Mathematical & Statistical Sciences Newsletter

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Spring 2003

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Message from the Chair

ATM Lau

I would like to congratulate Ted Lewis who has been awarded the 2003 PIMS Education Prize for his wonderful achievement in Math Fairs. This award was presented at the Banquet of the Inaugural Meeting of the Banff International Research Station on February 28, 2003. Thank you Ted for your devotion to mathematics education.

I would also like to congratulate Mazi Shirvani who is one of the winners of the 2003 Faculty of Science Teaching Awards. Thank you Mazi for your outstanding and innovative teaching.

Congratulations to Gordon Swaters who will become President of AASUA for the upcoming 2003-04 academic year.

Congratulations to John Bowman who has been awarded a Humboldt Fellowship to do research on developing a dynamical turbulent sub grid model at Philipps-Universitaet Marburg, Germany between September 1, 2003 and March 1, 2004.

Bruce Allison will be completing his two-year term as Associate Chair (Undergraduate) on June 30, 2003. I would like to thank Bruce for the truly wonderful job he has done in the management of our undergraduate program. Ivan Baggs will the Associate Chair (Undergraduate) for a one-year term, 2003-04, to be followed by Ken Anderson for a two-year term 2004-06. I would like to welcome Ivan and Ken to our team.

Dr. Cho-Jieh Chen from the University of Waterloo will join the Department on May 1, 2003 as an Assistant Professor. Dr. Chen's research area is in Actuarial Sciences. Dr. Michael Taksar from the University of Missouri has accepted our offer as a Professor and will join the Department on January 1, 2004. Dr. Taksar's research area is in Mathematical Finance. He will be nominated for a Tier 1 Canada Research Chair.

This year, the North/South Meeting of Alberta Universities and Colleges will be held in Calgary on April 26-27, 2003. More information regarding the meeting may be obtained from Michael Li.

Our winter term is coming to an end and the summer session is fast approaching. I would like to wish you all a very happy and fruitful summer session.

Associate Chair of Research
K.C. Carrière

The Department of Mathematical and Statistical Sciences implemented a new departmental procedure with research grant applications. Previously, the internal deadline was put in place primarily to ensure adequate time for smooth processing. Since September 2002, it will combine with peer review processing of the applications by the Research Committee. The first trial this year was enormously successful and resulted in excellent outcome in general in the 2003 NSERC competition. The committee worked hard to give feedback to applicants on the overall proposal, pointing out some important missing or inadequate information. Even the very experienced members sometimes forget to include some pertinent data. However, this procedure is not mandatory. Among 22 applicants this year, all but 2 individuals participated in the peer review process. The committee is consisted of faculty members who have had experiences at grant selection committees (NSERC, MRC, NHRDP, CIHR, etc.).

The Award committee has once again been very busy with various award nominations this year. Some of these awards are by self-selection rather than by nomination. Nonetheless, the committee works hard to encourage individuals to consider applying. The committee is always welcome to suggestions and nomination ideas on awards that may not be widely known to our mathematics and statistics communities. We are pleased to have Professor Ted Lewis win the PIMS Education Prize on February 28, 2003, a sole recipient this year among all candidates from PIMS universities.

Associate Chair of Undergraduate
B.N. Allison

Greetings to everyone at the end of the 2003/2004 fall/winter terms.

2003/2004 was a year of very significant enrollment increases. Our undergraduate enrollment was up 11.6% in first year courses and 8.4% overall. This created challenges for both students and instructors, but overall these challenges were met successfully. It is difficult to predict enrollments for next year. The Faculty of Science and the Faculty of Arts are making efforts to keep the student numbers manageable by raising the cutoffs for acceptance of students from high school, but the final enrollment figures won't be known until later this summer. One definite effect of the raised cutoffs is that the students in our first year classes will in general have stronger backgrounds than in the past.

This summer will be another good summer for undergraduate research in our department. The following students will be working with the support of NSERC Student Research Grants:

Carson Cheng, Genevieve Dagenais, Andrew Hammerlindl, Fareeza Khurshed, Richard Kublik, Jeremy MacDonald, Laura McIntyre, Joshua Nault, Steven Semenjuk, Liam Stewart, Richard Van Weelden, Stephen Wasylishen and Kerianne Yewchuk.

Congratulations to all of these students, and thanks to John Bowman, Ken Andersen and the Honours Committee for coordinating this program.

As you all know there will be a major change in our grading system next year. Starting in September, we will be using the Letter Grading System. This system will be familiar to everyone with experience at US schools. The main feature that distinguishes the Letter Grading System from our present system is that there are eleven passing grades and only one failing grade for undergraduate students. The new system has the distinct advantage that our grades will now be understood when students apply for jobs and graduate schools outside of Alberta.

This will be my last message as Undergraduate Chair, as I am finishing my two-year term at the end of June. I have appreciated everyone's help and cooperation during that time.

I wish you all an enjoyable and productive summer.

Associate Chair of Graduate Studies

Y.S. Wong

Together with the local PIMS office, we have successfully hosted the 2003 PIMS Graduate Studies Information week in early January this year.

We receive several hundred enquiries and letters from students who are interested in our graduate program each year. In order to improve our application procedure, we introduced a preliminary application form this year. Only those who pass the preliminary applications are invited to submit a full application form. The process seems to work well, and we plan to continue the same procedure for the coming year.

I am happy to report that our recruitment for new graduate students is almost completed. With the extra graduate funding due to the initiative for enhancing the environment program for the first and second year undergraduate program, our graduate budget will be increased by more than 10%. We received many applications from Canada and overseas this year, and have made 50 offers for admission. So far, ten students have declined our offer. Among the 40 students who will be joining our graduate programs this Fall, 22 are from overseas and 18 are Canadian / Permanent Residents. We have a good distribution of the incoming students, 21 in Pure & Applied Mathematics, 13 in Statistics and 6 in Mathematical Finance. I am particularly impressed with the quality of the new applicants; many of them have excellent academic records and strong ability in research. Six nominations for U of A M.Sc/Ph.D Scholarships were submitted to the FGSR Scholarship Committee, and five have been approved. I plan to submit six more nominations before the end of the Scholarship Competition in May. Three new students have also been awarded NSERC PGSA Scholarships.

Our current graduate students have been performing well, and they are very successful in being awarded many Scholarships both from inside and outside the University. Congratulations to our graduate students on their excellent achievements. The name of the awarded recipients is given separately.

In the last Newsletter, I mentioned that Dr. Maria Klawe who graduated with a Ph.D. degree from our Department in 1977 has accepted a position as the Dean of Engineering at Princeton University in January 2003. I am very happy to report again that Dr. Keith Taylor who graduated with a Ph.D. in 1975 will be moving to Dalhousie University as the Dean of Science starting August 2003. Dr. Taylor is presently the Acting Dean of Arts and Sciences at the University of Saskatchewan. Dr. Tony Lau was the supervisor for both Maria and Keith.

Graduate Student Awards

The Faculty Club/Dr. William A (Bill) Preshing Graduate Scholarship.

Nicolae Strungaru

Pundit R. Sharma Memorial Scholarship

Jan Rychtar

Qian Wang

Jingjing Wu

Graduate Student Teaching Awards

Elaine Beltaos

Thomas Holloway

Adi Tcaciuc

Alberta Learning Graduate Student Scholarship/University of Alberta

Benjamin Baird

Fanghuang Chen

Qiuli Duan

Morris Flynn

Thomas Holloway

Derek Postnikoff

Applied Mathematics Institute (AMI)

J.W. Macki

The major item is that the Institute's journal, the Canadian Applied Mathematics Quarterly, has recently mailed out volume 8(2000) and volume 9(2001). The first number of volume 10(2002) is just going to the printer, and numbers 2,3 and 4 should be published by the end of summer. By late fall next year, we hope to be on track. All or at least most of volume 11 (2003) will be needed for the papers being presented at upcoming Butler conference in June.

Volume 10(2002), no. 1 is the first issue of CAMQ edited and published in Canada. Our TeX editing is done by the CMS team in Winnipeg, and printing is by Quality Color in Edmonton. The contract with the (excellent) CMS service is quite expensive, and we will be considering forming our own TeX editing team here for volume 11.

The Industrial Internship Program continues to grow, but slowly, and it appears that we will place two or three students this year, one placement of an actuarial student with ATB is a certainty, and it looks like we have a solid placement of a statistics student with a Boreal Forest Research firm. We have limited ourselves to students with 7.5 gpa or higher, and this has helped. The biggest problem is finding the time to make industrial contacts.

Jim Muldowney from Pims and AMI director Jack Macki made a presentation to the Oil Sands Research Consortium at Alberta Research Park. It was very well received, and there is considerable interest in expanding contacts with Oil Sands firms. Surprisingly (to me, at least!) they were intensely interested in our department's new data mining research group. Plans continue to mount a Pims AMI series of distinguished lectures, sponsored by Syncrude.

The AMI membership will meet in late April to select a new director and lay out plans for the future.

Centre for Mathematical Biology

The Mathematical Biology seminar had a busy semester. There were 6 outside speakers and 4 departmental speakers. Subjects for presentation varied from mathematical modeling of solid tumor growth to the dynamics of West Nile Virus. Details can be found at

http://www.math.ualberta.ca/~mathbio/events.html

A PIMS Period of Concentration in Mathematical Ecology and Evolution starts this spring and runs for two years. Co-organizers are Mark Lewis (Alberta), Ed McCauley (Calgary) and Michael Doebeli (UBC). The coordinator is Thomas Hillen (Alberta). The goals of this period of concentration are to incubate significant new original research, foster local interactions, provide leadership to the new researchers, and strengthen the international profile of mathematical ecology and evolution in our PIMS universities. We hope to shortly have a new web page with details.

The PIMS 2nd annual undergraduate summer school will be held in the Department from April 30-May 9, 2003. Last year we taught this introduction to mathematical biology course to approximately 25 students. We hope to have a similar number this year.

Many thanks to Robert Bechtel (Research and Administrative Manager, Centre for Mathematical Biology) for his excellent work over the last two years. Robert is leaving for a new job in University administration. He is being replaced by Kym Schreiner. Welcome Kym.

Congratulations to Christina Cobbold (postdoc) on her new position as a lecturer at Glasgow University. We will miss you, Christina!

PIMS News

J. Muldowney

PIMS Postdoctoral Fellows Christina Cobbold (Mark Lewis), Wen Chen (Bin Han and RQ Jia) and Roman Vershynin (Nicole Tomczak-Jaegermann) will be continuing with the department until the Fall. Chuong Tran will be continuing for another year with John Bowman.

We look forward to welcoming new postdocs Ariel Blanco (Tony Lau and Nicole Tomczak-Jaegermann), Dimitri Grantcharov (Arturo Pianzola), Eugen Radu (Hans Kunzle), and Vardarajan Suneeta (Don Page, Physics).

Ted Lewis and Andy Liu continue to produce the outstanding series of Math Fairs on campus. Since the last newsletter there have been two fairs here, one on November 5, 2002, and the most recent on March 7, 2003. The campus fairs, each attended by over 600 elementary and junior high school students and their teachers, are the practicum component of Math 160, a course for students in Education. Only the available space and size of the volunteer contingent limit the number of participants.

Math Fair volunteers come from all across campus. A valiant contingent of graduate students made an invaluable contribution of their time, enthusiasm and expertise to the March fair. They are Robert Patterson from the Physics Department and, from MathStat, Elaine Beltaos, Shawn Desaulniers, Tom Holloway, Jeongyup Lee, Nora Man, Aron Murphy, Qian Wang and Freddy Yeung. PIMS had the privilege of hosting a luncheon in their honour later in the term.

Math Fairs seem to have mushroomed across the province since Ted developed the concept. There are literally thousands of students who participate every year. Ted and Andy now try to concentrate their energies on training teachers and college faculty involved with teacher education to provide math fairs. Towards this end, the first BIRS workshop on math fairs was held in Banff April 10-12 with 33 participants including teachers, graduate students and college and university faculty. It is hoped to move further in this direction in the near future with regional workshops around the province.

Ted Lewis was honoured by PIMS at the BIRS opening on February 28 when he was awarded the PIMS Education Prize.

PIMS salutes and thanks Wieslaw Krawcewicz on his resignation as Editor-in-Chief of Pi In The Sky. Fortunately he will not be severing his connection with his magazine but will concentrate his considerable energies on the creative side of the activity. Along with his colleagues John Bowman, Giseon Heo, Dragos Hrimiuc and Volker Runde here as well as Klaus Hoechsmann (UBC), Florin Diacu (UVic) and Carl Schwarz (SFU) he has just brought the March 2003 issue hot off the press. It is the excellent magazine that we have come to expect from this award-winning team. Check it out at http://ua-mirror.pims.math.ca/pi/ or drop by the PIMS office CAB 449 for a hard copy.

Wieslaw was honoured in the AS-Tech Awards ceremony in Edmonton on October 18, 2002. His efforts in promoting mathematics among high schools were recognized when Pi in the Sky was selected to receive the Excellence in Science and Technology Public Awareness Prize.

From January 7 through January 11 we joined with University of Calgary in hosting our third PIMS Graduate Information Week. This annual PIMS event brings up to 30 senior undergraduate students from across the nation to a workshop on graduate programs at the PIMS universities. This was a very good event due in no small part to the assistance of graduate students and faculty in the department who took time from their busy schedules to welcome the visitors and tell them abut our graduate programs. Bob Moody and Jim Hoover (CompSci) were the keynote speakers here and there were presentations by representatives of the PIMS Universities' graduate programs. Students were provided with individual itineraries of interviews and consultations to match their graduate studies interests. Hospitality included a welcome banquet, luncheon and farewell supper. Special thanks to Marian Miles and John Collins at U of C as well as Dona Guelzow, Shirley Mitchell, Lorna Stewart (CompSci) and Yau Shu Wong here for the excellent arrangements.

Upcoming conferences and workshops on the PIMS calendar:

1. 2nd Math Biology Summer School, April 30 - May 9
2. Connecting Women in Mathematics Across Canada, June 11 - 13
3. 4th GJ Butler Memorial Conference, June 17 - 21
4. Banach Algebras and their Applications, July 27 to Aug 9

We just received the good news from Syncrude that they will sponsor a Distinguished Lectures Series in collaboration with the Applied Mathematics Institute and PIMS. More details on this later.

Finally it is a pleasure to thank Veronica Krawcewicz for her valuable assistance in the office during her work experience at PIMS.

Cms Summer Meeting

E. Woolgar

This summer our department is hosting the Canadian Mathematical Society Summer 2003 meeting from the evening of Friday the 13th of June to Monday June 16th. The CMS meeting is expected to draw 300 mathematicians from across Canada and all over the world. YanPing Lin is Scientific Director for the meeting, and Eric Woolgar is Local Arrangements Chair. Several members of our department are organizing sessions, including Bin Han and RQ Jia (Approximation Theory and Applied Harmonic Analysis), Erik Talvila (Real analysis), George Peschke (Algebraic and Geometric Topology), Eric Woolgar Geometry and Physics), Tahir Choulli and Jie Xiong (Mathematical and Computational Finance), Peter Minev (Computational and Analytical Techniques in Modern Applications), Terry Gannon (Conformal Field Theory), Thomas Hillen (Infinite Dimensional Dynamical Systems), and Ted Lewis (New and Successful Courses and Programmes in Mathematics). At the start of the meeting on the evening of June 13, Bob Moody will give a public lecture in the Telus Centre.

Conference web pages and online registration forms for these meetings are available from http://www.cms.math.ca/. For further information, please see the meeting poster which is displayed in several locations in the department or consult one of the organizers.

In consideration of the generous financial assistance provided to the CMS conference by various U of A units, and by our dept in particular, all U of A faculty may register at the rate for invited session speakers. PDFs and graduate students may register at the rates posted on the website, which are already significantly lower than the speakers' rates.

The CMS meeting will be immediately preceded by the Project NExTMAC professional development workshop for new (and prospective new) faculty and the Connecting Women in Mathematics Across Canada meeting organized by the CMS Committee for Women in Mathematics.

New MITACS Project

S. Shen

Samuel Shen and Michael Li received a MITACS seed grant for their project entitled "Climate Signal Analysis." The project started from October 2002 for a duration of 18 months.

Opening of the Binary Arts Chui Chang Heuristic Instruction Centre

A. Liu

This will take place between 1 and 3 in the afternoon of Monday April 14. Mr. Bill Ritchie, Chief Executive Officer of Binary Arts Corporation, and Mr. Wen-Hsien Sun, President of Chiu Chang Mathematics Foundation, will be on hand to officially open BACCHIC, along with students in Grades 4, 5 and 6 of Frere Antoine Catholic School and visiting professors of mathematics education from Thailand. Both the Corporation and the Foundation have donated mathematical games and puzzles to the Centre.

These have been used in mathematics field trips by elementary school children to our Department.

CONNECTING WOMEN IN MATHEMATICS ACROSS CANADA Gerda de Vries

The CMS Committee for Women in Mathematics, in cooperation with the Pacific Institute for the Mathematical Sciences, is organizing a workshop for women graduate students in the mathematical sciences at Canadian universities.

The workshop will be held at the University of Alberta, Thursday, June 12 and Friday, June 13, with an introductory dinner and talk on Wednesday evening, June 11.

For more information, please visit the workshop website, at

http://www.cms.math.ca/bulletins/2003/cwimac03.

If you have any questions, please direct them towards Shirley Mitchell in the PIMS office on the 4th floor of CAB (shirley.mitchell@ualberta.ca).

Funding News

Canada Foundation for Innovation (CFI) Grant

A team of faculty members, Bin Han, Michael Li, and Sam Shen, were awarded a CFI New Opportunities grant. The four-year $350,000 grant constitutes contributions from the CFI, Alberta Science and Research Authority (ASRA) through its ASRIP program, the VP for Research, and the Dean of Science. The grant will provide infrastructure funds for the establishment of a state of the art research and training facility, Information Research Laboratory (IRL), in the department. The IRL is located in CAB 476 and is expected to officially open in June, 2003. It has the capacity to host 20 researchers. The award is one of the only seven New Opportunities grants to the area of Pure and Applied Mathematics since the creation of CFI in 1997.

GEOMA Project in Brazil

Dr. Peter Antonelli and his research group is part of a major Brazilian ecological research project GEOMA, led by Prof. L. Bevilacqua of LNCC in Rio, a long-time collaborator of Peter. The GEOMA has secured a funding of USD 1000K per year from the Brazilian government. The GEOMA wishes to take advantage of the U of A resources in mathematical biology in a formal and collaborative way involving student and Postdoc exchanges. Peter was invited down to Rio for a week in Feb., 2003 to jump start the collaborative project. This is good news for mathematical biology and for differential geometry modeling at the U of A.

This big project would involve teaching mathematics and modeling including courses by Peter Antonelli as well as other members of the U of A mathbio group.

The 2002 Putnam Results

T. Gannon

A total of 3349 students from 476 universities across North America took part in this year's Putnam exam. Our university was ranked 31, which is pretty good, considering that the Putnam exam this year occurred two days before one of our senior honors math exams, which caused many of our top 3rd and 4th year students to skip it. We had 15 students (mostly 1st and 2nd year students) write the exam.

Our top individual result was by Simon Lambert, a 4th year honors physics student, who finished in the top 100. Sumudu Fernando, Richard van Weelden, and Andy Hammerlindl all finished in the top 500.

The PIMS/U of A - March Math Fair

On Friday March 7, 2003 the Math 160 students of Venera Hrimiuc presented the PIMS—U of A Math Fair. Just under 500 enthusiastic students visited the fair, from Grade 3 to Grade 9. At the math fair, the children could try their hand at solving many math puzzles, and were guided in their endeavors by the university students.

This is a very popular event, and is the second math fair that has been given this university year. Together with the first one, 1200 students have visited the campus to try the puzzles.

A new component has been added. As well as applying their talents to the puzzles, the visitors also played a mathematical game. Their opposition was provided by 40 U of A student volunteers. There was a significant number of our grad students who volunteered, as well as many undergraduates. Each university student played against a dozen children in a setting somewhat like simultaneous chess. Any visitor who won a game was invited to challenge Andy Liu. The game is most commonly known "hare and hounds", and it is rumored that Andy never loses. Because of this, the games component of the math fair has been dubbed the "Math Unfair".

Math Fair Participants

BIRS Opening Ceremony—Banff, AB
February 28–March 1, 2003

R.V. Moody

J.S. Muldowney

D. Peter, S. Shen, T. Lau, & Phillippe Tondeur

T. Lau and Phillippe Tondeur, Director of the Division of Mathematical Sciences at the National Science Foundation

Update on the North-South Meeting, Michael Li

This year's North-South Meeting was scheduled for April 26-27, 2003, in Calgary. The meeting was cancelled due to a record-breaking snow storm in and around Calgary. Discussions is currently underway to rescheduling the meeting. Two possible dates being looked at are the weekends of August 9-10 and August 16-17, 2003.

A group of 17 faculties/students from U of A traveled to Calgary for the meeting. Alexander Melnikov made it to Calgary on Friday, and gave a nice talk on Saturday to a small but appreciative audience. The rest of the group left on Saturday and all got trapped in the snow storm on highway 2 near Calgary for hours, and eventually turned back to Edmonton. A few only made it back to Edmonton on Sunday morning. Luckily, everyone is safe and sound, so are the participants from other campuses. Our participants should be commended for their bravery and great effort trying to break through the storm

Mathematical & Statistical Sciences Newsletter

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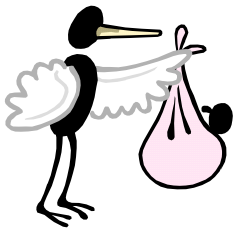

Congratulations to:

Gordon & Charlotte Swaters on the birth of their daughter Sarah, born March 12, 2003

Omar & Mariel Rivasplanta on the birth of their son Gabriel, born February 8, 2003

Xiufang Ye and Kehu Zhou on the birth of their son Thomason, born February 12, 2003

Humour

An engineer thinks that his equations are an approximation to reality.

A physicist thinks reality is an approximation to his equations.

A mathematician doesn't care.