca/~cwim>*

**22–23** London Mathematical Society joint meeting with the Irish Mathematical Society on Complex Analysis and Dynamical Systems (London, England)  
*<http://www.lms.ac.uk/meetings/diary.html>*

**24–30** Thirty-sixth International Symposium on Functional Equations (Brno, Czech Republic)

*Frantisek Neuman: [neuman@drs.ipm.cz](mailto:neuman@drs.ipm.cz)*

**28–31** 19th Annual Meeting of Canadian Applied Mathemat-

### MAI 1998

ics Society (CAMS/SCMA) and 13th Canadian Symposium on Fluid Dynamics (CSFD) (Simon Fraser University)  
*Cecil Graham: [gac@cs.sfu.ca](mailto:gac@cs.sfu.ca)*

**29–31** Annual Meeting of Canadian Society for History and Philosophy of Mathematics / Société canadienne d'histoire et de philosophie des mathématiques (University of Ottawa)  
*Glen Van Brummelen: [vanbrumm@compuserve.com](mailto:vanbrumm@compuserve.com)*

**29–1** Canadian Mathematics Education Study Group/Groupe Canadien d'étude en didactique des mathématiques (University of British Columbia) *Susan Pirie: [susan.pirie@ubc.ca](mailto:susan.pirie@ubc.ca)*

### JUNE 1998

**1–5** Industrial Problem Solving Workshop (Calgary, Alberta)  
*Huaxiong Huang: [hhuang@math.ubc.ca](mailto:hhuang@math.ubc.ca)*

**7–19** NATO ASI - 1998 CRM Summer School, The arithmetic and geometry of algebraic cycles (Banff, Alberta)  
*Louis Pelletier: [Banff98@CRM.UMontreal.ca](mailto:Banff98@CRM.UMontreal.ca)*

**8–12** Category Theory Workshop (Mount Allison University, NB) *ct95@mcs.dal.ca*

### JUIN 1998

**13–15 CMS Summer Meeting / Réunion d'été de la SMC**  
(University of New Brunswick, Saint John)  
*Monique Bouchard: meetings@cms.math.ca*

**JULY 1998****JUILLET 1998**

**10–21** 39th International Mathematical Olympiad (Taipei, Taiwan) *imo98@scc.ntnu.edu.tw*

**12–15** Ninth SIAM Conference on Discrete Mathematics (University of Toronto) *meetings@siam.org*

**12–16** Society for Mathematical Biology Annual Meeting (University of Toronto) *Leon Glass: glass@cnd.mcgill.ca*

**13–17** 1998 SIAM Annual Meeting (University of Toronto) *meetings@siam.org*

**13–17** Third WFNMC Congress (Zhong Shan, China)  
*Pak-Hong Cheung: phcheung@hkucc.hku.hk*

**16–18** MAA Mathfest '98 (Ryerson Polytechnic University)  
*http://www.maa.org/meetings/toronto\_desc.html*

**27–7** Séminaire de Mathématiques Supérieures - Séminaire Scientifique OTAN (Université de Montréal, Québec)  
*http://www.dms.umontreal.ca*

**30–31** Western Canada Linear Algebra Meeting (University of Victoria) *http://www.math.uregina.ca/~tsat/wclam.html*

**AUGUST 1998****AOÛT 1998**

**3–7** Workshop on Coding Theory, Cryptography and Computer Security (University of Lethbridge)  
*Hadi Kharaghani: http://www.cs.uleth.ca/cccs98*

**18–27** International Congress of Mathematicians (Berlin, Germany) *http://elib.zib-berlin.de/ICM98/*

**DECEMBER 1998****DÉCEMBRE 1998**

**13–15 CMS Winter Meeting / Réunion d'hiver de la SMC**  
(Queen's University, Kingston)  
*Monique Bouchard: meetings@cms.math.ca*

International Commission on Mathematical Instruction (ICMI) Study Conference (Singapore)  
*http://elib.zib.de/IMU/ICMI/bulletin/43/Study.html*

**MAY 1999****MAI 1999**

**29–31 CMS Summer Meeting / Réunion d'été de la SMC**  
(Memorial University of Newfoundland, St. John's)  
*Monique Bouchard: meetings@cms.math.ca*

**DECEMBER 1999****DÉCEMBRE 1999**

**11–13 CMS Winter Meeting / Réunion d'hiver de la SMC**  
(Université de Montréal)  
*Monique Bouchard: meetings@cms.math.ca*

**JUNE 2000****JUIN 2000**

**CMS Summer Meeting / Réunion d'été de la SMC**  
(McMaster University)  
*Monique Bouchard: meetings@cms.math.ca*

**12–15** Integral Methods in Science and Engineering (Banff, Alberta) *Peter.Schiavone@ualberta.ca*

**DECEMBER 2000****DÉCEMBRE 2000**

**CMS Winter Meeting / Réunion d'hiver de la SMC**  
(University of British Columbia)  
*Monique Bouchard: meetings@cms.math.ca*

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