CMESG is a group of mathematicians and mathematics educators who meet annually to discuss mathematics education issues at all levels of learning. The aims of the Study Group are:

1) to study the theories and practices of the teaching of mathematics,

2) to promote research in mathematics education,

3) to exchange ideas and information about all aspects of mathematics education in Canada,

4) to disseminate the results of its work.

Le GCEDM est composé de personnes oeuvrant en mathématiques et en didactique des mathématiques et qui se réunissent une fois par année pour étudier diverses questions relatives à l'enseignement des mathématiques à tous les niveaux. Les buts du Groupe sont les suivants:

1) susciter une réflexion critique sur la théorie et la pratique de l'enseignement des mathématiques,

2) encourager la recherche en didactique des mathématiques,

3) faciliter l'échange d'idées et d'informations sur tous les aspects de la didactique des mathématiques au Canada,

4) faire connaître les résultats de ses travaux.

PRESIDENT'S MESSAGE
Sandy Dawson
Simon Fraser University

It seems strange to me, and perhaps to you as well, that for the first time in the history of CMESG/ GCEDM this message is coming not from David Wheeler, Claude Gaulin, or Tom Kieren. The contributions those individuals have made to CMESG/ GCEDM since its inception cannot be praised enough. Without their inspiration and

leadership the Study Group would not have developed into the powerful voice it is today for mathematics education in Canada.

Hence, it was with some trepidation and concern that I took on the task of President. It would be difficult enough to fill one pair of large shoes, but

when there are three such pairs in our history the task seemed all that more formidable.

Consequently, it was with relief that I surveyed the very strong Executive the membership created in elections during our last meeting at York. Two of its members, Bernard and Eric, were instrumental in guiding ICME-7 to being a huge success last year; Carolyn Kieran is now President of PME; Pat Rogers is fresh from winning outstanding teacher awards, direction of a research centre, and of course organizing the York meeting; and Mary Crowley presents a strong Maritime influence as she guides this very Newsletter you are reading.

As a result of the outstanding quality of this group, the Executive meeting mid-September in Toronto was very focused. Within a few short hours the program for our 1994 meeting in Regina was drafted and approved. Details of the program can be found elsewhere in this Newsletter. It promises to be an exciting event, and I am looking forward to returning to Regina, the location of my first-ever academic appointment. If the educational environment in Regina today is even half as exciting as it was 25 years ago, then we should all have an excellent time in the Pile of Bones.

A second major focus of the Executive meeting was a report from Bernard regarding his discussions with the CMS. Arising from this report, fresh initiatives were outlined and acted upon immediately following the meeting. One consequence of this communication with CMS will be the presentation to the CMS Board and Executive in December of a motion inviting CMESG/ GCEDM to have voting membership on the CMS standing Committee on Education. In addition, the President of CMESG/ GCEDM has been invited to be an ex-officio member of the Canadian National Committee (CNC) of the International Mathematics Union (IMU), a position similar to that held by the presidents of CAMS, CMS, and SSC. These are exciting developments because they give formal recognition to CMESG/ GCEDM as a major and significant voice in mathematics education in Canada. Moreover, it creates directs links between CMESG/ GCEDM and the various mathematical groups in Canada which can only be beneficial to the goal of improving the teaching and learning of mathematics in Canada.

Financial constraints in education at all levels are uniform across our country, but even in such difficult times it is heartening indeed to be part of a group of people, such as CMESG/ GCEDM, which is so full of energy and which has such a strong commitment to the future. Our organization is a product of the synergy amongst its members, and given the vitality of each of you the future of our group is assured.

CMESG/ GCEDM Members Honoured

Our organization would be remiss in the extreme if we did not acknowledge the debt owed to two of our colleagues who stepped down this year after many years of service on the Executive.

Tom Kieren's association with the Group goes back to the initial meeting in Kingston in 1977 where he gave one of the keynote lectures. He has over the years served the Group in a variety of ways. Most recently, of course, Tom was our President. Tom's enthusiasm and drive, the sparkle in his eyes (which I have known since the days when he was my senior supervisor--so, the guy is allowed one mistake over the years!), his ability to always see at least 3 good things in most everything, are characteristics he brought to the Group which will always remain as part of our ways of working. Who could forget Tom's insightful remarks on the invited addresses, his gentle and loving interactions with Coxeter at the York meeting, and, of course,

his leading of pizza runs at odds hours of the night? Tom, we thank you, for your contributions to the Group, for just being the open, loving person you are who thereby enriches all our lives.

Many may not realize the enormous amount of work, time, and effort Lars Jansson put in to the Group. Joining the Executive first as a co-opted member, Lars then went on to being the Secretary-Treasurer for the Group for at least six years. Most of the work Lars did was not seen by the membership, because it was his task to put together each year the proposal to go to SSHRC which in fact funds our Annual meeting. This work is done under difficult time constraints. It involves coordinating input from across our vast country, putting that input together in an academically defensible way, and getting the proposal to Ottawa on time. In addition, Lars kept track of all our finances and the fact that we are in a sound financial position is due in large measure to the diligent manner with which Lars carried out his charge. Lars, we thank you for your many, perhaps unrecognized, contributions to the Group.

sandy dawson

Call for Nominations

As hard as it may be to believe, it is time to start thinking about electing members to the Executive. This group is composed of 4 elected members and 2 co-opted members. The elected members have terms of 2 years, with 2 members elected each year. The continuing members for 1994-95 are Sandy Dawson and Eric Muller. The terms of Carolyn Kieran and Pat Rogers are ending. We must therefore hold an election to fill those positions.

Please send your **suggestions for candidates** to Lesley Lee or David Wheeler, our Nominating Committee. They would appreciate these on or before **February 1, 1994**. Voting will occur in the spring and the results will be announced at the general meeting in Regina.

Please contact either Lesley or David at their respective addresses (e-mail or snail-mail) to submit your nominations:

Lesley Lee
5454 Waverly
Montréal, QC
H2T 2X9
e-mail: R36114@er.uqam.ca

David Wheeler
#205, 1230 Haro Street
Vancouver, B.C.
V6E 4J9
e-mail: Wheeler@sfu.ca

APPEL AUX MISES EN CANDIDATURE

Quoique cela puisse peut-être paraître étonnant, il faut déjà penser à l'élection de nouveaux membres au sein du Comité exécutif. Ce Comité est composé de quatre membres élus et de deux membres nommés par cooptation. Les membres élus ont un terme d'une durée de deux ans, deux des postes faisant l'objet d'une élection à chaque année. Parmi les membres actuels de l'Exécutif, Sandy Dawson et Eric Muller ont un mandat se prolongeant jusqu'en 1994-95, tandis que Carolyn Kieran et Pat Rogers ont un mandat se terminant à l'été 1994. Les prochaines élections concernent donc ces deux derniers postes.

Prière d'envoyer vos **propositions de candidatures** à un membre du Comité de mise en candidature d'ici **le 1er février 1994**. Le vote se déroulera au printemps et les résultats seront annoncés lors de l'Assemblée générale qui se tiendra à Regina. Le Comité de mise en candidature est formé de :

Lesley Lee
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David Wheeler
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Wheeler@sfu.ca

Prix en éducation

On nous a signalé que deux de nos membres se sont récemment vu attribuer des prix en éducation. **Gary Flewelling** a reçu, pour sa contribution exceptionnelle à l'enseignement des mathématiques, un prix du Chapitre Waterloo/ Wellington de la Société nord-américaine Sigma Xi. **Bernard Hodgson** a reçu le Prix Abel-Gauthier de l'Association mathématique du Québec, ayant été désigné la "personnalité de l'année". Félicitations à tous deux !

Notice of 1994 Annual Meeting
June 3 - 7
University of Regina
Regina, Saskatchewan

The 1994 CMESG Meeting will be held at the University of Regina from the 3rd to the 7th of June. Vi Maeers is the local organiser.

The program will feature as Plenary speakers Keith Devlin and Anna Sfard. Anna is a Senior lecturer at the Hebrew University in Jerusalem. She is head of the New Mathematics Curriculum Project for Grades 10 - 12 and the Editor of the Israeli Journal for Mathematics Teachers. Keith has just moved to St. Mary's College in California as Dean of the School of Science leaving the position of Carter Professor of Mathematics and Computer Science at Colby College in Maine. He is the author of 13 books (5 research monographs, 5 undergraduate texts and 3 general audience books on mathematics).

There will be three Working Groups. One lead by Tom Kieren will study theoretical mathematics education, another lead by George Gadanidis and Olive Fullerton will study preservice mathematics teachers as purposeful learners, and the third, lead by Bernard Hodgson and Eric Muller, will study "Popularizing Mathematics".

Topic Groups will cover a wider range of interests. The meeting will also draw on local expertise from individuals who have not previously contributed to CMESG - Chris Fisher from the Mathematics Department involved in teaching Finite Math to large classes of Education students, Margaret Pohl from the Bridging Program for Women and Donna Scarfe from the Saskatchewan Urban Native Teacher Education Program.

To top it all there will be special presentations on the two most recent ICMI Studies. These presentations will be made by two CMESG members who are involved in program committees for the studies. Gila Hanna will report on the ICMI study "Gender and Mathematics Education", and Anna Sierpinska will report on "Research in Mathematics Education".

The tour arranged by Vi of the RCMP Training Academy and the Qu'appelle Valley promises to be very interesting.

So mark you calendar today and plan to be in Regina for this exciting meeting. Conference forms will be included in the next newsletter (early March).

Teaching Awards

It has been brought to our attention that two of our members recently received teaching awards. **Gary Flewelling** received an award from the Waterloo/Wellington chapter of the North American academic society Sigma Xi for his outstanding contributions to the teaching of mathematics. **Bernard Hodgson** received the Prix Abel-Gauthier from the Association mathématique du Québec. He was designated "personnalité de l'année." Congratulations to you both!

Annonce de la Réunion annuelle de 1994
3 - 7 juin
Université de Regina
Regina, Saskatchewan

Le CMESG tiendra sa prochaine réunion annuelle du 3 au 7 juin 1994 à l'Université de Regina. L'organisatrice locale est Vi Maeers.

Le programme comprendra des conférences plénières de Keith Devlin et d'Anna Sfard. Anna est "senior lecturer" à Hebrew University, Jérusalem. Elle est directrice du "New Mathematics Curriculum Project for Grades 10 - 12" et éditrice du Israel Journal for Mathematics Teachers. Keith vient d'être nommé doyen du St. Mary's College, Californie, après avoir occupé le poste de "Carter Professor" en mathématiques et informatique au Colby College, Maine. Il est l'auteur de treize livres, dont cinq monographies de recherche, cinq manuels pour l'enseignement de 1er cycle et trois livres présentant les mathématiques à un public général.

Il y aura trois Groupes de travail. Le premier (responsable: Tom Kieren) portera sur la théorie de la didactique des mathématiques ; le deuxième (responsables: George Gadanidis et Olive Fullerton) s'intéressera aux futurs maîtres de mathématiques en tant qu'apprenants motivés; et le troisième groupe (responsables: Bernard Hodgson et Eric Muller) cherchera à faire le point sur la vulgarisation des mathématiques.

Les Groupes thématiques porteront sur des sujets variés. La rencontre sera également l'occasion de mettre à profit l'expertise locale : Chris Fisher, du Département de mathématiques, qui parlera de l'enseignement des mathématiques discrètes à de grands groupes d'étudiants en éducation ; Margaret Pohl, du "Bridging Program for Women"; et Donna Scarfe, du "Saskatchewan Urban Native Teacher Education Program". Tous trois en seront à leur première participation au programme d'une réunion du GCEDM.

Il y aura en outre des présentations spéciales à propos des deux Études les plus récentes de la CIEM. Ces présentations, faites par deux membres du GCEDM impliquées dans les Comités de programme de ces Études, seront données respectivement par Gila Hanna ("Genre et éducation mathématique") et Anna Sierpinska ("La recherche en didactique des mathématiques").

Une excursion des plus intéressantes, organisée par Vi, sera offerte au Centre de formation de la GRC ainsi qu'à la Vallée Qu'Appelle.

Inscrivez donc dès maintenant ces dates à votre agenda. Les formulaires d'inscription et d'hébergement seront envoyés en mars avec le prochain numéro du Bulletin.

Members Report

In keeping with past tradition, the Newsletter welcomes reports on the activities of members of GCEDM/CMESG. In this issue, we have two such accounts. One is an overview of a research project; the other provides a personal account of a member's efforts at curriculum reform. Won't you take a minute or two and drop us a page or so about your research, curriculum development, or teaching activities?

Algebraic Thinking at the Secondary Level.
Anna Sierpinska, Joel Hillel, Liliane Beaulieu, J. Brody
Concordia University

The Linear Algebra project is a three-year project now in its second year. Its overall objective is to improve students' understanding of basic linear algebra concepts by designing sets of activities which lead students to grapple with some of the important underlying concepts. The learning activities often try to exploit the use of Maple in order to get at some of these concepts. The project consists of four component projects:

1. Epistemological analysis of Linear Algebra: Obstacles and Conditions for Understanding. (Directed by Anna Sierpinska)

2. The design and evaluation of didactical situations incorporating the use of Maple to overcome basic epistemological obstacles. (Directed by Joel Hillel)

3. Three views of the history of linear algebra: the ideas, the books, and the courses. (Directed by Liliane Beaulieu)

4. Using a "computational approach" in the learning of linear algebra. (Directed by J. Brody)

The research program is funded by FCAR. The first two projects are also supported by SSHRC.

Letting Go: My Efforts at Curriculum Reform.
Peter Taylor, Queen's University

In some ways I am trying to move in the same directions as so many others: dialogue, class explorations, collaborative work, a leaner and more lively curriculum. What is perhaps idiosyncratic is my adoption of the humanities as a model for classroom teaching. There are a number of parallels between the sciences and the humanities which are very important for me at the moment. For example, they both draw their basic pedagogical model from the study of art, and have the common goal of making artists of their students. To understand this is to take a big step forward in curriculum reform in science.

(continued...)

My aim is to bring to each class what I call a "grain of sand":

To see the Universe in a Grain of Sand
And a Heaven in a Wildflower
To hold Infinity in the palm of your hand
And Eternity in an hour.

William Blake
Auguries of Innocence

Evidently that's quite a challenge--both to find and to present the right grains. I'll try to give you a sense of my progress in three different courses.

I would guess that the Math and Poetry course (IDIS 298) which I have taught for some ten years (jointly, until last year, with a colleague in the English Dept.), has been my principle guide and inspiration here: we spend an hour on a poem and an hour on a math problem, and my goal is always that the math problem should be just as enticing and provoking and even moving as the poem which preceded it, and the class discussion ought to be just as lively. There's a question of artistic integrity here too: in the study of a poem, it is the poem itself that drives the discussion at every point, and every contribution is judged by reference to the poem; hereby the students discover how to truly *care for* the poem and even more (here is the real trick), how to allow the poem to *care for them* (Mayeroff). So it must be with the mathematics problem. And if you think that's asking a lot, then I think you're right--it's really an ideal, a standard, something I'm always working towards.

In my math explorations course (MATH 382) which I teach for third year math students and a few high school math teachers, the emphasis is not so much on the content but on the process of learning and doing mathematics. Here, I am able to choose a few superb problems with all sorts of interesting and fruitful avenues to explore, and I can also take some time for a discussion of more general issues of education. In this connection we read together and talk about the books of Whitehead (*The Aims of Education*) and Mayeroff (*On Caring*). The classes are 3-hour evening slots, and we take the middle 40 minutes for coffee and cookies and discussion of the chapter of the week.

For example, this winter, MATH 382 consists of three four-week "grains." The first grain is the

problem of finding the limit of x to the x to the x to the x...etc., as the tower becomes infinitely high. The second grain is the problem of which prime numbers can be written as the sum of squares, and generalizations of this and the third grain consists of explorations with the Fibonacci sequence. As you see, we give ourselves lots of time with each problem, but I like to think that lots is learned.

In these two courses, I have no prescribed curriculum, and therefore no "standard" set of technical skills which must be covered by the end of the semester, so I can choose my problems to be the very best I can find. It is more difficult, and more of a challenge, to remain faithful to my humanistic ideals in a course which comes armed with a standard curriculum with considerable technical expectations, such as the one-variable calculus. My work with this course has had two aspects, one, to find the right "grains" and two, how to integrate them with the technical stuff and ensure that the latter gets learned. I'll say something about each of these.

The first task, of finding the right problems, has certainly taken longer and been more filled with frustration than I had expected. I published my calculus book long before I felt I had a proper handle on this question, but I knew I needed experience and feedback with what I had. Increasingly, I am centering my work around the theme of optimization, and I'm producing a curriculum that is oriented towards the interests of students in the life and social sciences. I am finding (at first to my dismay!) that quite a few of the fundamental time-honoured topics and types of problems really aren't of great interest or relevance to my students, nor are they needed for an understanding of the analysis of functions. [Eg. the Mean-value Theorem, the Newton Quotient, slipping ladders, techniques of integration, volumes of revolution, series...] There!--maybe this is the heart of the matter--I find that I and most of my students aren't really much interested in the calculus *per se*; what we are interested in is *the analysis of functions*, using both geometric and algebraic approaches, and for this, certain parts of calculus can serve as wonderful technical and conceptual tools. But this "lateral shift" of the centre of mass of the course has proved to be a key step in allowing me to let go of a lot of the standard material.

The second task, the handling of technical skills, is a crucial component of any discovery-oriented curriculum, because if we want our grains to sprout and take root (and produce wildflowers!--I'm in danger of mixing metaphors here because I must also recall that grains of sand can provoke and irritate and produce pearls!), we simply don't have (nor want to take) the time to present such skills in class. In fact, in a group of first-year students who differ widely in background and ability, the formal presentation of technical skills doesn't work well anyway--informal, individual learning should work much better. The system I have been working with is based on self-learned, self-paced modules, with mastery testing (8 right out of 10) and no penalty for failure--as many tries as one wants up to a deadline date. There are three modules, 1) derivative and applications, 2) exponential and logarithm, and 3) integration and differential equations (but not techniques of integration). The modules are supported by lists of solved problems and tutorial assistance from senior undergraduates.

In *When We Dead Awaken: Writing as Re-Vision*, Adrianne Rich writes, "For a poem to coalesce, for a character or an action to take shape, there has to be an imaginative transformation of reality which is in no way passive. And a certain freedom of the mind is needed--freedom to press on, to enter the currents of your thought like a glider pilot, knowing that your motion can be sustained, that the buoyancy of your attention will not be suddenly snatched away. Moreover, if the imagination is to transcend and transform experience it has to question, to challenge, to conceive of alternatives, perhaps to the very life you are living at that moment. You have to be free to play around with the notion that day might be night, love might be hate, nothing can be too sacred for the imagination to turn into its opposite or to call experimentally by another name. For writing is re-naming."

Her comments about poetry are universal, and certainly apply to the creation and learning of scientific knowledge. They remind me of the injunction that education should be regarded as a subversive activity. I see little of that in the current science classroom.

(Editor's Note: Peter Taylor's calculus book, *Calculus, The Analysis of Functions*, published by *Wall & Emerson, Inc., 1992, is available from the publisher at 6 O'Connor Drive, Toronto, Ontario, M4K 2K1. Phone: (416)-467-8685. Hard cover copies of the book cost $36.95 while soft cover copies cost $29.50.)*

STILL AVAILABLE !!!!

** There are still a few copies of the CMESG monograph, CURRENT RESEARCH ON THE TEACHING AND LEARNING OF MATHEMATICS IN CANADA/ LES RECHERCHES EN COURS SUR L'APPRENTISSAGE ET L'ENSEIGNEMENT DES MATHEMATIQUÉS AU CANADA.

For more information, write Lars Jansson, Curriculum: Mathematics & Natural Science, Faculty of Education, University of Manitoba, Winnipeg, MB R3T 2N2 or phone: (204) 474-9039, or e-mail: JANSSON@CCM.UMANITOBA.CA

** The English issue of Recherches en Didactique des Mathematiqués, a document prepared for ICME-7 and containing translations of 6 articles by leading French mathematics educators, is available from Joel Hillel. To obtain a copy, send a checque for $15 made out to Joel to him at the Department of Mathematics & Statistics, Concordia University, 7141 Sherbrooke St. West, Montreal, QC H4B 1R6. There are only a few copies left, so move quickly if you are interested.

Review of Bulletin No. 34.
International Commission on Mathematical Instruction
June 1993

(Editor's Note: The International Commission on Mathematical Instruction (ICMI) is a worldwide organization committed to improving the teaching and learning of mathematics at all levels. Miguel de Guzman (Spain) is the current president and Mogens Niss (Denmark) is the current secretary. Two members of CMESG hold office in this group: Anna Sierpinska, Concordia University, is a member of the executive committee while David Wheeler, Vancouver, B.C., is the Canadian representative. The CMESG Executive feels that our membership might be interested in knowing more about ICMI, thus this issue includes items extracted from the latest of the two yearly bulletins issued by ICMI, the June 1993 issue. We also plan to have reports at the 1994 CMESG meeting on several ICMI projects.)

Over the years, the ICMI has conducted several studies on crucial themes and issues in mathematics education. The 1991 study conference on *Assessment in Mathematics Education and Its Effects* has resulted in the publication of two books each edited by Mogens Niss. The books, Investigations into Assessment in Mathematics Education (270 pages) and, Cases of Assessment in Mathematics Education (220 pages) are available at a discount price for individuals from Mogens Niss, ICMI Secretariat, IMFUFA Roskilde University, P.O. Box 260, DK-4000 Roskilde, Denmark.

More recently, a conference on Gender and Mathematics Education was held in Hoör, Sweden, 7 - 12 October 1993. Gila Hanna, O.I.S.E., was the Chair of the Program Committee for this group. Publications from this study group will be forthcoming.

Future study conferences/ publications are planned on *What is Research in Mathematics Education and What are Its Results* (CMESG member Anna Sierpinska, Concordia, is co-chair for this group), on *New Perspective in the Teaching of Geometry*, and on *The Role of History in the Teaching of Mathematics*.

An updated edition of the first ICMI Study, *The Influence of Computers and Informatics on Mathematics and Its Teaching* (originally published by Cambridge University Press in 1986) has recently been released by UNESCO (October, 1992). Edited by Bernard Cornu and Anthony Ralston, the manuscript is No. 44 in the Science and Technology Education Document series. It is available free of charge from UNESCO, Education Sector, 7 Place de Fontenoy, F-75352 Paris 07, France. Amongst the contributing authors are two members of CMESG, Bernard Hodgson (Laval) and Eric Muller (Brock).

The ICMI has a long standing tradition of working closely with UNESCO. One example of this cooperation is the publication cited in the previous paragraph. Other joint ventures include the upcoming documents The Teaching of Numeracy, Volume 9 in the Studies in Mathematics Education series and Factors Influencing the Learning of Mathematics, edited by A. Bishop and prepared by the ICMI affiliate group PME for the Science and Technology Document series.

UPCOMING MEETINGS

Presented in chronological order:

Canadian Mathematics Society (CMS/SMC) Meeting
December 11 - 13, 1993,
Carleton University, Ottawa, Ontario

American Educational Research Association (AERA)
April 4 - 8, 1994
New Orleans, Louisiana

National Council of Teachers of Mathematics (NCTM)
April 13 -16, 1994
Indianapolis, Indiana

Canadian Society for the History and Philosophy of Mathematics (HPM)
June 8 - 10, 1994
University of Calgary
Calgary, Alberta

Canadian Mathematics Society (CMS/SMC) Meeting
June 11 - 13, 1994
University of Alberta, Edmonton, Alberta

Canadian Society for Studies in Education (CSSE)
June 15 - 18, 1994
University of Calgary
Calgary, Alberta

Psychology of Mathematics Education (PME)
July 29 - August 3, 1994
Lisbon, Portugal

ICM 94: The International Congress of Mathematicians
August 3 - 11, 1994
Zürich, Switzerland

Psychology of Mathematics Education, North America (PME-NA)
November 5 - 8, 1994
Baton Rouge, Louisiana

PROFESSEUR-E EN DIDACTIQUE DES MATHÉMATIQUES
POSITION IN MATHEMATICS EDUCATION

Le Département de didactique de l'Université Laval sollicite des candidatures pour un poste de professeur-e régulier-ère en didactique des mathématiques. La tâche comprend l'enseignement de cours aux trois cycles, l'encadrement d'étudiants et d'étudiantes de deuxième et troisième cycles, la supervision de thèses, mémoires et essais, et la recherche en didactique des mathématiques. La candidate ou le candidat pourra être appelé à oeuvrer dans le domaine des applications pédagogiques des ordinateurs en mathématiques.

La candidate ou le candidat doit posséder un doctorat pertinent aux domaines d'enseignement et de recherche, ou l'équivalent du doctorat. Seront considérées comme des atouts des expériences pertinentes en enseignement, en recherche, et dans le domaine des applications pédagogiques des ordinateurs.

Pour plus de renseignements, prière de rejoindre **Monsieur Jean-Guy Bernard, directeur, Département de didactique, Université Laval, Québec G1K 7P4. Tél.: (418) 656 3789, téléc.: (418) 656 2905.** Le concours se termine le 15 mars 1994.

The Département de didactique of Université Laval solicits applications for a tenure-track appointment in Mathematics Education.

Duties consist of teaching at the undergraduate and graduate levels, supervision of Master and Ph.D. students, and research in Mathematics Education. The candidate should also expect to work in the field of pedagogical applications of computers in mathematics.

The candidate should have completed a Ph.D., or the equivalent, in the pertinent domain of teaching and research. Pertinent experience in teaching, research, and pedagogical applications of the computer will be regarded as an asset. Teaching takes place in French.

For more information, please contact **Monsieur Jean-Guy Bernard, directeur, Département de didactique, Université Laval, Québec G1K 7P4. Tel.: (418) 656 3789, fax: (418) 656 2905.** Applications should be received by March 15, 1994.

L'EXECUTIF DE GCEDM / CMESG EXECUTIVE
1993-94

The members of the Executive extend an invitation to you to contact us about any item of interest. If you have something you want to suggest, if you have a complaint, if you want more information, etc., please let us know. In order to serve the membership well, we need to be aware of what your interests are.

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LOOK FOR GCEDM / CMESG MEMBERSHIP FORMS

AND ANNUAL CONFERENCE REGISTRATION MATERIALS

IN THE SPRING 1994 NEWSLETTER

See you in Regina in June