

SCHOOL OF COMPUTING

A WORLD OF OPPORTUNITIES

DIRECTOR'S MESSAGE

Welcome to the 2nd annual School of Computing Newsletter!



Jim Cordy

DIRECTOR, SCHOOL OF COMPUTING

It's been another great year in the School and in this issue we are pleased to highlight some of the exciting recent news from the School. We've also included interesting profiles of some of *you*, our illustrious alumni!

As you may have heard, incoming undergraduate numbers in Computing have been shrinking lately, and like most other places, our incoming undergraduate class is small, with about 57 incoming computing program specialists this year. Our fantastic students are helping us to encourage high school students with two initiatives: their very successful NTYLC (National Technology Youth Leadership Conference) will be at Queen's again this year, inviting top computing and technology high school students from all over Canada to the campus for a week of intensive technical experience in the spring, and a new program, CHAMP, designed to reach out into the high schools to introduce and excite students in technology and computing with hands-on workshops, seminars and projects, which you can read about inside. While the numbers may be smaller this year, as always the quality of our students remains remarkably high, at the top of incoming classes in Canada. Once again this high quality was evident the achievements of our students, as demonstrated by fourth year student, Gary Linscott – be sure to read about him in this issue.

In response to advice from our industry partners in the School's Innovation Council and many of you, we have this year added a new software technology course to the second year of our program to introduce students to the exciting world of Linux / open

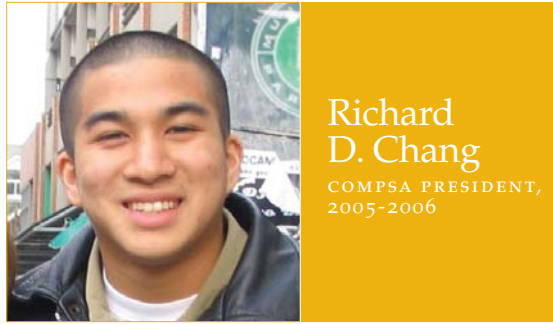
source software development concepts, technologies, tools and skills. While modern IDE's and Java-based systems dominate the web world our students have been working in, little attention has been paid to another domain of the Linux-style system software development environment. This new course will help bring back our students' traditional strength in the software development area.

By contrast with our undergraduate numbers, the graduate student population of the School continues to grow, with record numbers of both MSc and PhD students. The quality of our students also continues to rise, with a record number of scholarships. This growth in our graduate population anticipates a new emphasis on graduate work at Queen's advocated by our new Principal, and greatly enhances our research capabilities.

Speaking of research, we've had yet another outstanding year in research achievement and support, including large new research projects sponsored by NSERC, CITO, CFI and industrial partners IBM and Bell. As always our researchers have been recognized in a number of ways, but perhaps the most clearly visible is the award of the 2005 Queen's Prize for Excellence in Research to Professor Selim Akl. This is the highest recognition our university offers, in an extremely competitive environment, and it is a great honour for both Selim and the School. You can read about Selim and his prize inside this issue.

Personally I'm happy to be back from my year away in Italy and very appreciative of the great job that Professor Pat Martin has done in leading the School in the past year. I look forward to facing our challenges in growth and enrollment with new energy, and to hearing from many of you in the coming year!

Jim Cordy, DIRECTOR, SCHOOL OF COMPUTING



**Richard
D. Chang**
COMPSPA PRESIDENT,
2005-2006

Hello Queen's Alumni!

It is an honour to be addressing the audience of Queen's Computing Science graduates. On behalf of the Computing Students Association I would like to extend a warm greeting to you and your families.

As the department evolved into the Queen's School of Computing, the student council also evolved, into the Computing Students Association (COMPSPA). In its opening year as an official student association, COMPSPA achieved its goals of establishing a strong presence on campus, gaining representation on ASUS and AMS assembly, and establishing out own constitution and government executive.

Last September, the School of Computing had its very own Orientation Week for the first time, and it was a huge success. It united generations of Computing students in pride and spirit, and was the first big step towards creating a community in the School of Computing.

For this coming year, COMPSPA will focus its effort inwards, on developing and fostering that sense of pride and community in the School of Computing. Looking forward we have several very large and exciting new projects planned for the coming year, including a Highschool Mentorship Program, a Computing Boat Cruise, and an extensive social calendar.

To keep up to date on COMPSPA events and activities, please visit our brand new "wikified" website at <http://compsa.queensu.ca>

Cheers,
Richard D. Chang, COMPSPA PRESIDENT, 2005-2006

A MESSAGE FROM SELIM ULUG

Alumni, students and faculty came together to celebrate the School of Computing's 35th anniversary on the 6th, 7th, and 8th of May. Kicking off the series of events was a reception on Friday evening. Participants registered and renewed acquaintances over punch and a slide show of photographs from current and bygone days. Following the reception, some hardier alumni ventured to the Grad Club and sampled the current fare.

Saturday began with a series of demonstrations of current research activities. For many alumni, not only was the technology new, so were the problem domains. The best example of this is the outstanding work in the area of computational medicine.

A boat tour of the St. Lawrence followed, including a sit-down lunch. And while the scenery and weather were spectacular, it was the excitement of renewing acquaintances and friendships that electrified the atmosphere on board.

In the evening a dinner was held and several speakers told stories of the formative days of the School. Don Jardine, Michael Levison, and Bob Crawford held the rapt attention of the audience. Glenn MacEwen, another founding member of the School, was also present. With the closing of dinner activities, a number of alumni discovered that the Grad Club is closed on Saturday nights during the summer. Not all change is for the best. However, alternate arrangements were made and celebrations continued into the evening.

Closing out the weekend was a baseball game and barbeque. A careful observer might have noticed that the game was somewhat slower paced than it might have been in earlier years. However, all would agree that it was terrific fun and brought back many happy memories.

If I may, I would like to express my appreciation to Dean McKeown, Irene, and all the organizers of this event on behalf of all the alumni. To put it simply, it was a great weekend. Congratulations to the School of Computing on your 35th anniversary, and may you enjoy many more. Looking forward to the next reunion!



Dr. Selim Akl Wins 2005 Queen's Prize for Excellence in Research

The \$5000 award is given in recognition of outstanding research contributions while the scholar is at Queen's University. The prize was awarded at the fall convocation ceremony. Dr. Akl presented his research: "From Infinitely Small to Infinitely Big: The Universe as Computer" at a public lecture in November.

Congratulations Selim!

ALUMNI PROFILE

The game's the thing!

BY CAROL EDGAR LAW

Not many recent Queen's graduates get to play golf for much of their work week but Xbox 360 games developer Scott Grant gets to do just that. Scott works with the Tiger Woods engineering team at the Electronic Arts Redmond Shores studio, Washington state, translating the excitement of Woods' legendary play into multimedia experiences for myriad games players, across the world.

"The job is incredible in general," Scott says. "I work with next generation technology that most people haven't even seen yet."

In addition to the Xbox platform, the studio also develops games for Playstation 2 and GameCube consoles. Most exciting of all is current development work on media for the upcoming Xbox 360.

"We just recently completed development on two iterations of the game; one for the current generation of consoles (PS2, Xbox, and GameCube) and one for the upcoming Xbox 360, which will be released November 16th.

He says Queen's gave him the experience he needed to play a useful role in the project.

"I took several mathematics courses, which is critical in this type of work."

He also took a significant number of computing courses such as graphics and artificial intelligence "that were helpful", along with general courses such as software architecture which help in planning and laying out the games code for maintenance and readability.

"As an engineer, I am primarily tasked with writing sections of the game code itself. Often, it feels like I'm back in university working on a project."

Scott graduated from Queen's in 2002, with a B.ScH in computing. He completed his Masters work in 2004, under Professor James R Cordy, Director of Computing and Professor of Computing and of Electrical and Computing Engineering.

My day often involves speaking with the engineering, production and art teams, writing code to fill out sections of the game, and writing technical documentation.

Scott's research at Queen's focused on software transformation and software engineering. When he completed his graduate degree, he was offered the opportunity "to come down to California to work at Electronic Arts; an offer I was glad to take advantage of."

"The great thing about a job like this is that we're constantly working on the cutting edge of software and hardware, constantly developing new techniques and ways to solve problems."

EA's worldwide studios are headquartered in Burnaby, BC. Additionally, EA has an office in downtown Vancouver and is building a major studio in Montreal. The good news is that it's hiring, not only in Canada but also in the States and Europe, where it has a major studio in Chertsey, England and sales offices in Spain, Sweden and other European Union countries.

The corporation received 93 out of 100 on the 2004 Human Rights Campaign's Corporate Equality Index, which measure how equitably employers treat their lesbian, gay, bisexual and transgender (GLBT) employees, consumers and investors.



ALUMNI PROFILE



A bright and shining star

BY M.J. JAFFRAY

When Rhodes Scholar Susan Bartlett ('03) returned from her two-year sojourn at England's Oxford University in July, 2005, she brought souvenirs for her family in Riverview, New Brunswick, as well as a little something for herself: a third undergraduate degree in philosophy, politics and economics.

Established in 1903, The Rhodes Scholarship is the oldest and most prestigious international scholarship for postgraduate study. Scholarships are awarded annually throughout the Commonwealth nations and the United States.

In December, 2002, Susan's selection as one of just 11 Rhodes Scholars in Canada came as no surprise to friends and professors who were well aware of her outstanding academic success at Queen's.

In May, 2003, Susan had completed an Honours Bachelor of Science degree in software design; prior to that, she had received her Bachelor of Arts degree in English Literature in May, 2002. Susan also competed in hurdles, sprints and relays for Queen's University Varsity Track Team, and was a three-time academic all-Canadian on the Dean's Honour List for both English and Computer Science.

"I loved Oxford," she says. "It was an amazing place to study. I also had the opportunity to go to Buckingham Palace, where I was presented to Queen Elizabeth II and Nelson Mandela at an evening reception in honour of the Rhodes centenary."

Susan studied at Wadham, one of Oxford's largest undergraduate colleges, which was founded during the reign of King James I in the 17th Century by wealthy Somerset landowners Nicholas and Dorothy Wadham.

"Life at Oxford was incredibly busy," she says. "It was enormously challenging because I had never studied economics or politics, and the amount of work was simply colossal. For example, I studied comparative government, and the required reading list for that course, over eight weeks, was 40 pages long! I was also required to write two essays per week. But it was also wonderful, because I learned so much in such a short and concentrated period of time. It was just 'go-go-go', all the time."

When asked if there was any time left over for fun, Susan laughs. "Wadham College is legendary for their entertainment and especially their 'bop' dances, which can be rather risqué but were hugely popular. I also enjoyed learning how to play cricket, and I ran track at a few Oxford-Cambridge meets."

With her final exams completed by the beginning of June, "massive celebration" ensued, and Susan enjoyed her final days at Oxford punting on the river and then traveling through Italy, Austria, and Germany before flying back to New Brunswick to reunite with her family.

It wasn't long, though, before Susan was packing her bags again – this time for Edmonton's University of Alberta, where she began her next degree, a Masters in computer science, in September.

"At the moment, I'm studying natural language processing and computational neuroscience, so that's keeping me quite busy," she says. "I also love sports. I'm taking squash and skating lessons, and playing intramural soccer." An avid reader, Susan absorbs books, magazines and newspapers as time permits, but admits that she still misses the London dailies!

She has also discovered that time had a way of marching on while she was away at Oxford. "When I came back, I discovered that I had missed a couple of Java updates, so I had to buy a new operating system for my computer," she laughs.

One has the feeling, however, that there isn't much that can hinder her progress towards the acquisition of her Master's degree. And for someone as gifted as Susan Bartlett, does the learning curve ever end?

She ponders the question for some time, and then admits she isn't sure yet what the future holds for her in terms of a career path. Like Java and the other computer software which are the tools of her trade at the moment, her long-range plan is still subject to frequent upgrades.

One thing is for certain, though: this young Queen's alumna is a bright and shining star whose path of success will take her "virtually" anywhere she wants to go.

Good luck, Susan!

STUDENT EN ROUTE TO MICROSOFT AFTER WINNING TOP COMPUTING PRIZE

REPRINTED FROM QUEEN'S GAZETTE 4 APRIL 2005, BY KAY LANGMUIR



KAY LANGMUIR

Gary Linscott: "What's interesting is the ability to get in there and figure out something you didn't know how to do before. It's a sense of exploration."

An innate love of solving problems has earned a fourth-year computer student some world travel, a large U.S. cheque and now a job at the head office of Microsoft.

Gary Linscott recently beat out thousands of other hopefuls in the TopCoder Computer Challenge sponsored by Yahoo to take home \$13,000 U.S. for solving a complex computer problem.

The big win came after Mr. Linscott helped his Queen's programming team make a number of excellent showings at the annual ACM Inter-Collegiate Programming competition, at both the regional level and World Finals.

The contest is sponsored by the Association of Computing Machinery, (ACM), a professional body of computer scientists.

"What's interesting is the ability to get in there and figure out something you didn't know how to do before. It's a sense of exploration," says Mr. Linscott, who hails from a military family currently based in Ottawa.

Mr. Linscott first tried the TopCoder Challenge in 2002, but he was also involved that year with doing his part to help the Queen's computing team make the ACM Worlds competition for the first time. Mr. Linscott and other team members travelled to Hawaii that year to compete and placed a respectable 27th out of 3,500 of the best universities in Europe and North America.

In 2004, he managed to make the finals of the TopCoder contest, but also made the ACM Worlds competition again with his mates on the Queen's computing team.

They travelled to Prague, Czechoslovakia where they placed 12th, beating out their strongest Canadian rival, University of Waterloo, and nearly beating out the powerhouse team from the Massachusetts Institute of Technology.

This year, not being eligible to compete in the ACM Worlds a third time, Mr. Linscott turned his energies to the TopCoder Challenge.

After doing well at the initial online level of the contest, Linscott went to Yahoo's U.S. campus to compete, and triumph, in the finals.

"Gary's greatest strength is not his ability to program but rather his unusual combination of good sportsmanship, leadership and humour," says Amber Simpson, a PhD student in the School of Computing who worked with him on the programming team.

"He has chosen to continually learn about his craft, rather than simply relying on previous knowledge, which makes him someone who will go far."

Yahoo sponsors the TopCoder Challenge in order to entice the best young computer talent down to its U.S., headquarters "so it can pitch the company as a great place to work," Mr. Linscott says.

He talked with a number of different companies before deciding that Microsoft headquarters in Seattle, Washington, where he had interned the previous two summers, was the right fit.

His job, which begins in June, will be helping to develop the graphics side of the next version of Windows.

Mr. Linscott, who has loved solving problems on computers since the age of five, calls his years at Queen's "a great experience."

"Queen's gave me the launch pad to do all these things and to meet all these people."

The university's programming team, which brings together students from disciplines as diverse as music and English, and physics and math, "was easily my best experience at Queen's."

Canadian Student Conference on Biomedical Computing – Another Canadian “First”

Queen's started the first Biomedical Computing program in Canada a few years ago. This year Queen's will be having another first in the area - the first ever Canadian Student Conference on Biomedical Computing (CSCBC 2006, <http://cscbc2006.cs.queensu.ca>). The conference will be held on the Queen's campus March 17-19, 2006, and will provide the opportunity to showcase the campus to many of Canada's brightest students in the biomedical field. The conference has attracted many students from across Canada, and the interest among Queen's students has been phenomenal. Roughly two dozen students, both graduate and undergraduate, are actively working to organize the conference, not to mention the many others who have helped with the promotion of the conference and who have volunteered as reviewers. The conference is a student-run initiative, and all submissions must have students as first author.

Already with the support of the School of Computing, the conference is seeking sponsorships both internally and externally to help support conference events and defray costs of organization. Other current sponsors include Precarn (IRIS), IBM, Queen's Faculty of Arts and Science, Queen's School of Computing, and Precision Conference Solutions. Interested sponsors should contact Parambir Keila, our fundraising coordinator, at fundcscbc@cs.queensu.ca.

The deadline for the call for papers is coming up quickly (December 20th for papers, January 15th for posters). Details regarding the call for papers and submissions can be found online. Awards for the best paper and the best poster will be presented at the awards luncheon at the conclusion of the conference. Several distinguished speakers have been invited to give keynote talks, and students are invited to attend a panel discussion with representatives from industry.

Students interested in helping with the conference can get in touch with our chairs Mehdi Moradi (grad), Anjali Patel (undergrad), and Mireille Gomes (undergrad) at cscbc2006@cs.queensu.ca.

Queen's proud of its newest CHAMP

We would like to take this opportunity to introduce Queen's University's newest outreach program, CHAMP (Computing High School Academic Mentorship Program). This organization is a cross-disciplinary initiative and is being launched during the 2006 winter term. Our purpose is to promote science and technology to high school students in interesting and creative ways. We plan on reaching students in all varieties of subjects such as computing, chemistry, music, and business. Through our understanding and experience of youth culture, we can relate to young individuals and promote technology more effectively. In the coming year, our plan is for the CHAMP program to reach a total of 10 000 students.

A large part of the program consists of creative and interactive workshops administered in classrooms by Queen's students. These workshops show secondary school students how technology is used in all the various subjects that they are studying. To increase the students' desire to learn, the workshops are designed to be fun, innovative, and current with the latest youth interests in pop culture. CHAMP will also invite students to a series of presentations right here at Queen's University. Secondary school students will attend seminars by members of academia and industry professionals on technology related topics interesting to youth. Other aspects of the program include training high school teachers, offering workshops to guidance counselors, and partnering with IBM USA to design a new online science mentoring website.

Another important part of our program is its focus on groups that are underrepresented in science and engineering. Working with IBM Canada, the Aboriginal Council of Queen's University, and WISC (Women in the School of Computing), CHAMP will, additionally, be targeting aboriginal and female students in its promotion of technology. We are planning to send students to rural and aboriginal communities where there are less school resources available for technology. We are hoping that by targeting these groups, greater equality can be reached in education and careers related to technology.

CHAMP presents Queen's students with a unique opportunity to become involved in the community. We envision the administrators of the workshops to come from all disciplines – including Concurrent Education, Commerce, and even Fine Arts!

Along with the support of the Queen's School of Computing, Faculty of Arts and Science, and IBM, CHAMP is seeking sponsorships from sources both inside and outside of the university. We are hoping to receive corporate funding from companies such as Apple Computers and Shoppers Drug Mart, as well as government funding from the NSERC PromoScience grant.

We are extremely excited about CHAMP and we welcome any input or suggestions (Justin Lee: 2jl15@qmlink.queensu.ca).

ALUMNI PROFILE

Building Bridges at IBM

BY CARL EDGAR LAW

Dr. Kelly Lyons (Queens, B.Sc,1985) runs the Center for Advanced Studies (CAS) at IBM's Toronto lab. It was set up in 1990 with a mission to strengthen links between research communities and IBM.

Since then CAS has worked closely with academic institutions, as well as corporate, government, and other IBM research groups on various projects that relate to the products of the IBM Toronto Lab.

Because of the success of CAS Toronto, 14 other IBM Laboratories and Research facilities around the world have opened their own Centers for Advanced Studies.

"A Canadian success story!", laughs Dr Lyons.

The original CAS mission (www.ibm.com/ibm/cas) continues today to:

- Ensure timely and effective transfer of leading-edge research to IBM;
- Provide academics with access to problems of interest to IBM;
- Enable collaboration among academia, industry, government and IBM;
- Provide a venue for research sabbaticals;
- Become the leadership model within IBM for co-operative research.

"Working in CAS is a very rewarding experience because I get to walk the line between academia and industry and get to know lots of graduate students."

Kelly did her B.Sc, 499 project with Janice Glasgow and then went to IBM. After two years she elected to take an educational leave from IBM to return to Queens for her masters and Ph.D.

In 1988 she completed a master's degree under David Rappaport, in computational geometry. Her subject area was robot probes.

In 1994 she completed her Ph.D thesis, again under David Rappaport, and Henk Meijer; subject area "graph layout algorithms".

For the last two years of her Ph.D. work she was an IBM CAS fellowship student.

What Dr Lyons enjoys at IBM is working with very smart, very innovative people every day.

"At IBM, an employee can work in the same product area for his or her entire career, becoming a deep technical expert in a particular area. One can also try many different challenging jobs over time and stay in the same company."

Dr. Lyons husband is a pilot with Air Canada and she has two children; a 10-year old boy in grade five and an eight-year-old girl in grade three.

She works at a new IBM campus in Markham, Ontario, which is about a 20 minute commute – not bad by Toronto terms.

It is a comprehensive IBM campus with on board fitness and esthetic components; laid out on spacious grounds with aesthetic landscaping.

FRIENDS ENJOYING 35TH ANIVERSARY IN MAY 2005





Beth McCarhy and Lisa Menard

Advancement News

You may know that the School of Computing works in consultation with the Office of Advancement to support alumni relationships that continue to make a difference to the spirit and accomplishments at Queen's. By communicating regularly with alumni and friends, inviting you to events, offering meaningful volunteer opportunities, and recognizing your loyal philanthropic support, we build strong relationships that will meet your interests while strengthening the Department's academic and research programs.

As new Development Officers with the Faculty of Arts and Science, we look forward to working with School of Computing alumni in initiatives such as the Innovation Council and we invite you to contact us if you are interested in volunteering or contributing to the School's many important programs. Please visit our website at www.queensu.ca/atrsoci/alumni or contact us by phone.

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