Curiosity Finds Evidence of Dried Stream on Mars

JACOB TERRY
2T NANOTECHNOLOGY

NASA has put much effort into finding intriguing ways of keeping Curiosity in the news since it launched its Mars mission. Apart from checking in on Foursquare, Curiosity has embarked on more intriguing scientific frontiers, primarily in the soil analysis field. Now, Curiosity has found possible evidence that a stream once "ran vigorously" in the region the rover is exploring.

Dubbing the rock outcrop Hottah, after the lake in the Northwest Territories, NASA believes that the gravels observed near the rocks are similar to those found on Earth. The size of the gravels suggest that the water would have moved at about three feet per second, with a depth that would cover a variable level of a human leg. While this isn't the first time scientists have posited that water has flowed on Mars, it is the first time however that gravel transported by water has been found, suggesting more concrete evidence of a riverbed.

Two other rock outcrops, Link and Goulburn, were previously observed on Curiosity's path towards the Glenelg region of Mars, where Curiosity hopes to discover more information on geological features and soils. Consistent throughout these outcrops are rounded stones, which could have been transported over large distances and softened over very long periods of time. Researchers believe it flowed billions of years ago, and tentatively opine that it would have been active for over a thousand years.

Theories of water on Mars began in the early 1970s, when the Mariner 9 spacecraft found and took images of what appeared to be dried up river channels. The Viking orbiters then found eroded valleys that likely would have required massive amounts of water to carve out. The presence of magnesium sulfate in the soil samples found by Viking 2 highly suggested that water was in the area, since it contains chemically bound water. Moving forward a few decades, the Odyssey and Pheonix rovers found evidence that much of the ground is covered in ice.

In a nearby region between the Gale Crater and Mount Sharp, a fan of material has deposited from a series of channels that are presumed to have flowed long ago. The shapes of the gravel in these deposits range from angular to rounded, in multiple sizes, which is further evidence of water flow. The variation in sizes rules out wind as a factor in forming different rocks.

Water evidence, of course, could be proof of life supporting conditions on Mars. While we wouldn't necessarily be able to be entirely self-sufficient on the

10 cm
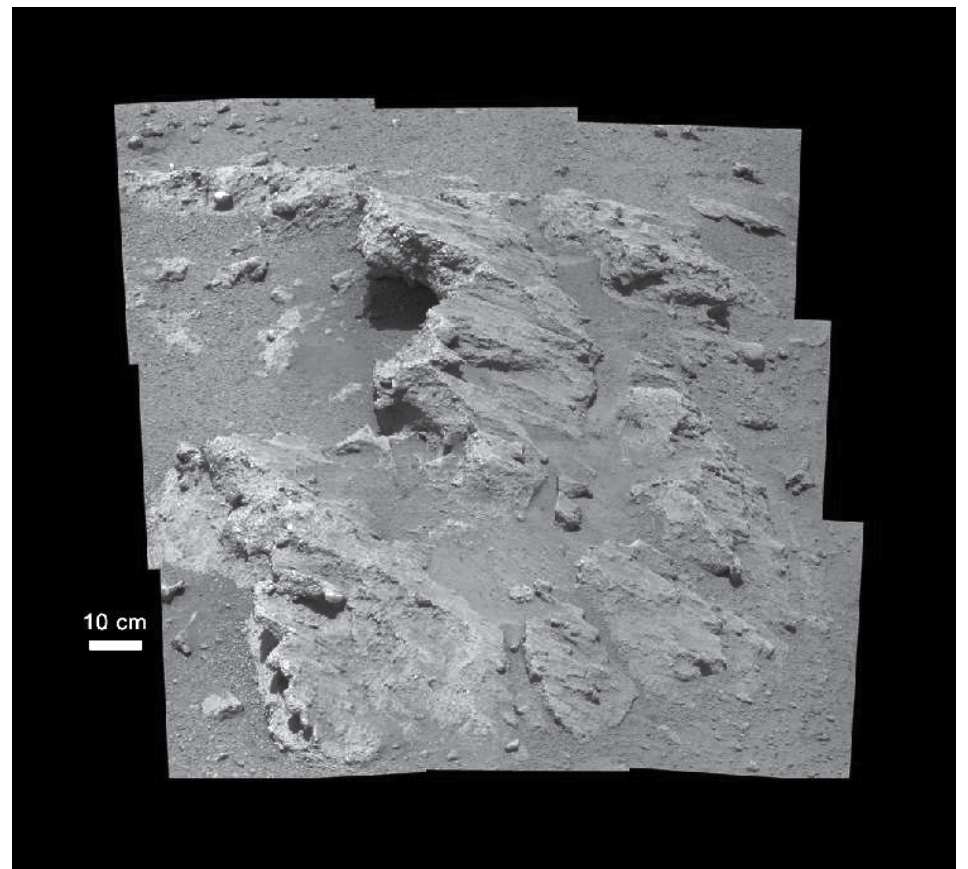
NASA
Curiosity captures remnants of ancient streambed, "Hottah", on Mars

frigid planet, this discovery could lead to more space research such as the age of the solar system and how Mars was able to support life. The two year mission of the Mars Science Laboratory, to investigate the Gale Crater for favourable microbial life conditions, appears to be off to a great start.

Mission to the Mantle: Next Step in Human Discovery

NACHIKET SHERLEKAR
2A NANOTECHNOLOGY

Humankind has been pushing the boundaries of discovery for millennia, sending instruments to outer space, to the moon, and from other planets to the depths of our oceans. However, the interior of the Earth itself has remained relatively unexplored. That is set to change in the next decade, with a team of Japanese and UK scientists developing a $1 billion project to drill through the six kilometre layer of crust to reach the Earth's mantle, a highly viscous layer of our planet lying between the outer core and the crust, and retrieve a sample. This new project, called The Integrated Ocean Drilling Program (IODP), comes after many previous attempts that yielded little success when it came to actually reaching the mantle of the Earth.

The mission is being carried out in one of three possible locations in the Pacific Ocean, all of which were chosen because the thickness of the Earth's crust in these spots is very small, about six kilometres, as opposed to a thickness of about 60 kilometres over land. In addition to the technological problem of building the required drill, being able to transport it to the bottom of the ocean is also a big challenge. The latter task is being undertaken by a Japanese-built deep-sea drilling vessel. Dubbed 'Chikyu', meaning 'Earth', this vessel was first launched in 2002 and is capable of carrying up to ten kilometers of drilling pipes. It possesses on-board research facilities such as borehole observation, microbiological analysis, sampling processes, testing laboratories, and other equipment.

Damon Teagle of the University of Southampton, UK, is one of the researchers on the project. He described the procedure of drilling all the way to the mantle as trying to align a steel tube the width of a human hair with a 1/10mm hole when it's at the bottom of a swimming pool. This is a massive technological feat, and considering the enormous amount of money and effort put into the mission, one can safely say that the samples collected would rival moon rocks in terms of scientific rarity.

The drill for the project will be used to bore a hole just 30 centimeters wide, which is itself an engineering feat. Since the idea is to retrieve a sample, the drill would have to be used without a riser (drills that use double pipes for venting gas), meaning they would have to pump seawater down through the hole with enough pressure to force a bit of the mantle back up to the surface. The drill bits for the operation would have to be used under extreme conditions of temperature and pressure (300 °C and 2,000 atmospheres). As such, with exis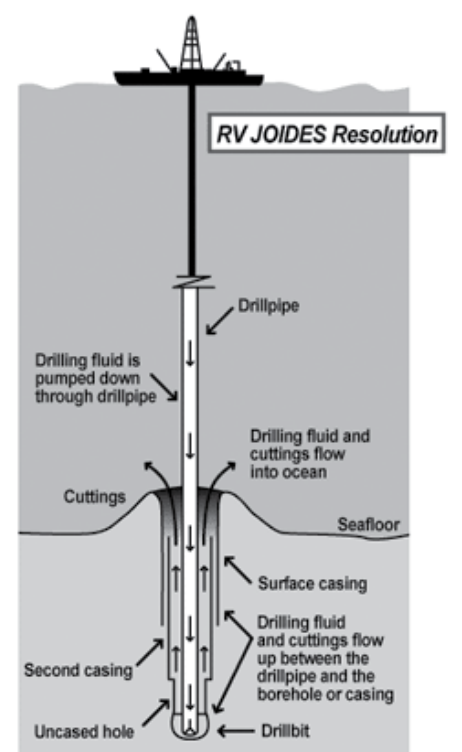ting technology, these drill bits have a lifespan of only about 50-60 hours under these conditions. This means that it could take years to drill all the way down, unless technology improves.

The first mission to reach the mantle was undertaken by a team of US scientists in the early 1960s. "Project Mohole", named after Andrija Mohorovicic, a Croatian meteorologist who first discovered the boundary between the crust and the mantle, was initially given recognition, even from President John F. Kennedy, but was shut down in 1966.

Why all this fuss just to get a bit of molten rock, you ask? After all, one can just wait for the next volcano to happen and retrieve some mantle sample that has come straight to us, instead of digging to get some. However, scientists wish to find a representation of the physical conditions within the mantle, and this is not provided by volcanic rock. This information will help us deduce the reason behind earthquakes, tsunamis, eruptions and other seismic movement, as well as the origins of the Earth itself. Also, the nature of the Moho layer, a transitional layer between the crust and the mantle will be explored. In addition to the structure and composition of the mantle, the project will focus on searching for evidence of microbial life on the way down to the mantle. One might think this is unlikely considering the high temperatures, but previous instances of life existing at temperatures up to 120°C have been recorded.

If all goes well, the IODP hopes to start the drilling process by 2020. With the information ultimately obtained, we hope to glean a little more insight about the working of our planet and the universe, and proudly check off another box in our long list of achievements.

RV JOIDES Resolution
Drillpipe
Drilling fluid is pumped down through drillpipe
Drilling fluid and cuttings flow into ocean
Cuttings
Seafloor
Surface casing
Drilling fluid and cuttings flow up between the drillpipe and the borehole or casing
Second casing
Uncased hole
Drillbit

clas.ufl.edu
The RV JOIDES Resolution, a 10000-ton drilling vessel

Letter From the Editor
An Ode to the Job-Searching Student

FARZI YUSUFALI
3B NANOTECHNOLOGY

Hello, my good fellow! Now, that I've settled into my awesome-sauce chair (it's not really that awesome), I feel comfortable in saying "This is a message from the desk of *the Iron Warrior*." Before I embark on the topic of this editorial, let me apologize to the readers who actually read my editorial last issue and were dissuaded from reading any future installments due to my failure at being interesting.

It should follow that I refrain from getting personal but, instead, talk about co-op and the different ways to go about finding the right job for you. If you're not blessed in having a plethora of job interviews (through JobMine) as you are a first year or you don't have many job postings that are related to your program, then don't fret. There are other ways to make sure that you have a job once you have finished exams and are ready to go on your respective co-op terms.

If you're a first year, I'm not going to lie to you: getting your first job is going to be tough and will be especially so if you don't have work experience prior to coming to university. If you are using JobMine, don't be discouraged if you don't get an interview during the first round; there is still a continuous phase in which plenty of jobs will be posted, some of which are more interesting than those in the former round. I will, however, warn you about one thing when it comes to finding a job in the continuous phase: there are infinitely more postings in this round and you will have to check every three days for any interviews as there is no definite timeline. With that said, expect to spend a lot more time on JobMine than you have already.

If you are in a program that doesn't have any job postings due to its inherent nature (Nanotechnology and Geological Engineering are good examples), then you are going to find job hunting tough because of the stiff competition for those positions. If you're a first year in this type of program, then that's a double-whammy! Not only do you not have enough job postings but, more likely than not, you're going to fighting a bunch of upper years for those jobs who have more relevant work experience than you.

At this point, co-op job hunting sounds like a nightmare but I'm here to give you a couple of alternative processes in procuring your co-op job and provide some tips to make your life a lot easier.

If you're a first year and you're looking for a job in your town that pays well, then you have set your expectations too high. You need to be open to moving away from home (or within commuting distance of home) as this will greatly increase the number of job op-

tions you have. With that, lowering your expectations to the type of job you are looking for also helps, especially if you don't have the experience to take on the tasks that the more interesting positions require. Your best option in this scenario is to exploit any connections that you or your family has to acquire a semi-engineering job. Another way to get a job would be to ask your professors and administration on campus for a job for the duration of your first co-op term. For instance, working in the residences at the front desk will allow you to develop technical skills as well as soft skills that will be very useful when looking for co-op jobs in subsequent terms.

If you're in a program with a less-than-satisfactory helping of postings, unlike Computer, Electrical or Software Engineering, I'm sorry to say but JobMine hunting is not going to get that much easier as you go through university. As I said before, if you're a first year, then, unfortunately, your luck might just run out because you're going to be competing with upper years for those jobs. While this would require more time spent on JobMine, you could try applying for jobs outside your program which better fit the skills you have in your repertoire. If all else fails, where there are three category columns to input your engineering program under Job Inquiry, add Engineering "everything" as another category or another engineering program that is similar to you in terms of its applications. For instance, a Software Engineering student could apply to Computer Engineering or Computer Science depending on whether your interests are research-oriented (for which Computer Science would be the right choice) or not.

Now here's something that Career Services won't tell you; using JobMine is not mandatory – in fact, it shouldn't even be deemed highly recommended. Some (including yours truly) have found that looking for a job outside of JobMine is a lot more fruitful than going through the process set up by the university. On top of that, more freedom comes with your job description because there has been no precedent set for co-op students; this could be a great opportunity to show your potential by assisting on bigger projects and taking initiative. Think of it this way, you're less likely to do repetitive work that other co-op students have done before if the employer won't know what to expect from a co-op student.

While this editorial is about co-op job hunting, don't discredit the usefulness of honing your interview skills and updating your résumé. Keep in mind, getting job interviews isn't as hard as getting job offers

While I did say that this editorial was not going to be personal compared to the former, I have decided to break that rule (already!) by recounting some of my own co-op experiences as I feel they are for the betterment of the point I'm trying to make. Let's start with this fact; this is the first time I've applied to JobMine since the beginning of my univer-

sity career. I now invite you to move your gaze towards my byline to fully grasp what the above statement means. Yes, I've been at UWaterloo for three years and this is the first time I've used JobMine.

Now you ask, "How did you manage to find a job without JobMine?" I'm going to tell you now that it wasn't easy. For my first job search, as a product of being a nano student, my JobMine prospects were already dismal to begin with not to mention the two upper year cohorts of nanos that would be vying for the same jobs I was interested in. At that point, I very quickly realized that my efforts would be wasted on JobMine and that my time would be better served if I asked professors in my program to take me on as a Research Assistant. While I risked being unpaid, I recognized that I would gain technical skills that other students in the same boat as me would be hard pressed to find. Moreover, with the skills I obtained, I was hopeful that my next job would pay me enough such that I could pay off the debts I would incur in that term. Two terms later, I was ready to seek a job again. This time, I vowed to get a paying job within commuting distance of my home in order to pay for school without suffering the overhead of arranging for accommodation. Again, with the Nano program, using JobMine was not worth the effort when I knew that contacting researchers in the heart of Toronto would be a better use of my time. After emailing twenty-odd researchers, I found a job at the Hospital for Sick Kids conducting my own research on tissue engineering. Needless to say, after that resume-booster, finding my next job was a cinch I had demonstrated that I'm someone to be coveted in the job market. With that, my next co-op term was arranged, without the assistance of JobMine, at the University of Toronto with an affiliated start-up company that worked with semiconductors, solid-state lighting, and photonics. This position was unique as I got to start my own project again while experiencing the environment of working in industry (and having to deal with the red tape that comes with it).

Now that I'm in 3B, I decided to give JobMine a shot since there are some jobs available to me that I'm qualified to take on (as compared to my former first year self). However, I'm still going to use my own method of getting a co-op job in conjunction to JobMine as I know what I want to gain out of my last co-op experience before I graduate. If you want to learn more about my way of job searching, need someone to critique your résumé, or just need some insight as to what to expect co-op-wise, then don't hesitate to come by the IW office or stop me in the hall to have a chat.

With that, I'll sign off now by telling you to hang in there now that university life is more chaotic, to wish you luck on your upcoming midterm exams, and, of course, happy job hunting!

Issue #3 Deadline: Friday, October 26 at 6:00pm for publication on Wednesday, October 31, 2012
Send your submissions to iwarrior@uwaterloo.ca
Fall 2012 Publication Schedule: October 31, November 14, November 28

Big Bird, Shared Embassies, Syria-Iran Tensions, Justin Trudeau & Chinese Takeovers

THE SIT-IW-ATION ROOM
2B MECHANICAL
3B NANOTECHNOLOGY

Barack Obama vs. Mitt Romney - Round 1: Debate!

The first of three, 90-minute, US presidential debates featured a determined and energized Mitt Romney take the fight to a rather hesitant and professorial Barrack Obama. In a debate that included back and forth bickering on policy nuances and segments, dominated by technical jargon, the true star was perhaps - Sesame Street's Big Bird!

While expanding on his economic policies centred around tax cuts, GOP candidate Mitt Romney said he would cut taxpayer funding to the PBS network (that hosts Sesame Street) even though he loves Big Bird. President Obama constantly asserted that these tax cuts would add another $5-trillion to the deficit over 10 years and favoured the upper-class. Trying to champion the middle-income Americans' cause, Obama countered with investments in education and vocational training in addition to tax incentives for companies investing domestically. Mr. Romney however labelled this strategy as a "trickle-down government", and brought notice to the fact that the Obama's policies were reminiscent of four years ago; having only increased deficits and decreased the income of the middle-class. Romney instead proposed to implement pro-business policies that would rejuvenate small business, domestic energy, free trade and skills development while allowing for a balanced budget.

Trailing Obama in key states with a teetering campaign highlighted by numerous gaffes (*see our Issue 1 column 'Republican Presidential candidate Mitt Romney's controversial 47% comment'*) Romney sought to change the course of the election and he may have succeeded.

Canada and the UK to share embassies in some countries.

British Foreign Secretary William Hague quoted Prime Minister David Cameron saying, "We are two nations, but under one Queen and united by one set of values" during an announcement that Canada and the United Kingdom would be sharing some embassies abroad. The move was made in an attempt to reduce costs and increase diplomatic reach for both countries. It is meant to only involve countries where Canada doesn't have an embassy but Britain does, and vice-versa. For example, Canada has offered the UK a space in the Embassy in Haiti, where Britain has no presence, and the UK has offered Canada a place in their embassy in Burma, where Canada has no diplomatic presence. The NDP led opposition expressed outrage as they feel that it would give Britain some control of Canada's foreign policy. Foreign Affairs minister John Baird assured them that there will still be a "made-in-Canada foreign policy" and that the agreement was a purely administrative one. Canada currently has an agreement with Australia to provide consular services in countries where one nation has a presence and the other doesn't.

United Nations holds General Debate - Syria and Iran centre of attention.

From September 25th to October 1st the United Nations held its General Debate. Representatives from over 190 sovereign states had a chance to speak on the world podium. Most of the speeches had the common theme of denouncing the war in Syria. Some nations like Russia and Cuba did defend Syria but they were in the minority. Russia and China have used their veto power on three past Security Council resolutions meant to try and pressure Syrian leader Bashar Al-Assad. Iran was also a hot topic. Israel made a speech criticizing Iran's nuclear program and implied that if things kept going as they were Israel would attack Iran within a year. Iran made no direct references to their nuclear program during their speech but instead criticized the UN as well as Israel. Canada was represented by foreign minister John Baird. In his speech he condemned the UN for its inaction against Syria as well as attacked Iran and called for them to halt their Uranium enrichment program immediately. No resolutions were made for either the war in Syria or the Iran situation.

Justin Trudeau Announces Leadership Ambitions

Justin Trudeau, a Liberal representative in the House of Commons for the Papineau riding in Montreal and son of former Prime Minister Pierre Trudeau, has announced his candidacy for leadership of the federal Liberal party. Despite criticism of riding on the coattails of his famous father, Justin remains highly popular among many Canadians, with polls showing that if he were the leader of the Liberal party they would unseat the ruling Conservatives in the election. His recent boxing match victory over Conservative senator Patrick Brazeau and audible cursing in the House of Commons have further enforced his charismatic and fiery image to the Canadian population. Most analysts believe that unless a surprise heavy hitting candidate emerges to run the Federal party, such as Bank of Canada Governor Mark Carney, Justin Trudeau will cruise to victory and will become leader of the federal Liberals. An increase in party support from Quebec and Ontario will likely hurt support for the NDP and provide a formidable foe to the seemingly unshakable Stephen Harper and his Conservative Party.

CNOOC Attempts Takeover of Nexen

The Chinese National Offshore Oil Company (CNOOC) has recently announced a plan to takeover Canadian oil and gas company Nexen, based out of Calgary, Alberta. Nexen has assets in the Canadian oil sands, but has the majority of its shares in foreign offshore assets around the world. Stephen Harper's federal Conservatives are left with a difficult political decision. By allowing the takeover, they forfeit the controlling interest of a Canadian company with some Canadian assets to Chinese hands. However, by blocking the takeover, they go against their own policy of diversification and block large capital inflow needed for oil sands development. Stephen Harper is left with yet another dilemma that comes with the responsibility of a majority government.

iPhone Assembly Plant Shuts Down After Riot

VINCENT ZHU
1A CHEMICAL

A Foxconn plant was forced to shut down after approximately 2,000 Chinese employees of the Taiwanese electronics company fought in an altercation on September 24th.

About 5,000 police officers were sent by authorities in the northern city of Taiyuan after the plant's owners of Foxconn Technology Group reported a personal quarrel in a dormitory that had escalated quickly. However, messages have been posted online by employees, accusing the factory guards of provoking the violence by attacking the factory workers.

Authorities reported that a number of people had been arrested and about 40 people had been taken to the hospital. In addition, the state run Xinhua news agency reported at least three people were in serious condition.

This conflict has been the latest in a string of incidents at factories owned by the Taiwanese company, who have faced many accusations of poor working conditions and mistreatment of workers at its plants in China, where approximately 1 million workers are employed.

Foxconn, however, insists that it has been heavily spending money to improve working conditions and worker wages. In a public statement, the company says that the incident erupted from a personal dispute between several employees late Sunday evening and was resolved by the police early Monday morning. Foxconn also stated that the incident does not appear to be work-related.

A similar incident occurred in June, when about 100 workers went on a rampage at a Foxconn plant located in Chengdu in China.

ew.com

The first of four presidential debates; Romney willing to cut funding to PBS

Cost of Learning > Cost of Living for Canadian Students
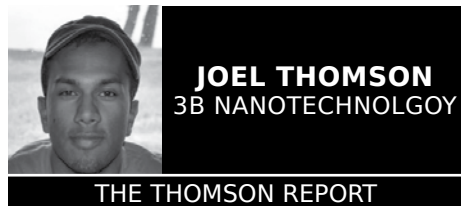
JOEL THOMSON
3B NANOTECHNOLGOY

THE THOMSON REPORT

According to a report released last month by the Canadian Centre for Policy Alternatives (CCPA), since 1990, the average tuition and compulsory fees have risen 6.2% annually – that's thrice the rate of inflation. The report further reveals a wide range of tuition costs ranging from $2861 in Newfoundland and Labrador and $3278 in Quebec to $7061 in Alberta and $7513 in Ontario. At its current rate, tuition is projected to hit $9231 in Ontario in the next four years. Insufficient public investments have magnified debt loads for students and families as they are forced to bear the deficits when tuition and other fees increase, often in excess of the cost of living. This brings the cost vs. value debate into the spotlight.

Students, particularly among low income families, are dissuaded from pursuing higher education when faced with costs exceeding $5000. Statistics Canada reports only 31% of youth from families in the bottom quartile of income distribution enroll in universities by age 19 compared to 50.2% for youths from families in the top quartile. What's maddening is that media, governments, and university administrators falsely assume that as long as enrollments increase, fees are a non-deterrent. However, this is in fact due to the current reality that a degree is necessary to get a decent job. Such assumptions mask the true reason behind tuition hikes – diminishing public funding.

Provincial education spending has declined for the most part and has failed to buffer the surge in enrollments. From 1979 – 2009, government funding has drastically decreased from "84% to 58% while the proportion funded by student paid tuition has increased from 12% to 35%." As student fees substitute the declining government investment, debt has increased as well. Presently, the average debt incurred by an undergraduate degree – for about 60% of Canadian students – is about $27, 000. Graduating with such a huge short fall has adverse effects such as decreasing likelihood of home ownership, slower wealth accumulation, and even negative psychological effects such as depression. In order to put things into perspective, CCPA devised a measurement scheme called the Cost of Learning Index which evaluates how much more (or less) affordable a university education is with the aim to compare provincial policies and spur pro-active government action.

The Index illustrates that currently, Newfoundland and Labrador is the most affordable province for university education with Nova Scotia being the least affordable for median-income families (with Ontario finishing closely behind) while Ontario was deemed to be the least affordable for families on the poverty line. Unsurprisingly, Ontario has consistently ranked amongst the highest-tuition-charging provinces. As a countermeasure, in 2011, the government introduced a "30% Tuition Rebate"; despite this, CCPA indicates that the rebate barely improves the province's standing, especially for low income families, since fees were already high to begin with. Such programs are examples of increasingly passive approaches that most governments are taking.

Rather than choosing to lower costs upfront, most governments opt for after-the-fact financial assistance in the form of debt relief, loans forgiveness, tax credits and zero interest. These policies have ulterior motives – serving as buzz worthy highlights during election campaigns in addition to allowing for stealthier cancellations. Even though such programs may alleviate the debt burden for qualified students, it fails to assist them in paying the up-front costs. As stated by Erika Shaker, director of the CCPA's education project, "you can't pay your university bill with a tax credit."

The CS Way: Making Elective Choices Easier

JOSHUA KALPIN
2A SOFTWARE

Due to the intense structure of engineering programs at Waterloo, students are presented with a limited number of elective choices throughout their five years at the school. This presents students with stressful and sometimes confusing decisions when it comes to choosing their upper year technical electives. Moreover, these electives are often scheduled to conflict with one another and many students are pigeon-holed into taking courses that they do not want to take, wasting the student's time and credits, and potentially affecting their GPA.

To find a potential solution to this problem, we can look outside of Engineering and towards Computer Science (CS). CS currently hosts a website that contains a list of all the courses offered by the school with links to course websites, descriptions, and calendar entries. In addition to this, most of the upper year electives courses offered by Computer Science feature a Youtube video of the professor who either authored or taught the course discussing the course in extensive detail.

The website concept solves many of the problems that face engineers. First, it centralizes all the information regarding specific courses in a readable and easily navigable format. Second, all information for the course is on the website including syllabuses, when the course is offered, and the textbook for the course. Third, having a professor schedule a short amount of time to present and record a lecture lets students see that professor's lecture style, have course selection reference for the future, and find out what is actually taught in a course. Lastly, having a thorough online resource is an invaluable asset for engineers due to their, at times, ridiculous schedules. Attending an info-session for a course or scheduling a meeting with a professor can be challenging if not impossible. Offering the possibility for a student to retrieve information for a course at ease removes this problem and can reduce the amount of stress on a student.

As an example, let's examine the CS course CS360, Introduction to the Theory of Computing. From the name alone, it is fairly difficult to figure out what exactly the course teaches or whom it is directed at. Looking at the calendar, the course is described as teaching "Models of computers including finite automata and Turing machines... Unsolvable problems and their relevance to the semantics of programming." This really doesn't help this process either, because the description provides no information about the difficulty, workload, scheduling, or who would enjoy the course. However, when someone goes to the course description page and watches the video, he or she can find out that the target audience for the course is "Some exposure to the theoretical foundations of Computer Science is considered useful for all CS graduates, especially for anyone intending to continue studies at the graduate level," and that the course is three lecture hours a week and is offered in all terms. Furthermore, the page has specific information on how each topic in the course is explored, with specific examples from the lecture material.

If Engineering provided more resources for choosing electives in the way that Computer Science does, many students would find course selection less stressful, avoid wasting credits, and be better prepared when they begin their courses each term. The time and effort required to implement this would be minor for all parties involved and could even open up some co-op opportunities for students to organize and develop the website. Furthermore, once a framework is in place for an entire faculty it is more likely that the rest of the university will follow suit, further simplifying the enrolment process.

New Entrepreneurship Resources at Waterloo

VELOCITY
UNIVERSITY OF WATERLOO

VeloCity, originally a Residence program at the University of Waterloo, has evolved and grown immensely in the last year with the launch of two additional new programs, VeloCity Garage and Velocity Campus.

This term VeloCity Campus is launching on UWaterloo turf with the clear message that entrepreneurship is for all students, not just techies. VeloCity has seen outstanding success and demand for students to test drive their business ideas in an environment that cultivates experiential learning.

The program is hands on, explorative, and is a departing point for connecting students with each other. The light bulb moment happens during the exchange and execution of ideas.

This is not just another incubator or accelerator program. Velocity Campus is different because it is specifically focused on providing entrepreneurial resources for students of all faculties at the University of Waterloo.

By providing place for innovative business ideas, students are able to test drive and validate entrepreneurial concepts with a realistic understanding of idea validation. Typically the startup scene means having an entrepreneurial idea with a tech factor. Velocity Campus boasts no restrictions on business ideas. Whether you're after an accelerated tech idea or a lifestyle business, the program is aimed at providing the resources to get you there.

Each term, the program covers a wide variety of topics related to entrepreneurship on a weekly basis. These resources are open to all students with no cap on participants unless the venue of the event has limitations. VeloCity Campus is looking to bring in notable speakers to explore entrepreneurial ideas. Each week the topics build on previous concepts to provide a comprehensive understanding of entrepreneurship as a whole.

Some may ask how VeloCity Campus may affect entrepreneurial academic courses being offered on campus; however, the intention is for this level of experiential learning to compliment the academic experience. Similar to how a business club/society or co-operative work term may exist at university, VeloCity Campus looks to provide an experiential learning environment that contributes to a holistic understanding of entrepreneurship alongside the value that academic learning brings.

A key bonus is that the ideas that you create at the UWaterloo are your own. The University of Waterloo has an inventor-owned idea policy. This means that any ideas you generate while at the University have no ownership ties to VeloCity or the University of Waterloo. You can worry less about who owns what and focus your energy on your business. VeloCity Campus provides the ideal environment for students to follow their passion for solving business solutions with no limitations on what these may be. Welcome to unlimited idea generation.

The Ups and Downs of 8-Month Co-ops

KATE HEYMANS
3B CHEMICAL

This term's 3B 8-stream chemical engineering class is piloting a new program for 8-month co-ops. Students were told that up to 25 of the approximate 57 people in the class would be allowed to complete an 8-month co-op and switch into the 4-month stream. They usually do two separate 4-month co-ops in their last year instead. Of the 8-month positions, it is hoped that approximately at least 20 will be filled. In an informal survey, over 50% of the students reported that they would not be considering the 8-month co-ops.

Most students' opinions on 8-month co-ops are divided. With a good job, it can mean a better work term with more depth and responsibility. Dave Evans, an engineering student who recently finished an 8-month co-op said that "with eight months you can actually see a project from beginning to end". A mediocre job, however, can become downright terrible if it is stretched from the typical four months into eight months. Many students freely choose to complete more than one work term with the same company; however, this choice is guided by the fact that they know based on the first work term that the job that they are returning to is fulfilling and useful.

The alternate double work-term commitment also works better than a straight 8-month co-op in most of the regular-streamed programs. By committing to two work terms instead of doing 8-months, students get to stay in their own streams. They also get the mental "break" of work terms between two school terms. Waterloo engineering students are adaptable, the constant switching every four months forces that mentality. However switching streams presents challenges such as arranging housing, having to build new friendships, needing to fix lab groups or even FYDP groups. Even the student health and dental insurance program must be notified so that students can maintain their coverage until the following school term.

Despite the potentially more interesting experience of an 8-month work term, many students also want more 4-month terms because it gives them more variety. One of the most common reasons for which many students choose to enter a co-op program is so that they can figure out what kind of job they want in the long term. If students choose to do 8-month co-ops, they get fewer opportunities to test the waters with various jobs.

University of Waterloo students also often complain about the lack of student life on campus. Despite the Engineering Society running a strong system using the alternating A-Soc and B-Soc system, problems still remain. If more programs begin to run in the 4s or 8s stream, or using 8-month co-ops, how will this affect our student life? Will it foster more communication between A-Soc and B-Soc, or will it just cause a breakdown in the structure and continuity that we depend on to run our student life?

While 8-month work terms may be what employers and the CECS department want, there seem to be more disadvantages than advantages to taking an extended work term for most students. Ultimately individual students must decide what they prefer.

Engineering Hosts Graduate Studies Info Session

GABRIEL MORENO-BAUTISTA
4A NANOTECHNOLOGY

On Wednesday, October 3rd, the Faculty of Engineering hosted a graduate studies information session to ensure that any students who are thinking about continuing their education at Waterloo receive the information they need. All the departments sent professors and current graduate students to talk about the graduate programs and degrees available.

"But *Iron Warrior*," you may ask, "why would I choose to stay in school for even longer after getting a fancy engineering degree from Waterloo?" Well, as Dean Pearl Sullivan said when she addressed the attendees at the beginning of the reception: you should consider graduate studies because a bachelor's degree is the lowest common denominator among job seekers today. Canada is producing thousands of engineers every year. If you want to stand out from the crowd, additional credentials are a good way to do so. In addition, graduate school gives you an opportunity to experience moments of discovering something new and exciting. Or as the Dean put it, "Wow!" moments.

"I don't trust the Dean," you may retort, "it's her job to try to get me to come back to do more school." Current graduate students also spoke about the advantages of continuing their education. Some of them worked in industry after graduation for a couple of years and then decided to go back to school. One of the reasons is that if you have a graduate degree under your belt, you are more likely to get a position to work at a different level than someone without one. You might even get to use your brain at the work place! Also, if there is a particular topic in your engineering field that really interests you, it's hard not to want to know more about it and get involved in its advancement.

"Ok, I guess those are some good reasons," you may think, "but why would I come back to Waterloo?" Some of the graduate students that were at the reception did their undergrad here and decided to stay. They said that knowing the professors and the department allowed them to feel comfortable in their new role much sooner than if they went to a new school. Raymond Legge, the Associate Dean of Graduate Studies, mentioned another good reason to stay at Waterloo during his speech. If you develop some new technology while doing your research, the IP and the rights to the product or process belong to you, not to the university. If you produce something successful, then you get to make money off of it!

Waterloo is not just a research-oriented university. The Faculty of Engineering also offers various professional degrees that can be completed in as little as one year. These degrees include Master of Engineering (MEng), Master of Architecture (MArch), Master of Management Sciences (MMSc), and a newer program called Master of Business, Entrepreneurship, and Technology (MBET). Since these programs lead to professional degrees, you need to fund your own studies, unlike the research-focused degrees. However, any of these graduate degrees provides a good compliment to bachelor's degree in engineering.

If you are curious about graduate programs at Waterloo and want to learn more about what they entail, there is plenty of information in the Future Graduate Students section of the Faculty of Engineering website. Making a decision about what you want to do after graduation can be quite daunting, so it is a good idea to be informed about what options are available to you.
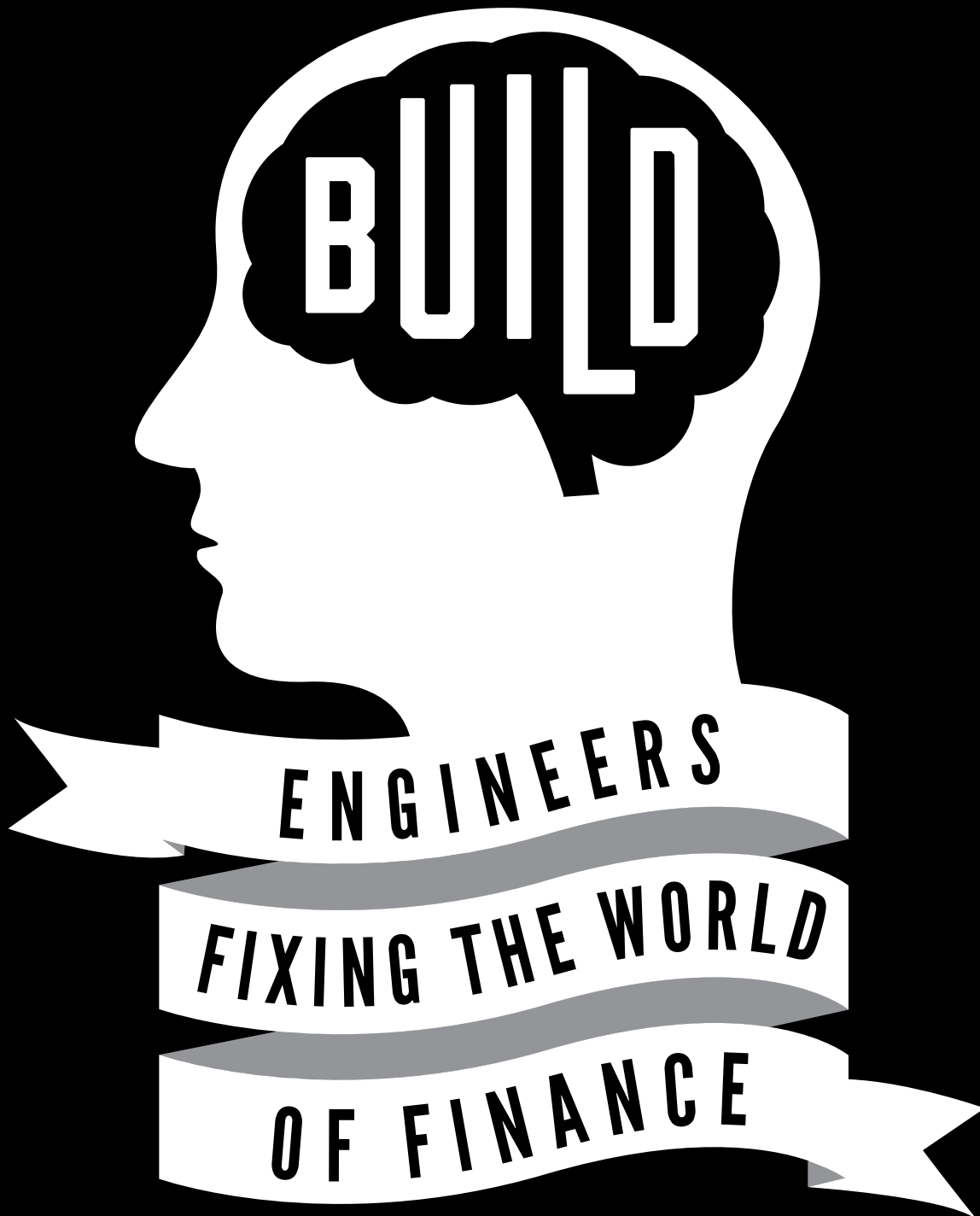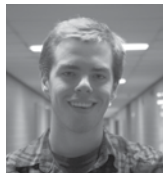
A Dish Best Served Cold: The Mafia Wars of Montreal

SPENSER GOOD
2B MECHANICAL

One of the most widely acclaimed and most popular films of all time remains Francis Ford Coppola's The Godfather. The film portrays the inner workings of the high profile New York city fictional crime family, the Corleones. The family is originally headed by Vito, whose poor health and eventual death coincide with the rise of his son Michael, who takes over the family as a far more ruthless, unforgiving but also successful boss. Towards the end of the film, audiences witness one of the most famous murder montages in movie history, as all the heads of the other four New York crime families and other high profile mobsters are killed with the approval of the new Godfather, Michael. The violence and symbolism of these murders may be dismissed by many as "Hollywood influence", but the history of the Mafia has validated this montage not only in famous mob dominated cities such as New York and Chicago, but also in a city that is familiar to most of us.

It was 1954 when Nicolo Rizzuto immigrated to Montreal, Quebec from Sicily. Nicolo, commonly referred to as Nick by friends, family and the media, was no stranger to organized crime when he arrived in the country. His father, ironically named Vito, moved to New York City in the 1920s. He became associated with the New York mafia and was killed in 1933 by rival gangsters. His son wasted no time in following his father's footsteps upon immigrating to Montreal. He quickly became associated with the Cotroni crime family. The Cotroni family was headed by Vic Cotroni, who died of cancer in 1984. However, Vic remained largely shielded by the Violi brothers, who acted as capos (the high-ranking "head of soldiers") for the regime. The Cotroni family and most if its members were of Calabrian descent.

The Cotronis were widely acknowledged to have full control of Montreal's lucrative drug trade. Their close association with the powerful Bonnano crime family of New York City (the FBI considerd the Cotronis to be a branch of

the much larger Bonnano family) allowed for easy access to narcotics that could be distributed throughout the city. However, Nicolo Rizzuto would soon challenge the seemingly unmovable Cotroni family and its underboss, Paolo Violi. His close ties to the Cotroni family angered members of the Calabrian mafia, who resented not only Rizzuto's Sicilian heritage but also his secrecy and uncontrollable nature.

Knowing this, Nicolo Rizzuto built up his own Sicilian crew in Montreal

The Late Nicolo Rizzuto, Montreal Mafioso

LeStudio1.com

mainly through ties with the Cuntrera-Caruana Mafia clan and other known Sicilian gangsters. The Cuntrera-Caruana clan, like Rizzuto, originated in Sicily before members began emigrating first to Canada and then to the United States and Venezuela. The Cuntrera-Caruana clan played a large role in global drug trafficking and money laundering for many Sicilian mob families. With likely help from the Cuntrera-Caruana clan, Nicolo Rizzuto travelled to Columbia and Venezuela to build relationships with drug cartels to ensure a steady narcotics supply to Montreal. With his own source of drugs and a built up clan, tensions began to rise between the Cotroni family and the Rizzutos, with a war akin to that seen in the Godfather soon to break out.

These tensions finally broke out into

war on Valentine's Day of 1976, when Cotroni consigliere (adviser to the boss) and money man, Pietro Sciara, was shot and killed outside of a Montreal theatre. To further add to the irony, he had just finished watching the Godfather Part II with his wife. Sciara's dead body was left on the street. The war escalated with a further victory for the Rizzutos in February of 1977, with the murder of Francesco, brother to Paolo Violi's brother. Francesco was considered the muscleman of the family. His body was further mutilated by shotgun wounds in a murder that was not only violent but bold, having occurred in a Violi-owned business. The next murder occured in January of 1978, with underboss Paolo Violi being killed with a close range shotgun wound to the head at his his own cafe. The Rizzuto family's position as controller of the Montreal underworld was cemented for the foreseeable future in October of 1980 with the murder of Rocco Violi, who was shot and killed by a sniper while sitting at his own kitchen table. With this, all three Violi brothers were buried side by side at the Notre-Dame-des-Neiges cemetery at the top of Mont Royal. They were left to look over the city that was once theirs, now ruled by their despised rival, the Sicilian Nicolo Rizzuto. Rizzuto

turned the Montreal based family into Canada's most successful and longest reigning crime family, with his family's dealings recently implicating many high profile construction bosses and politicians in Quebec's recent bid rigging investigations.

However, as stated by Mario Puzo in his novel *The Godfather*, from which the films were based, 'revenge is a dish that is best served cold'. On December 28th, 2009, Nick Rizzuto Jr., Nicolo's eldest son and a family street boss, was shot and killed and like Pietro Sciara, was left to be found on the Montreal streetside. The violence against the Rizzuto family was escalated on May 20, 2010, with the disappearance of Paolo Renda, son-in-law of Nicolo. Evidence shows that Renda, widely believed to be the Rizzuto consigliere and money man, was stopped by a vehicle with flashing lights on his way home from a golf game. Police found his empty vehicle on the side of the road, with the doors wide open, after his worried wife informed police that he was late returning home. He has not been seen since. Just over a month later, Augusta Contrera, believed to be acting boss of the Rizzuto family, was killed just outside of his own food distribution business. The method of execution: a close range shotgun wound to the head, a death filled with symbolic similarity to that of Paolo Violi. On November 10th, 2010, 86 year old Nicolo Rizzoto sat down at his own kitchen table for dinner, much like Rocco Violi did on a fall evening in 1980. His meal ended much like Rocco's did: Nicolo was shot in the head by a sniper believed to have been hiding behind his Montreal mansion.

It has been 32 years since the Calabrean Cotroni family controlled the Montreal underworld. However, with the symbolic murders of all of the leading Rizzuto mobsters, except for son Vito who is about to be returned to Canada after serving 10 years in an American prison, the Montreal underworld remains wide open for a Calabrean takeover. Speculation swirls over who will take over and to what degree they will be able to escape increased prosecution. However, it may not be long before the Violi brothers look over a city that is once again under Calabrean control.

Gambling: A Statistical History

CHRISTY ROUAULT
2B GEOLOGICAL

Gambling is to play a game of chance for stakes. Whether you bet on horse racing, play slot machines, or buy lottery tickets, it is a game of luck where great risk holds promise of greater reward. Canada has had a long evolution of gambling, which today has a great effect on our society. From law, to government, to family and addiction problems, what may seem like fun and games actually has a large impact on all of us.

Although gambling is extremely profitable for a lucky few, for most Canadians it averages out to about $515 lost per year. In 1892, gambling was strictly banned in Canada, and it was not until the late sixties that the law was amended to allow for provincial lotteries and sweepstakes. Small steps along the way, including horse racing, charitable events, and gambling at fairs and exhibitions slowly but surely proved that the government could profit

substantially from this type of gaming. In order to maximize income without increasing taxes, the first national lottery was held to raise money for the 1974 Montreal Olympics. This concept was so successful that the trend continued. By 1980, the first ever cash casino opened in Calgary, and in 1989, the first commercial casino opening marked the beginning of the casino era. In the nineties, Video Lottery Terminals (VLTs) popped up all across the country in both licensed and non-licensed venues, and became an enormous source of income for the Canadian Government. There were 59

permanent casinos by 2001, in addition to tens of thousands VLTs, lottery ticket vendors, and bingo halls. According to Statistics Canada 2011, the Canadian Government now makes a whopping 3% of its total revenue from Canadian gamblers.

Although there are benefits for the revenue of Canada, there are many concerns for those 1.2 million Canadians who are considered to be at risk for or already have gambling addictions. Statistics Canada reported that 5% of adults in the country have problems severe enough to impede their family or professional lives. Debates on whether commercial casinos have more positive or negative effects on those who live near them is ongoing. Casinos can bring crime and drugs to an area, but they also bring in

money to build green space and maintain infrastructure.

A common misconception about casinos is that they are not allowed in cities and are only allowed on native reserve land; in reality, legislation on where a casino is built lies in the hands of the province and voters' choice, often by referendum. Native reserve land is no exception to this rule, although the reserve is often entitled to a portion of the profits. The first ever casino on reserve land was opened in 1993. Today, more and more casinos are being built to increase income, although the social ramifications are spiraling. Programs like Gamblers Anonymous are becoming more and more common, costing the government millions of dollars a year.

Bringing in billions of dollars of revenue each year, the benefits of gaming and gambling are hard to deny, but for citizens in our society there is a price to be paid to reap the benefits. Research has shown that gambling addictions are linked with poverty, low socio-economic statuses and substance abuse. As has been said, "the lottery is a tax on people who are bad at math."
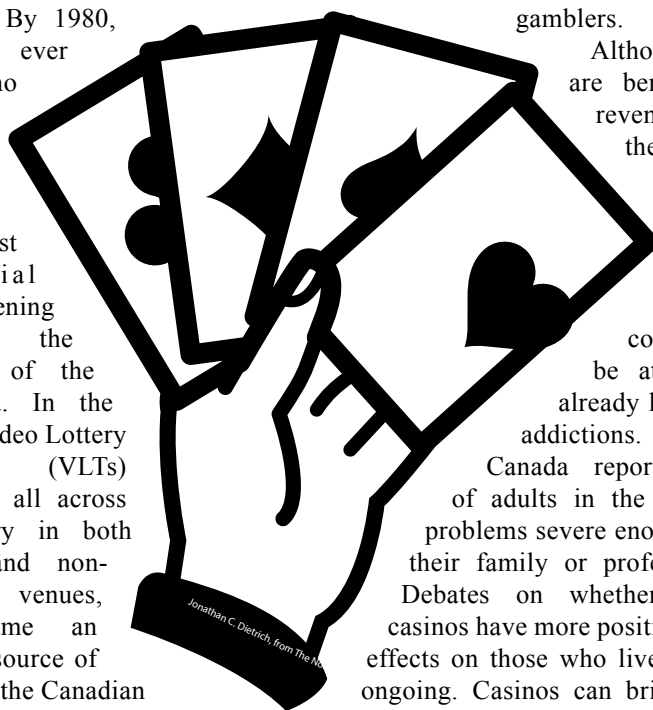
Jonathan C. Dietrich, from The ...

EWB Junior Fellow: Maximum Mzungu

ZAC YOUNG
2012 JUNIOR FELLOW

ZAC IN ZAMBIA

My name is Zac, and I am one of the 2012 Junior Fellows from the University of Waterloo Engineers Without Borders Chapter. For the next few months I will be working in an organization called Kulamela, who facilitate growth of innovation and entrepreneurship through education, in Lusaka, Zambia. Below are my most recent thoughts and observations from my life overseas.

One's self-consciousness is a complex mixture of emotion, perception, and assumption. In a situation where you stand out in the crowd, it feels like a spot light is over your head and the more you fret, brighter the light feels.

In Zambia, I stand out. In a sudden shift, I am a minority, and by a large margin at that, in a place where over 99% of the population is of African descent1. Coming from the comparatively colourful ethnic landscape of Canada, where I am still certainly in the majority, the contrast strikes a little more sharply. It is hard to miss the attention that is drawn towards me and I can feel I am something of a novelty in an average Zambian's day.

"Mzungu, taxi? … My friend, where are you going? … Mzungu, look what I have here for you…"

Mzungu. White man. Foreigner. One who wanders aimlessly.

But none of this is malicious; it's just my best identification. "Hey blondie" or "you with the glasses" would serve the same purpose, but those haven't the easy colloquial term. In some cases, it is them poking fun at my difference and in others, celebrating my presence. In a sort of comical irony, it can be an exclamation of welcome despite centring you out as different. All of this has brought many thoughts about the perception of that "mzungu" identity, both inward and outward.

Starting off in the morning, I put on a light coloured v-neck, some shorts, and my running shoes. No different than the average day off to class. It's a hot day and my not yet acclimatized body can use all the ventilation and heat repellence available. However, as soon as I step out into the red Zambian dirt I feel like I'm glowing. My shoes, relatively new and tragically white, beam in the sunshine. Looking around I don't see a bare calf for miles – maybe pants would have been a better choice. Does anyone around here wear v-necks? Boy do I look like I just fell out of a plane…

In this moment, the self-consciousness strikes. I make a half successful attempt to kick some red dirt on my shoes and shake my head at my shorts that, while keeping me cool, seem better suited with a baggy floral shirt and a pina colada. The spotlight above my head is humming with energy, shining at full beam power. The harmless glances by those passing me poke my self-image even further from its confidence.

Later in the day, I make a couple ignorant goofs in the seating shuffle on the mini bus and I have been asked if I need a taxi on about thirty separate occasions.

My current self-perception: **Maximum Mzungu**.

Over time, the spotlight has dimmed. Maybe from shining bright too long, or from having a revelation that I just needed to turn down the switch on my own. That revelation has come with some confidence and feeling more settled in my surroundings. I know how the bus seating system functions; I can just politely shake my head no like everyone else instead of a full verbal thanks to the taxi offers; I grin when someone calls out "mzungu"; and I begin to live out that phrase I put in my first Zambia post:

"Please, feel free."

Of course there are also the external forces at play that I have made peace with. Why do taxi drivers and street vendors target me? Because whether I like it or not, I am likely to be a customer with money to spend. As a smart business operation, how could you not add some extra effort for me? When two small kids point and giggle at me, with little whispers of "mzungu" reaching my ears, it is just because I am a sight in their day that stands out. Look at that funny white skin.

All of this can be managed internally by having a resolve that as long as I am not contributing to a negative reinforcement of these perceptions – like not contesting a price that is too high or choosing to skip the transit system that most of the public uses because I can afford more – then I am living in a balance that is pushing towards the perception I would prefer.

There is also the moment in which you realize that living in a city, you will remain a fresh sight to most. Take any day in an urban centre and there may only be a couple people you know or recognize. This has reduced the frustration that my "mzungu" identification has remained static. I will continue to look the same to most whether I have been in Zambia for two weeks or two months. Furthermore, you begin to understand the different cultural context of differences in ethnicity. Perhaps in Canada, where minority groups can still constitute a significant part of the population, racial identification seems to carry the undertones of historical and modern power struggles, pushing back on a majority reduction. However, here in Zambia, such differences are held in a different light and calling race into identity can just be a celebration that you are choosing to integrate or an easy way to get your attention. Putting all these things into the balance can at least reduce the challenges that complex self-consciousness brings to you.

My current self-perception: **Happy Mzungu**.

See?

Have you ever had such an experience? What other factors do you think play into this self-perception? What do you think is the healthy balance between recognizing your identity and making the effort to blend in? I'd love to hear your thoughts as I continue to navigate my Zambian identity!

Zac Young
See?

Kickstarter Changes Policy to Clarify Risks

RYAN ORR
2A COMPUTER

Online funding platform Kickstarter changed its policy recently, hoping to deter the growing belief Kickstarter operates under a store-based model. In a blog post entitled "Kickstarter Is Not A Store", the site detailed changes to its policy, including a Risks and Challenges section for all projects. It also claims to have stricter guidelines for Hardware and Product Design, aiming to decrease ambiguity between the current capabilities of a product and its goal functionalities.

All project creators must now list all foreseen risks and challenges ahead, as well as their solutions to such roadblocks. The post describes how investors should "judge both the creator's ability to complete their project as promised and whether they feel the creator is being open and honest about the risks and challenges they face".

As for Hardware and Product Design, creators are no longer permitted to display renderings or simulations of future products, but instead must show the product in its current state. In addition, Hardware and Product Design projects can no longer offer rewards of multiple quantities of the final product. Rewards must instead be either singular quantities or logical kits of related items. The site encourages creators to "under-promise and over-deliver", while avoiding leading the investors to higher expectations.

These guideline changes apply only to those projects which are developing new products and promise shipments of the final product. Projects which do not offer the product as a reward do not fall under the changes. The reasoning? According to Kickstarter, "they aren't developing new products that [investors] are expecting in their mailboxes".

The policy change is aimed to "reinforce that Kickstarter isn't a traditional retail experience and underline the uniqueness of Kickstarter". The site exists as a means of communication between creators and the public audience.

An inventive solution to the traditional profit-based funding systems, Kickstarter has become renowned for giving innovators and "creators" the means to get their projects up and running through the pledges of investors and "backers". By allowing a wider variety of projects, the site allows far greater chances for success. However, this increased success also comes with increased risk, a aspect of the site which has faced criticism as of late.

During the fundraising phase of a project, backers can pledge various amounts of money to fund the product, and upon project completion, receive prizes relative to the amount pledged. Due to the nature of certain projects, creators may fail to meet reward deadlines or the project may fail altogether.

Kickstarter is never responsible for the completion of the project, nor do they guarantee reward delivery. The site's policy states that all creators are legally responsible for delivering the rewards to backers; if the project should fail, it falls to the duties of the creator to refund backers. Kickstarter hopes the improved policy will clarify any potential risks to investing, without misleading the backers as to the current and future abilities of the projects.

For more information on the policy change, visit *kickstarter.com*.

Robots Mimic Bee Brains

BRIAN SO
1A NANOTECHNOLOGY

INTO THE NEW WORLD

We have been giving robots brains of their own for a quite the while now, so that they may perform specialized and vital tasks for us. Of course, this definition of a "robot brain" points towards some robot following a sufficiently complex pre-made algorithm directing its movements. Recently we have extended this description of a robot brain to include the re-creation of the biological brain of monkeys, humans, and mice in a robot, with hopes that we may be able to create better prosthetics that will respond to our thoughts, and that robots may think for themselves.

The scientists from the universities of Sheffield and Sussex are now tapping into the power of a bee-brain. In a million dollar project, they plan to simulate the parts of their sensory system responsible for smell and sight and subsequently use that in a flying robot. Although bees are simple organisms compared to primates, they have proven to have surprisingly advanced cognitive capabilities, including their amazing ability to find their way back to their colony without fail. It is believed that they use the position of the sun as a reference point and can compensate for its movement across the sky while finding their way back home.

There are already many potential applications for a robot relying on such a simulated brain. For example, flying robots may emerge from this research that have the potential to provide a helping hand in search and rescue missions, or to help mechanically pollinate crops. The fact that the bee of a brain is small and so accessible makes it is very possible for the team of scientists to produce an accurate and complete model of this brain before long.

Electric Travel at No Cost

ANDREW MCMAHON
2B ENVIRONMENTAL

On September 24th, start-up electric car company Tesla Motors unveiled their Supercharger network, a series of battery recharge stations located across the state of California. They are located in Folsom, Gilroy, Coalinga, Lebec, Barstow, and Hawthorne. The stations can be thought of as gas stations, except instead of supplying gasoline for combustion engines, they recharge the batteries that operate the company's luxury style sedans and crossovers. Another thing that is different from the conventional gas stations that charge per unit of gasoline, drivers can charge their Tesla vehicles at the Supercharger locations for free. To offer this service free of charge, the Supercharger stations harness solar power, and actually generate more power in a year than they use. So, in addition to providing free electricity, they also produce a small positive transfer of electricity back to the grid. This eliminates the notion that electric cars simply divert carbon emissions from the combustion engine to the power plants that power them.

Access to the Supercharger network is not some expensive add-on. Each of their base models comes equipped with the hardware, software, and testing required for an owner to enjoy free charging at all Supercharger stations. A vehicle that has been charged at a station for 30 minutes can drive for up to 3 hours at 60 mph (just under 100 km/h).

To speed up the recharge time at these stations, the Supercharger stations use DC power as opposed to AC power used in homes. DC power does charge the vehicle's battery faster, but means that the vehicle cannot be charged at home. It also limits the number of vehicle models that can use these stations; for example, the Chevrolet Volt supports AC power but does not support DC charging.

The cars produced by Tesla motors are pure-electric, which means that unlike traditional plug-in hybrids that have a combustion engine that will kick in for extra power (or when the battery runs out), these cars rely solely on battery power. One of the traditional arguments against pure electric cars has been their lack of range. Buyers and investors are skeptical of the functionality of a car that can only be used for short trips for fear of running out of power before making it home to recharge. Tesla Motors has a vision of eliminating this problem and took their first step in the unveiling of the Supercharger network.

There is a fair amount of pressure on the car company, having received a $465 million loan from the US Department of Energy, and having been used by Mitt Romney in a recent presidential debate as an attack on the ineffectiveness of Barrack Obama's tax breaks for energy companies. The start-up electric car maker is definitely not lacking ambition, with plans to expand along 3 major US traffic corridors: Vancouver to San Diego, Miami to Montreal, and Los Angeles to New York by next year, and begin installations in Europe and Asia in late 2013. Tesla also plans on opening its first store in Canada this November. The store, located in Toronto, will boast features uncommon to current automotive dealers including a design studio where customers can design their own Tesla on a touch screen and view their creation on an 85-inch video wall.

To the many skeptics out there: despite the potentially high stock evaluation and some early hiccups in production, Tesla motors seems to have addressed a number of major problems with the current electric car industry. Tesla is the first car manufacturer to build consumer cars that are 100 percent electric from the ground up. As the major car manufacturers tentatively venture into the electric vehicle industry, Tesla has jumped right in and is changing the way we think about electric cars.

Toto, we're not in Kansas anymore…or are we?

JOEL THOMSON
3B NANOTECHNOLOGY

Yes indeed! Welcome to Google's very first Fiberhood! Google launched its fiber-to-home network in Kansas City (covering both Kansas & Missouri) where 180 neighbourhoods have qualified to be the very first fiberhoods. Using optical fiber cables, Google is able to transmit data at a speed of one Gigabit per second (Gbps)- that's almost 20 - 100 times faster than the internet speeds offered by current Internet Service Providers (ISPs) in the rest of the US! The revolutionary service was first announced at end of July 2012 and after a single week on the open market, Kansas City was chosen to premier the product. Promoting features such as being able to record up to eight TV shows simultaneously, store up to 500 hours of high-definition programming, and voice-activated remote control using smartphones or tablets, analysts estimated that Google signed up almost 7000 of a potential 165,000 households in the first week alone. And who could resist? For $120/month – Google offers: up to one Gbps broadband speeds, Fiber TV and one terabyte of Google Drive Cloud Storage. Additionally, a broadband only package with one terabyte of data storage was also available for $70. Their closest competitor, Time Warner, offers their fastest (50Mbps) internet only service for $99.95 and their combined TV and home phone service package sells in excess of $200! Now the question remains, why Kansas City?

Even though Kansas and Missouri offer comparatively smaller markets, the search engine giant chose the Midwestern cities to pioneer their service because of the numerous subsidies and regulatory concessions offered. This includes free power, free office space, free marketing, expedited permits and inspections, free right-of-way easements (which means Google can build anywhere in the city without having to answer for noise or increased traffic) and the right to approve or reject any public statements made regarding Google Fiber. It's noteworthy to mention that Kansas has never offered such incentives to any other ISP. Moreover, Google is exempt from open access regulations thereby preventing competitors to lease the fiber network to offer competing services. However, this could be a dangerous precedent. With such incentives, Google could monopolize the industry which would harm customers long-term.

Other disadvantages include costly installation fees. Google charges $300 installation fee which, while waived for the early adopters, could prove onerous down the line. In addition, the lightning fast speed could become a nuisance when communicating with someone having a lower speed ISP. Finally, there is the issue of privacy. The data magnet already is capable of tracking the websites we frequent and the purchases we make. Now, they would be able to gather TV and movie consumption data as well. While some consider it a small price to pay for improving the quality of service, more often than not people see it as an unnecessary intrusion.
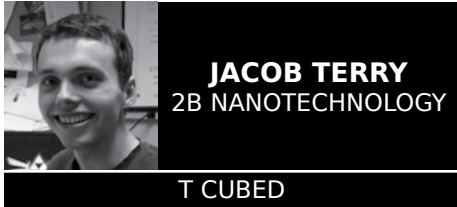
However, overall, Google Fiber is a game changer. Having raised the bar for competing ISPs, Google has ushered in the future of communication systems.
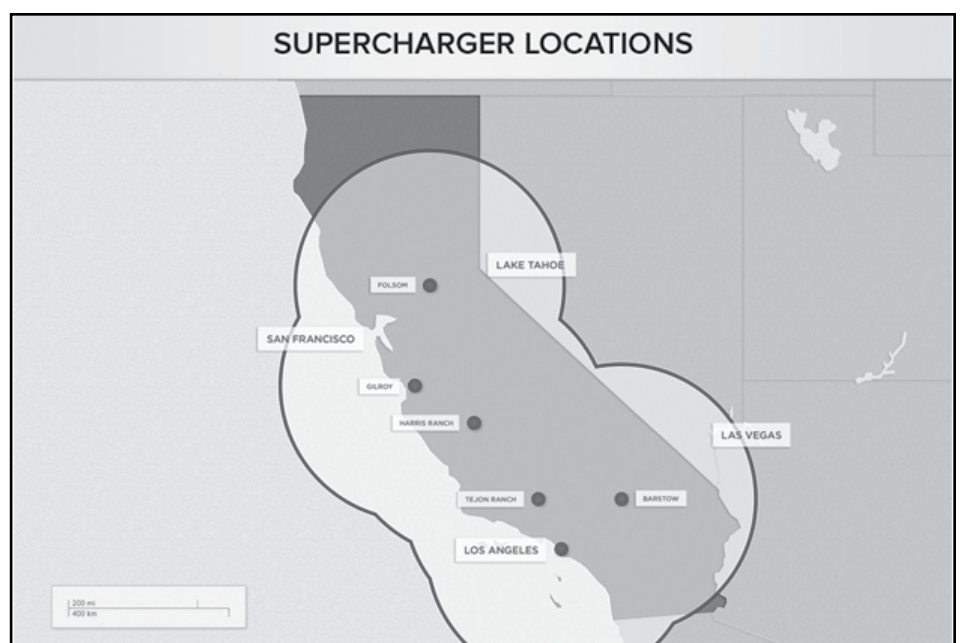
SUPERCHARGER LOCATIONS
Supercharger locations across the Californian coastline

Getting to Know the Windows 8 OS Better

JACOB TERRY
2B NANOTECHNOLOGY

T CUBED

This look at Windows 8 was based on the Release to Manufacturing, which is a version virtually identical to the final one which manufacturers can use to have the final version on their computers once it is released. While some minor changes may be made when the final version releases on October 26, the general feel and operation of the operating system will likely be the same.

Those of us who have an interest in technology are often a fickle and critical bunch. One day, we heap praise on a gadget. The next day, it's garbage. We want things to change, but have a bizarre attachment to what is established already. In a way, you could say other people are like that too, but many of us have often intense feelings or opinions about electronic devices that arguably are fuelled by our passion for all things silicon.

It's no surprise then that Windows 8 is receiving mixed feelings from longtime fans of its predecessors. Leading up to the release of Windows 8, there has been much opposing discussion regarding changes made, which until recently has been our only way of getting an idea how good or bad they are, unless you have access to the previews. After using the release version for almost a month now, found free on Waterloo's MSDN website, it's a little easier to see which things are in the final versions that bothered people in the preview, and note that there are some clear benefits and drawbacks to moving from Windows 7 or earlier to Windows 8.

The most obvious difference, as I have discussed in previous columns, is the Start screen, which replaces the Start Menu but also acts as a sort of application launcher. The concept is novel in the sense that ideally, most people are looking to launch an application once they start up their computer. This follows a similar model to your mobile devices, which often present similar screens on launch. Live tiles are the key feature here, giving you constant updates about what's going on in all your applications. The staple example of how this helps is in the social applications. For example, Mail shows you one big square or rectangle with the count on your inbox while People will alert you to new notifications on Facebook, Twitter or any other networks you have added. Combine these with all the other applications which support live tiles, and this quickly replaces the ritual mail-Facebook-news-weather check that people like me are guilty of doing nearly every time we sit down at our computer.

Applications that populate the Start screen are downloaded from the Windows Store, and are appropriately titled Windows Store apps. Once you start downloading more of these, they can become rather unwieldy to manage, but grouping them is simple and cleans up the screen very well. They have a very similar look and feel, following minimalist layouts with giant images where needed, bold typography and simple interfaces. This works and looks great for most of the things you want to use, but the biggest obstacle is often usefulness. It could be just me, but I often found in all the minimalism, that usability took a hit as it became harder for me to figure out how I was supposed to do something. Internet Explorer is perhaps the best example. Most of the time it appears to be full-screen and it's not immediately obvious that you have to right-click to make the toolbar appear.

In fact, right-clicking is one of Windows 8's greatest secrets. Historically, it's assumed with a contextual menu that drops down from where you clicked, but in Windows Store apps and the Start screen it pops up this little
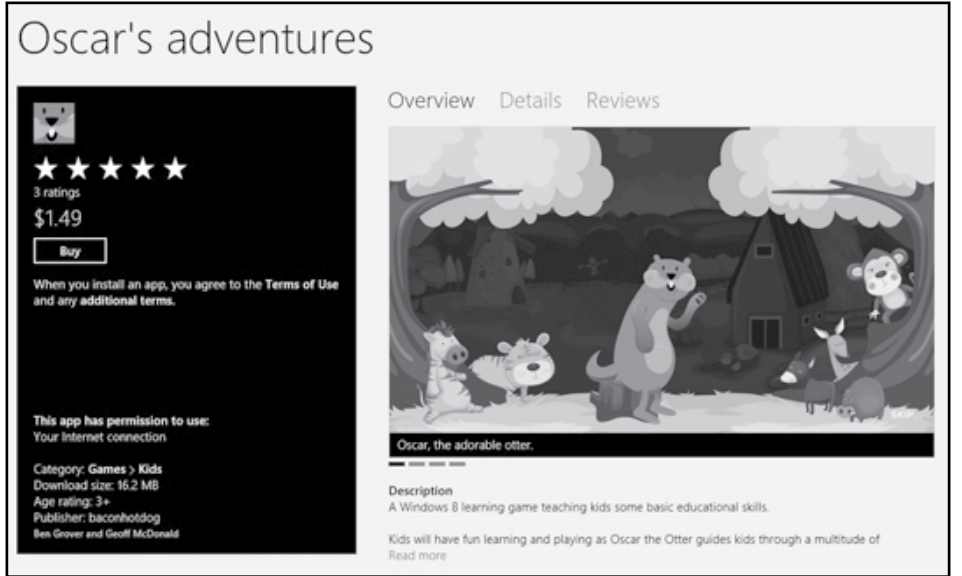
Windows Store now has apps for sale, prices range from $1.49 to $999

pcmag.com

toolbar on the bottom with a series of commands to follow. This is one of the hardest parts to relearn, after having expected a specific behaviour from right-clicking in Windows, OS X or Linux until now. Other things that used to be fairly obvious to find have also moved around. One of my friends working on Windows 8 for work struggled for the longest time trying to find how to see all the apps installed on their computer from the Start screen, but all that was needed was a right-click, then selecting All Apps (or, apparently, Ctrl-Tab). While it sounds like this is the same as right-clicking before, but in a different location, the options that come up are a lot more central to the basic functionality of the app, making right-clicking more required than it has been in the past.

This odd right-clicking behaviour could, however, be because it's a remapping of a swipe-up gesture from the bottom of the screen. The Charms bar - which contains most of the important settings and functions you're usually looking for - is only active by hovering near the corners on the right side of the screen, which seems to be a compensation for how a tablet would swipe left from the right of the screen. These gestures and many more make you think of how much easier they would be on a tablet, and why there's not a more intuitive method on mouse-and-keyboard systems. Windows 8 can't be totally tailored for tablets though, partly because the Desktop isn't very finger-friendly.

The Desktop is where Windows 8's identity crisis comes into the forefront. The File Explorer windows, for example, are a bizarre hybrid demon-child of the traditional windowed interface, with some Office-styled ribbons and the new design language thrown in. It's both a sign that Microsoft is looking forward, yet also doesn't know how to apply their own design language to their Desktop. Off-centred headers, strange colour schemes, old garish icons, and more make it seem like Microsoft may not be totally finished making Windows 8 yet. Office 2013, while a much earlier preview, is the same deal. Menus are now capitalized, and that's pretty much the extent of their attempt to modernize the Office interface. While Office certainly is a greater challenge to try to cut down, it certainly would have sold people on the Start screen if Microsoft managed to have a fully functional Office 2013 Windows Store app, complete with their newer design, ready for Windows 8's launch.

This confusion over what Windows should be and what it should become is ultimately what makes Windows 8 seem so half-baked. Granted, some things won't be entirely ready until the official launch, but so many things seem unfinished. The Desktop isn't the hub of your computer anymore, now it's both a centre for traditional apps and just an app on your Start screen. The Control Panel in the Start screen is an embarrassingly small selection of the one included in the Desktop. The need to switch back and forth is the most jarring part of the experience, constantly jumping between a traditional Windows 7 setting and a newer Windows Phone setting. The feeling that a tablet would work better in some spots, and a mouse would work better in others, is a little perplexing.

Don't get me wrong though, Windows 8 isn't bad. I would argue it may be better than Windows 7 if you took an average of my opinions of all the features, especially with respect to the design and little features that make what you're looking for easier to find, but there are some spots where Windows 7 excels, such as consistency and clarity. The biggest thing it needs is a more coherent identity and more appropriate controls for the device you're using. The effort on Microsoft's part to make "no compromises" is evident, but unfortunately it falls short of that goal.

The new Start Screen in Windows 8

techradar.com

ELECTION

ENGINEERING SOCIETY 'A'　　　**FALL 2012**

President Candidates

Derek Thompson　*3B Mechanical Engineering*

Hello. My name is Derek Thompson, candidate for the next president of the Engineering Society. I come prepared with a vast bank of experience, through extra-curricular activities, academics, and co-op. The most pertinent of this experience is acting as the current Vice President Education. As VP Ed, I work with the faculty, administration, and students on any number of matters including curriculum and course changes; I have a great deal of experience working with the upper echelons of the engineering faculty already. I have also held positions requiring a great deal of people and asset management such as being a previous Federation Orientation Committee (FOC) member. I am currently in 3B Mechanical Engineering.

Goals: every candidate should have a few right? As president, there are a few specific goals I would like to accomplish. First and foremost is the building of communities. You, the reader, are just one person in a diverse set of students from different backgrounds and interests. I would take it on as my responsibility to facilitate the building of communities, not just within engineering, but between students, classes, programs, and even faculties. We can take pride in not just Engineering, but our entire school. Building into this goal, I would like to further efforts taken by the current executive team in making the incoming first-year students more welcome. These efforts would be focused on the distribution of information in multiple different fashions.

The second main goal I would like to accomplish is one of balance. As a society, we have been growing into something much more than a vehicle for social events. Efforts have been made to give us a much more professional footing. I will not forsake these new underpinnings. However, I will research and determine new methods to balance these two aspects of the Engineering Society. There are traditions that must be upheld, despite some serious changes in the structure of future engineering teachings at the University of Waterloo.

As president, I would act as the face of the Engineering Society to the best of my ability. I will act with the best intentions of the society and provide a competent voice where it is needed. To all those seeking assistance, knowledge, or advice, I will be there for you.

Signing off,

Derek Thompson

David Birnbaum　*2B Mechatronics Engineering*

Hi all you UW Engineering students,

My name is David Birnbaum and I am running to be your Engineering Society president. I believe that my experience and dedication will allow me to not only accomplish my goals for the Engineering Society but all of your goals as well. I am very pleased with the amount I achieved over the past 13 months as your VP Finance, and I am looking forward to continuing my work for the next 19 months.

I believe that the most important thing the Engineering Society does is advocate for you, the students. This is not exclusively for academic issues, but in everything we do. As VPF, I am actively advocating for all of you, whether that be in the budget reform I am currently implementing, the complete revamp and recognition of the novelties store and coveralls, or with the Engineering Capital Improvements Fund (ECIF) Committee that I helped initialize and give direction to.

I have implemented a significant amount of budget and financial reform to ensure that everyone who has access to your $14.72 student fee is held accountable, with myself included. It is your money, it should be spent well, and that is one of the primary reasons the ECIF Committee was formed. This committee was forming when I was elected, and I am proud to have been there to help steer it, as it is truly beneficial to every student. The installation of the bike repair stand, and the LCD Screens that will be getting installed, are only two examples of how the ECIF is a great way for the Engineering Society to use your money for long lasting, significant improvements.

If you elect me as your Engineering Society President, I will continue my work of advocating for you, but on a much larger scale. I will work tirelessly to increase the amount of academic advocacy we do, starting with setting up meetings a minimum of once each term with Dean Sullivan as well as the department chairs to ensure your point of view is heard. A large number of changes happen quite frequently at Waterloo, and the students should be informed about these changes before they happen, and should also have the chance to voice their opinion. I would also like to improve the open dialog between FedS and the Engineering Society, to ensure the engineering students' voices are being heard loud and clear on campus wide issues.

The Engineering Society has made great strides with our services recently, yet there is still work to be done. If elected, I will increase and improve our student services. I am currently putting a plan together to create a textbook library that would be free for all Engineering students. I am also looking to introduce a Leadership Scholarship program that would be a joint venture between the Dean's office and the Engineering Society. As well, I will be looking into significantly improving the Exam Bank by partnering with the Faculty and departments to provide you with more exams, including finals, while still protecting the rights of the professors.

If you are interested in reading more about how I plan on implementing these goals and my other initiatives, and learning more about my background and experience with the Engineering Society, please check out my website, www.birnbaumforpresident.ca. When the polls open, remember that a vote for me will make the Engineering Society work for you.

Greetings from your friendly CRO!
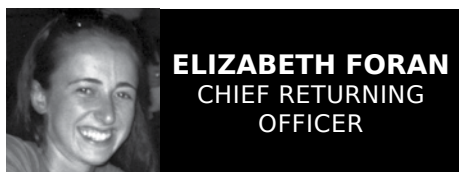
ELIZABETH FORAN
CHIEF RETURNING OFFICER

Hey there Engineers! My name is Elizabeth Foran, and I am the Engineering Society A Chief Returning Officer, or CRO. What that means is that I am the one who is responsible for running the elections to find the next EngSoc Executive Team. Each team represents the society for two on-stream terms, as well as the subsequent off-stream terms as Off-Stream Executive Members.

The election process has been broken down into two separate elections for this term. There is a Presidential Election which will close as of the release date of this *Iron Warrior* issue and there will be an Executive Election which will be underway as of October 11th. The Executive Election will determine who will fill the positions of Vice-President Education, Vice-President External, Vice-President Finance, Vice-President Internal/Operations, and WEEF Director for the next term.

Each of the elections begins with a week-long nomination period, allowing potential candidates to get the support of their peers before becoming a potential executive member of the Society. This is followed by a five-day campaigning period during which the candidates are able to make posters, buttons, and anything else (approved) to promote themselves and make it known they are running and hoping for your votes. The day after campaigning closes, the polls open, and the fates of the candidates rest in your (the voter's) hands. Polls are open for four to five days, over a weekend and through the start of the week.

This leads to the ever popular question, 'Who do I vote for?' Honestly, it's your vote, it's your choice; do whatever you'd like with that vote. Although, I suggest learning what you can about the candidates and picking the candidate that shares your ideals and vision for the Society. You want someone who is dependable, dedicated, and who will come through for the Society. You want a leader, a team player, a careful thinker, and a good listener; someone who will bring the best of everything to the Society. If you can't find all that in the candidates, find someone who comes close and who will make the Engineering Society the kind of society you want to be a part of.

Now for the question of 'How do I vote?' Hopefully, you have some idea from the election that will close tonight, but if not, here's what to look for: you should check your Waterloo email account for a personalized link to the Online Voting System. Click the link, read the platforms prepared, pick who you'd like to be a part of the next exec, submit it, and POOF! You just voted in the EngSoc Elections!

In advance, congrats to the new President of the Society and the best of luck to him with his future goals. Think you'd like to be a part of the Executive? Nominations open on the 11th, and the best of luck to all those who will be running.

Reunions, Meetings, and VOTING (Note the All Caps)!

LEAH ALLEN
PRESIDENT

Hello fellow engineering students (or anyone reading the IW)! At the end of last week, the Engineering Society executives had the chance to sit down with the Dean of Engineering, Dr. Pearl Sullivan, to talk about the Engineering Society and the undergraduate student experience as a whole. The Dean was very responsive to the concerns the executives brought up and she seems to have a vision for undergraduate studies that is in parallel with the student opinion. To address the students

directly, the Dean will be attending the next Engineering Society meeting to speak to the students about her vision of the undergraduate experience, as well as answer any questions the students may have. If you have any questions you would like to ask the Dean, please feel free to attend the next EngSoc meeting that will be held on Wednesday, October 17th at 5:30 PM (please check the events calendar on the EngSoc website for the meeting location).

In the past couple of weeks, you may have seen some election posters around the engineering buildings for presidential candidates of the Engineering Society. If you have a chance today, I urge you to get informed on the two candidates and vote in the election. This is

your chance to give your opinion on who will be representing you and all other undergraduate engineering students on campus. If you are a full-time undergraduate student this fall term and have not requested your EngSoc fee back, then you should have received an email about voting. Voting for the presidential election will close TONIGHT, so please take 10 minutes to get informed and vote. If you have any questions, please contact *cro.a@engsoc.uwaterloo.ca*. In the next few weeks, the elections for the rest of the EngSoc VP positions will also be running. The nomination forms for these positions are due Thursday, October 18th to the Engineering Society office; the forms can be picked up there, if you are thinking about running for a position.

I would also like to update you that, a week ago, I was privileged in giving a speech at the Engineering Alumni Dinner where past alumni celebrating their 5th through 50th graduation reunion were invited back to Waterloo. They shared a weekend full of events and reminisced the good old times. I met tons of wonderful alumni who were excited to hear about what the Engineering Society and undergraduate students as a whole are doing these days.

Lastly, I would like to let you know that I am always available to set-up a meeting to talk about the undergraduate experience for students and how it can be improved. Feel free to contact me at *president.a@engsoc.uwaterloo.ca*.

Have a wonderful Wednesday.

Mental Health = Puppies!

ANGELA STEWART
VP OPERATIONS

Hello bright eyes! I hope the fall term is treating you well.

Get ready for some fuzz therapy on Thursday, October 18th. Volunteers from National Service Dogs (NSD) will be coming to the POETS lounge from 10AM-3PM for you to enjoy a much-needed break from midterms and homework to hang out with therapy dogs. Check out the Facebook event EngSoc presents: Therapy Dogs for all puppy-related news.

The only thing better than puppies are puppies with a purpose. We were lucky enough to have the Executive Director Danielle Forbes, Fund Development Manager Laura Scott, and Echo (…the dog) attend the 2nd EngSoc meeting to teach us more about their programs and facilities. In case you missed it, National Ser-

vice Dogs is a non-profit organisation which provides therapy dogs for children with autism. Their training program was the first one of its kind in the world, and they have recently starting training dogs for Canadian veterans with PTSD. They provide the dogs, training, and resources at zero cost to the family, being 100% supported by donations.

Is your love of dogs not compatible with the co-op lifestyle? The NSD headquarters is located in Cambridge and are always looking for volunteers to help with the dogs, assist with office or grounds work, or aid their fundraising efforts. Despite the busy schedules, some engineering students at UW get involved as volunteer puppy raisers or weekend dog-sitters.

As students, having a pet is simply not a reality for most of us. Volunteering with NSD and coming out to EngSoc Therapy Dogs workshops are a great way for you to get that fuzz fix while helping out an amazing cause. To find out how you can get involved, and learn more about their programs, visit them at *www.nsd.on.ca*.

Co-op and Midterms!

DEREK THOMPSON
VP EDUCATION

VP Ed, Back again. Check and direct and let's begin. Upside down and inside out I'm about to show you what it's all about.

But I digress. For those of you that have had a co-op evaluation done in the past, you may have found the evaluation form to be somewhat dubious in certain respects. The connection between the overall grade and the individual points could often be found as disjointed. There has been a concentrated effort over the last while to create a new evaluation form, one that better represents what a student has accomplished over the course of the term. The good news is that this new form will be done very soon. It will soon be undergoing industry and employer feedback and is being geared to be released for the next term (theoretically for the winter co-op term). I have seen this new evaluation and it looks

like it will provide much better feedback for both the student and the employer. It should also be noted that the final evaluation grades from the old form (satisfactory, good, excellent, etc.) have been left intact, as changing the final evaluations was deemed to be too problematic.

Next up to bat: Midterms! As Eddard Stark of Game of Thrones fame once said, "[Midterms] are coming." Well, he probably had some bigger issues with winter, but midterms are probably just as problematic. A friendly reminder to study for them! Don't let them sneak up on you. Redo some old assignments, create study notes, search up some past exams on the exam bank (located at *engsoc.uwaterloo.ca/services/exam-bank*), or do some combination of all of the above. Best of all, find what works for you and do it! Exams can send a student into high levels of stress, so don't forget to take the occasional break while studying as it can help with the retention of information.

Until next time, work hard play hard! (But study for those midterms too!)

PMs and MOVEMBER!!!

**MICHAEL SELISKE
LISA BELBECK**
VPS EXTERNAL

Hello again! Just finished off a busy month attending two awesome/informative conferences: ESSCO PM and CFES PM.

Canadian Federation of Engineering Students (CFES) PM was held in Halifax and the most interesting topic discussed was the new International Engineering Competition (IEC). This year, the winner of the Canadian Engineering Competition (CEC) will be attending the IEC to compete against teams from the United States, Europe, and Australia! Next, the CFES will be working on a survey and report with Engineers Canada asking, "Are what engineering students learning in school relevant to the real world?". This topic is an extension of last year's report about how professional development, such as communication skills, is taught in schools across Canada. You will be hearing more from myself (or the new VP External) on how and why we should fill out this survey, and the survey itself. Lastly, a motion passed to completely change the executive structure of CFES. If you are interested, please email or come talk to me in the office.

Now, it is your chance to attend a conference

in November! The first conference is Professional Engineers of Ontario Student Conference (PEOSC) on November 2nd-4th. This is a professional development conference where you can learn how to become a professional engineer and network with professional engineers across Ontario. For more information visit *www.peosc.org*. The second conference is National Conference of Women in Engineering (NCWIE). This conference is for both men and women and is November 16th-18th, learn more at *ncwie.cfes.ca*. To get more information on both of these conferences, please go to the Engineering Society website and apply! For NCWIE, head to *engsoc.uwaterloo.ca/ncwie2012* and for PEOSC, *engsoc.uwaterloo.ca/PEOSC2012*.

Lastly, MOVEMBER MOVEMBER MOVEMBER! This year it is going to be bigger than ever while supporting the fight against cancer. There are two things you can do right now to help support this awesome initiative. First, join the UW ENGSOC 2012 team on the Movember website! Second, book November 1st from 7PM-10PM off because there is going to be a fantastic Movember launch party in POETS. This party will be licensed and will have cookies and milk (to make milk moustaches). I hope everyone had a fantastic long weekend, and are ready for midterms!

Lisa

SO MANY COVIES!!!

DAVID BIRNBAUM
VP FINANCE

Well, hello there! I hope everyone is enjoying their term as much as I am. I have just a few things to update you all on.

First, is the budget. The budget was ratified as proposed this past Engineering Society meeting. This means that the one that was in last week's issue of the IW is the one that we will be working with over the term, with one change (an increase in the music budget to accommodate renting a venue). It is up on the EngSoc website so head to *engsoc.uwaterloo.ca/node/6221* to take a read.

Next, are Novelties and Patches. Everyone should come check out the revitalized Novelties store (located next to POETS) where we have awesome new t-shirts, new sweatshirts, new toques and a ton of other stuff. It's open every day 11:30am to 1:30pm. As for the patches, if you are interested in ordering some for directorships you have had in the past, FRIDAY is the last day to get them. Please email me at *vpfinance.a@engsoc.uwaterloo.ca* if you are interested.

Last, but not least, is the sponsorship! Sponsorship proposals are currently being accepted, and we will be having a meeting to see the presentations and decide the allocations on October 20th, 2012. If you have any questions about that, or anything else, just send me an email.

Thanks! See you all in two weeks.

To Innovate or Not To Innovate? That is the Question

JON MARTIN
OBI JON1138

FUTURE OF GAMING

Every gamer has their favourite franchises, whether it is long running series like *Zelda* or *Final Fantasy*, or more recent ones like *Fable*, *Bioshock*, and *Gears of War*. Most of these games are story driven, but still rely on improving the gameplay mechanics between iterations to draw in new and returning consumers. Of course, the hardest part for any gamer is the wait to hear if a sequel is going to be made, and how many years they will have to wait to jump back into that game world. Then, there is a whole other group of games that don't really suffer from those problems. Essentially, they guarantee a new offering in their series every year – with eager fans lining up to get their hands on the new iteration. But how different is the game year to year? Does the investment of time really balance the investment of cash that consumers shell out year after year for games like *Madden*, *NHL*, *FIFA* and other (mostly sports) games? That is the topic for this issue.

First, let's look at some of those franchises I put into the first category – the story driven, long development franchises. Even here you can have ups and downs in terms of quality and 'improvement' of games. Two examples I'm going to look at - *Fable* and *Bioshock* - have three games in their respective series (or at least *Bioshock* will when the new game is released). The first *Fable* game, created by Lionhead studios, was released for the original Xbox, which would later be bought by Microsoft, making the newer *Fable* games First-Party licenses. The first *Fable* had a great world filled with lots of British humour, but was simple and featured a relatively small game world when compared with later games. *Fable II* advanced the story a few hundred years into the future, to the time of the industrial revolution hitting the world of Albion. Featuring a vastly more detailed, and larger world, *Fable II* was a great advancement on the size and look of the original, but failed somewhat on the gameplay front. *Fable III* followed the same trend, with a larger, more detailed world, but again, a drop in gameplay. While the original had a kind of basic RPG style advancement system split into Melee, Ranged, and Magic combat, the newer games instead just rewarded with a generic point system including everything from shaking hands with villagers to killing the largest enemies. Magic powers were scaled down, combat was simplified with the removal of health and mana bars to be replaced with the standard 'take cover for a minute after the screen starts to go red and your health will regenerate'. With *Fable: The Journey* being released for the Xbox 360 Kinect, and *Fable IV* in development (apparently) I have my hopes up. Why? Because I love the humour of the series and always hope that they will realize that they already had great gameplay, they just need to bring it back (maybe on the Xbox 720???).

The second franchise I'm going to talk about is *Bioshock*, which currently has two games in the series, set in the underwater city of Rapture, and a third game on the way in a new, floating city. The *Bioshock* series has risen to success (see, the game is going from underwater to above the clouds) through a combination of great gameplay, beautiful environments, and deep storylines. I've talked before about the great audio diaries hidden throughout the original game - they don't just give you a neat little picture into the world, they also expand it. A series of three audio diaries tells the story of a family torn apart by the sickness of their daughter and her transformation into a little sister – but you can actually find their apartment (use the keycode from one of the diaries) and see the conclusion of the story. All that is second to the main storyline, and can only be found if you search every room for new things. The second game was a bit of a letdown as it was in the same world again – still great, but not exactly new. Gameplay was largely the same – except you now play as a Big Daddy, one of the main enemies from the first game, which didn't really change the game much. I think the other problem is the lack of a deep storyline - you aren't trying to find out what happened to Rapture, since you already know what happened, instead, you just wander around. I will eventually go back and finish *Bioshock 2*, but the story failed to pull me in as another game I was anticipating was released. *Bioshock: Infinite* looks to revitalize the franchise with a whole new world, while keeping the quirkiness of the original. New characters, locations, political struggles – this isn't a dead world you are walking into, this is a world in chaos – look to recapture the great qualities of the original, but we will have to wait and see how it shapes up.

So how about that second group I talked about – the repetition gaming category? Well, this is a genre that I just could never find myself interested in, mainly because I'm not a very sports-oriented person, and the idea of playing through an entire football season really doesn't capture me in any way. For this reason, I always watch in wonder every time a new *Madden NFL*, *NHL*, *FIFA*, or other game in that genre is released, and millions of people line up in droves to shell out $60 for a game that suddenly makes last year's completely obsolete. Does the gameplay really advance that much year to year? Is the rendering of grass or ice really that much more detailed to warrant the expense? Do the new uniforms for a team really affect your enjoyment of the game? Apparently, it depends on which console you are playing.

FIFA 13 is making news right now for becoming one of the fastest selling games of all time, selling 4.5 million copies in five days. While most of the versions of the game are being lauded as great improvements over *FIFA 12*, the owners of the Wii version of the game probably thought that they had put in the wrong disc when they started up the game. It seems that the Electronic Arts (EA) decided that fans would be happy with the same gameplay as long as character stats and uniforms were updated for this year. You can see in the screenshot – don't worry, the socks and shoes are accurate to this year's standards. The only other change to the game is the soundtrack, which is the same as all the other 2013 iterations of the game. So why is this acceptable, why can EA basically change the skins, a couple of stats, add a new soundtrack, slap a '13' on the box and demand $60 from consumers? I don't know – what, did you expect me to solve this problem? I just want to incite a small rebellion.

Basically, these are the issues I have with the disparity between long and short development cycle games. While both have their issues and can sour a franchise, at least the long-term developers generally try to change things significantly from iteration to iteration. It may be a new world or gameplay mechanic, or an entirely new take on an established brand (like the *Fable II* Pub Games for Xbox Live Arcade), and it can be viewed in both a positive and negative light – but at least it is something new. Now, I realize I'm going to probably get a lot of complaints about putting down yearly sports games, but I have two points to raise in my defense. 1) I'm on co-op in Alberta so I can avoid most people until next term when the angriest people will have forgotten. 2) Just think of the improvements and new features that could be in each of these games, if they came out even just two years apart – would you be willing to pay $60 for that better game and maybe instead have the yearly updates come as downloadable content for a lower price? Until next time, Keep on Gaming.

Nintendo Gamer Magazine

The Wii version of *FIFA 12* (above) and *FIFA 13* (below) show a stricking resemblance to each other, apart from the socks

Frosh Embark on the Wild Goose Chase

CAITLIN MCLAREN
1A CHEMICAL

Wild Goose Chase: *noun*. A foolish and hopeless search for or pursuit of something unattainable.
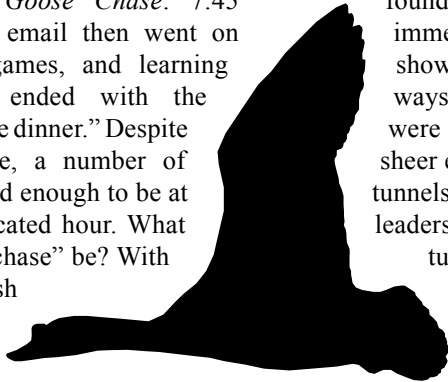–Oxford English Dictionary.

And yet, the invitation was clear: *Frosh Mentoring Goose Chase*: 7:45 PM, POETS. The email then went on to promise fun, games, and learning experiences, and ended with the magical words: "free dinner." Despite the worrying name, a number of Frosh were intrigued enough to be at POETS at the indicated hour. What would this "goose chase" be? With memories of Frosh Week still fresh in their minds, some first years worried about staggering tasks and sudden humiliation.

However, when the frosh arrived, they were welcomed and placed into teams by friendly and helpful upper years. It turned out that the Goose Chase was a treasure hunt, with the prize being a stuffed goose. However, to obtain the goose, the teams would have to race one another around campus, following twelve clues that led to vastly different parts of the campus. With the clock ticking, the teams set out with only an hour to find their goose.

To their dismay, each clue seemed to indicate a building at least a thousand miles away from the building it was found in. The wiser upper years immediately took the lead, showing the Frosh the fastest ways around campus. Some were startled to discover the sheer extent of the underground tunnels; others panted behind leaders who suddenly, cruelly, turned out to be long-distance runners.

The clues took many forms: some were pictures, others riddles, and at least one was in cipher. This lead to some confusion and plenty of frustration ("Oh, it meant the DC Fishbowl!"), and, in some strange

cases, even the leaders' experience failed them. As it turns out, everyone gets lost in the MC building, and it is difficult to search for an envelope taped to the wall when there is a formal event going on.

Far too soon, the clock read 9:15, and the teams reluctantly made vtheir way back to POETS. Reluctantly, except for Team #1, who returned exultant, bearing

eleven clues. A different team returned with the goose, but the judges determined that they had ~~cheated~~ not presented the correct number of clues. No one denied Team #1 their victory, as all had had a splendid time and, tired, were now busy gorging on pizza. Only one team was entirely successful, but the event's success was legendary!

Ammar Masud

Upper years and first years get to know each other before the chase begins!

Short Story: The Second Kind of Loneliness

JOSHUA KALPIN
2A SOFTWARE

THE SHORT SHORT REVIEW

Greetings readers, and welcome back to the Short Short Review where I'll attempt to review a short film or story in a really short number of words. This week I'll be reviewing George R. R. Martin's Game Of… I mean "The Second Kind of Loneliness" in exactly 314 words, which is the number of 'locations' the story is on my Kindle.

"The Second Kind of Loneliness" was originally published in the December 1972 issue of *Analog*. This story was written at the beginning of Martin's career but it is still a shining example of his work.

The story is about an unnamed man who has been assigned to operate The Cerberus Star Ring, a method of rapidly travelling from one end of the universe. This man is waiting for his replacement to arrive

and the story details the loneliness and madness he experiences because of his isolation.

The story is written in a journal style that allows for the protagonist's thoughts to be directly portrayed to the reader. The style also gives the reader a look into the length of time that he spends alone in outer-space and why he ended up out there.

The plot itself is deep and emotionally fruitful. When the protagonist is reflecting on his time on the ring he describes "a second kind of loneliness… It's the loneliness of people trapped within themselves. The loneliness of people who has said the wrong thing so often that they don't have the course to say anything anymore." This is an insight into another aspect of what it means to be lonely and lets the reader reflect on why people feel lonely. Furthermore, it makes you think and that's what makes a good story.

To wrap things up "The Second Kind of Loneliness" is an amazing story and definitely worth a read. I give it five large space rings out of five.

Visual Art and Design Program for Engineers

RYAN CONSELL
VISUAL ART AND DESIGN
PROGRAM COORDINATOR

Visual Art and Design for Engineers is a series of free studio art seminars being offered, with support from the Dean, to any interested students in the Faculty of Engineering. The goal of these seminars is to provide an opportunity for students interested in engineering design to learn and practice fundamental artistic skills and concepts.

Each session will include studio art activities, primarily drawing based, aimed at developing both skill and theoretical background in fine arts. The materials necessary will be provided at the sessions

and students will be welcome to keep anything they produce.

This program first ran as a six week pilot in the fall term with remarkable enthusiasm and positive feedback from the student body. Due to its popularity, it is being brought back again this term.

The first session is scheduled for Monday, October 15th from 4:30 to 6:30 in DWE 3517 and will cover the use of lines in art and introduce some practical drawing exercises. Future sessions will be held at the same time every week thereafter. These sessions are free and voluntary.

To secure a spot at a session or for more information please email the session coordinator at *raconsel@uwaterloo.ca*

1 Billion Users = More Money for Facebook?

JOSHUA KALPIN
2A SOFTWARE

Facebook, the social networking platform that "everyone" seems to use announced that it has hit one billion active users on October 4th 2012. After months of bad news, a slumping stock price, and criticism of CEO Mark Zuckerberg, this is great news for the company. However, the magic one billion mark does not guarantee the company's longevity in an increasingly tumultuous and ever-changing high-tech landscape.

When Facebook had their Initial Public Offering (IPO), their stock was at 38 dollars (USD). The stock then proceeded to fall to 20 dollars by the beginning of August. This fall was driven by a number of factors. First, Facebook's revenue growth has not been as fast as the market or company had expected. As a result, the market research firm, eMarketer, revised its estimate of the company's revenue in August, reducing it by almost one billion dollars to five billion dollars.

Furthermore, if one digs deeper into the numbers, 15% of Facebook's revenue in Q1 2012 was from advertising or micro-transactions in the social gaming company, Zynga's games. Zynga is currently being investigated for insider trading during its IPO and its stock is down 75% from its IPO. Additionally, revenue from its social games is down and prospects are not looking much better for the future. This trickles down to have a negative effect for Facebook's revenue from Zynga's games.

Outside of micro-transactions from social games from companies like Zynga, Facebook's primary revenue source is from advertising on its website. This is a very similar revenue model to Google; however, the key difference between the two companies is their ability to generate revenue from advertising on multiple platforms. If you visit a website and see ads there is a very high probability that is provided by Google. This is similar on Android and sponsored search results on Google's search engine. Facebook has struggled to generate revenue on mobile platforms and outside the Facebook website. The other issue Facebook faces on this front is that there is a fine line between generating revenue from users, and making ads annoying and a hindrance to using the platform.

For example, before the creation of the many popup blockers we had today, there were hundreds of popups. These ads were sometimes inappropriate, made loud noises, or just interrupted the user of the website. In reaction to these, and other forms of interruptive advertising, ad and popup blockers have been built into modern browsers. This has reduced revenue for websites that implemented these forms of advertising and many websites that don't implement these practices now ask for users to turn off their ad-blocker so they can generate more revenue.

If, to increase revenue, Facebook started to implement a popup that directed me to try "Farmville X" or populated search results with "sponsored results" that blocked the user from finding what they actually wanted, users would be annoyed. As a result, there are diminishing returns to advertising on the Facebook platform. Without diversifying their advertising mediums, revenue will eventually hit a cap, regardless of the number of users on the platform.

The last factor that contributes to Facebook's troubles is the nature of the product that it is. Facebook is consumer software that enterprise companies mainly use for advertising. This causes their enterprise clients to exist on the pure basis that their current users keep using the platform. Therefore, if users find a new social platform to use instead of Facebook, their corporate customers will depart as well. Without having stable enterprise services and customers, success is purely based on users agreeing with what the company does and staying in the platform.

In the summer, people were asking "what is wrong with Facebook?", as there were and still are many reasons that the company's stock was struggling. However, with moves to be more aggressive with advertising, Facebook has managed to pull its stock back up. What this means for the future is anyone's guess. It will be greatly dependent on what happens to Zynga and if the company can find new innovative ways to keep those one billion users.

The Effects of Cutting Government Funding

SARAH YOUNG
1A SYSTEMS DESIGN

Over the months, the federal government has continually cut funds from a number of different services and programs. This includes different departments affecting varying age groups. With these cuts, people have lost jobs, institutions have lost money, and the general public is outraged with the government's decisions.

Numerous departments that have been affected by funding cuts include public libraries; for instance, Library and Archives Canada and the Community Access Program (CAP) grant helped give Internet access to libraries at no cost to its users. By cutting funding, it means that these public services are receiving less money to run the institutions, buy new materials, and pay employees who work there. With the government decreasing the amount of money they will give to libraries, it has forced people to lose their jobs and to decrease library hours because they cannot afford to hire more staff.

Not only have services like this affected the public, but the government has also cut student and youth programs. Some of these programs include a volunteering program called Katimavik, and a paid program called the Ontario Youth Ranger program.

Some of you may be wondering what these are and how they impact you. Well, these are two amazing programs that youth benefit from all over Ontario.

Katimavik is Canada's leading youth volunteer-service program that gives young people the opportunity to be a part of services through volunteer work. This program is a not-for-profit organization that works in different areas that suffer from poverty, areas working directly with society through cultural and social services, and in the environment. Many months ago, the government cut their funding for this organization because they, themselves, were not benefiting from it; however, many young people were. This program gave people a chance to grow in society, individually, and as an active member. It is devastating to see the government no longer supporting the program which has been around since 1977. Sadly, people all over Canada, like me, did not get the opportunity to be a part of this wonderful program because the funding was cut before they could.

I was, however involved in the Ontario Youth Ranger Program run through the Ministry of Natural Resources (MNR), which was one of the most amazing experiences of my life. For all of you who don't know what this is, the Ontario Youth Ranger Program is a program where people who were born 17 years previous (must be 17 or turning 17 that year) work over the summer at an Ontario provincial park in a different region from where they live. These youth get to work with 20 other people of the same age and gender to accomplish tasks and work in the community and the environment. The government has cut its funding for this program which has been around since 1944 and a new program called the Stewardship Youth Ontario Program has replaced it. This new program is half the Ontario Ranger program because you do not get the full experience of living in a different region of Ontario or meet the amazing people you do. This year, there were 1,974 summer students employed by the MNR through the Ontario Ranger program who had the opportunity to work for such an amazing ministry, create and maintain portage and hiking trials, go on canoe trips, plant trees, and clean up and monitor habitat for fish and wildlife. Next year, the number of students employed will decline as the Stewardship Youth Ontario Program doesn't hire as many people as the Ranger program did. Thus, people, young and old, are outraged at the government for cutting funding to this program because it has been around for a very long time and has impacted a number of age groups that have helped them grow as a person.

The Ministry of Natural Resources has also had to eliminate four other summer youth ranger positions, and over 130 jobs - both full-time positions and seasonal. With this downsizing, the government is expected to save the the money, but it is nothing compared to the experiences, both professional and personal, that come with this program and many others in the MNR. The government is also cancelling overnight camping at 10 provincial parks so that there will not need to be as much staff working day and night.

Thus, over the past year, the government has greedily cut their funding for many industries and services that are provided for the people of all age groups. It is important to fight back against them (respectfully), to stand up for what you believe in, and let them know how these services have impacted you!

Point Vs. Counterpoint

Should Public School Teachers be able to Strike?

ELIZABETH SALSBERG
1A NANOTECHNOLOGY

Alright Ontarian parents, you can relax now. This past Tuesday, the McGuinty government passed a legislation forcing a two-year wage freeze and several benefit cuts, and most importantly, a two-year strike ban on Ontario public school teachers. While many of us UW students may not be directly affected at this moment, many of us were once sitting in the classroom of an Ontario public school. Besides, we are all taxpayers here, and this legislation puts (a little) more money in our pockets. However, we are here to discuss one issue, and one issue alone: Teachers should never have the right to strike.

This statement may seem on the harsh side, but the reality is that teachers are bulk of our education system. If teachers strike, children in Ontario public schools will not receive the same quality of education as their counterparts in private schools or in other provinces. This is very serious, particularly in the case of secondary schools, where students may be applying to university without proper preparation. Unfortunately, the only way around this drop in quality is money and not everyone has a lot of it.

In today's rough economic times, many parents simply cannot afford to put their child in a private school and thus depend on the public school system to ensure the academic success of their children. By striking, teachers would essentially encourage the creation of an economic class divide. Only the children whose parents could not afford to put them in a private school would remain in the public schools. This would likely create unsafe school environments, as much of the public school population would be comprised of students from low-income families in rough neighbourhoods. Since when has our system of education been based on net income? Clearly, the teachers do not understand the implications that striking may have on society. This leads us to the following question: Is it really appropriate for the teachers to strike?

When teachers strike, they often complain about wages, benefits and sick days. While these are legitimate issues for the union to negotiate on, the teachers must realize that they already have many benefits that many working people do not have. The endless list of benefits includes, but is not limited to: impenetrable job security, an above-average salary, cumulative sick days, and an incredibly secure pension plan. Teachers should also remember that these benefits come from the government, and indirectly from taxpayers. In striking, they are abusing their rights to these benefits in that they are selfishly asking for more than society can possibly give them. Their demands are exceptionally unreasonable considering the enormous multi-million dollar deficit that the province of Ontario is facing at this time. The government needs to close this gap, not enlarge it. Once the deficit is erased, it will then be possible to reassess the situation and distribute assets according to what taxpayers need, be it schooling or otherwise.

On another note, teachers have clearly forgotten that their employment depends on registration of children in their schools. If registration in public schools decreases, not as many teachers will be needed. Parents only want the best for their children, and striking teachers will force parents to find a better alternative for their children if they are financially able. This would ultimately lead to less teaching jobs in Ontario, thereby leaving thousands of new graduates from teachers' colleges across Ontario unemployed.

Though the teachers may feel that their salaries are not the best right now, the reality is that most working people are in the same boat. The only way out of this situation is for everyone (including the unions) to give up a little so we can work towards erasing the black-hole sized deficit that we are facing. Every member of society has this responsibility, and teachers are certainly no exception. Students do not deserve to have their quality of education cut back simply because the teachers are not pleased with their already substantial earnings and pension benefits.

All in all, the teachers need to remember their responsibility to the public. By serving the public system, they are maintaining relative stability in the quality of education Ontarians receive. This is the most crucial part of their job, as they are training tomorrow's workforce. According to Statistics Canada, over two-thirds of all new jobs in this country will require post-secondary education. High school is a mandatory prerequisite to college or university, giving secondary school teachers a pivotal role in turning out graduates with solid preparation. If teachers are allowed to strike, students will be put at risk. In the end, nobody, not even the teachers, will benefit.

MEAGAN CARDNO
1A NANOTECHNOLOGY

Oh hey, did you hear the teachers were striking again? What? You haven't? I wonder why that may be. Maybe it's because they've been slapped on the wrist by Mr. McGuinty's new legislative bill and told to sit in the corner nice and quiet.

Now this might have seemed like a half-decent move were it not for the duality of it. Tough economic times (which you are no doubt aware of unless you've spent the last half a decade in some jungle, eating fruit with your primate companions) call for economic budgeting and some unpleasant decisions. Hey, we all have to tighten up our belts and take some of the load, and that's understandable. So the teachers receiving the wage freeze and having some of their benefits taken away seems a reasonable proposal, even if the teachers moan and groan about it. But hey, they would probably have complained about something else anyways. Who doesn't complain? Complaining is what gets you stuff. If you don't ask, you won't receive.

But this move went past that sort of "acceptable" jerk move, straight to full-out swindling. It was a very cheap double-whammy; almost like playing tag with one other person where the moment they catch you they call no-touch-backs.

Well those of you who remember the days of tag know that the no-touch-backs is a really necessary move for those games when the two people decide they're just going to smack each other repeatedly instead of running away and continuing on with the game. The same sort of logic applies to the two-year ban on striking. If the moment any sort of bill is passed, the teachers go on strike, nothing will progress. There is some reasoning behind a temporary ban on striking… perhaps. Temporary is on of the key words here.

The other key word is democracy. Last time I checked, Canada had a democratic government. Now, I know it's been a long time since your civics class, but what that means is that we have the right to complain. We choose our government, and when stuff happens that we don't like, we complain to them, and they try to fix it (or at least make it look like they did). Taking away a significant part of teachers' voice like that is getting rid of the only bragging right we have as a democracy; the ability to challenge the government when we think something is unjust.

Now people may think that striking is a very financially wasteful process, and it is. But one must also take into consideration the debate that will result because of this bill. The legislative time that will be required for amendments on the bill will be removing time that could have been used to solve other pressing issues. Think of the money in the media coverage alone; having a controversial topic is always expensive.

Also controversy always makes nerves on edge and patience run thin. Trying to take away what most people see as a constitutional right just causes more uproar within the teaching community, rather than quieting complaints. In a system where we expect our voice to be heard (but, unfortunately, with a high noise-to-signal ratio as a cost), trying to mute the voices will only cause them to fight back harder. Just think about the scene in Harry Potter and the Deathly Hallows, when Voldemort tried to keep Hogwarts a quiet, captive audience. I don't mean to liken the Canadian Government to He-Who-Must-Not-Be-Named, but look at his attempt to silence upset people. And he used magic; laws and bills only apply on the legal battlefield, and we know that issues can easily go past that.

People must also remember that striking is not just that clichéd image we have of people rioting angrily in the streets, amounting to nothing. Striking is a long-used method that has been used in order to call attention to serious unaddressed issues. It might not be the most esthetically pleasing solutions (what country likes to see its workers on international news for refusing to work?) but hey, if it isn't broke, don't fix it.

The last thing to consider would be why people dislike the idea of their government gaining more power. Read one u(dys)topian novel to find out how a society like that looks to the present-day eye. Get one glimpse at the Big Brother notion in Nineteen Eighty-Four and you can understand why people have been so hesitant to just sign off their life in total faith to the government (see also: communism). The more they try to take complete control, the unhappier the people are going to be, and the more rebellious the people are tempted to be.

So yeah, there are some very good intentions and ideas behind the banning of teacher strikes, but keep in mind that the road of good intentions might lead to a very dark place… Dark Lords included.

Editor's Note:
Point Vs. Counterpoint is a feature meant to stimulate discussion on thought-provoking topics. The views and opinions expressed here do not necessarily reflect those of the authors, *The Iron Warrior*, or the Engineering Society.

John Henry Irons a.k.a Steel

DANIEL OSORIO
2T NANOTECHNOLOGY

UNSUNG HEROES

Heroes come in all shapes and forms. From the dawn of the golden age of comics the world was given Batman, Green Lantern, Flash, Wonder Woman, and the Man of Steel himself, Superman. But there came a day that no one could foresee, the day the last son of Krypton was no more; Superman had been killed. The death of Superman came as a shock to most, and everyone in the Justice League knew that no one could ever take his place in power, integrity, and inspiration. Metropolis fell into peril of massive gang wars. Four men banded together and decided to fill the role of Superman, but one stood out from the rest: Dr. John Henry Irons, better referred to as Steel.

Irons was an expert weapons engineer who worked for a company called AmerTek Industries. During his time at AmerTek, Irons developed a portable energy cannon nicknamed "The Toastmaster". When the invention was used to kill innocent civilians by a crazed gunman, Irons faked his death, moved to Metropolis, and began to work as a construction worker so he would never be forced to create weapons that could hurt innocents again. One day, one of Irons' fellow workers was about to fall from a skyscraper, and Irons pulled him back onto the platform. He lost balance and began to fall 40 stories, but he was saved by Superman himself! When he asked Superman what he could do to repay him, Superman simply said, "Be a life worth saving." Then, the day came where the beast known as Doomsday battled Superman in the streets of Metropolis. Irons took a sledge hammer and tried to protect Superman, who was severely beaten. Irons was backhanded into rubble, only to awake hours later to see the aftermath of the battle, muttering the words, "I have to stop Doomsday." Upon Superman's death, four men stood to fill his shoes who became known as the Supermen, consisting of Superboy (eventually became part of the Teen Titans), Cyborg Superman (eventually became a villain and joined the Yellow Lantern Corps), The Eradicator (a reformed Superman villain who uses lethal force) and Steel. Some came to believe that Steel was the true successor to Superman. Even Lois Lane considered that Steel's armour was embodied by Superman's soul.

Steel's abilities and traits rival those of the strongest of heroes. Although all of his gadgets and abilities stem from his own weapons he developed and smuggled out of AmerTek industries, his greatest weapon is still his indomitable willpower and heroic spirit. However, he still packs a wallop of skills and abilities. First, he has a power armour that is nearly indestructible. It can take bullets, knives, bazookas, energy beams, and punches from people as strong as Superman. His strength has been known to rival those of some of the top ranks of the Justice League. He is able to throw around most of Superman's rouge gallery easily, and lift nearly 100 tons. His suit is also built to defy the laws of physics and actually fly, even though he is incredibly heavy. Although he is not the fastest

hero out there, Steel can keep up with the best of them. His armour is outfitted with some of the most sophisticated equipment known to man, with a variety of sensors, radar, and sonar applications, acting almost as a spider-sense (and sometimes as a low-powered X-ray vision). Steel is also known for his many weapons, such as his wrist-mounted rivet gun that he carries into battle with him, but his most iconic is his "Smart Hammer". It has built-in flight abilities, and is able to hit harder the farther it is thrown. It can find its way back to Steel at any time, and it is as strong as the armour Steel wears. Later on in his Superhero career, Steel's DNA was altered by Lex Luthor, where he gained the ability to become organic steel, much like Colossus of the X-men universe. He could also heat his body to the point of becoming molten steel.

Steel has had many achievements throughout his years as a Superhero and has found himself working side by side with some of the biggest names in the DC Universe. He has been a part of two major DC Universe teams: the Justice League of America and the Suicide Squad. During the events of 52, Steel assisted the Justice League in defeating the Secret Society of Villains in Metropolis. He watched over Metropolis and defeated most of Superman's rouge gallery single-handed, stopped major gang wars across the city, and stopped major gangs in Washington, DC. Steel eventually took down all of AmerTek Industries and prevented their illegal weapon trade from continuing. During week 40 of the 52 event, Steel led the Teen Titans on a full assault on Lex Corp to save his niece, Natasha. After battling hoards of Luthor's robot guards, he was able to defeat Luthor in a final battle, bringing him to justice for his crimes of illegal weapons trades and kidnapping. He has also gone toe-to-toe with Atlas, a time travelling villain who is on par with Superman.

For current comics, Steel has been rebooted slightly and made his first appearance in action comics. He still has the same personality with the same abilities,
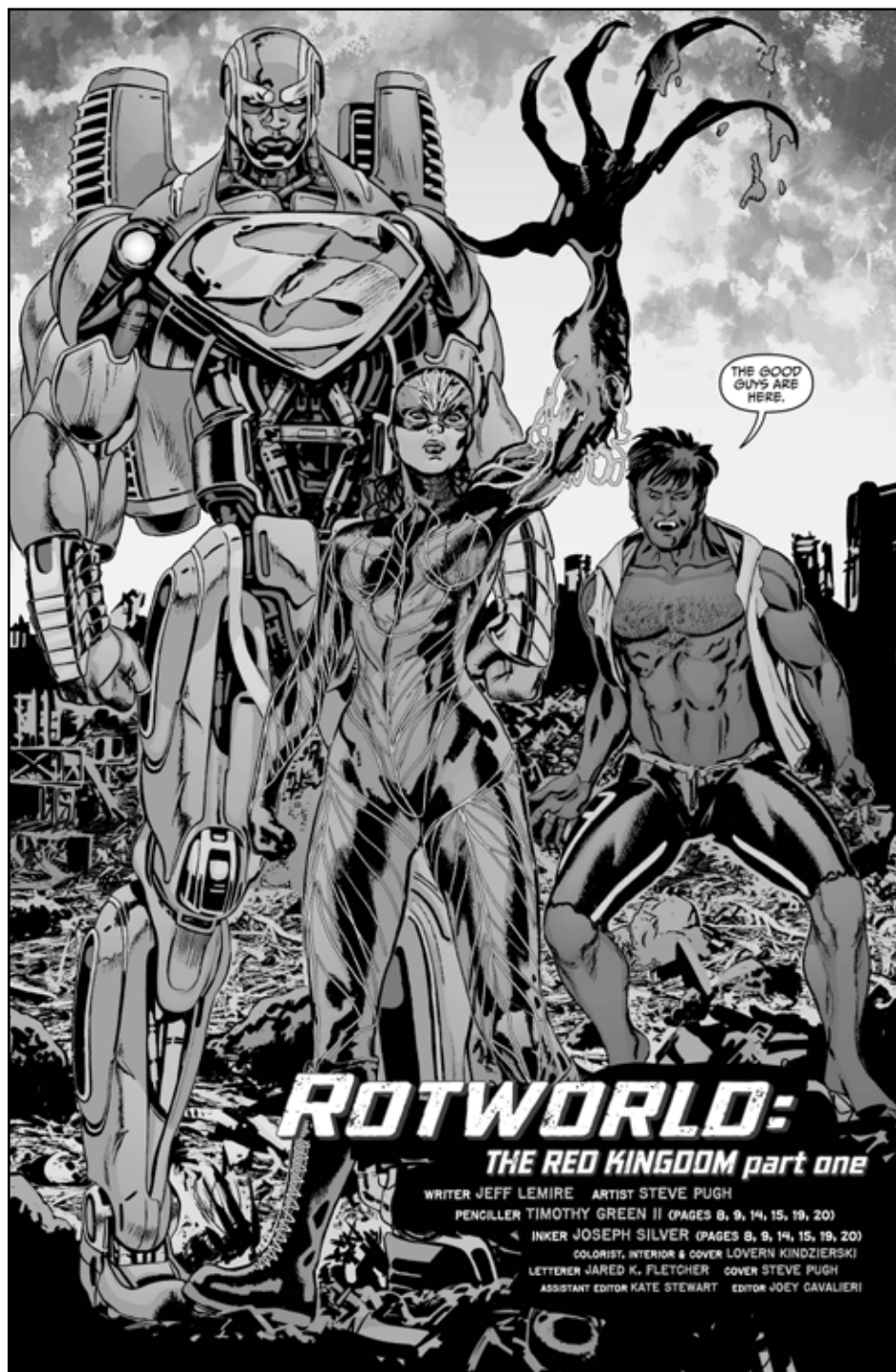
Steel in the new 52v

comicbookmovie.com

only instead of fighting off Doomsday, he fights off Metallo. He is currently featured in Animal Man in the cross-over event Rot World, where the world has been consumed by the entity of The Rot. Steel is one of the last remaining heroes along with Black Orchid, Frankenstein, and Swamp-Thing.

To sum up this article, we are taking a look into a new kind of hero that I haven't really explored before. Instead of being tormented by a dark past or being an orphan to a destroyed home world, he was just a common man who was inspired to make a difference. Steel is the embodiment of the hero that exists in all of us - we just have to let it out. Steel took on the impossible role to become Superman and succeeded. So, when you are thinking of heroes that are god-like, powerful, and all around awe-inspiring, remember that one man stood to make a difference and gave a city - nay, a world - hope in its darkest hour, a hope as real as Steel.

KW Symphony and Music Around the City

JOSHUA KALPIN
2A SOFTWARE

DISCOVERING KW

Greetings readers and welcome to Discovering KW. In this column, we will be traveling around Kitchener-Waterloo to discover some of the lesser known activities, locations, events, and see some cool stuff. This week, we will be exploring music around Kitchener-Waterloo; specifically, the Kitchener-Waterloo Symphony Orchestra (KWSO).

The KWSO was founded in 1945 and currently has 52 musicians on staff with Edwin Outwater as the music director. You can see performances by the symphony from September until May. Additionally, the symphony plays in many venues in the tri-cities area including Centre in the Square (more on that later), Conrad Centre for the Performing Arts, and the newly opened Quantum Nano Centre.

So why should you go see the KWSO? Well, they offer a ridiculously awesome and inexpensive way for students and anyone under the age of 18 to see almost every single concert for $60. What makes this awesome is that these seats are normally worth upwards of $100! So, I imagine many of you are thinking "OMAGASH WHERE CAN I GET THIS" while some of you don't care.

For those in the former group, you can get more information on the KWSO website at *kwsymphony.ca*, call (519) 745-4711, or go to the box office at the Conrad Centre for the Performing Arts on 26 King St. W in Kitchener. For those of you who don't enjoy classical music, there are some other awesome music-related activities and venues around Kitchener-Waterloo.

One of the venues we talked about earlier, Centre in the Square, also hosts many other types of music events. Most recently, it has played home to the musical *Wicked*, *Gordon Lightfoot*, and it is scheduled to host *Video Games Live* as well as *Theory of a Deadman* later this year. The venue could be compared to Massey Hall, Toronto, in terms of material and acoustics and is definitely worth seeing a concert at.

For those of you looking to buy musical instruments, there is a Long & McQuade located on King St. between Bridgeport Rd. and Erb St. in Uptown Waterloo. This isn't any ordinary Long & McQuade; this one managed to get the ridiculously talented drummer Gavin Harrison (Porcupine Tree, King Crimson) to do a drum workshop last year. Furthermore, this is the closest music store between campus and Cambridge. Also, if you are thinking of renting an instrument, you can get them here at very low prices.

Well that's all for this week's exploration of the Kitchener-Waterloo area. Hopefully, you have learned some new facts and fun things to do off-campus. Next week we will explore a totally new and unrelated part of Kitchener-Waterloo.
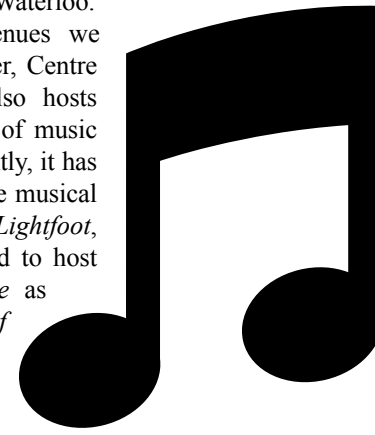
The Freedom of Ever-Changing Jazz

ZACHARY GRINGAS
1A NANOTECHNOLOGY

MUSIC THROUGH THE (P)AGES

First I need to start by making a small addendum to my last article. I mistakenly referred to Jupiter as a song; the literal definition of "song" is something with lyrics sung by a choir, and it is improper to refer to an orchestral movement from a larger composition as such. For that mistake, I am sorry.

Now, onto the jazz!
Jazz music is the heart and soul of the late night city. Any trip downtown will find any city alive with jazz clubs, bustling with all forms of the music 'till all hours of the night. Jazz music is able to attract such a crowd because it is always new and exciting; it's all about freedom and allowing for a lot of solo improvisation to make it constantly change.

Such a freedom in music translates to a great diversity within jazz bands. Small bands require a strong percussion and bass to start off, becoming the heart of every song and holding everything together. After that, the composition of the band is as diverse as your imagination! Pianos and saxophones are common additions, but flutes and oboes can be added into the band for an interesting change. Strong brass is also very common within small jazz bands.

The larger ones are a bit more structured. Most large jazz bands have very strong brass sections, keystone rhythm, bass, and piano, and a strong soloist sax section. But this isn't a requirement; many jazz bands are made entirely of brass, and they still sound amazing! And on top of all that you can always add a vocalist to give it a new feel.

With such a diversity in the composition of the band, jazz music is able to take on many different sounds; however, there are some common linking features. Complex rhythms evolve through syncopation, creating emphasis on the offbeat, as well as the blue notes, the ones that diverge from a major scale, to create a new feel. In fact, there are even scales specifically for jazz.

While keeping to these flexible rules of jazz, it has evolved into a wide and diverse genre of music. I don't have enough words to talk about all of it, so I shall focus on only two contrasting styles: Swing and Blues.

Swing
I don't mean a thing if it ain't got that swing. I'm sure you've all heard that somewhere, but what exactly does it mean? Well, swing is the core technique of swing music. It is a technique that creates a lilting rhythm of uneven notes by making the first eighth note in a pair longer, and the second one shorter. This essentially establishes a groove that gets your feet tapping along with the beat. This style is used all over the place, extending through many forms of jazz and even into country! Why don't you listen to "It don't mean a thing if it ain't got that swing". In fact, listen to two versions and you'll hear the freedom and improvisation that jazz is full of!

Blues
Blues, as its name suggests, is based around the blue note and often has sad and sorrowful undertones to it. These songs tend to be much slower, like a ballad, where the band conveys the sorrowful emotion to the audience. Songs like "Since I Fell For You" are great examples of everything that blues music can hold.

Now you may be starting to realize how large jazz music really is from those two examples, but I haven't even touched the surface! For example, my personal favourite song is "Children of Sanchez", a must listen to piece, and that doesn't even fall close to any of the above styles! Jazz is as ever changing as the people playing it, making this style one that will stay around for centuries, always new and exciting!

Next time, we dive into the world of Rock and Roll. Keep your passion alive!

1000+ Miles Down and Over 9000 Degrees…

ELIZABETH SALSBERG
1A NANOTECHNOLOGY

SCI-FI MOVIE REVIEW

WARNING: SPOILER ALERT!
The headline speaks for itself. *The Core*, directed by Jon Amiel, is certainly quite the chilling thrill. However, what was intended to be a realistic sci-fi thriller does not quite fit the bill. Perhaps the words 'realistic' and 'sci-fi thriller' do not really belong in the same sentence. Oxymoron, anyone?

The movie begins when 32 Boston citizens with pacemakers within a 10 mile radius of each other suddenly drop dead for no apparent reason. Meanwhile in Trafalgar Square, London, swarms of pigeons lose their ability to navigate and fly into everything, from statues to cars to the usual multi-window office towers—but not because the lights were left on.

Dr. Josh Keyes and Dr. Zimsky, prominent geophysicists, have concluded that these incidents are the results of the waning electromagnetic field that surrounds the Earth. Keyes reasons that this 'waning' is directly related to the fact that the molten metal core of the Earth has stopped moving. The consequence: everyone on Earth will be fried to death by radiation within the next year.

The only way to restart the core would be to drill down and detonate several nuclear bombs. Dr. Serge Levesque, a weapons specialist, is enlisted to design and construct the bombs. While we have certainly made progress in our understanding of highly explosive materials and their uses, we have never had to use them under the incredibly high pressure at the Earth's core.

In other technological advances, we've built space ships but never have we had occasion to construct a ship to go down into the Earth's crust. Conveniently, Ed 'Brazz' Brazzleton has found a way to drill through deep rock with lasers and has also engineered a new material dubbed 'unobtainium' (check your local periodic table) that converts high pressure to energy (that's a new one)!

Within three months (my, that was quick), the team has constructed a long, (rigid), compartmentalized, tube-like ship named Virgil to be launched into the Earth. NASA pilots, Commander Iverson and Major Rebecca 'Beck' Childs, are assigned to navigate Virgil down through the depths of the Earth to the core.

After a successful launch, it seems to be a jolly good time up to the 700 mile mark. Suddenly, Virgil hits a massive geode and gets stuck in a cobalt cove full of amethyst. The laser-drilling device is badly damaged and the crew is forced to go outside to do repairs, where the temperature is around 4500°F (hotter than hell). Commander Iverson is killed in the process. After some time, Virgil is again ready to sail on to the next rock-block.

As if life has not been hard enough so far, Virgil ironically bumps a gigantic diamond, the hardest substance on Earth. The weapons compartment is crushed and Dr. Levesque with it. Fortunately, he was able to pass Keyes the activation codes within just seconds of his death.

Finally, Virgil arrives at the core. However, science can only predict so much about what it has never seen (no kidding): it appears that the inner core is more dense than Zimsky had originally thought—their ammunition is not going to be powerful enough to restart the core. With Levesque gone, there is no possibility of modifying the bombs and so it's back to the old drawing board. Several minutes of frustrating calculations later (only a few minutes?!), Zimsky proposes that timing the nuclear bombs to create wave interference would generate enough power to jump-start the core.

This presents a new challenge: the team will need to separate the bomb compartments so as to detonate them one at a time. This involves one member venturing into hull of the ship, which is exposed to deadly 9000°F temperatures. Brazz volunteers to be fried alive to save his own ship and the mission (or world… or something).

The detonation of the bombs successfully restarts the core. Zimsky was caught in the second last bomb compartment and was blown to bits. The only survivors of this whacked-out mission are Beck and Keyes.

Only now do they realize that coming back up may potentially be a problem. Keyes proposes to use the 'unobtainium' along the hull of the ship to convert the high pressure at the core to kinetic energy. This energy ends up being enough to bring
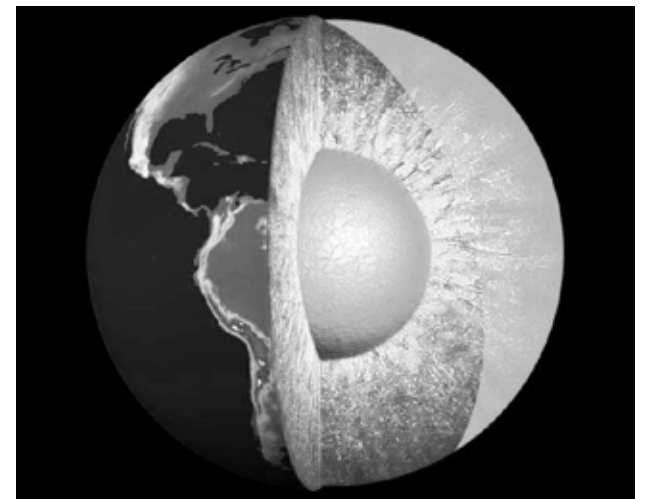
new.sciencemag.org
There are definitely no diamonds in the Earth's core

them all the way back up to the ocean floor. The US navy senses their ship from the transmission of whale song and successfully rescues Beck and Keyes.

Well dear readers (is it obvious I'm past my word count?), this movie was a somber reminder of why sci-fi thrillers and realism never go together. Wait! One more thing: if you go out, always have a safe way home!

Pumpkin Derivatives: Nightmare on Mill Street

GRAEME SCOTT
3B CHEMICAL
ERIC EVENCHICK
3B ELECTRICAL

GETTING GOOD HEAD

In case you haven't heard, it's October, and Halloween is soon. Of course, Halloween means pumpkins, and pumpkins can be turned into variety of things. This includes carriages and our preferred pumpkin derivative: beer.

This month we are enjoying Nightmare on Mill Street, a lovely Pumpkin Ale from believe it or not... Mill St Brewery. Who would've thought? Today we have several guest columnists including Anish Bhutani, Derek Thompson, Ronak Shah, and also Megan Pollock, Bin Tandura and Cameron E. Winterink; President,

Imprint Publications Corporation. The last three aren't drinking Nightmare, but are nonetheless here so they get to talk too.

Tim is drinking Blackthorn and made the apt point that while pumpkin is in season, apple is also a lovely fall fruit and is, in fact, always in season, making it in season right now. Enjoy a lovely apple pie, tart or crumble is always a wonderful choice. Cider is good as well.

Megan isn't drinking Nightmare, but also makes the point that it tastes like pie.

Cameron E. Winterink does not like pumpkin things. But he is making us laugh, so he can stay. He is drinking Erdinger Weifbier, which is Alexa Baker's favourite beer. Which is all we're going to say about that. For more info read...

Now....on to the main topic of the article,

Nightmare on Mill Street. The beer itself isn't bad. It has a very noticeable taste of pumpkin spice, like a pumpkin spice latte but with beer, so it's better. It could use a good deal more carbonation though and has very little bite to it. But overall, the beer is rather tasty, but leaves a lot of room for improvement.

Now it's time for a new and possibly one time only article feature; Quote time with the people at our table at Kickoff's

"[The Beer] needs more head" - Ronak Shah

"Cribbage is a great game and you should all learn to play" - Tim Bandura

"This Pumpkiny Nightmare, although not as heavy as other pumpkin ales provides a flavour of pumpkin far more flamboyant...lets not use that....than other beers of this style and season" - Derek Thompson, Presidential Candidate

"No comment" - June Lowe

"I don't know if it's my old age or the strength of this pumpkin ale, but this beer has made me forget about my woes as an (f)unempleyed grad, and for that I am grateful that this exists." - Anish Bhutani

"I've been asked to type a quote while Graeme pays for the beer. This being the case, you should all read the wiki article on Sébastien Le Prestre de Vauban, the French Marshall who basically revolutionized seigecraft. Additionally, if you are interested in being the new Imprint EIC please contact me" - Cameron Edward Winterink

Based on the above quotes and our highly stringent review and scoring process, we have decided to give the beer 3.2/5 Surly Bartenders.

Next time, we'll talk about the effects of plagiarism on microfluidics.

A Highly Variable Lasagna Recipe

CAITLIN MCLAREN
1A CHEMICAL

A HIGHLY VARIABLE [X] RECIPE

Midterms are really close now. You're studying all the time, and you're starving. Your brain needs food immediately! You're too hungry to concentrate!

Sounds like you need some protein fast. How does some lasagna sound? No, I'm not kidding; it doesn't take forever.

First you need some noodles. You know those wide, flat lasagna noodles? Those. You can also use other noodles if you like- that will just turn your lasagna into a casserole, which is just as good.

Boil the noodles. Don't forget to add salt.

The other major component of lasagna is the filling. Now, you may love meat, or you may be a vegetarian (we don't judge either way). So, there are two different sauces you might make:

Meat: Cook some meat in a saucepan. Ground beef works best, but use whatever you like (except salami or luncheon meats. Trust me, that won't work). The meat should be in small pieces. Add a sauce to the meat. Tomato sauce is the obvious choice, but you can add pesto sauce, or another kind. It should be thick sauce: soy is not recommended.

The sauce should coat the meat, but the mixture shouldn't be liquid-y.

Vegetarian: Use vegetables instead of meat (surprise!). A good vegetable base to use is spinach, but if you only have random veggies, they will do fine. Cook the veggies in a saucepan until they are soft, not liquid-y! Add a sauce if you want, and cheese is good if you eat it.

Obviously, you can save time by cooking the noodles and the sauce at the same time. Whatever you do, don't watch the noodles boil. It'll make them take about twice as long.

Now that you have your noodles and

Consuelo Elo Graziola, from The Noun Project

sauce, get out a flat, deep dish and begin layering. Begin with a layer of sauce so the lasagna won't stick, and alternate layers of noodles and sauce. The top layer should be a thin layer of sauce.

Note: If you have the time and resources, there is an excellent thing you can do at this point: take some soft cheese (cottage and ricotta cheese work very well) and intersperse layers of cheese among the layers of noodles and sauce.

When you've finished your layers, sprinkle some cheese on top. Put the dish in the oven and bake at 423K until the cheese is melted or the edges of the top noodles look crispy.

It's done. Take it out, wait for it to cool, and eat it. Hurry up - that report won't finish itself!

V1 Caf Renovations: An Upper and First Year Opinion

LEAH KRISTUFEK
2A CHEMICAL

Upper Year Perspective

Back when I was in first year, I lived in V1. It was fantastic except for one thing - the terrible cafeteria! The food was either delicious or barely edible and there were lines everywhere! I mean who designed that place? When the food was worth lining up for, the lines circled in on themselves restricting access to the salad bar, milk fountain and cake fridge area. And when it wasn't, the area between the grill and the juice fridges became congested with students who were settling for a burger or mulling between hungry and undecided.

For a school with so many engineers, architects and designers, you would think

they would have gotten it right the first time! Oh well better late than never, the design flaws have now been corrected. To test this fact, I decided to return during peak hours of operation - lunch time Friday(okay, relatively peak hours of operation).

Although the cafeteria has been widened in some places, the islands inserted instead take up a lot of space. Talking to a first year I learned that lines are still quite long and navigation still time consuming. Food is quite similar except you can now scoop your own ice cream and pizzas are available for purchase every day. Smoothies have been stream lined and they are now conveniently available pre-made.

Overall the caf hasn't changed too much if you hated the V1 food before, you'll still hate it still now. If you have a sweet tooth, bad food is now even more readily available to you.

MICHAEL YANG
1A GEOLOGICAL

First Year Perspective

After attending Student Life 101 and talking to upper years during my first two weeks in university, my impression of cafeteria food is that it is something to be sparsely eaten. Maybe, they have yet to see the renovations of the *Mudie's* in V1, which got a makeover during the summer.

While the rooms inside V1 resemble a correctional institution, the interior of food services is popping with colour which shows that someone paid attention to aesthetics as well as function. The names of the stations go with the theme of what is served; *L'oven* serves stone baked pizza, *Station 57* has make-your-own stir-fry, pasta, and noodles, and

Sizzle Street serves the infamous V1 spicy chicken wrap. It is very exciting that the addition of colour to the cafeteria has been complimented with elegant wood panels and classy lights on the roof of the dining area.

However, the food doesn't match the aesthetics. This is true at *Mom's Counter* as the portions are not proportional to how much you pay. With cafeterias, there is the issue of repeatedly purchasing menu favourites and quickly losing interest in them. This can be avoided if you are open minded as there are many options you can choose from. You may even find something that you never knew you loved!

If that does not convince you to visit, then I challenge you to try a pizza at *Mudie's* or make a pasta at *Station 57*. Don't be afraid to try something new as you'll be surprised to find what you like to eat isn't what you expected.

Top Ways to Handle Being Turkey-Dumped

**WADE WILSON &
EDWARD BLAKE**
3Z HANDSOMENESS
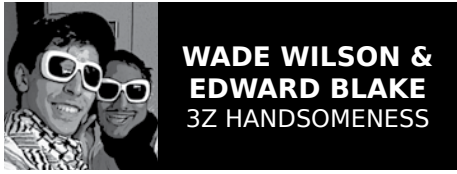
So, you've made it home from Thanksgiving with the old family, old friends, but a new pain in the heart that's making you feel like an inferior vena cava. Yes, you fell prey to the infamous "Turkey Dump" and now you're wondering, whatever will you do? The answer: be proactive, be positive and don't take it sitting down.

Rest: Some say that the thing to do after a break-up is to hit the gym and sweat-it-off, presumably because the release of bodily fluids cleanses your aura and washes away the hurt feelings. However, what's easier than sweating? Crying. Lock yourself in your bedroom and cry away your problems. That always solves things.

Consume: Breaking up leaves a pit in your stomach that can feel like a hole blacker than your ex's heart. You might be wondering how to fill this hole: Religion? Family? Friendship?

Hobbies? No, no, no and no. Food, dummy. Food fills you up: you should have learned this during Thanksgiving when awkwardly shoveling food in your mouth in-between whimpers.

Rebound: There are plenty of fish in the sea, but before you get that desperate there are lots of single people all around you from whom to choose. The best way to get over someone is to find a new beau (plus, if your ex sees you with someone new they'll totally get jealous and will be sure to take you back!) Entering the dating scene after a break-up isn't easy: you're left with more baggage than a brown family at the airport. This might lead to social fauxpas so we recommend that you start each and every date with a long explanation of your previous relationship, how your heart was broken and how you're totally over them. Of course, being a Waterloo Engineer we should mention that this advice can also be applied to cyberdating … or just watching pornography. As we said earlier: releasing fluids is good for you.

Beg: Like your friends and family already knew but wouldn't tell you to your face: you've realized that you can't do better. This leaves any ~~self-respecting~~ engineer with one

thing to do, play League of Legends then run to their house to show up at their doorstep in the middle of the night. At this point you're probably self-conscious of how much you've perspired, if not, you should be. Make like Elisha Cuthbert and proclaim it then ask to go in. Now is your time to shine, show how much you care by demonstrating you are willing to break the law if anything comes between the two of you. So ignore any mention of the restraining order and keep on trucking you prospective criminal you.

Do what makes you happy: Prostitutes are not the answer when you get this desperate. The key is to go out and do what made you happy: take a tandem bike ride through the park alone, cook a meal for two for one, go to the theaters reserving the seat next to you, sleep on the more dangerous bed side closer to the window, and of course have dinner with the former in-laws...just kidding with that last one, they were the worst. Good riddance!

People care: Speaking of family, remember how much more enjoyable stuff is when you do them with others? Ensure that a friend or family member is there with you every step

of the way. They care for you, help them care by having them not remind you of your irreplaceable ex. For instance, relate everything they do to something your former soul-mate did. They are more than happy to give up their personal habits to make you feel better, if not, make them know that they should. What else are friends for?

Drugs: Speaking of friends, we DO NOT ever condone the use of drugs, unless for medicinal purposes. Seeing as how horribly depressed you are, getting a prescription would be as easy as pineapple express.

Celebrate: You've finally rid your time of that horrible being that's been dragging you back all this time, what else is there to do than celebrate these good times, come on! For more information see previous point.

By now you should feel a little better about your lonesome life. In all seriousness (as we have been throughout our entire time together), leave your comfort zone, meet people (MEET US...please, we're so lonely), and travel the world to get your mind off things. We'll leave you with this fun fact: the tallest bridge in the world is the Millau Viaduct.

How (NOT?) To Apply to Jobmine

**SPENSER GOOD &
MICHAEL LAANVERE**
2B MECHANICAL

Hey there first time jobminers! I have some well thought out advice for you from my years of job mining experience that will ease stress, prevent disappointment and maybe even get you a decent first coop experience. By the time this article is published, the first and second round of applications will be closed. That's OK! You still might have the ever important lightning round ahead of you.

The lightning round, also called the continuous round, is the best round anyways. In fact, I would advise you to never apply to rounds one and two. I never do. In rounds one and two, you have to wait an entire month before the rankings come out. That means you could really like the job for your first interview and get the offer, and then you have to go to a bunch of other interviews for crappy jobs that you applied to without really reading the description. The lightning

round is where it's at, you do an interview and then do the ranking the same day. If you didn't get the job, there are tonnes more out there that you can apply to everyday. You may even be blessed with having an interview during finals, which is always a good conversation starter during an interview. For example you if your interviewer says: "How's it going?" you can reply "Horribly, I just got destroyed on a final and I have to cram for one tomorrow but instead I have this stupid interview". Then you can all laugh. Trust me, it's a good way to break the ice. Another advantage to applying to the lightning round is that it's slim pickings for the employers. By that time, all the best jobs would have been taken by the best candidates. That leaves a bunch of mediocre and crappy jobs for you to pick and choose from. However, the quality of jobs matches the quality of applicants, making it easier for your underwhelming and under qualified self! Trust me, things will click into place when you are going up against Christy from 1A Enviro whose work experience consists

of a summer job at Wendy's instead of 2B Jerry of Mechanical who has worked at Apple, Harvard and NASA! Talk about an easy offer!

Now that you know when to apply, the next step is to know who to apply to. Don't worry, I'm not going to explicitly call out underwhelming employers (ahem.....most Government of Canada jobs) as *the Iron Warrior* wouldn't allow it. I can tell you an easy way to screen applications. You may be overwhelmed the first time you do a job search at all the various jobs you encounter. Well there's a list of red flags that I use to tell me not to apply to a job which should help you narrow down the field. Here's the big two: The first one is cover letters. If I open up a job description and see in red lettering that I have to attach a cover letter: RED FLAG. I have no time to write a cover letter, I'm too busy applying to a bunch of other jobs from employers who are not snobby enough to require cover letters. If I open up a job description and it says in red lettering "Please apply to Jobmine and at ....":

RED FLAG. I use Jobmine's somewhat annoying interface for a reason: so I can apply to a bunch of jobs in one place with a couple of clicks. Sometimes, however, I go against my advice and apply to a job that requires a cover letter or a separate application. I may have actually read the description and found it to sound really cool. If I do apply to one of those jobs I take extra care to make sure I don't include a cover letter or apply separately. I feel that I show my independent and sometimes wildcard-like nature by explicitly ignoring instructions. One time I applied to a job and got an interview and realised after that the description said a cover letter was required. That just goes to show that employers either don't really care for cover letters, or they are looking for people who have a little bit of wildcard in them. Plus, any employer who has enough time to scan through 100 two page cover letters instead of doing their real job is probably not someone you want to work for. Well this has been How (NOT?) to Apply to Jobmine. I'll leave it to you to discern the fact from the fiction.

Too Geeky for Humour

By Kyla Rodgers
1A Civil
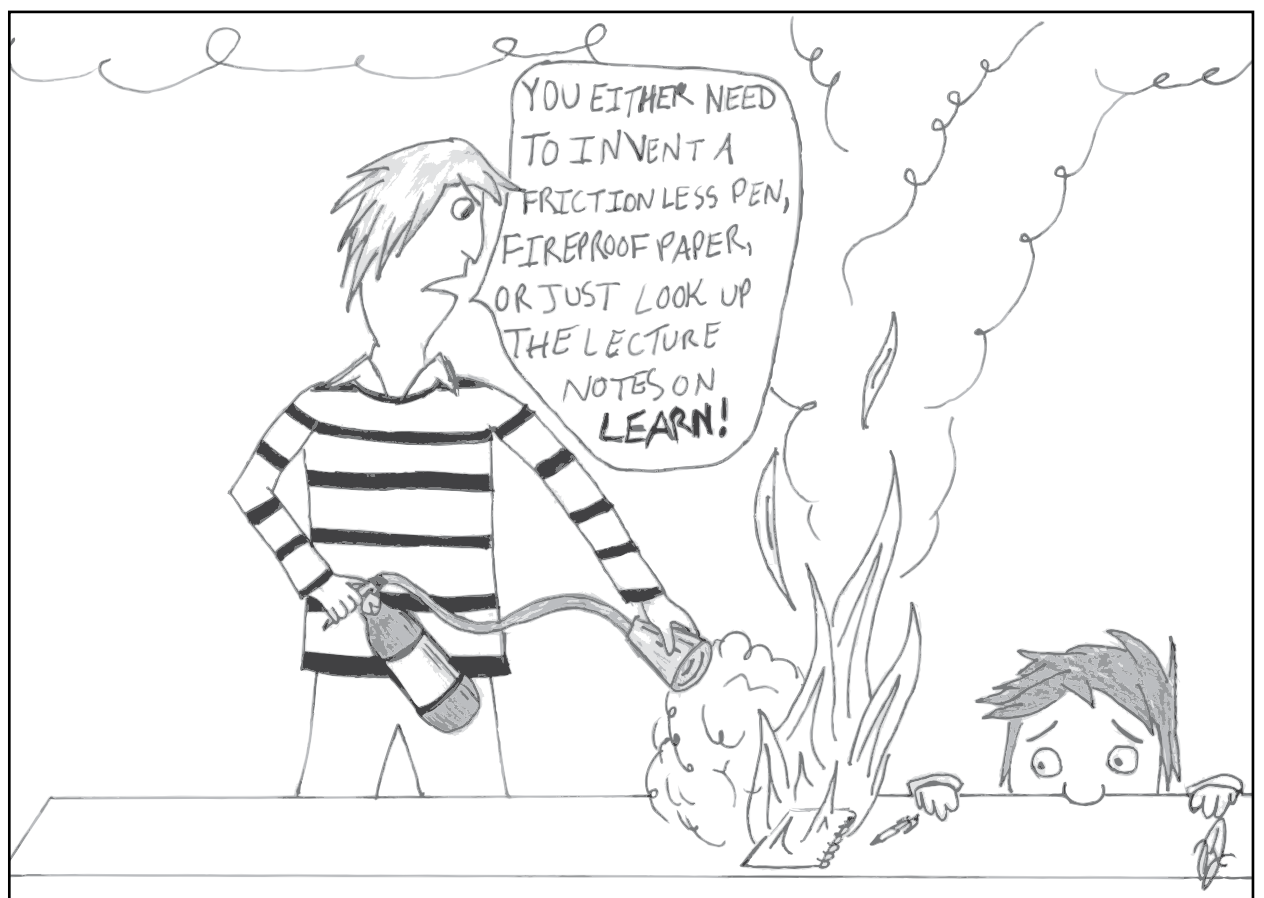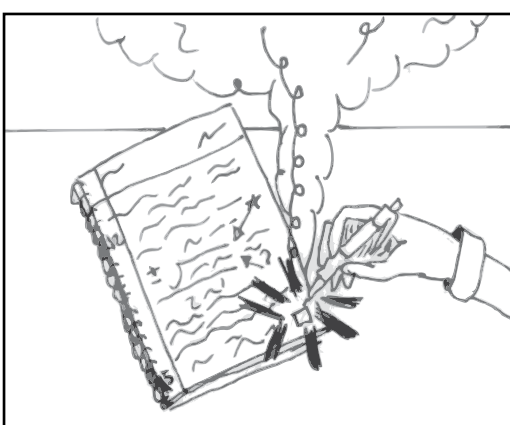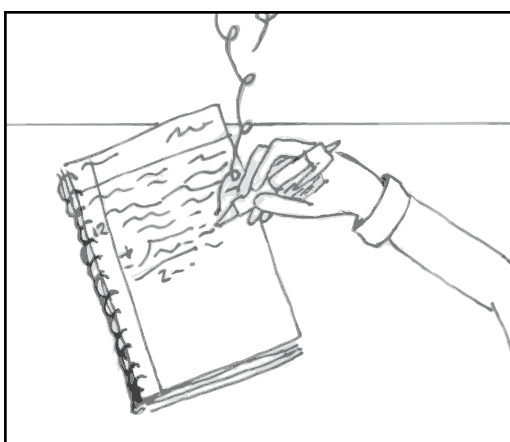
The Iron Crossword
Voting Season

STUART LINLEY
3B NANOTECHNOLOGY

Sudoku
#2012-12

JACOB TERRY
2T NANOTECHNOLOGY

Submit your completed crossword to the crossword submission box in the Orifice (CPH 1327)
before next Wednesday to compete in the bi-weekly Crossword Competition!

ACROSS

1 Biblical false god
5 Hugs and kisses, sometimes
9 Type of code
14 It can be major or minor
15 High: prefix
16 In or E go-withs
17 Level
18 Atlantic council
19 How Freeman's character in Shawshank might introduce himself
20 Candidate #1
23 Billy Bishop, eg.
24 Lean over
25 School gp.
28 New Zealand runner
30 Nickname for this puzzle's writer, perhaps
31 Mime
34 Etched symbol
36 Trickster
38 Unmentionable
40 *The position*
44 _____'s Lot (King novel)
45 Approx.
46 Star Wars, eg.
47 Chi. to Mia. dir.
48 Ram mistress
51 Stroke
53 Bad
54 Clean, as teeth
56 Cleopatra killer
58 Candidate #2
63 Type of parking
64 Canadian politician C.D.
65 Previous Dean
67 Resource
68 Always
69 One time Italian currency
70 Not those
71 Roan or burgundy
72 The cat's _____

DOWN

1 'Hold on!'
2 Desert-like
3 Sailing
4 Cocoon preceder
5 H1N1, eg.
6 Dull
7 First parts of plays
8 Pants alternative
9 The capital of Djibouti
10 Cartograph again
11 Beige
12 Flower support
13 Computer storage option
21 Black or thin go-with
22 Negatory
25 Mold
26 Ahi and White
27 Try to catch 26-down
29 Ref.
31 Alongside, nautically
32 Type of line
33 Sum
35 Nationality suffix
37 Before: prefix
39 Posters, eg.
41 Breakfast dish
42 Palm reader power
43 Ferries, once
49 Stir-fry dish
50 Biblical heroine
52 3 to a tbsp
54 Emancipates
55 Push
57 David ditty
58 Sprint
59 Ultimatum ender
60 Had bills
61 Garfield pal
62 Roman emperor
63 Wine holder
66 Nothing's above it

Easy

Medium

Hard

Solutions for previous crosswords can be found on *The Iron Warrior*'s website at *iwarrior.uwaterloo.ca/distractions*.

THE IRON INQUISITION
Brian So, 1A Nanotechnology

"What is the worst thing you have done in a job interview?"
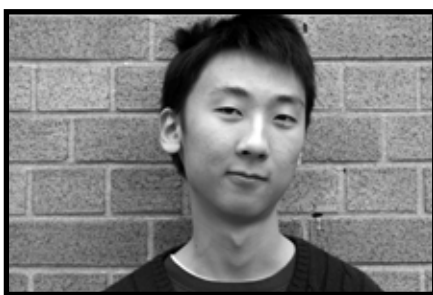
"And that's why I want to work at Kindle... I mean Kobo."
Stephen Li, 2A Software

"Why would you think I put a skill I didn't have on my resume?"
Cameron Winterink, 4N Electrical

"I smiled too much. They thought I wasn't serious"
Li Chen Zhang, 1A Civil

"They asked me for interest; I said 'not this!'"
Sean Aubin, 3B Electrical

"I accidentally bad-mouthed the company."
Tyler Lear, 4A Peace and Conflict Studies

"For my weakness, I stated I was lazy."
Dushanth Seevaratnam, 3B Nanotechnology