

LOCAL SPACES

UBC Department of Mathematics

Winter 2005

Message from the Head



As I welcome you back to UBC for the new term, I encourage you to participate in our full menu of courses, seminars and colloquia. While mathematics requires a good deal of solitary thinking, we can get lots of help by working and learning together in informal ways. We also have plenty of opportunities for interactions at afternoon teas on Mondays (Math lounge and IAM lounge), Wednesdays (PIMS) and Fridays (Math lounge) as well as IAM Coffee on Friday mornings.

We have made great progress in many areas, but we do continue to face challenges, and I would like to highlight a few of these.

1. Large section sizes in our 300 and 400 level courses: The impact of this on course instructors has been minimized by assignment of more TA hours, but we could serve our advanced undergrads better with smaller section sizes. In the next year or two, we expect to get some relief with the addition of new faculty. We may also redistribute our teaching assignments by having a few more regular faculty teach large sections of first year courses and having a few more postdocs teach upper-level courses.

2. Inadequate classroom space and teaching facilities: The Math Building and Math Annex have benefited considerably from improvements. However, this past term, I received a record number of complaints from students and faculty regarding problems in other buildings. Over the next few years, some relief will be provided by space made available by new construction on campus. In the meantime, we are working with Classroom Services to make more reasonable assignments of classrooms for our courses. For instance, the appropriate capacity of a classroom with a non-sloping floor and limited blackboard space may be much lower for a Math course than other courses.

3. Insufficient hours for the Mathematics library: As you may know, the Math collection is split between the Math library and the Main library, with many of the more critical and recent journals and books housed in the Math library. The current reconstruction of the Main library would make it possible to move the entire Math collection to the Main library, which is staffed for many more hours per week than the Math library. A better solution that is current practice at many other universities would be to provide Math library keys to Math users. This solution has met resistance in the past, but we will revisit it in the coming year.

The Math Department is working on these and other issues, and, as always, we appreciate your feedback and suggestions.

Finally, as I reflect on the past year, I would like to share with you some of my New Year's Resolutions:

1. Don't plan any departmental beach parties in September.
2. Try to resist sending general emails regarding discretion in the use of our washroom facilities.
3. In the next faculty-vs-graduate student soccer match, strictly enforce the rule that faculty play with only 11 players at any given time.
4. Provide more delicious cakes at departmental events.

I cannot guarantee that I will live up to these lofty goals, but I will try. I wish you all the best for the New Year!

Brian Marcus

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Announcements

2004 was a special year for some of our staff and faculty members. **Sharon Chan** was inducted into the 25-Year Club and **Mary-Margaret Daisley** joined the 35-Year Club for staff. They were both honored for their contributions and dedication at UBC. Sharon started working at UBC in 1979 at Financial Services and Mary-Margaret in 1969 at Plant Operations.

The Faculty also has a club that recognizes those who have reached 35 years of service – Tempus Fugit (which means “*time flies*”). **Andrew Adler**, **John Heywood** and **Kee Lam** were among the 29 new members inducted. Kee also celebrated his retirement at the end of December. Congratulations and best wishes on your retirement!

Faculty Awards

Kai Behrend and **Joel Friedman** were awarded UBC Killam Faculty Research Fellowships from the Izaak Walton Killam Memorial Fund for Advanced Studies. These fellowships top up faculty salaries while they are on sabbatical leave. In addition, they will also receive a grant for research and travel expenses.

Jimmy Feng, **Ian Frigaard** and Mark Martinez (Chemical Engineering) were awarded a NSERC strategic grant for research on smart spacers for extended reach horizontal well cementing.

Philip Loewen, Guy Dumont (ECE), Michael Davies (ECE) were awarded a NSERC strategic grant to research autonomous cross-directional systems.

Welcome Aboard!

The Math Department welcomes new faculty members, **Alejandro Adem** and **Ulrich Horst**. Alejandro comes to UBC from the University of Wisconsin-Madison, where he served as Chair of the Mathematics Department from 1999-2002. In addition to joining the Topology research group, Alejandro is the newly appointed Deputy Director at PIMS.

Ulrich comes from Humboldt-University of Berlin and has held visiting positions at Princeton University and University of Minnesota. His research interests include Microstructure Models for Financial Markets, Probabilistic Interaction Models, Stochastic Difference Equations and Mathematical Economics.

We are privileged and excited to have you join the Department!

Graduate News

Theodore Kolokolnikov finished his Ph.D. degree under the supervision of Michael Ward and is currently a post-doctoral fellow at the Free University of Brussels. He is working with Dr. Thomas Erneux on pattern formation and bifurcation problems in nonlinear optics.

After finishing her MSc. degree under the direction of Fred Brauer, **Alicia Shim** is pursuing her Ph.D. at Arizona State University. She is continuing her research in mathematical modeling of rotavirus epidemic and vaccination under the supervision of Dr. Carlos Castillo-Chavez.

Samuel Hikspoors finished his MSc. degree under the direction of thesis supervisor, Jingyi Chen, and is currently studying at the University of Toronto for a Ph.D. in Statistics.

Glen Pugh completed his doctoral exams in November and will continue at UBC working as a Postdoctoral with Bill Casselman.

Dagan Karp was awarded this year's Graduate Teaching Award at the Department Dinner. Dagan previously won a Teaching Award at Tulane University in 2000/2001.

The following students received their MSc. degrees at the Fall Convocation: **Brenda Fine**, **Carl Gladish**, **Mariah Hamel**, **Mathew Rogers**, **Benjamin Wang** and **Liam Watson**. Mariah, Mathew and Benjamin are all continuing their Ph.D. studies at UBC. We wish you continued success in your endeavors!

Perspectives on Studying Abroad

By Wan Chen

Last year was a pretty busy yet rewarding year for me. As a second-year international student, I gained a wealth of knowledge as well as new experiences in the Math department. Even before I came here from China, I tried several times to imagine how different and exciting life would be, but not until I arrived, did I realize how much my life would change.

In the beginning I experienced some language barriers and cultural shock but people here were so nice. They helped me break out of my shyness and adapt to the new environment. Sometimes I couldn't understand the courses very well and felt frustrated by the tough homework assignments and projects. Fortunately, the professors were very patient and open to questions and therefore, I was able to survive all my courses. What's more, I really appreciate the guidance of my supervisor, Brian Wetton, who taught me not only where and how to go in my research work but what qualifications a mathematician should possess.

Most impressively, there are dozens of seminars and colloquia every week, covering broad areas of pure and applied math. The speakers are usually world famous experts in specific areas. I am able to learn what happens in the frontier of mathematical science, and even get a chance to talk to them. This is a great advantage of being a student in a math department with such international prestige. Besides, we get to enjoy various social activities ranging from colloquium teas, annual dinners to soccer games, all of which build more connections between professors and students.

Before I came, I may have felt a little hesitant about whether to keep mathematics first as a career but after being in the math department, my warm and nourishing home, the last bit of uncertainty has gone now because I have met so many people who are devoted to mathematics and I'm pretty lucky and proud to be among them.

By Catherine Dupuis

I chose to come to Canada and particularly Vancouver to study for two main reasons: for the Applied Mathematics program offered at UBC, and for the city itself. I also considered the skiing opportunities, which were quite important to me.

The studies in North America are more focused on research and less theoretical than in France. France makes a point of making sure that the student knows a lot of theory and background knowledge by making them take a lot of courses before letting them do research. Here, the learning process is done through research itself and students have to develop and choose their own research topics. Another thing that is different is the relation between professors and students. It is more relaxed here, students can talk easily with different professors about the problems in their research, and that makes the environment friendlier. Here, I also learned how to give presentations (and in English!).

Everything went well for me because I met lots of international people (I still made sure I met Canadians, otherwise I would have missed the point). I had a unique experience learning about many countries and cultures through my friends. Building a great network of friends is very important in life. I am more open-minded now and can understand the different cultures much better. I also visited different places with some of my friends and these are moments I will never forget.

I will also never forget the beautiful sceneries I saw. I visited some parts of British Columbia, as well as California and Nevada. You cannot find the natural landscapes that we see here along with deserts, mountains or lakes in France just because France is small. Nothing can be compared to the amazing wildlife and sceneries I saw. Experiencing the world is what I am currently doing and I think nothing can be more valuable to me than this wonderful experience.

By Patrick Ingram

As some of you may know, I spent the past term in Paris where I filled the time between croissants by attending the "Trimester on Explicit Methods in Number Theory" at the Henri Poincare Institute. This trimester consisted of three full-length courses, about a dozen "short courses" (of three or four lectures), several seminars, and one-week conferences on the PARI and MAGMA computational packages, as well as two more general conferences. In attendance were some of the premier number theorists from around Europe, and some from farther afield.

Although studying abroad seems quite appealing, anyone considering such an option would be immediately faced with several practical issues. The primary obstacle that anyone faces (after, I suppose, separation from family and friends) is funding. However, I was quite lucky to have funding support from my supervisor, Mike Bennett, Nike Vatsal and the Poincare Institute.

The principal benefit of studying abroad is also the primary detriment, that is, the opportunity to explore a new city. Certain destinations are not much of a threat, but Paris is, of course, as it is rife with distractions. On the one hand, one would like to make the most of this potentially productive period, surrounded by high-falutin minds and sequestered from the distraction of friends and other obligations. On the other hand, new friends, museums and galleries, sights, creperies and cafes all conspire to make the outside world more interesting than whichever yellow-sale purchase you thought you would finally read. The balance I struck was to make the most of the resources that I would not have when I returned to Vancouver. This included both the lectures and the Louvre, but not the Springer.

My advice to any student considering a sojourn abroad is to jump on it and, and here I anticipate the chagrin of thesis supervisors everywhere, to not let mathematics monopolize your time. Even if you don't accomplish as much as you'd set out to, the contacts you will make, both social and academic, are well worth the effort.