In This Issue...

The View from Goodwin Hall ............ 2
Creative Computing .......................... 4
Roger Browse .................................. 4
High School Interns ......................... 10
Bob Tennent: 44 years of Service ...... 10
School Awards/Recognition ............. 11

Special Feature: Apps & Games

See what our alumni and current students have been creating...

Microsoft Imagine Cup ...................... 5
The Story of Parallax ........................ 6
From Teaching Games to Making Games . 8
Sago Sago Saga ................................ 9
The academic year 2014-15 was a period of mixed emotions: joyful successes, exciting achievements, sad departures, and exhilarating new beginnings.

In fall 2014, the Queen’s School of Computing (QSC) underwent its Cyclical Program Review, an exercise performed every seven years as part of the Queen’s University Quality Assurance Processes. Early this year, we were delighted and humbled to receive the reviewers’ report which represented a strong endorsement of the QSC and an unequivocal recognition of the outstanding quality of the education the School provides, its contributions to research, and the service it offers to the community. The reviewers wrote:

“Queen’s University is lucky to have this School to enable it to participate in the highest levels of research in multiple domains that require strong and advanced computing technology. It is clearly a special place where individuals are able to collaborate to produce excellent work, whether that work is a new discovery or teaching an undergraduate student the beauty of theoretical computing or unlocking the power of programming. […] To use an analogy to baseball, the faculty members in the School of Computing at Queen’s "hit above their weight". For a relatively small unit compared to other Computer Science departments at top institutions across the country, the research output, expertise and breadth of topics covered of the School is truly impressive. […] The School of Computing at Queen’s University is doing an exemplary job in the development of computer science professionals and researchers through their undergraduate and graduate programs.”

Almost at the same time, the Canadian Information Processing Society renewed its accreditation of QSC’s Computer Science and Software Design programs for six years.

Congratulations to Professor Bob Tennent who retired on June 30, 2015, after 44 years of impeccable dedication and a wealth of contributions to the mission of the Queen’s School of Computing. I am also happy to announce that for his exemplary service to Queen’s in all areas of responsibility, Bob has been granted the title of Professor Emeritus following his retirement.

In July, the QSC welcomed the newest member of its faculty, Dr. Qingling Duan, holder of a Chair as a Queen’s National Scholar. Dr. Duan, who is jointly appointed in the Department of Biomedical and Molecular Sciences, specializes in Bioinformatics. We look forward to her contribution in strengthening an already flourishing collaboration between the QSC and the Faculty of Health Sciences.

The year also brought profound sorrow as we mourned the passing of Dr. Roger Browse, a faculty member in the QSC for 33 years. Roger’s loyalty to the School, his passion for cognitive science, and his love for his students will be greatly missed.

Throughout the year, and as always, members of the QSC continued to excel in all areas of endeavour. A team of second year undergraduates earned the title of Canadian Champions in Microsoft’s Imagine Cup competition and represented their country at the world finals. Ph.D. candidate Eric Rapos won the prestigious Queen’s Tricolour Award. Dr. Ahmed Hassan received the Outstanding Young Computer Science Researcher Prize from the Canadian Association of Computer Science. And Dr. Hossam Hassanein received the School of Graduate Studies Award for Excellence in Graduate Student Supervision.
This past year has been most exciting and interesting. Getting to know you all more personally and trying to cater to your interests has been a challenge. It’s great seeing friendly faces come to events and getting to know people in the department in general. We have enjoyed movie nights, a delicious Iron Chef competition, game nights, the Graduat Computing Society Conference, and so on...

We have determined that we need to do an even better job to involve the department this coming year. Once again, priding ourselves on transparency and accurate representation, we will strive to make this department a community. One of the major weaknesses is that everyone seems to be in different labs across a physical distance, but with one common purpose: to further computing research. Let’s build on this and make something epic together.

This past year has been difficult and a great learning experience. This coming year we will build on the past and try to fight for the acclaim this department deserves. We will once again strive for community between all our labs, but this coming year we will try to fight for the School itself.

Once again, I’d like to thank Eric Rapos for facilitating this transition to GCS President, Emese Somogyvari for the amazing amount of work she has put in to GCS events, and Bahram Kouhestani for helping with movie nights. I would also like to thank all three specifically for being amazing sages while in this position.

All for one and one for all!
With great sadness we learned that our friend and colleague Dr. Roger Browse passed away on July 18, 2015 after a long illness. Dr. Browse received his PhD from the University of British Columbia in 1982 and joined the Queen's School of Computing (then the Department of Computing and Information Science) shortly thereafter. He quickly established himself as a recognized expert in artificial intelligence, computer vision, and robotics. In 1984 he founded the School’s Cognitive Science undergraduate program, believed to have been the first such program in the world, combining computer science, psychology, philosophy, linguistics, and neuroscience. Over the years, Roger remained the program’s main architect, passionate advocate, and indefatigable promoter. He served as its coordinator, principal instructor, and dedicated student advisor.

The most eloquent tribute to Roger’s legacy as an inspiring educator came from one of his students, Max Garcia, who wrote:

“I wanted to take some time to reflect on the gift that we were given in the School of Computing for many years, this being Roger Browse. While I didn’t interact that much with Roger Browse, as I’m sure more people have, Dr. Browse played an important part of me being where I am today.

Back in 2011, when I was in grade 11 and deciding where to apply to university, I stumbled across a program called Cognitive Science. Queen’s had always been one of my options, given that my brother was studying Economics here at the time, and I had fallen in love with the school whenever I came to visit him.

As I researched more about Cognitive Science, I realized that it was the program that I wanted to study in university. 4 years ago, Roger Browse took time out of his busy schedule to answer some of the questions that I had in high school regarding the program. Furthermore, he went beyond that and we even had a phone call. In one of the occasions in which I came to visit my brother, Roger Browse made time to meet with me in person and talk about the program.

This attention to a student from a professor was one of the things that helped me choose Queen’s as a university and as a home. In my first year at Queen’s, I had the privilege of taking COGS 100 and learning from Dr. Browse. Yet far more than what I learned within the classroom, I believe it was his behaviour outside of the lecture hall that truly made a difference in my life, and I’m sure in the lives of other people who got to meet him.

The legacy of Dr. Browse shouldn’t be limited to what he did in the lecture hall or in his research. It should include the moments in which he made time to help students. That is how I will remember him.”
Two teams from the School of Computing were chosen to represent Canada at Microsoft’s Imagine Cup, an international student competition across a number of categories “to create applications, games and integrated solutions that can change the way we live, work and play.”

First, Team Eye3 won the Project Blueprint Challenge — a competition for ideas not fully implemented. The team consists of Zaeem Anwar (Biomedical Computing), Jake Alsemgeest (Software Design), and Eddie Wang (Commerce). They were coached by the School’s own Pat Martin along with Brent Gallupe from the School of Business.

Zaeem and Jake were on hand to demonstrate their entry, Ciris, at the School’s annual Creative Computing Showcase. Ciris provides a visual overlay for desktops and mobile devices to translate hard-to-see colours into visually equivalent colours for people with colour-blindness.

“We’re really excited about the positive feedback from our professors and the community,” said Zaeem. “We have a real chance to do something helpful to the world and are looking forward to the work ahead.”

The second team to enter the Imagine Cup was Team Walkly, consisting of Julie Lycklama, Riley Karson, Anastasiya Tarnouskaya, and Christopher Thomas. They made it all the way to the finals with their app, Walkly. They presented it in front of a crowd at the competition in Seattle on July 29th, which was also live-streamed on the web.

Walkly provides an alternative to the AMS’s Walkhome service. The app allows the user to set a destination and an estimated time of arrival. Their trusted network of people are then notified of their trip. When they arrive at their destination, another notification is sent to let everyone know they arrived. If, for whatever reason, they don’t make it in time, the app notifies everyone and prompts them to take action. The app also provides a button that contacts everyone with the user’s exact location in case of emergencies.

Although they didn’t win, the team hopes their success can inspire others to compete in the future.

“Honestly, these competitions are so incredible, they are so much fun and a fantastic learning experience,” Anastasiya told the Queen’s Gazette. “We really want to inspire other students to get involved in these competitions because Queens has so much talent and we want people to be able to use that talent and do great things and get recognized for their capabilities on a world scale.”
You are standing on a black platform in a vast white emptiness. You see another platform across from you that seems to be glowing. An exit. But it’s too far to jump. It’s then that you notice a circular doorway. You proceed to step through it and are now entering a world of black, standing on a white platform. You see another door. As you get closer, you notice that the exit is on the other side. Finally, you are free.

This is the world of Parallax, a monochromatic first-person puzzle game created by School of Computing alumni Zi Ye and Jesse Burstyn.

Parallax started in 2011 as a project for CISC 877, taught by Dr. Nicholas Graham. The requirement was to make a unique game mechanic using a novel technology, where “technology” referred to something implemented in software, not hardware. They chose to implement seamless viewing and traversal between parallel dimensions.

“I came up with the idea,” Zi said. “There is no real story behind it, and it wasn’t really iterated on. It sort of just came to me. After I told it to Jesse, we said, ‘okay let’s do it.’”

“We were aware of Portal - who wasn’t? - but it did not inspire the idea,” he added.

Parallax didn’t always have the striking black and white visuals you see today. It went through a number of iterations of visual styles. At first, they combined the black and white with some gray tones. Object colours were not inverted between dimensions but rather it was only the backgrounds that differed. The light dimension simply had a lighter background than the dark one.

“When we ported to Unity, smooth lighting and materials were suddenly a lot more accessible to us,” Zi said. “So we decided to experiment with a style in which both dimensions looked exactly the same. This was really mind-bending to look at, but we decided it would be way too confusing for a puzzle game.”

Next, they tried a hybrid of the previous two art styles, where the backgrounds were black or white depending on the dimension, and the objects were a smooth shaded gray.

Finally, they settled on the pure black and white, full-inversion art style that they kept ever since. This aesthetic gave the game a unique look. The contrast and inversion was very effective in communicating the existence of two dimensions that were the complete opposite of each other.

After the course ended, they decided that the game had potential to become a full commercial product. So they decided to continue working on Parallax outside of school time.

And so began many pair programming sessions in the School lounge or one of the computer labs.

“There were many long nights of frustration,” Zi said. “The ability to design puzzles between two parallel dimensions is not something we were born with.”

“A lot of the early process involved making literal drawings of level layouts, quickly marking and erasing paths as needed,” Jesse said. “Essentially, we just exhausted all options until we found something that simply worked, even if it wasn’t that interesting.”

Until now, Parallax was unknown outside of Queens. But that was about to change when a friend posted a video of the gameplay on Reddit. It quickly climbed its
An early version of Parallax shown at the CISC 877 Showcase (an early version of the now annual Creative Computing Showcase).

Zi and Jesse created a visual language (seen here) to brainstorm new levels and a system for proving that it was solvable.

way to the front page and stayed there for a day.

Riding on the excitement from this, they entered Parallax in the 2012 Independent Games Festival (IGF 2012). And even though they didn’t end up winning, it gave them even more coverage. They then submitted it to Steam Greenlight, a community-voted platform for independent developers to sell their games on Valve’s popular online store. After several months, Parallax was finally greenlit and ready to sell on Steam. Now, they just needed to finish it.

Development was slow and hard. There were a few small hiatuses. They had lost a lot of their original attention. At a certain point, they had 10 levels completed with varying degrees of difficulty. However, they started to realize that they all utilized the same concepts to create difficulty. They were stuck and desperate.

To the outside world who had only seen trailers, they had a near-finished game and were simply stalling. Eventually, development came to a complete stop.

Jesse continued his MSc and eventually PhD in Dr. Vertegaal’s Human Media Lab. Zi, having finished his degree, worked at Dr. Graham’s EQUIS lab for a couple of years, where he worked alone making an online multiplayer exercise game for kids with cerebral palsy, called Liberi. The game consisted of an overworld, with 6 or 7 minigames that were basically full games of various genres, including a sandbox voxel building game, a platformer adventure, and a racing game.

“I learned a lot from these couple of years,” Zi said. “Making and playing games full-time, in retrospect, was a huge part of what enabled me to finish Parallax later on.”

Despite this experience, Zi still struggled with development. He wanted to finish Parallax, but was unsure as to how. He rewrote it several times, at one point making it a 2D sidescrolling game.

He began doubting it would ever be finished. Then, in December 2014, he entered Ludum Dare, a game competition where contestants must make a game based on the given theme within three days. His entry, “Escape Character,” won second place out of 1269 entries.

“That experience helped me learn how to develop with speed in mind,” Zi said, “and not to fixate on anything for too long.”

With his EQUIS lab experience and the Ludum Dare competition under his belt, he finally had what it took to finish. Although Jesse was no longer actively developing anymore, he provided Zi with feedback and advice, and helped promote the game. Parallax launched on Steam on March 10th, 2015, where it received mostly positive reviews (95%).

“Parallax is not a perfect game,” Zi admits, “but a game that is continually perfected without being released is completely meaningless to a developer. In the end, Parallax is a game I’m proud of, and I’m glad that it was finally published. Now I can work on other things.”
Cheryl Savery took a pretty unusual path to developing games. Her PhD brought her to Dr. Graham’s EQUIS lab, where she researched networked games and taught Game Design (CISC 226).

“I decided that if I was going to teach game design, perhaps I should have actually designed a game myself, as opposed to the many partial games I had created as part of my research,” Cheryl said.

The first step was to come up with a unique idea. She wanted to create something that would appeal to older adults and would require thinking and planning as opposed to quick reflexes. After many prototypes, she settled on a grid-based game where you swipe to combine coffee beans and water drops to make cups of coffee. The player would earn points when they get 3 or more of the cups lined up in a row. She made a quick mockup of it and let the other students in the EQUIS lab try it at lunch.

“I figured the basic idea of the game was pretty good when a half hour later I walk around the lab and almost everyone was playing instead of working,” Cheryl laughed.

With the game mostly finished, she began user testing with a few seniors who had played other games on their iPads. Much to her dismay, they were confused. While younger players seemed to grasp the gameplay very easily, it was too different from anything the older players had done before. So she went back to the drawing board for a new simpler tutorial. After a couple more rounds of revisions and testing she finally had it. Once she figured out how to submit it to Apple’s App Store, Google’s Play Store, and Blackberry’s App World, she sat back and excitedly watched people download her game.

Following Coffee Crush, Cheryl made a few other games: Circle Smash, a game that has players tapping circles to make them disappear; and CodeWord, along with its spinoff CodeWord Canada, a crossword-like game without clues that requires the player to match each letter of the alphabet to a number on the board.

In addition to making smartphone games since graduating, Cheryl has still been active in the Queen’s community, having participated in Ludam Dare competitions with fellow Computing students and alumni through the “Kingston Games” Facebook group. In December 2014, she competed with Dan Moran, Mallory Ketcheson, and Matt Ishii. They created a game called “Dog Pile” for the theme “Entire Game on One Screen.”

In May of this year, they formed 3 teams of 3 to make games for the theme “An Unconventional Weapon.” Matt Oskamp, Adrian Schneider, and Cheryl made “Night Light” where light was used as a weapon. Dan Moran, Mallory Ketcheson, and Bernard Cheung made “News Flash” where a camera was the weapon. And Matt Ishii, Galal Mounir, and Div Gupta made “Queen Bee” where social media was used as a weapon.

“Ludum Dares are lot of fun and are a great opportunity to get started in game development, to experiment with making different types of games, and to learn by working with others,” Cheryl encourages. “Check out the Kingston Games Facebook group if you are interested in getting involved.”

In Coffee Crush, players swipe to combine coffee beans and water drops to form coffee cups and score points for 3 cups in a row.

In CodeWord, players match numbers with letters to try to decipher the crossword-like puzzle.
Nik Aggarwal had always wanted to be a game designer, but his journey did not begin at the School of Computing. When he first came to Queen’s, he was enrolled in Arts with Film as his desired major. “It seemed like a natural fit for someone who played a lot of games, watched a lot of movies, and strictly wanted to be on the creative side of things,” Nik said.

During his time in Computing, he was a member of the Queen’s Game Developer Club. “I loved the QGDC for the behind the scenes look at the industry I had been following since I could remember, and discussing them with other like-minded students and professors,” Nik said. “In fact, it was instrumental in landing me my first job in the field.”

At one of the QGDC meetings, the CEO of local game company Ravenous Games came to talk to them. At the end of Nik’s final year, they made contact again when he showed up to check out some of the final projects the students in Nik’s course had been working on that year (an event predating the Creative Computing Showcase). This led to his first job in the field as a programmer at Ravenous Games.

During his time at Ravenous Games, he worked on a number of high profile mobile games, such as the Random Heroes and League of Evil series. Most of the games were platformers, his favourite genre. “I got to see how they were done in a professional environment,” Nik said, “and I learned a lot about their implementation and different approaches to platforming engines. I even got to write my own, during work on a later game.”

Nik was very excited to be given the chance to do some level design, something he had wanted to do since the beginning. The small team size and his technical education allowed him to work in both the technical and design aspects of game development, instead of being limited to just one or the other.

Like all good things, his time at Ravenous came to an end, and he found himself moving to Toronto where he found a new job at Sago Sago, working on apps for younger children in the 3-6 range.

“I was interested in the job right away because it is something unique in the industry,” Nik said. “A job like this didn’t exist a few years ago, before iPads were popular among consumers, let alone toddlers.”

Nik had always been interested in watching people play games of all types, and seeing how they figure out puzzles and walk themselves through new situations. Gameplay in this age group was particularly interesting for him to watch and even more interesting for him to implement on the development side. It presented a much different but equally satisfying challenge to solve.

During a playtest for one of his first games, Nik saw many different approaches by the kids trying to interact with them. Instead of writing any sort of tutorial or showing how it was meant to be played, he had to observe, understand, and support all of these approaches, based on how players were already trying to use them. This was one of the most intriguing challenges for Nik. He found it gratifying when many different children progress in the game in completely different ways.

Nik isn’t exactly sure what pushed him over the edge to make the switch into Computing, but he still thinks about it often and says it’s what got him to where he is today. He’s only been programming since his first year in Computing, but he already feels at home working in a small team structure with senior programmers.

“There are many students and professors who were a great help along the way,” Nik says. “And I highly recommend joining a club like QGDC if you have an interest in getting into game development!”
The School of Computing welcomed five high school interns who spent their summer immersed in computer science research and development.

**Hope Yen** developed a web-accessible database for the Masters of Public Health (MPH) program to track student practicums. This system will be used by the MPH administrators and also by current students to brief them on the types of practicums that are available. Hope was supervised by Wendy Powley and Brenda Melles (Master of Public Health Program).

**Sam McWhirter** was supervised by David Lamb and he spent the summer learning to develop Android applications using Android Studio. It is hoped that this will be introduced in our undergraduate curriculum at some point.

**Michael Kwan Chow** left his home in Toronto to spend the summer with us in Kingston. He worked with Nick Graham analyzing data from a study of the use of exergames to improve social connection among children with cerebral palsy.

**Kaitlynn Hodgson** worked with Manuela Kunz in the area of 3D modelling for image-guided surgery systems. She generated a database of virtual prosthesis components for hip and knee replacement procedures using a light scanning method. These virtual high-accuracy 3D models will be used to improve pre-operative planning for surgical interventions.

**Aidan Baksh** worked under the direction of Gabor Fichtinger on a project to measure electromagnetic tracking error in a navigated breast surgery setup.

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**Bob Tennent: 44 years of Service**

The end of an era! Bob Tennent, the longest serving faculty member in the School of Computing, has retired. In 1971, Dr. Tennent joined the Department of Computing & Information Science at Queen's when it was two years old and had nine faculty members.

As a new young professor in the early days, he taught a wide variety of subjects: programming, data structures, computers and society, artificial intelligence, compilers, and theory of computing. In recent years, his main undergraduate course has been CISC 465 (Foundations of Programming Languages).

Dr. Tennent has had an impressive research career. His most important research paper, “Parametricity and Local Variables,” authored jointly with his former student Peter O’Hearn, was published in the *Journal of the ACM*, the most prestigious publication in computer science. On invitation, he has spent sabbaticals at universities in Grenoble, Oxford, and Edinburgh. Dr. Tennent is the author of three textbooks, two of which are still in print and in use at Queen's and elsewhere.

When he became Undergraduate Chair in the School of Computing, he saw the need to improve on the crude prerequisite chart then available and developed advanced LaTeX-based technology for generating and editing attractive and informative charts for programs. This software has been open-sourced and is used at other institutions.

Dr. Tennent has been primarily responsible for several key additions to the School’s curriculum: CISC 223 (Software Specifications), CISC 260 (Programming Paradigms), CISC 220 (System-Level Programming), CISC 320 (Software Development), CISC 102 (Discrete Mathematics I) and CISC 500 (Undergraduate Thesis). He also deserves credit for his considerable work in the establishment of new programs in the School of Computing, including Computer Science and Software Design (to meet accreditation requirements), Professional Internship versions of our Honours programs, Computing and the Creative Arts, Computing and Mathematics and the Game-Development option in Software Design.

Dr. Tennent has seen Queen's University grow from an institution of 8,000 students to one of 23,000. He saw the Department of Computing & Information Science transform to the School of Computing. And he saw the field of Computing change in almost unimaginable ways. Each of us who carries a cell phone holds in our hand more computing power than could be found in the entire university when Dr. Tennent arrived.

Most importantly, Dr. Tennent has made an important difference in literally thousands of lives, through his writings, his teaching, his advising, and his work on behalf of students. He will be missed. The School wishes him the very best in retirement.
School Awards

Margaret Lamb
Howard Staveley Teaching Award

Matthew Holden
Outstanding Master’s Thesis Award

Weiyi Shang
Ph.D. Research Achievement Award

Wendy Powley
Distinguished Service Award

Andras Lasso
Research Award

Ben Cecchetto
Graduate Student Distinguished Service Award

Pat Martin
Distinguished Graduate Supervision Award

Dr. Hossam Hassanein was the recipient of the 2015 Queens School of Graduate Studies Award for Excellence in Graduate Student Supervision. Wendy Powley was appointed as Chair of the ACM-W Celebrations of Women in Computing. Dr. Ahmed E. Hassan was named CACS/AIC Outstanding Young Computer Science Researcher for 2014. Dr. Ahmed Hassan and Dr. Mohammad Zulkernine were promoted to the rank of Professor. Matthew Holden received Mitacs Globalink funding to support his research on Modelling of Surgical Workflows. Robin Dawes won the Zalman Yanovsky Award for Outstanding Volunteer Service to Literacy. Eric Rapos was awarded the Agnes Benedickson Tricolour Award and inducted into the Tricolour Society for service to the Queens community. Dr. Randy Ellis was selected as a Fellow of the Institute of Electrical and Electronics Engineers. Dr. Mohammad Zulkernine and Dr. Fehmi Jaafar successfully applied to Mitacs for an internship with OMP Music. Jenny Zou (cross-appointed from ECE) was named the 2014 IBM CAS Faculty Fellow at CASCON in November.

New Members

The School of Computing welcomed Dr. Qingling Duan and Dr. Louise M. Winn this year. Dr. Duan is a Queens National Scholar, jointly appointed in the Department of Biomedical and Molecular Sciences, whose specialty is Bioinformatics. Dr. Winn is a Professor in the Department of Biomedical and Molecular Sciences and in the School of Environmental Studies, who was offered a cross-appointment with us.

Other Recognition

Danitte Kozai
Award for Outstanding Contribution to School Life, Excellence in Teaching Assistance Award

Best Poster

Paul Strohmeier, with supervisor Roel Vertegaal
“DIY IR Sensors for Augmenting Objects and Human Skin”
ACM Augmented Human Conference

Best Paper

- Gehan Selim, with supervisors Jim Cordy and Juergen Dingel
  “Migrating Automotive Product Lines: A Case Study”
The International Conference on Model Transformations

- Tamas Ungi, with supervisor Gabor Fichtinger
  “Real Time Navigation in Breast Tumor Surgery, presented at the Computer Assisted Radiology and Surgery”
The International Society for Computer Assisted Radiology and Surgery, published in
The International Journal of Computer Assisted Radiology and Surgery

- Derek Foo, with supervisor Ahmed Hassan and SAIL Lab
  “An industrial case study on the automated detection of performance regressions in heterogeneous environments”
IEEE Software

Most Influential Paper

- James Cordy and Thomas Dean (ECE cross-appointee), along with their former student Nikita Synytskyy (now at Amazon)
  “Practical Language-Independent Detection of Near-Miss Clones”
CASCON 2014 (originally presented at CASCON 2004)
We are very grateful to have supportive alumni and friends who are inspired to make a difference at Queen's. Your support is instrumental in upholding our long-standing tradition of excellence. The School of Computing delivers an outstanding university experience, both inside and outside the classroom. We continue to attract exemplary students and world-class faculty and researchers. Thank you for making a difference through your generosity and support.

We appreciate the following alumni, faculty, staff, and friends who directed their Queen's University gifts to the School of Computing. Listed below are our benefactors over the past ten months. These donations are making a difference! Annual Giving can help us attract outstanding students and continue our outreach program.

- Dr. Selim & Mrs. Karolina Akl
- Mr. Manjunath Anand
- Mr. Carlos Bhola
- Dr. Steven & Dr. Dorothea Blostein
- Mrs. Frances Booth
- Dr. James Cordy
- Mr. Ge Deng
- Dr. Juergen U. Dingel
- Dr. Freeman Huang
- Mr. Richard McCrae
- Ms. Kim McKenzie
- Mr. William McKenzie
- Mr. W. Richard & Mrs. Susan Silver
- Ms. Megan Sprague
- Dr. Mark Staveley
- Mr. Hubert Tong
- Mr. Michael Yeung
- Mr. Yonghua You
- Microsoft Corporation
- IBM Canada Ltd
- Bank of Montreal

And of course, thanks to our many anonymous donors!

To make your gift today, please visit www.givetoqueens.ca/computing

We are very grateful to have supportive alumni and friends who are inspired to make a difference at Queen's. Your support is instrumental in upholding our long-standing tradition of excellence.

The School of Computing delivers an outstanding university experience, both inside and outside the classroom. We continue to attract exemplary students and world-class faculty and researchers. Thank you for making a difference through your generosity and support.

- $3,000/year pays for a Teaching Assistant, which helps both our undergraduate and graduate students directly.
- $1,000/year helps COMPSA run their amazing orientation program each September.
- $500/year allows us to upgrade a computer.

Canadian Celebration of Women in Computing 2016

In 2010, the Queen's Women in the School of Computing group organized the Ontario Celebration of Women in Computing Conference, an ACM-W Celebration event. This conference ran for five years at five different campuses including the University of Toronto, Western University, the University of Waterloo and the University of Guelph. The conference has been wildly popular, attracting more than 300 attendees from Ontario in 2015. In 2016 the conference is transitioning to a nation-wide celebration with more than 500 attendees expected from across Canada.

The event will be held in Ottawa on January 22/23, 2016. For more details - and how you can attend, present, or sponsor - check out the website at http://www.can-cwic.ca.

JOIN US AT THE FOLLOWING UPCOMING EVENTS:
- Fall Preview - Nov 7, Nov 21, Biosciences Atrium
- March Break Open House - Mar 21
- Creative Computing - Mar 31, Biosciences Atrium

For more events, go to: www.cs.queensu.ca/calendar

SCHOOL OF COMPUTING DISTINGUISHED SEMINAR SERIES:
Want to keep in the seminar loop? Please send your request to: inquiries@cs.queensu.ca

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You may send address changes to records@queensu.ca

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