

MATHEMATICAL AND STATISTICAL *SCIENCES NEWSLETTER*

January 2002 Issue
Editor: G. Ludwig

In this issue:

- [I. Chairman's Report](#)
- [II. Report from Graduate Studies](#)
- [III. Report from Undergraduate Studies](#)
- [IV. Report from the Associate Chair of Research](#)
- [V. News from the AMI and the Canadian Applied Mathematics Quarterly](#)
- [VI. PIMS News](#)
- [VII. Report from the Centre for Mathematical Biology](#)
- [VIII. Report from the Biostatistics Research Group](#)
- [IX. Report from the Computing Analysts](#)
- [X. Report from MITACS-PINTS](#)
- [XI. Canadian Mathematical Bulletin](#)
- [XII. Fourth Annual Fluid Dynamics Summer School](#)
- [XIII. Enrollment in Honours Programs](#)
- [XIV. UTRF grant for developing Maple documents](#)
- [XV. Sam Shen honoured by the Chinese Academy of Sciences](#)
- [XVI. A Brief History of Chinese Education in Advanced Mathematics](#)
- [XVII. This is how we did it in Romania](#)
- [XVIII. New Staff](#)
- [XIX. Colloquia and Seminars](#)
 - [1. Colloquium](#)
 - [2. Algebra seminar](#)
 - [3. Approximation and wavelet theory seminar](#)

[4. Differential equations and dynamical systems seminar](#)

[5. Differential geometry seminar](#)

[6. Functional analysis seminar](#)

[7. Graduate student seminar](#)

[8. Mathematical biology seminar](#)

[9. Non-linear waves/fluid mechanics seminar](#)

[10. Statistics seminar](#)

- [XX. Departmental Christmas party](#)
- [XXI. People](#)
- [XXII. Humour](#)

Editor's comments: The editor wishes to thank everyone who has had input to this and past issues of the departmental newsletter. He wishes to remind *all* readers that it is only they who can make the newsletter a success, by contributing news about the Department and its activities and by giving him new ideas as to what to include. The amount of information received determines the number of issues per year.

This is the second of this academic year's newsletters. Please send any correspondence for future issues to gludwig@gpu.srv.ualberta.ca, with "Newsletter" in the subject line. This and past issues may also be found on the Department's web page: <http://www.math.ualberta.ca/>.

[Top](#)

I. CHAIRMAN'S REPORT

Tony Lau

A warm welcome to all our new graduate students, post-doctoral fellows and visitors this term.

I would like to congratulate Wieslaw Krawcewicz for winning the PIMS Education Prize and Michael Kouritzin for winning the PIMS Industrial Outreach Prize. The award ceremony was held in Vancouver on December 1, 2001.

I would also like to congratulate Garry Ludwig and Jack Macki for their 35 years of service and Bruce Allison and Ken Andersen for their 30 years of service to the University of Alberta.

We will be very busy with hiring this term. We have advertised four regular positions: Classical Analysis, Geometry, Mathematical Finance and Statistics. We are also hiring a Faculty Lecturer with preference in Statistics. In December, two candidates for the Junior Canada Research Chair in Stochastic and Filtering were brought in for interviews. We are waiting for approval of a senior Canada Research Chair in Algebra. We have been approved for an iCore Chair jointly with Computing Science in Information Science and Technology.

The 2001 Christmas party was very successful. All 120 tickets were sold. I would like to thank Rick Mikalonis for organizing the party. Rick has already tentatively booked a larger room at the Fantasyland Hotel (West Edmonton Mall) for the 2002 Christmas party.

Wishing you all a very happy New Year.

[Top](#)

II. REPORT FROM GRADUATE STUDIES

Yau Shu Wong

We admitted a large number of graduate students in our M.Sc. and Ph.D. programs last fall. As we are starting the second term, I would like to remind our new graduate students that in order to continue their graduate program, we expect all first year students to achieve a certain GPA standard in their M.Sc. or Ph.D. course work. The details can be found in the regulations and guidelines for graduate programs in the Department of Mathematical and Statistical Sciences, and all students should already have received a copy when they started their program in September. The Graduate Committee will be meeting in April to review the progress for all first year students and will then forward a list to the Department of those who are recommended to continue their graduate program. I will be happy to meet with any student who may have difficulty to meet the expected GPA requirement. I would also like to inform all first year graduate students that the major support during the summer period (i.e. May - August) will be coming from the supervisor, and it is a good time now to start searching for a faculty member who will supervise the thesis or the project.

Finally, I would like to remind our second- and third-year Ph.D. students that the Graduate Committee strongly recommends that they prepare for their Candidacy Examination within a year of passing the Ph.D. qualifying year.

[Top](#)

III. REPORT FROM UNDERGRADUATE STUDIES

Bruce Allison

Welcome back to classes for the winter term!

We are fortunate to have several new instructors teaching in our courses for the first time. They are:

Christina Cobbold (postdoc of Mark Lewis, from Edinburgh)
Phoebe Elliot (sessional lecturer, from Alberta)
Stefano Ferri (postdoc of Tony Lau, from Hull, England)
Mahmoud Filali (research associate of Tony Lau, from Finland)
Abdul Hussein (graduate student from Alberta)
Oksana Kotovych (sessional lecturer from Alberta)
Alexander Melnikov (new academic staff member, from Moscow)
AnneMarie Pielatt (postdoc of Mark Lewis, from Amsterdam)
Chuong vanTran (postdoc of John Bowman, from Toronto)
Roman Vershynin (postdoc of Nicole Tomczak-Jaegermann, from Missouri)

I hope you will welcome them all and offer assistance in adapting to our system when needed.

[Top](#)

IV. REPORT FROM THE ASSOCIATE CHAIR OF RESEARCH

K.C. Carrière

I thank the Research Committee members for their helpful inputs to the NSERC re-allocation questionnaires for the two GSCs 336/7 and 14, which were completed fully in time by the requested deadline. Thanks also go to Professor Akbar Rhemtulla. The process of GSC 336/7 re-allocation exercises can be found on our Department website. That of GSC 14 is posted in the Statistical Society of Canada website (www.ssc.ca).

A week before the SSHRC deadline and three weeks before the NSERC deadline, our administrative assistant Sandra had to take an indefinite sick leave. There were 19 academic staff members who relied on her assistance to complete the grant applications. Fortunately, everyone helped and assisted for a smooth transition through an otherwise chaotic state. Linda Thompson from Temporary Services was a big help. Of course, we cannot forget Leona who filled in Sandra's position on top of everything else

she is responsible for. All application forms were taken care of and couriered to the granting agencies in time.

The Awards committee worked on several award and prize nominations in the first half of this reporting year. We are happy to see that two of these efforts materialized recently, while some are still pending.

* Professor W. Krawcewicz received the well-deserved Education Prize from PIMS for his effort in promoting mathematics to high-school students. The magazine 'pi in the sky' was born through his initiative.

* Professor M. Kouritzin received another well-deserved Industrial Outreach Prize from PIMS for his energetic involvement with industry people.

Congratulations, Michael and Wieslaw!

[Top](#)

V. NEWS FROM THE APPLIED MATHEMATICS INSTITUTE AND THE CANADIAN APPLIED MATHEMATICS QUARTERLY

Jack Macki

The month of June saw AMI director Jack Macki and a large group of graduate students from the U of A take part in the 5th annual Pims Industrial Problem Solving Workshop, held at the U. of Washington. Problems were posed by representatives from IBM (optimal rental and scheduling for space on servers), Microsoft (optimizing hard disc performance), the Canadian Communications Security Establishment (how to find floating software viruses/worms/bad.things on the web), Firebird Crystals of Trail, B.C. (modelling LARGE crystal growth in devices of their design), Alberta Energy Company (automating the prediction of well production--commonly called well-decline analysis), and Algorithmics, one of the best known financial portfolio advisors in the country (Monte Carlo methods for analysing credit risk in large portfolios). If you couldn't find something interesting in there, you weren't trying! The reports from each group are in hand here in Edmonton, and are being prepared as a Pims publication under AMI sponsorship. The next Graduate Student Training Camp will be at Simon Fraser University at the end of May, followed by IPSW6 at UBC the following week. Check the Pims website for details. All staff and grad students, pure and applied, are urged to consider taking part--the need is for good original thinkers. I am serving on the planning committee for these events, and I would like to see more U of A staff get involved. Please talk to me if you are curious.

The AMI and CAMQ have new websites, linked to the Department website. Have a look, and please offer suggestions for improvements. Thanks to Lisa Haraba for a splendid design job. We also have a new AMI/CAMQ Office on the fourth floor, opposite the new Pims offices. Bryant Moodie and Jack Macki will continue to edit CAMQ for another year. We recently sent a subscription offer to all 700+ members of the Canadian Applied and Industrial Mathematics Society, and subscriptions are coming in at a steady rate. Plans are underway to try to move the printing of CAMQ to Canada. Presently

CAMQ is printed by the Rocky Mountain Mathematics Consortium at Texas Tech, and the arrangement is cumbersome and expensive.

The Applied Math. Institute is also coordinating the Industrial Internship Program which is, to put it mildly, highly labour intensive. We still need to develop a program of contacts with industry. Any staff member who would like to be involved is encouraged to contact me.

Right now we have a small program of placements within the university (Ivan Baggs' educational computer support programs, a program in Rural Economy) and a great deal of enthusiasm from Stats Canada for our IIP Stats students (in this area, Professor Prasad is coordinating things). We have another group of actuarial students to be placed. January and February will be make-or-break months for getting positions for these students. Sigh.....lots of work ahead. The AMI has approved modest support for a small number of local conferences, and also for the CAIMS meeting in June in Calgary. The payoff from this support is visibility (we hope!) and good papers for CAMQ.

Winter term should see the usual spate of interesting talks by guests of AMI members. I am hoping Allan Douglas from the Communications Security Establishment can take time to visit--his planned fall visit was cancelled because of September 11.

[Top](#)

VI. PIMS NEWS

Jim Muldowney

A special thank you to the former Site Director for PIMS, **Bryant Moodie**, for his dedication and many accomplishments during his two-year term with the University of Alberta Site office.

We extend a warm welcome to **Jim Muldowney** who took over the position as University of Alberta PIMS Site Director in September of 2001. We look forward to working with Jim during his term to continue the work on the PIMS mission.

OPEN HOUSE

The office for PIMS has now relocated from 501 CAB to 449 CAB effective December 20, 2001. An open house for the new premises will be held early in 2002.

AWARD WINNERS

Two Department members were recognized at the annual PIMS banquet and awards ceremony at SFU Harbour Centre in Vancouver.

Mike Kouritzin was awarded the PIMS Industrial Outreach Prize for his leadership on the MITACS Centre of Excellence, *Prediction in Interacting Systems*. The MITACS_PINTS Centre of Excellence is one of a network, the MITACS network, founded with core funding from NSERC as well as cash and in-kind contributions from industrial sponsors. The award cited Mike's outstanding

accomplishments in research and especially the strong links that he has forged with industrial partners Lockheed Martin Canada, Lockheed Martin Naval Electronics & Surveillance Systems (USA), VisionSmart (Edmonton) and Acoustic Positioning Research Inc.(Edmonton) as well as with academic scientists around the world. In accepting the award, Mike paid generous tribute to academic and industrial colleagues as well as to post-docs, graduate students and support staff who have worked on the project as well as to his family.

Wieslaw Krawcewicz was a popular choice for the PIMS Education Prize. His contributions to mathematical education were recognized, especially the vision, enthusiasm and perseverance that led to the conception and implementation of *Pi in the Sky*. All of us will be aware that this is a semi-annual periodical designated for high school students in Alberta, British Columbia and Washington with the purpose of promoting mathematics, establishing direct contact with teachers and students, increasing the involvement of high school students in mathematical activities, and promoting careers in mathematical sciences. In his acceptance speech, Wieslaw paid moving tribute to those who have shared his vision and helped make *Pi in the Sky* a reality.

DEADLINES

February 8 Deadline for Nominations for PIMS Postdoctoral Fellowships
March 16 Deadline for Applications to the National Program Committee
March 16 Deadline for Applications to the Spring Competition of the PIMS Scientific Review Panel

For further information on these deadlines and PIMS requirements see:

<http://www.pims.math.ca/opportunities/pdf.html>

BIRS

The BIRS Scientific Advisory Board and Steering Committee have completed the selection of the program of forty 5-day workshops for 2003. The results show how significantly the new facility will impact the University of Alberta. Six of these workshops have U of A faculty as organizers:

1. Localization Behaviour in Reaction-Diffusion Systems and Applications to the Natural Sciences (Thomas Hillen);
2. Regularization in Statistics (Ivan Mizera);
3. Current trends in representation theory of finite groups (G. Cliff);
4. Calabi--Yau Varieties and Mirror Symmetry (James Lewis);
5. Applicable Harmonic Analysis (R. Jia);
6. Constraint programming, belief revision, and combinatorial optimization (Randy Goebel, Computer Science).

In addition, many of the other selected workshops have U of participation. The full listing of workshops and dates will be on the BIRS website soon.

The selection of 6 workshops for the U of A is, by the way, a significant achievement. There were 108 proposals from around the world, and far more than 40 of them were absolutely first-rate.

The space for other activities at BIRS (research in teams, focused research groups, etc.) is largely filled for the summer months (May - early Sept) but there are still possibilities for these activities in the months March, April, October, November, and December 2003. If you are interested -- even for short 2-day events involving small numbers of people, please contact Robert Moody.

PIMS POSTDOCTORAL FELLOWS

We wish to welcome a new postdoctoral member to PIMS. **Christina Cobbold** joined PIMS in November from Heriot-Watt University where she completed her Ph.D. in Mathematical Biology. She is working with **Mark Lewis** on Outbreaks of Forest Tent Caterpillar Infestations and the Effect of Fragmented Habitats on Forest Tent Caterpillar Populations.

UPCOMING EVENTS

Around Group Rings

The Around Group Rings Workshop, organized by **Gerald Cliff**, **Mazi Shirvani**, and **Al Weiss**, will run from February 18 – 21 in Jasper, Alberta. Fourteen national and international speakers have been invited to lecture at the workshop. The aim of the workshop is to introduce problems and survey the process in the area; this involves ring theoretic and representation theoretic aspects of group rings and their relatives. This workshop will be of interest to graduate students and research mathematician who work in this area of Algebra. Further information may be found at <http://pims.math.ualberta.ca/AroundGroupRings.htm>.

Mathematical Biology Summer Workshop

The Mathematical Biology Summer Workshop, organized by **Mark Lewis**, will take place from May 11 – 19 at the University Of Alberta. The aim of this workshop is to introduce students to mathematical modeling and analysis applied to real biological systems. Students are expected to have completed 2 – 3 years of undergraduate study (or equivalent) in mathematics or a similar quantitative science. University Of Alberta lecturers include Mark Lewis, Gerda de Vries, Michael Li, and Thomas Hillen. Additional information may be located at http://pims.math.ualberta.ca/mathematics_of_biological_system.htm.

4th Annual Fluid Dynamics Summer School

The Fluid Dynamics Summer School, organized by **Bruce Sutherland**, will take place at the University Of Alberta from July 28 – August 9. Participants will attend a comprehensive series of lectures, and will be given hands-on experience performing and analyzing experiments in the Environmental and Industrial Fluid Dynamics Laboratory, as well as running numerical simulations using research- level codes. Topics will include fluid dynamics fundamentals, industrial and environmental flows, geophysical fluid dynamics, turbulence modelling and computational fluid dynamics. Subjects will be taught at a graduate level. Invited speakers include John Allen (COAS-Oregon State University), Jean-Luc Guermond (LIMSI-CNRS, Orsay, France), and Peter B. Rhines (School of Oceanography, University of Washington). The Summer School web site may be found at <http://fdss.math.ualberta.ca/>.

Filtering Theory and Applications 2002

The Filtering Theory and Applications 2002 workshop, organized by **Mike Kouritzin**, will be held in Edmonton and Jasper from July 25 – July 30. This meeting will help to advance scientific development of filtering theory and its applications and offer benefits to industry. In particular, this meeting will encourage local research activity in this field and identify additional industrially motivated filtering problems. Both national and international delegates have been invited to lecture at this workshop. Keynote speakers include Nick Duffield (AT&T), T. Duncan (University of Kansas), G. Kallianpur (University of North Carolina), and Nicole El Karoui (Ecole Polytechnique). Additional information may be found at <http://www.math.ualberta.ca/pints/events.htm>.

Math Fair

Ted Lewis spearheads our activities in the schools with comprehensive offerings for teachers and students, including presentations, contests and the innovative and popular Math Fairs. Even before it has appeared formally in print, the workbook that Ted has produced is already in heavy demand across Western Canada and in Washington State. It will be generally available soon both in hard edition and on the web.

The 5th Americas Conference on Differential Equations and Nonlinear Dynamics

PIMS will sponsor a special web-based poster session at this conference of dynamicists from South and North America that will be held here July 7-12, 2002. A prize of \$1,000 is offered for the best poster submitted by a graduate student from the Americas. This conference is organized by **Michael Li** and **Jim Muldowney**. The conference website is <http://www.math.ualberta.ca/~mli/americas.htm>

Pi IN THE SKY

The December issue of *Pi in the Sky* is undoubtedly the best yet. It is its usual unique blend of 'serious' mathematics, problems, cartoons, news, gossip and humour that have brought it so many accolades. Editor-in-Chief **Wieslaw Krawcewicz** as well as all of the Associate Editors, **John Bowman**, **Dragos Hrimiuc** and **Volker Runde** are Department members. Many of the articles are authored by Department members. This and past issues are available at the PIMS office, in the mailroom and lounges as well as on the web at <http://www.pims.math.ca/pi/>

Editor Wieslaw is constantly on the lookout for new contributors.

Of special note in the current issue is an elegant photo-essay on a visit to Tempo School by **Wieslaw Krawcewicz**, **Dragos Hrimiuc**, **Volker Runde**, **Henry van Roessel** and **Don Stanley**.

ANNUAL REPORT

The 2000/2001 Annual Report is now available. If you would like to receive a copy, it is available in the PIMS office as well as in the mailroom and lounges.

[Top](#)

VII. REPORT FROM THE CENTRE FOR MATHEMATICAL BIOLOGY

Mark Lewis

The Centre for Mathematical Biology is now up and running. The Centre (CAB 545-551) is designed to promote research in mathematical biology at the University of Alberta through interdisciplinary research collaboration, a visitor program, a seminar series, a summer school, and postdoctoral and graduate education.

The Centre is directed by Mark Lewis and also houses Robert Bechtel, Christina Cobbold, Frithjof Lutscher, Annemarie Pielaat, and Tom Robbins.

The focus is on research across the disciplines of Mathematics and Biology and on research between departments and institutions. The Centre also includes office space and computing facilities for our visitors and postdocs. Please come by and visit and have a cup of coffee!

From May 11-19, 2002 we will be offering the 1st PIMS Annual Mathematical Biology Summer Workshop entitled “Mathematics of Biological Systems”. Our aim is to introduce undergraduate mathematics students to mathematical modeling and analysis applied to real biological systems. Instructors are Gerda de Vries, Thomas Hillen, Mark Lewis, and Michael Li.

Funding for the Centre comes from the Canada Research Chairs Program, the Canadian Foundation for Innovation, ISRIIP (Alberta), and the Pacific Institute for Mathematical Sciences.

Contributed by Robert Bechtel and Mark Lewis.

[Top](#)

VIII. REPORT FROM THE BIOSTATISTICS RESEARCH GROUP

K. C. Carrière

The Biostatistics Research Group Advisory Committee met to discuss some course requirement changes. Present were K.C. Carrière, N.G.N. Prasad, P. Hooper, S. Newman, and S. Selvan. A lengthy discussion ensued about what Public Health Sciences believe the M.Sc. Biostat students should take, namely PHS 590 and 690, the two core Epidemiology courses. Our position was to maintain the current flexibility, given that those two are epidemiological courses. Further, the interdisciplinary program has had to endure some class schedule conflicts between the two departments. Fixing the requirements on the two courses would be problematic for the students. Our students could not attend some interesting seminars being held at the Public Health Seminars, which are organized at irregular times. We agreed to leave the current requirements as they are, and also that we should maintain better communication so that timetabling conflicts can be avoided in the future.

The Training Consulting Centre celebrated its second Christmas dinner party at the King and I restaurant on Whyte Ave on December 5, 2001, the last day of classes. Food was great as usual, although a little pricey. We discussed the future of TCC, incoming and outgoing consultants, and incoming observers for the new year. This reporting year we have had such interesting guest statisticians as Dr. Rhonda Rosychuk, Ms. Lieling Wu, Mr. Damon Mayes, and Dr. Sentil Selvan in our monthly meetings.

There was a change of hands at the Training Consulting Centre. We thank Alex de Leon for his outstanding work as the 2nd co-ordinator (Jan 1-Dec 31, 2001) of the TCC. Alex was enthusiastic about his work, always full with creative ideas for better consulting environment, friendly atmosphere at the Centre and improved client and consultant relationships. He is leaving the post to focus more on his dissertation research. We welcome Melody Gharhamani as the third co-ordinator of the TCC. Continuing the excellent work Alex has done, she will also bring a unique woman's touch to the TCC. We know that consultants, observers, and clients continue to be in good hands. Welcome, Melody!

[Top](#)

IX. REPORT FROM THE COMPUTING ANALYSTS

Scott Berard

Another semester is upon us here at the Department of Mathematical and Statistical Sciences, and the technology team is pleased to provide the graduate students with a new statistical laboratory. This new lab consists of 22, 1200 MHz Athlon systems, each with 512 Megabytes of RAM and a 19" Monitor. These workstations run a remote network image (similar to the 6th floor math. laboratory), that provides the students with a KDE desktop environment in a Unix shell account for all their computing needs. In addition to these workstations, a new full duplex, network-enable printer has been provided for the 4th floor staff and students.

Due to this recent increase in publicly available computer systems, a need to re-allocate certain resources has arisen. The original scope of internet/computer addresses assigned for student labs needs to be increased. In order to do this, the technology team will be moving people off these addresses and into other available address ranges.

In parallel to the new computer lab on the fourth floor, the wiring and infrastructure upgrades scheduled throughout the winter months have now been completed. This means increased speed, reliability and performance for all the existing and recently relocated offices on this floor.

One last note is that new keypad locks have now been installed on all computing facilities in the Department. These locks will provide easier administration and better security for after-hours access. If you would like access to any of these rooms, stop by the main office and ask for your access code.

[Top](#)

X. REPORT FROM MITACS-PINTS

Mike Kouritzin, Victor (Xinjian) Ma and Surrey Kim

Hello again, this is Mike Kouritzin, as well as Victor (Xinjian) Ma and Surrey Kim, both Computing Science students at the University of Alberta. Victor and Surrey are working for MITACS-PINTS (led by Mike Kouritzin) under an Industrial Internship Program.

In the past couple of months, we (Mike Kouritzin, Hongwei Long, Surrey and Victor) finished the project dealing with one of our corporate sponsors, Acoustic Positioning Research. This project was about simulating a performer on stage with parameters: x , y , z , speed, orientation, behaviour (WALK/PIVOT). The performer moves stochastically, and observations are one-dimensional noisy distances between the performer and speaker, transmitted by four speakers situated on each corner of the stage. A branching particle non-linear filter was used to approximate the conditional distribution of the performer's three-dimensional coordinates, and the filter can also predict the position of the performer in the future.

Now Mike Kouritzin, Wei Sun, Hongwei Long, David Ballantyne and Surrey Kim are working on the Markov Chain Approximation for spatial signals. Particle system based methods have experienced rapid development and have become an essential technique of contemporary filtering strategies. Hitherto, researchers have focused on continuous state particle filters, evolving from traditional weighted particle filters into adaptive particle filters and then finally into refining particle filters, readily able to perform path space estimation.

Based on the paper *Discrete-space Particle Filters for Reflecting Diffusions* by David J. Ballantyne, Michael A. Kouritzin, Hongwei Long, and Wei Sun, we demonstrated visually computer-implemented versions of a novel discrete space particle filter. By discrete space particle filter we mean a Markov chain that counts particles in discretized cells of the signal's state space, in order to form an approximated unnormalized distribution of the signal state. This is being applied to searching and rescue problems of Lockheed Martin Corp.

Mike Kouritzin, Hongwei Long, Wei Sun and Victor Ma are working on the parameter estimation project. In filtering, it is often assumed that we have a fixed model for the signal process. In these certain cases, we do not know the model of the signal exactly; the model may have unknown constant parameters which cannot be determined beforehand. We found an algorithm to estimate simultaneously both the parameters and the conditional distribution for the signal state using branching particle filters. So far the simulations show that the developed algorithm is effective for estimation, tracking and predicting the behaviour of the general non-linear discrete-time on continuous-time stochastic signal; at the same time, parameters can also be estimated.

We will host an Open House in early February at the University of Alberta. Anyone interested is welcome to attend, contact us for more detailed information. We are very excited by our algorithms and simulations, any one interested in seeing them is more than welcome to drop by CAB 522 and/or CAB 524. Surrey Kim and Victor Ma will be pleased to set up a short informal demonstration. Mike Kouritzin is co-organizing the IMS Annual Meeting, which will be held in Banff in July 2002; Filtering Theory and Application 2002 will also be held in Alberta.

[Top](#)

CANADIAN MATHEMATICAL BULLETIN

James Lewis

The Canadian Mathematical Bulletin (CMB) is devoted to publications of papers in mainstream mathematics. The current editors are J. D. Lewis, A. Pianzola, and N. Yui (Queen's). In recent news, Professors Victor Kac (MIT), Ram Murty (Queen's), A. Geramita (Queen's) and M. Zworski (Berkeley), are newly elected associated editors. The continuing Associate editors are F. Shahidi (Purdue), M. Barlow (UBC), F. Lalonde (Montreal), P. Borwein (SFU), J. Millson (Maryland), N. Pippenger (UBC), C. Sulem (Toronto), and G. Elliott (Toronto). The current backlog for the CMB is roughly one year. The acceptance rate for incoming papers is about 30%. The Canadian Mathematical Bulletin Editorial Office is now located on the fourth floor of CAB 462.

[Top](#)

XI. FOURTH ANNUAL FLUID DYNAMICS SUMMER SCHOOL

Bruce Sutherland

The Fourth Annual PIMS Fluid Dynamics Summer School will run from July 28 to August 9, 2002. Invited lectures will be given by John Allen (Oregon State University - speaking on Coastal Oceanography), Jean-Luc Guermond (LIMSI Paris - speaking on computational fluid dynamics) and Peter B. Rhines (U. Washington - speaking on experiments in fluid dynamics.)

Each day the participants are given hands-on experience running research-level numerical codes and they perform laboratory experiments. Both the simulations and experiments were designed to complement the lectures and so help students develop an intuition for fluid dynamics phenomena, how they are mathematically modelled, and how reliable approximate solutions can be.

The PIMS Fluid Dynamics Summer School is an annual event sponsored by the Pacific Institute for the Mathematical Sciences, with additional support from the Institute for Geophysical Research, the Applied Mathematics Institute and the Environmental and Industrial Fluid Dynamics Laboratory.

Summer school information is available on the web at fdss.math.ualberta.ca/.

[Top](#)

XII. ENROLLMENT IN HONOURS PROGRAMS

John Bowman

Historical Enrollment Figures in Honours Programs in Mathematics and Statistics (as of the middle of the fall term)

1997-1998	13
1999-2000	13
2000-2001	33
2001-2002	30

Enrollment in Honours Math. as of September, 2001

First Year: 7
 3 Math, 1 Stats, 1 Applied, 1 Applied/Comp Sci Minor,
 1 Unofficial (until next year)

Second Year: 14 (1 unofficial until next year)
 4 Math, 4 Applied, 1 Math/Comp Sci Minor, 4 Math Econ,
 1 Unofficial (due to *27 credits last year)

Third Year: 4
 3 Math, 1 Applied/Comp Sci Minor

Fourth Year: 4
 3 Math, 1 Math/Stat

After Degree: 1

[Top](#)

XIII. UTRF GRANT FOR DEVELOPING MAPLE DOCUMENTS

Eric Talvila

Erik Talvila and Gerda de Vries have been awarded a grant of \$9600 from the Undergraduate Teaching Research Fund for developing an interactive document for teaching Maple. The goal of the project is to develop Maple worksheets to help students (and faculty) learn to use Maple. The first part will cover topics already in the undergraduate curriculum. The second part will include topics not in the usual curriculum that are especially suited for exploring with a computer algebra package. It is hoped that this will eventually become the basis for a new second year honours course. The money will be used to hire an undergraduate assistant for the summer of 2002. If you know of suitable candidates, please put their name forward.

[Top](#)

XIV. SAM SHEN HONOURED BY THE CHINESE ACADEMY OF SCIENCES

On August 12, 2001, Sam Shen, was honoured by the Chinese Academy of Sciences as a “Well-known Overseas Chinese Scholar (2001).” Altogether nine professors were so honoured, among whom

five are mathematicians (J. Li of Stanford, S. Zhang of Columbia, G. Tian of MIT, F. Lin of Courant/NYU, and S. Shen of Alberta). Sam's selection for this honour was based on his innovative work on "sampling error estimates for climate observations." The United Nations' Intergovernmental Panel for Climate Research just published a new authoritative report "Climate Change 2001", whose theory on uncertainty estimates of global warming is based on Sam's work. The report cited four of Sam's papers.

In addition to the honour, each scholar was awarded a research grant of 1,000,000 Chinese RMB from the Chinese Academy of Sciences.

Sam was also among eleven scientists invited by President Lu Yongqiang of the Chinese Academy of Sciences to be on the Advisory Committee for the Innovation Projects of the Academy. The group of eleven visited China during September 3-7, 2001 and were received by Vice Premier Li Lanqin of the Chinese State Council and President Lu Yongqiang. The group's activities were well covered by the major Chinese media, including China Central TV, People's Daily, Xinhua News Agency, Science Times, and Guangmin Daily. Sam was also selected as an "Overseas Assessor of the Chinese Academy of Sciences (2001-2005)." This is an honour given to excellent scientists (mainly overseas Chinese) to evaluate the research programs of the Chinese Academy of Sciences. Altogether 100 assessors will be appointed by the academy. The appointment is for four years and a research grant of 500,000 Chinese RMB is awarded to each Assessor.

[Top](#)

XV. A BRIEF HISTORY OF CHINESE EDUCATION IN ADVANCED MATHEMATICS AND COLLABORATION OPPORTUNITIES WITH CHINESE MATHEMATICIANS

Bin Han, Rong-qing Jia, Michael Li, Yanping Lin, and Samuel Shen

Although the Chinese contributed much to mathematics in the earlier part of history, particularly from the 3rd century BC to the 14th century AD, China's mathematical development was basically stagnant from the 14th century AD, during which China was isolated from the modern mathematical world. Modern advanced mathematics was brought to China by missionaries in the 17th century, but not in a systematic manner. It was not until 1918 that the first Chinese, Dr. Hu Mingfu, published a paper in an important western journal, the *Transactions of the American Mathematics Society*. Dr. Hu had received his Ph.D. from Harvard a year earlier. The year 1930 might be considered the beginning of modern mathematical research in China. The location was Tsinghua University, which was established in 1911. The Department of Mathematics consisted of seven faculty members: Xiong Qinglai (Chairman), Zheng Dongsun, Yang Wuzhi (father of the Nobel Laureate C.N. Yang), Sun Guangyuan, Zhou Hongjing, Tang Peijing, and Chen Shengsun (Shiing-Shen Chern). Hua Lugeng (Loo-Keng Hua) joined the department in 1931 as a part-time assistant and he had only a junior high school education. Some talented students came to study at the department, including Zhong Kailai (K.L. Chung). The Chinese Mathematical Society was established in 1935. Norbert Wiener and Jacques S. Hadmard visited Tsinghua during 1935-1936. In 1935, Loo-Keng Hua published papers in *Mathematische Annalen* and in the *Tohoku Mathematics Journal*. When, in 1937, the Japanese occupied Beijing (Peking), Tsinghua University moved to Kunming in Southwest China and merged

with Peking University and Nankai University to form the Southwest Union University. During the anti-Japanese war (1937-1945) and during the civil war (1946-1949), living conditions were very difficult but professors continued with their teaching. Some talented students graduated from the Southwest Union University, including the Nobel laureates T.D. Lee and C.N. Yang.

During 1950-1959, China followed the Soviet system of education. With help from the Soviet Union, China enhanced the education and research capabilities of a few established universities and started a series of new universities. The new universities mostly resulted from the disintegration of the western style universities and specialized in science and technology. Tsinghua University became an engineering school and its mathematics program was weakened when strong mathematics professors were assigned to other universities, including Jilin University. This was part of the major program called "College-Department Restructuring." Most Chinese universities used Russian texts (translated into Chinese) and many universities had Russian visiting professors (referred to as the Soviet Union Experts). Numerous mathematical talents obtained university training in modern mathematics, including most branches of modern mathematics with emphasis on analysis. Many talented students were sent to study in the Soviet Union, including Xia Daoxing (a functional analyst and a former student of I.M. Gelfand), Zeng Qingcun (who established the first Chinese general circulation model for atmospheric motion), and Jiang Zeming (the current Chinese President). Loo-Keng Hua left the professorship position at the University of Illinois and returned to China in 1950 and became the Director of the Mathematics Institute of the Chinese Academy of Sciences in 1951. Informal graduate studies were carried out under a few dozen advisors, such as Loo-ken Hua who directed at least 11 research students. These students were taken from the outstanding ones who had finished their 4- or 5-year undergraduate programs and were employed by a university or by the Chinese Academy of Sciences. An advisor would take somebody as a research student and arrange for him a program of studies and research, but no M.Sc. or Ph.D. degrees were awarded. The degree system was not established until 1981. The formal graduate education started in 1978 when the first batch of Master degree candidates were recruited through a rigorous scrutiny of entrance exams. Graduate schools were established in most universities in the middle 1980s.

"The Anti-Right Movement", which started in 1957, regarded some intellectuals as "rightists" who were against socialism. These were assigned to lower positions or to the countryside. "The Great Leap Forward" movement started in 1958, and set an unrealistic ambition to "surpass England in three years and catch up with America in five years" in terms of steel production. This unrealistic "ambition" was partly due to the very fast growth of the Chinese economy from the beginning of socialist China (1949) to 1957. "The Three Years of Natural Disasters" occurring during 1959-1961 was, in fact, cross-country starvation caused by the "Great Leap-Forward Movement" and resulted in the death of millions of people in the countryside. The "Cultural Revolution" started in 1966 and lasted for ten years. It pushed the Chinese economy to the edge of collapse in 1976. Universities did not recruit any students from 1967-1971. The unfinished students who entered school before and during 1967 were allowed to continue their studies so that they could graduate according to the original time-line, but they spent more than half of their time working in factories and on farms. In this way they could "learn from workers and peasants." China had implemented the system of "city residence" and "countryside residence" since the beginning of the socialist government, a practice that still continues. The city residents have the privileges of going to city elementary schools and being hired as government employees and factory workers, while the countryside residents are not eligible for these good opportunities. Because of these privileges, strong prejudice exists against the countryside residents. For example, a city girl would never marry a countryside man, unless he was extremely rich. The high

school graduates from cities were forced to go to the countryside as "go-down learned youths" from 1968-1977, except for the only or the eldest child of a family. These students had thus lost the privilege of becoming government employees, which was the best employment opportunity in China at that time. The graduates residing in the countryside went back to farms as "return-home learned youths." Some university teachers and "rightists" cadres were also forced to "go down" to countryside or government farms. These were often incorrectly referred to as "labour camps" by western media or Chinese political dissidents. But the real labour camps were for prisoners which were to be reformed through work. From 1972-1976, universities started to recruit new students but only from factory workers, peasants and soldiers. Here, the "peasants" were usually the "go-down learned youths" from cities. These students were called the "worker-peasant-soldier students", who had no adequate background for regular university courses established according the Soviet system. Thus, each university composed its own texts for these students at a very low level. For example, first-year mathematics would start from operations of fractions and factorization and finally touch on differentiation and simple integration.

Deng Xiaoping came to power in 1977 and changed the system back to requiring serious college entrance exams. In December 1977, the provincial entrance exams were taken by millions of students who graduated from 1966 to 1977. Only around 3% of the candidates passed the exams and went to the universities in early 1978. These were referred to as the class of '77 by the general public. The national entrance exams started in July 1978 and admitted the class of '78 students to the universities in September of that year. This type of national college entrance exam was held once a year (always in July) and has continued with some cosmetic changes. In the first few years of this new beginning, the best students opted to study mathematics, physics, chemistry and engineering. This was due to government propaganda promoting science and technology. The situation changed in the middle of the 1980s due to economic reform in China and demand switched to students in other majors such as business and English. From 1978 and throughout the 1980s, the students took courses six days a week and stayed in school for ten months a year. Particularly for the first few years, starting from the class of '77, students studied extremely hard due to their years spent in the countryside doing hard physical labour during the "Cultural Revolution." They had discovered that the chance of studying in university was precious and no one wanted to lose any more time. Because of this drive, professors could teach very advanced materials in the third and fourth year, including Real Analysis, Functional Analysis, Operator Theory, and Partial Differential Equations. The depth of these courses was equivalent to that at the M.Sc. level in the United States and Canada. However, this is no longer the case.

In 1982, the classes of '77 and of '78 graduated and a few students were selected for graduate studies abroad. These were the most outstanding students and many of them are now prominent researchers in the world, such as Professors Gang Tian of MIT and Fang Hua Lin of the Courant Institute. The first wave of Chinese students with or without an M.Sc. degree came to North America in 1986 and 1987, and this influx has continued since then. The financial situation of Chinese mathematicians and intellectuals in general was decent in the early 1980s but gradually degenerated to poor in the late 1980s, compared to the income of waitresses and taxi drivers. They remained poor all the way until 1998 (but still fared much better than most peasants and ordinary factory workers). Consequently, in the late 1980s, students no longer had any interest in graduate studies. A popular saying then was "as stupid as a Ph.D. and as poor as a professor."

Since 1998, China has dramatically increased its investment in education and research. The Chinese Academy of Sciences was given more than three billion yuan (1 yuan = CND\$0.18) for its "Innovation

Project." Prominent universities, such as Beijing University (Peking University) and Tsinghua University (Qinghua University) were also given billions of yuan by the Education Ministry. The faculty salary from these universities was raised almost three-fold to a mean around 4,000 yuan/month (with a tax rate of less than 10%), while an ordinary factory worker made about 900 yuan/month in Beijing. The universities dramatically expanded their size in terms of both number of students and facilities. Some Soviet type universities specializing in one area, such as an agriculture university, were integrated into a major university nearby. For example, Zhejiang University consolidated four other universities in Hangzhou in 1998 and became the largest university in China with 40,000 students. From the year 2000, the salaries were further increased and research grants became bigger. It is now quite common for an active research mathematician to receive 70,000 yuan/year (CND\$13,000) for his/her research program. The money can come from the Ministry of Education, China National Science Foundation, Ministry of Science and Technology, Chinese Academy of Sciences, Provincial Department of Science and Technology, Ministry of Defense Science and Engineering, and other ministries in need of mathematics research. The salaries of mathematics research leaders have been raised to more than 10,000 yuan/month, with a few to 20,000 yuan/month. Most full professors at Beijing University have bought an apartment of 120 square meters or larger at the university-subsidized price. Mathematicians from China now routinely attend international mathematics conferences. The government investment in advanced education and research has dramatically increased the collaboration opportunities between Chinese scientists and their western counterparts. Because of the large amount of investment, the Chinese government asks for more output: more papers, more patents, and more industrial innovations. For mathematicians, this mainly means more papers in the international journals reviewed by the Science Citation (called SCI journals). Thus, a large number of Chinese scientists are eager to collaborate with the western counterparts not in order to receive a foreign supplementary income but to publish SCI papers. The Ministry of Education, Chinese Academy of Sciences and other departments also have established a fund to host sabbatical leave professors to China. The support amount is comparable to the Humboldt Fellowship at 8,000 yuan/month plus an apartment and some other benefit. Some host universities can even top up the salary if the candidate is in an urgently needed area. Such opportunities are open to anyone around the world regardless of ethnic background or nationality. More information can be obtained from the Chinese Education Consul in Vancouver, Tel: 604-732-6723, Fax: 604-738-1801, or the website www.chinatalents.gov.cn (in Chinese).

The Morningside Centre at the Academy of Mathematics and System Sciences of the Chinese Academy of Sciences is like the Fields Institute in Canada and sponsors various kinds of symposia and short courses on pure mathematics, applied mathematics and statistics. The Centre possesses very nice facilities for these activities, comparable to those at Fields. The website for the centre is <http://www.amss.ac.cn/amssweb/eversion/eversion.html>. The Academy of Mathematics and System Sciences also hosts visiting scholars and hires Chair Professors. The visiting scholar salary is negotiable and can range from 3,000-10,000 yuan/month. Beijing University has also established a system to host visiting scholars from abroad. Currently, there are five visiting scholars in the Mathematics Department of the university. The stipend is comparable to that of the Chinese Academy of Sciences. More information can be found at <http://www.math.pku.edu.cn/en/>. Numerous collaboration opportunities exist at other universities beside the above two institutions.

In spite of the increase in investment in advanced education and research, the elementary education is still backward in the countryside of poor provinces. There are still schools without desks or chairs. There are still schools in caves. And there are still millions of children who drop out of elementary

school due to poverty. The gap between rich and poor is many times larger than in Mao's time, although the quality of life has improved a lot across China in both countryside and city. The countryside residents comprise 70% of China's total population, yet only 30% of the university students are from the countryside. A big pool of talent, including mathematical talent, has been wasted. In his visit to Beijing in September 2001, Sam Shen spoke with Vice Premier Li Lanqing of China about the seriousness of the problem of countryside education. The story of the movie *Not One Less* is still true now for many poor villages but, hopefully, it will be experienced solely as history in a few years' time.

[Top](#)

XVI. THIS IS HOW WE DID IT IN ROMANIA

Ovidiu Voitcu

At the editor's request, I'll say a couple of words about the way mathematics was taught in Romanian universities when I was a student. Though I can only talk about my own experience at the "Al. I. Cuza" University of Iasi, the educational system was basically the same in all public universities in Romania. However, some details of the system may have been implemented differently in different institutions, therefore some of the things I'll say might not apply to some universities. I do not claim to have a complete knowledge of these differences.

In Romania, the education in public universities is free. There are a few private universities, where students pay tuition, but I'm not sure whether mathematics is being taught there at all. The admission to undergraduate studies was based on a contest which consisted of three written (closed-book) assignments (in Algebra, Analysis and Geometry). These days, things have changed (as far as I know) and candidates only have to submit their school report card and the scores obtained at the School Leaving Examination (which is very tough). At my university, about two hundred new students were admitted to the math. program each year. The duration of the undergraduate program in mathematics used to be five years when I did my studies, but now it is four years. Classes started on October 1st and usually ended in June. The academic year was divided into two terms, separated by the winter holidays.

The timetable of courses was set by the department and was basically the same for all students in the same generation. The students had to take specific single-term and full-year courses and labs, offered by the Department of Mathematics only. (For instance, I took 20 single-term courses and 25 full-year courses.) Courses offered by other departments did not count towards the undergraduate degree in mathematics. One couldn't even officially register in a course offered by a certain department unless one was enrolled in an undergraduate program in that department. (In some universities, however, the departments of Mathematics and Computing Science were merged together.) In the last two years of the program, students had to choose a certain (mandatory) number of so-called "optional" courses (from a list of "optional" courses offered by the department) in addition to the "mandatory" ones. (About a quarter of all undergraduate courses I took were "optional" in this sense.)

Students were not given any homework during the term. The grade in each course was based on the final exam only, which was written and oral (in some courses the oral component was missing). The grades were assigned from 1 to 10, based on the absolute (as opposed to relative) performance of the

student. The tasks given in the final exam included solving problems, defining key concepts and proving theorems covered in the course. A strong emphasis was set on the thorough understanding (and assimilation) of the rigorous manner in which the respective mathematical theory was built.

At the end of the undergraduate program, each student had to defend a thesis, whereby he/she was supposed to demonstrate a thorough understanding of a certain advanced math. topic. At this level, original results were optional. In order to be allowed to teach math., graduates had to pass a licence examination, consisting of a written exam and two oral exams. The candidate had to master the topics covered during the first two years of coursework, and more.

The admission to the M.Sc. program was again based on a contest (written and oral), and the duration of the program used to be one year but is now one year and a half. The M.Sc. program included coursework (I took seven single-term courses in one year) and a thesis. Enthusiastic mathematicians could further apply for admission to the Ph.D. program. Because of the heavy coursework completed so far, there were no course requirements for this program. The candidates could focus exclusively on their research.

This is how things were done in my university when I did my undergraduate studies. Since I came to Canada (about three years and a half ago), some things might have changed. I can only hope that you enjoyed this short voyage through a different culture.

[Top](#)

XVII. NEW STAFF

We welcome the following new pdfs:

C. Cobbold (working with Mark Lewis), H. Cuixia (with Nicole Tomczak-Jaegermann), S. Ferri (with Tony Lau), M. Filali (with Tony Lau), X. Li (with Michael Li), T. Marinov (with Peter Minev), V. Skorynakova (with A. Melnikov).

We also welcome Rachel Schofield to our Department. Rachel has been appointed to the position of Administrative Secretary to the Associate Chair of Research, starting immediately. She will be with us for the next year as a replacement for Sandra during her maternity leave and will take on all duties previously carried out by Sandra.

[Top](#)

XVIII. COLLOQUIA AND SEMINARS

i. Colloquium (Edith Gombay)

In the fall semester we had a great variety of excellent speakers from all over the world (perhaps to justify the new University Logo “where the world meets”). The topics were also of great variety:

1. Hermann König of the University of Kiel, Germany, visiting Professor N. Tomczak-Jaegermann, spoke on “Spherical design and sections of l_p -spaces”.
2. Eric Woolgar of the University of Alberta spoke on “The remarkable geometry of negative mass solitons”.
3. Jozsef Szabados of the Mathematical Institute of the Hungarian Academy of Sciences, visiting Professors Seghal and Ditzian, spoke on “Weighted polynomial approximation and interpolation”.
4. Juliana Erlijman of the University of Regina, visiting Professor Runde, spoke on “Von Neuman factors and braid representations”.
5. Andrej Pazman of the University of Bratislava, Slovakia, visiting Professor Mizera, spoke on “Results on optimal experimental design, especially in nonlinear models with parameter constraints”.
6. Ricardas Zikitis of the University of Western Ontario, visiting Edit Gombay, spoke on “Econometrics, Lorenz curves, and convexifications of stochastic processes”.
7. Eli Aljadeff of Technion, Israel, visiting Professor Mazi Shirvani, spoke on “Induction from elementary abelian subgroups”.
8. Hal Smith of Arizona State University, visiting Professors Michael Li and Mark Lewis, spoke on “Resource competition: a review of recent work”.
9. Noriko Yui of Queen’s University, visiting Professor Jim Lewis, spoke on “Congruence number problems in dimension 1 and 2”.
10. Ioan Bucataru of Al. I. Cuza University, Romania, visiting Professor Peter Antonelli, spoke on “Linear connections for systems of ordinary differential equations”.
11. Laszlo Kozma of Debrecen University, Hungary, visiting Professor Peter Antonelli, spoke on “Busemann’s hyperbolicity in Finsler spaces”.
12. Shahar Mendelson of The Australian National University, Canberra, visiting Professor A. Litvak, spoke on “Gaussian and Rademacher averages and their connection to learning theory”.
13. Victor Snaith, visiting Professor A. Weiss, spoke on “Relative K_0 , fitting ideals and the Stickelberger phenomena”.

We already have a few interesting talks scheduled for the second term, but there is room for more. So if you have a visitor who could give a presentation that describes his/her field and may be of interest to the general departmental public, please consider inviting him/her to participate in our Colloquium Series.

[Top](#)

ii. *Algebra seminar (Mazi Shirvani)*

The Algebra Seminar will meet in the second term as follows:

The Study Group on perverse sheaves, p-adic cohomology, and applications, will meet every Friday at 2 p.m. in CAB 657, starting January 18, 2002. Regular algebra seminars will take place on Wednesdays at 3 p.m., again in CAB 657. The first speaker has not been finalized yet. All are welcome.

[Top](#)

iii. *Approximation and wavelet theory seminar (Bin Han)*

All the information about this seminar will be available on the organizer's web page at <http://www.ualberta.ca/~bhan/seminar.htm> (or click on the link from the Department's web page).

[Top](#)

iv. *Differential equations and dynamical systems seminar (Michael Li)*

The Differential Equations and Dynamical Systems seminar resumes the second week of this winter semester. The weekly seminar will be on Fridays, at 2 p.m. in Room CAB 657. The first talk is given by Jim Muldowney on Jan. 18, 2002, entitled "Stability implications of Bendixson's conditions for difference equations." The schedule for the rest of the semester as well as updates can be found on the seminar website <http://www.math.ualberta.ca/~mli/seminar.htm>.

In the past two years, the attendance of the DE seminars has averaged about 15-20, and includes faculties, postdocs, visitors, and graduate students. We expect that this semester's seminar will be even better attended with the large infusion of graduate students last fall.

[Top](#)

v. *Differential geometry seminar (Peter Antonelli)*

The geometry seminar will meet, as usual, in CAB 657 at 2 p.m. on Thursdays. Everyone is invited. There will be lectures on algebraic geometry (e.g. regulators and K-theory by J. Lewis), Finsler geometry (applied and pure, by S. Rutz) and algebraic topology (by G. Peschke). Also, at the end of January, Dr. I. Bucataru will lecture on recent work that he has done in continuum mechanics.

Last semester we held a mini-symposium on Finsler geometry (L. Kozma, D. Hrimiuc, S. Rutz, P. Antonelli, I. Bucataru). This semester we will hold another on Cartan geometry applied to seismology (A. Bona, M. Slawinski, I. Bucataru, P. Antonelli, S. Rutz).

Recent speakers were

October 11, 2001, Dr. S. F. Rutz, "Applications of Finsler geometry with computer algebra", I.

October 18, 2001, Dr. S. F. Rutz, "Applications of Finsler geometry with computer algebra", II.

October 25, 2001, Dr. S. F. Rutz, "Applications of Finsler geometry with computer algebra", III.

November 1, 2001, Dr. Don Stanley, "LS –Category with respect to a class of spaces".

November 22, 2001, Dr. W. Krawcewicz and Dr. G. Nosovskij, "Decoding of the astronomical symbolism of old Egyptian zodiacs".

November 29, 2001, Dr. Don Stanley, "Improving Lefschetz duality".

January 10, 2002, Lynn Dover, "Riemannian and symplectic structures on manifolds".

January 17, 2002, Dr. S. F. Rutz, "3-dimensional Finsler geometry and applications".

[Top](#)

vi. *Functional analysis seminar (Volker Runde)*

Unless explicitly stated otherwise, the seminar meets Tuesdays at 3 p.m. in CAB 369. Details of past and future talks may be found on the seminar's website at <http://www.math.ualberta.ca/~runde/functanal.html>

[Top](#)

vii. *Graduate student seminar (Kathleen Dohan)*

The graduate student seminar is a series of student presentations, designed to be accessible to all Mathematics/Statistics students. The purpose is to have an informal atmosphere for graduate students to talk about their field of study, to share ideas with other students, and to be more informed on the variety of research in the Department. All graduate students are encouraged to attend and/or give a talk. The seminar is kept exclusive to students in order to create a friendly and casual environment.

So far this year we have had four volunteer speakers: Kathleen Dohan, Oksana Kotovych, Peter Campbell, and Liping Liu. There is no regular schedule of talks this semester; all graduate students are notified each time there is a volunteer speaker.

For more information, please contact Kathleen Dohan at dohan@math.ualberta.ca or go to: <http://www.math.ualberta.ca/~mreszka/gradseminar.html>

[Top](#)

viii. *Mathematical biology seminar (Gerda de Vries)*

The Mathematical Biology Seminar Series had a busy fall term, with a seminar every Monday afternoon. Seminars featured presentations by departmental faculty, postdoctoral fellows, as well as visitors to the Department (some from as far away as Australia and the UK). We are grateful for partial funding by PIMS for some of our visitors (and also to various bakers and cookie suppliers for fortifying snacks).

The seminar continues in full force this spring term. We meet Monday afternoons at 3 p.m. in CAB 657. The schedule is almost full, again with many visitors to the Department. For details on speakers, titles and abstracts, point your browser to <http://www.math.ualberta.ca/~devries/mathbioseminar/>.

Note that graduate students may register for this seminar and earn one credit. For details, contact Gerda de Vries.

[Top](#)

ix. *Non-linear waves/fluid mechanics seminar (Bruce Sutherland)*

Talks are given on topics in nonlinear waves and fluid dynamics relevant to the research of the participants. Talks this term will be given on abyssal ocean currents, particle-laden gravity currents and other topics. The weekly seminar will run on Thursdays at 4 p.m. Information on the talks and location may be found on the web at

<http://taylor.math.ualberta.ca/~bruce/courses/math654.html>

[Top](#)

x. *Statistics seminar (Peter Hooper)*

The Statistics Seminar normally meets on Fridays at 3 p.m. in CAB 657.

We had three speakers in recent months:

September 28, 2001, Dr. Tahir Choulli, University of Alberta,
"Some generalized Hellinger processes and their applications in mathematical finance",

November 30, 2001, Llwellyn Armstrong , Institute for Wetlands and Waterfowl Research, Ducks Unlimited Canada,
"Incorporating heterogeneity in nest survival estimation",

January 16, 2002, Dr. Arthur Dempster, Harvard University,
"Statistical Reasoning and the Climate Change Debate".

Anyone interested in giving a talk at the Statistics Seminar is asked to contact Peter Hooper.

[Top](#)

XIX. DEPARTMENTAL CHRISTMAS PARTY

Garry Ludwig

This year, the Department's annual Christmas party, superbly organized by Rick Mikalonis, was held at the Fantasy Hotel at West Edmonton Mall. There were about 120 people present. This was perhaps the largest departmental party ever. The master of ceremonies was Jack Macki who did an excellent job and should be hired again next year. (Since the first door prize, a basket full of goodies from the Second Cup, went to me I have nothing but praise for Jack). Apart from dinner and conversation, the highlight of the evening was a performance of Christmas Carols by the U of A Mixed Chorus. Since the party went on for hours after some of us old folks left, you'll have to find out from the younger crowd what transpired during the dance that followed the formal part.

[Top](#)

XX. PEOPLE

At the 2nd annual PIMS Prizes Awards Ceremony on December 1, 2001 in Vancouver Professor **Wieslaw Krawcewicz** won the *Education Prize* and Professor **Michael Kouritzin** won the *Industrial Outreach Prize*.

In a ceremony on November 29, 2001, **Garry Ludwig** and **Jack Macki** were honoured for 35 years of service and **Bruce Allison** and **Ken Andersen** for 30 years of service to the University of Alberta.

Jack Macki will retire as of August 31, 2002 and work half-time for some period thereafter.

Sudarshan Sehgal has already retired as of last summer and is continuing on a part-time basis for five years.

Several graduate students have successfully completed their program (or a significant part thereof). Congratulations to all!

Todd Oliynyk had his final Ph.D. thesis defense on January 18, 2002. He has obtained a one year position (with possible renewal for another year) as Associate Lecturer at the School of Mathematics and Statistics of the University of Canberra. He will be doing research with Robert Bartnik on geometric analysis and differential geometry relevant to the Einstein equations.

Rong Haung has completed her Ph.D successfully and is currently working with Statistics Canada.

Elser Naser and **Julie Jang** have completed their M.Sc. degree and are currently enrolled in the Ph.D. program in our Department.

Abdul Hussian and **Irina Dinu** have successfully completed their candidacy requirement.

We congratulate **Gordon Swaters** and **Charlotte Giordano** on their recent marriage (December 21, 2001).

Laura Heiland got engaged to **Murray Mielnichuk** on December 30, 2001. No wedding date has been set yet. Congratulations!

We have two new babies in the Department. Both were born on Thursday, January 10, 2002. We wish them all the best and hope to see them touring the Department hallways sometime in late January.

Anna and Ross Stokke are the proud parents of a baby girl: Ava Mary, 7 lb. 9.5 oz., 21 in. long.

Sandra and Wayne Salmon are the proud parents of a baby boy: Evan Mackenzie, 8 lb. 10 oz., 21.5 in. long.

Rachel Schofield is here as **Sandra's** temporary replacement for the next year.

Dana McCallum will be returning from her maternity leave on Jan 28. Hence **Kathy Proehl's** last day with us will be January 25.

[Top](#)

XXI. HUMOUR

Samples of mathematical humour found on the internet:

Q: Why did the mathematician name his dog “Cauchy”?

A: Because he left a residue at every pole.

Ralph: Dad, will you do my math. for me tonight?

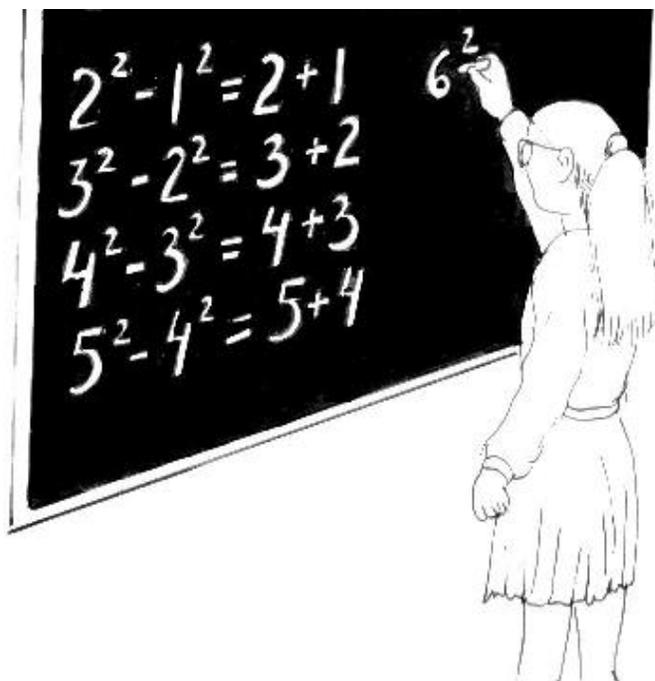
Dad: No, son. It wouldn't be right.

Ralph: Well, you could try.

Old mathematicians never die. They just lose some of their functions.

One attractive young businesswoman to another, over lunch:

My life is all math. I am trying to add to my income, subtract from my weight, divide my time, and avoid multiplying.



She is a ...
PATTERN
FREAK!
I think we
should
notify her
parents.



Courtesy of *W. Krawcewicz*

[Top](#)