Prof Offers Tips to Protect Yourself Online

When was the last time you read a company’s privacy policy before sharing your personal information with them? If you’re like most people, you probably skip that step.

Prof. Rozita Dara, School of Computer Science, wants people to be more vigilant about what they share online, and that includes reading privacy policies before filling out forms that ask for personal data, such as while shopping online or downloading an app.

Online privacy measures are constantly being challenged, she says, so it’s important to “share your data with care.” Public institutions and retailers are responsible for protecting the data they collect, but individuals are also responsible for what they share. “As soon as your data is out in the borderless world, they will have a life of their own” she says.

When reading privacy policies, Dara advises that you pay close attention to the type of data being collected, how it’s being used and whether the information will be shared with a third party. Her research looks at privacy policies and how to make them more transparent and easy to understand.

Dara is also working with the Upper Grand District School Board to teach students how to protect themselves online. Teenagers and young adults are particularly vulnerable to having their personal information used against them because of how willing they are to post such information on social media. Sharing your date of birth, phone number, home address and personal preferences can put you at risk.

“At the end of the day, it’s up to us to be conscious of the digital footprints that we leave online,” she says.
The success of our alumni is directly related to their success as students. The College of Physical and Engineering Science offers diverse programs taught by world-renowned faculty using state-of-the-art equipment and lab facilities. Our learner-centred focus provides students with the skills they need to excel in the classroom and in their future careers.

But our growth depends on your support. We are currently working toward four major fundraising priorities: 1. College-wide international graduate student scholarships and postdoctoral placements with a focus on increasing the number of women in the School of Computer Science and the School of Engineering; 2. Chair in Women in Computing in the School of Computer Science; 3. Chair in Design in the School of Engineering; and 4. Undergraduate scholarships with a focus on mathematics and statistics.

There are many other ways to get involved with the college. By becoming a mentor, you can provide our students with a first-hand account of what your career is like and the path you took to get there. Hiring co-op students gives them real-world experience that can help them plan their future careers.

We look forward to hearing from you. For more information about alumni events and how you can get involved, please contact Annie Benko, alumni advancement manager, at abenko@uoguelph.ca, or 519-824-4120, Ext. 54568.

Anthony Vannelli
Dean, CPES

A traditional aboriginal performance opened the event.

Following a $1-million gift from RBC in 2013 to study water-related issues in First Nations communities, U of G showcased the results of teaching and research projects by faculty and students.

Ryan Lauzon, fisheries assessment biologist for the Cheppewas of Nawash Unceded First Nations, is studying the effects of development on aboriginal fisheries in the Great Lakes. Using fyke nets to trap live fish, he and his research team collected hundreds of fish in the summer and fall of 2014 to establish a baseline population of each species.

“There’s so much development going on,” he says, “and the Saugeen Ojibwe are very concerned about the impact on fisheries and the environment. They have the largest commercial fishery in the Great Lakes, and there’s a very strong interest to protect that and the land.”

RBC’s gift helped fund equipment and hire faculty and students from a variety of disciplines at U of G, including computer science, engineering, environmental sciences, geography and integrative biology.
U of G Names Co-op Award Winners

Co-operative education provides students with the opportunity to learn about prospective careers before graduation, and co-op employers make that possible. Both co-op employers and students were honoured at the 2014 Co-op Awards banquet in March.

Guelph-based Canadian Solar Inc. was honoured with the 2014 Guelph Co-op Employer of the Year Award. The company has hired U of G co-op students for the past five years, providing them with practical learning opportunities outside the classroom.

The 2014 Co-op Student of the Year in Science and Engineering Award went to Li (Danny) Liang, a fourth-year biological engineering co-op student.

“During his work term, Danny made significant contributions and improvements to a large project and successfully took on new roles,” says Guru Sundar, manager, clinical development at Fujifilm VisualSonics.

Tim Martin, a fourth-year water resources engineering co-op student, received the Collin Cureatz Memorial Award for Co-op Student Involvement for his work with Samaritan’s Purse Canada.

“Tim went above and beyond his work role,” says Dan Rossi, program manager at Samaritan’s Purse Canada. “Tim would stay over his work hours and continue serving community members in High River who were affected by the Alberta 2013 floods.”

Matthew Thompson, a second-year engineering student, studies in the Thornbough Building.
Soy May Help Fight Germs

In the ongoing battle against antibiotic-resistant bacteria, the newest weapon may come from plants. Rekha Dhayakaran, a PhD student in the School of Engineering, won first place in Project Soy’s graduate category for her research on the antimicrobial properties of soy. Project Soy is an annual competition that invites students to develop new products using soy.

Her adviser, Prof. Suresh Neethirajan, suggested she study the phytochemicals found in soy, which the plant uses as a defence mechanism against foreign invaders such as fungi and parasites. “We wanted to see if those isoflavones had antimicrobial efficacy against bacterial pathogens,” she says.

Working with John Shi at Agri-culture and Agri-Food Canada, they extracted and purified the isoflavones. At U of G, the isoflavones were tested on four types of bacteria: methicillin-resistant Staphylococcus aureus, Pseudomonas aeruginosa, Listeria and E. coli. The isoflavones were found to be most effective on the latter two bacteria.

Dhayakaran says her research has potential applications in the food industry to help prevent spoilage and in the medical field to treat antibiotic-resistant bacteria. She also studied soy peptides and found them to have antimicrobial effects. Previous research has shown that both isoflavones and peptides damage the cell membrane of bacteria, causing cell death.

“I would like to thank my adviser Dr. Suresh Neethirajan and co-adviser Dr. John Shi for trusting me and giving me an amazing opportunity to work with them,” says Dhayakaran. “It was by their support, guidance, encouragement and motivation that I was able to participate and win Project Soy.”

As exams approach, the engineering atrium in the Thornbrough Building is filled with students.
Prof Treks to Everest for Charity

Computer science professor Dan Gillis, B.Sc. ’00, M.Sc ’02 and PhD ’10, says he’ll never forget the sight of Mount Everest during a fundraising expedition with friend Rick Chin, M.Sc. ’08, in December 2014. The two raised money to help people with vision problems.

The trek to the world’s tallest mountain aimed to raise one dollar for every metre of the base camp’s height above sea level ($5,361 to be exact) for the Canadian National Institute for the Blind. At press time, they had raised just over $2,300.

Prof. Dan Gillis, left, and Rick Chin

Tech Showcase Draws Employers and Students

Choosing a career path is one of the biggest decisions a student will make. Trying out different jobs through co-op placements can help make that decision easier.

That was the aim of the Guelph Tech Showcase at U of G, which featured local employers in the tech industry that were interested in hiring or collaborating with students.

One of those companies was Blue North, a Guelph-based firm that specializes in marketing and data analytics.

“We’re here to connect with students and let them know about us and what we’re doing,” says Scott Beech, vice-president of technology.

Blue North was looking to hire a summer student.

Sharing knowledge through co-op placements benefits both students and employers. “We can learn from them and give them the opportunity to experience the real world,” says James Munroe, BA ’85, data specialist. “They can learn other skills that they wouldn’t learn in an academic environment and some real-world applications.”

Event organizer Greg Klotz, School of Computer Science, says it’s important for students to experiment with different jobs before graduation. “It helps them find out what they like, what they don’t like and what fits for them.”
During flu season, schoolchildren are often the first to become sick because they’re at greater risk of contracting the virus. Anu Stanley, a 2014 master’s graduate in mathematics and statistics, studied absenteeism among schoolchildren to predict flu outbreaks earlier, which could help stop the spread.

“We’re trying to detect the outbreak at the earliest possible stage so we can put in more intervention measures before it goes into a widespread outbreak,” says Stanley, who looked at the effectiveness of disease surveillance methods. “My study was applied to a real problem and finding a real solution.”

Syndromic surveillance involves monitoring the behaviour of people who are sick, such as taking time off from work or school, buying over-the-counter medications or visiting a doctor’s office. “Monitoring these symptoms rather than waiting for a diagnosis gives you an early prediction,” says Stanley.

School absenteeism is a strong predictor of outbreaks, she adds, because children are particularly susceptible to acute respiratory viral infections, and the flu virus spreads quickly in schools due to close contact between children.

Most public health units use a surveillance system with a threshold of 10 per cent absenteeism per day at any school. “My role here is that I want to improve those methods,” says Stanley. “The problem with that method is that it doesn’t look at the individual school’s statistics. Every school is unique.”

Elementary schools have a lower baseline for absenteeism, she explains, so the 10 per cent threshold would apply. High school absenteeism, however, has “a lot more noise,” she adds, referring to non-illness-related causes for absenteeism such as skipping class. Not taking these factors into account can “set off the alert for no reason,” says Stanley.

To confirm whether an outbreak was underway, she checked hospital data to see if any cases of influenza had been reported. “If there’s a hospital case, that means there’s a true alert. If there isn’t, that means it’s a false alert.”

Professor Wins Best Paper Award

Chemistry professor Adrian Schwan was honoured with the 2015 Canadian Journal of Chemistry’s Best Paper Award.

“When I first learned of the journal’s intention to award a prize for best paper, I laughed to myself as I pondered my chances,” he says. “So when the phone call came, it was utter surprise! I am very pleased that the referees, editors and award judges recognize the importance of fundamental investigations into organic chemistry reactivity.”
Not many people can say they started their own business as a student, let alone a business that continues to achieve great success long after they graduated.

In their final year of co-op at U of G, Devin Gauthier, BA '05, and Mark George, B.Comp. '05, started their own business called Wired Effects. “Ten years later, we’re still here,” says Gauthier. Since then, the company changed its name to Sandbox Software Solutions and currently employs 14 people, including U of G co-op students and alumni. The Guelph-based company also has an office in Halifax, N.S.

The company specializes in developing customized web applications. “When a client can’t find something off the shelf that meets their needs, we can step in and build something from the ground up to meet those needs in an efficient way,” says Gauthier.

His entrepreneurial spirit dates back to his childhood when he sold hockey cards out of his grandmother’s garage. “From that time I knew I wanted to be my own boss,” he says. “I’ve always been the type of person who appreciates a lot of variety in their work and a lot of challenges, and I think entrepreneurship in the tech industry really offers that.”

As co-op students, Gauthier and George seized the opportunity to become entrepreneurs. Not having a portfolio of previous work made it difficult for them to land their first client, but their first co-op employer took a chance on them and hired them as consultants. Now 80 per cent of their business comes from existing clients and referrals.

Hiring co-op students has been an important part of the company’s growth. “It’s extremely valuable for us as an employer because it ensures we stay current with the curriculum and what students are learning,” says Gauthier. “As a small business, it also gives us an advantage in terms of identifying students who would make ideal long-term employees.”

The company has also sponsored awards and scholarships for co-op students in computing and information science and participates in mentorship events.

**Director Reappointed to School of Engineering**

Prof. Hussein Abdullah’s term as director of the School of Engineering has been renewed for another five years, starting May 1, 2015. He joined U of G in 2000.

In a letter announcing Abdullah’s reappointment, CPES dean Anthony Vannelli praised him for his leadership of the school over the past five years. “I am pleased that he is agreeing to continue in this important role,” says Vannelli.
When Mark Lautens, B.Sc. ’81, was an undergrad, he was faced with the option of working a summer job in a steel mill or an organic chemistry lab at U of G. He chose the latter, and by the end of the summer, he says, “I was completely hooked on chemistry.”

That summer job has since led to a career as a chemistry professor that spans almost three decades at the University of Toronto. His career highlights include being named to the Order of Canada in 2014, but he says none of his accolades would be possible without the help of his students, who range from undergrads to postdocs.

Those students are getting the same type of experience in his lab that he did as an undergrad working in the labs of Prof. Gordon Lange at U of G, and many have followed similar career paths to becoming researchers and professors.

Lautens is also passing on the thrill of discovery to his students. “You make a molecule that’s never been made in the history of humankind and you wonder, ‘Is it good for something?’” he says. “Maybe it is or maybe it isn’t, but at least you’ve made something that’s brand new. I think that’s kind of exciting.”

His research at U of T involves streamlining the process of developing new drugs by reducing production costs and time.