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Greetings from

Queen’s Graduate Computing Society

It is once again with great pleasure that I say HELLO!

I would like to personally thank all members of the Queen’s Graduate Computing Society (GCS) for all the hard work they put into the last year, as well as our honorary members (you know who you are!), and all the graduate students. Because of this wonderful community of people, we were able to enjoy many a game night, pub nights, and a most memorable PaintNight!

The 8th installment of the Queen’s Graduate Computing Society Conference (QGSC) featured many of the graduate students’ work this year. I am always impressed with the diversity of research projects in the School, and of their top notch quality. QGCSC is entirely run by volunteers and members of the GCS, and I am looking forward to seeing our new students there next year!

In addition to providing resources and representation, GCS exists to make student life within the School a wonderful experience, and we continually welcome input, suggestions and questions regarding our events, how to get involved with GCS, and graduate life in the School.

I look forward to meeting our new graduate students and welcome you all to the School this year. We hope to see everyone at our events and we look forward to a fantastic year.

Emese Somogyvari
GCS President

The View from Goodwin Hall

As many are aware, I have been appointed as the new Director of the Queen’s School of Computing (QSC). This is an honor and responsibility, especially at this time where Computing is booming, where we had record numbers of applicants from high School (close to 3000), and admitted 170 first-year students. Indeed, computing is at the heart of everything our society does, from business to health care, from education to transportation, from communications to entertainment. The importance of computing for the future of our societies has been recognized by politicians, industry leaders, and business executives worldwide.

As part of my “responsibilities”, I found that it has been customary that the director writes a welcome message in the Newsletter. In my first message, I thought I would talk about plans and vision for our School. I will be lying if I said that I have brilliant plans that are going to turn everything around and that our affairs are going to be rosy. However, I know that we have wonderful alumni, faculty, staff and students who can deliver.

We are bringing back the School Innovation Council composed of a select group of QSC alumni. The purpose of the Council will be to review the School’s programs and initiatives, and advise on potential improvements or new directions appropriate to better serve our students and graduates. The council members will work closely with a new Strategic Planning Committee whose mandate is to assess the current state of the School including our graduate and undergraduate programs, and make recommendations of where we want to be in 5, 10 or 20 years from now. Please send your suggestions and comments to SPC@cs.queensu.ca.

Queen’s has made excellence in Data Analytics an integral part of its research strategic plan. At the core of Data Analytics are algorithmic techniques taught and developed here at the QSC. The QSC is currently engaged in several initiatives related to Data Analytics from new course offerings to new program developments and research directions. Follow the School web pages for news and details.

On behalf of COMPESA, it is with the greatest pleasure that I would like to say a huge hello Summer has flown by, and the new school year brings many exciting changes and opportunities for undergraduate Computing students. We will be welcoming one of our largest classes this fall, and we are thrilled at the diverse set of individuals and skills that are entering this school!

This year COMPESA is focusing on strengthening community relations, creating tangible opportunities for Computing students, and improving student life. We have restructured COMPESA Council, offering many new positions for students and community activities that students can get involved. We are working to create events to allow students to socialize and build connections in both formal and informal settings. In terms of community relations, we are putting in place a buddy program to help transfer and exchange students in computing. COMPESA is also working to create an alumni speaker program, we will be working to help prepare students for future careers, by hosting resume workshops and by helping students meet mentors and speakers with relevance to their interests.

During the summer, the Tech Committee had been busy getting ready to welcome the incoming class of 2021. Incoming students were given a chance to cheer, dance and learn about the traditions and opportunities that are tied to being a Queen’s student. They have faced the nurses in an intense dance-off, painted coveralls, and fought bravely in the battle to win the Comp Sci Cup.

The year, students will be continuing attending RKY Camp, a non-profit organization that runs an intense summer camp programming for children for all has broken, as part of a charity event during Orientation Week. This strengthens bonds between the students, as well as the bonds with the community at large.

I am incredibly honored to be working with such an amazing team of people. This year, we hope to see everyone at our events and we look forward to a fantastic year.

Alex Wojaczek
COMPESA President

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The month of August saw MPP Sophie Kiwala, Kingston Mayor Bryan Paterson, incoming dean of the Faculty of Arts and Science Barbara Crow visit the School to learn more about the innovative research that happens in our research labs.

MPP Sophie Kiwala and a COGECO film crew were in the School’s Perk Lab on August 10, to shoot an episode for the TV series “Conversations with Sophie”; quoting Ms. Kiwala, “a show featuring some of Kingston’s most inspiring people.”

The film concentrates on NaviKnife, a collaborative project between the School of Computing’s Perk Lab and the Department of Surgery. NaviKnife is a novel surgical navigation technology, invented, patented and clinically tested at Queen’s. Much like a miniature GPS device, NaviKnife allows surgeons to visualize breast tumors and the position of the surgical tool in real-time with the use of electromagnetic position tracking. NaviKnife aims to eliminate surgical failures due to incomplete resection of the tumor while also reducing the amount of breast tissue resected thus enhancing cosmetic outcome and eliminating the need for reconstruction surgery.

The film features a hands-on demo of NaviKnife and interviews with some of its principal developers, including Drs. Gabor Fichtinger, Andras Lasso and Tamas Ungi of the School of Computing and Drs. John Rudan and C. Jay Engel of the Department of Surgery. The film is expected to air in early October.

On the same day, Kingston Mayor Bryan Paterson took part in a campus tour that included visits to the Perk Lab and Human Media Lab.

Finally, on August 16, incoming dean of the Faculty of Arts and Science Barbara Crow, along with Associate Dean Nick Mosey, visited the School for a tour of the Perk, Medical Informatics, Human Media, and EQUIS labs.

“I appreciated the breadth of your areas of study and commitment to Computing,” Crow said.

“I was very impressed with the Labs and how articulate the students were about their participation in research projects.”

Jim Cordy Receives Prize for Excellence in Research

Every year the Office of the Vice Principal of Research awards major research contributions - either recent or recently recognized - from a Queen’s researcher. This year, our very own Jim Cordy was one of the lucky recipients.

From the Vice Principal’s website: “Celebrating major research contributions either completed or recognized in recent years, the Queen’s University Prizes for Excellence in Research are the highest form of research excellence recognition from Queen’s.”

The award comes with a $5000 prize and is given to researchers across each of five categories: Humanities, Social Sciences, Natural Sciences, Health Sciences, and Engineering. Recipients are also invited to give a featured lecture.

The Gazette writes:

Dr. James Cordy’s research has led to the development of methods and tools that make the management of today’s large software code bases possible. His work has been used to safely make systematic modifications to large code bases — notably used by Canadian banks to solve the Year 2000 (Y2K) problem — and for identifying trouble spots in other complex programs, such as those behind the development of autonomous vehicles. In his lecture This Means That: Programming by Transformation, Dr. Cordy will dive deeper into the development and management of complex computer programs.

You can read a full bio of Dr Cordy in the Spring/Summer issue of eAFFECT.
Q’Nial, the language interpreter developed at Queen’s University for the Nested Interactive Array Language, Nial is now available in a revised version that supports both 32-bit and 64-bit architectures. The open source code can be used to build versions for both Unix and Windows operating systems.

Nial is a very high level, general purpose, language based on a formal model of Array theory, developed by Michael Jenkins and Trenchard More, that influenced the development of APL2. Q’Nial is a C-based interpreter with efficient, tuned, implementations of basic array operations.

As such it supports computations of large data sets that can be numeric or symbolic data. The programming style is highly functional but can be used in an interactive way to experiment on data and build functions incrementally. It combines concepts from APL, Lisp and functional programming and supports Algol-like control structures.

The implementation is competitive with other array languages such as J and APL as well as other interpreted languages with array libraries (Python/NumPy, Lua/Torch).

Nial has been used for rapid prototyping in areas as diverse as insurance underwriting, question/answering systems, composing music in a specific style, and a variety of artificial intelligence applications. The repository is located at http://www.github.com/danlm/QNial7. This repository includes binaries for OSX, Linux, Windows, and Raspbian that can be downloaded and used directly.

The Summer issue of the Queen’s Alumni Review prominently featured the School of Computing throughout in their technology issue.

The issue contains a number of stories by and about people in the School and the work they do.

Wendy Powley talks about her passion for computing and how she is using that to empower women in the field. Undergraduates Annabel Kramer, Karina Kim, Jessica Dassanayake, and Melissa Mangos talk about the Sudo initiative and how they are helping women in the Kingston community learn to code (Daisy Barrette, Cara Falcon, Callum Tomkins-Flanagan, Emily Crawford, Omar Toutounji, and Shubhi Sharma are also part of this initiative). Former Director Selim Akl talks about natural computing, the idea that the key to understanding Nature boils down to the bit and not cells, molecules or atoms. Finally, the cover story features Roel Vertegaal talking about the Human Media Lab and the innovative research that they do.

For these stories and more, check out the whole issue on the Alumni Review website.

Hundreds of interested faculty, students, and staff gathered at the Biosciences Complex on Thursday April 6th for the Queen’s School of Computing’s annual Creative Computing Showcase. The event highlighted the work of the School’s undergraduate and graduate students with hands-on demos, presentations, and posters from a selection of our courses, with topics including Game Design and Game Technology, Computing and the Creative Arts, 4th year projects, and more. Congratulations and thanks to the organizers and participants.

For these stories and more, check out the whole issue on the Alumni Review website.
This past year saw many staff and faculty changes at the School. Long-time faculty member Jim Rodger retired from teaching. In happier news, we received two new faculty positions. Our first new hire was Farhana Zulkernine, who was already overseeing the Cognitive Science program and continues her work in data analytics. Our second hire, joining us this fall, was Joshua Dunfield who comes to us from the University of British Columbia.

On the staff side, administrative secretary Lynda Moulton retired in May after decades of service to the School. She leaves the position to Carly Napier who came to us from Career Services. In addition, undergraduate program assistant Irene LaFleche retired from the position in June (see page 9). She leaves us in the capable hands of Karen Knight, who trained with Irene prior to her retirement. Karen came to us from the Smith School of Business and served as senior secretary in the main office on the 5th floor before taking this new position, even pulling double duty as she trained. The senior secretary position has now been filled by Erin Gunsinger.

Tech staff also saw many changes this year. Long-time senior systems specialist Gary Powley retired; Ben Hall now fills the position of senior business analyst in his stead. Ben’s former position was then filled by recent PhD graduate Doug Martin (Ed’s note: Hi!), who covered the position part-time (while completing his thesis) for Ben when he was on parental leave. Dave Dove left his role as digital systems manager to focus on teaching. Queen’s Engineering alumnus Aaron Visser, who previously worked in the Human Media Lab, now joins the team as Systems Analyst.

We wish a very happy retirement for those that have left us and a warm welcome those joining us!
School Awards

Matthew Holden (pictured) and Peter Chen
PhD Research Achievement Award

Eric Rapos
Ian Herbert Graduate Student Award
Graduate Student Distinguished Service Award

James Cordy
Distinguished Graduate Student Supervisor

Wendy Powley
Howard Stanley Teaching Award

Graduate Student Distinguished Service Award

James Cordy
Distinguished Graduate Student Supervisor

Wendy Powley
Howard Stanley Teaching Award

Matthew Holden (pictured) and Peter Chen
PhD Research Achievement Award

Eric Rapos
Ian Herbert Graduate Student Award
Graduate Student Distinguished Service Award

Wendy Powley
Howard Stanley Teaching Award

This past year saw two key people, Selim Akl and Irene Lafleche, leave us after many many years of service. To honour all that they have contributed to the School over the years, we presented them with a special Lifetime Distinguished Service award. Congratulations, and enjoy your newfound time off!

Other Recognition
• Dr. Gabor Fichtinger and Dr. C. J. Engel (Surgery) received a CIHR Collaborative Health Research Projects grant.
• Undergraduate researchers Rachael House and Anna Ilina were the recipients of Ontario-Baden-Württemberg Summer Research Program scholarships.
• Dr. Hossam Hassanein was elevated to IEEE Fellow.
• Dr. Ahmed Hassan received a Special Recognition Award for Influential Research.
• Dr. Randy Ellis was awarded the August-Wilhelm Scheer Visiting Professorship at Technical University of Munich.
• Farzin Mousavi was elected to Royal Society of Canada’s College of New Scholars, Artists and Scientists.
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.

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

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And of course, thanks to our many anonymous donors!

(A partial list of donors was made available to us. Apologies if you donated and are not on the list. We appreciate your contribution!)

**50th Anniversary Celebration**

The School’s 50th anniversary is coming up in 2019 and we want your memories about your time here over the past 50 years.

Send us your photos, your funny stories, anything you have or remember about your experience at Queen’s. Whether you’re a former undergrad or grad student, faculty, staff, or even just a friend, we want to hear from you!

Send anything you have to memories@cs.queensu.ca and make sure to label photographs as best as you can.

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

**Join us at the following upcoming events:**
- **Fall Preview** - Nov 4, Nov 18, Biosciences Atrium
- **March Break Open House** - Mar 10
- **Creative Computing** - Apr 5, 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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