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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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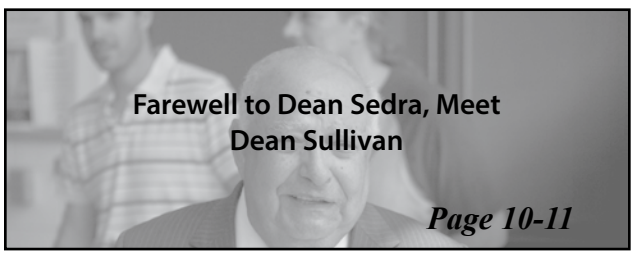

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Waterloo Engineering Students Form ESSCO Executive

NIKHIL JOY
1T ELECTRICAL

Michael Seliske

Leila Meema-Coleman (far left), Michael Seliske (left), Emily Bot (right) and David Birnbaum (far right) are ESSCO's executives for the upcoming year.

The ESSCO AGM took place on Friday, June 15th. For those of you who don't know about ESSCO, here's a small spiel about them. ESSCO stands for the Engineering Students Societies' Council of Ontario and it represents the approximately 24,000 engineering students at 16 Ontario-wide post-secondary institutions. It acts as the liaison with the Professional Engineers of Ontario, the Ontario Society of Professional Engineers and the Council of Ontario Deans of Engineering. ESSCO gathers with the VP-Externals of these 16 different schools, thus resulting in a forum where ideas regarding improvements to student life can be exchanged and thus be implemented in these member schools by their respective VP-Externals. The Annual General Meeting (AGM) of ESSCO took place at Queen's University this year. AGM consists not only of council meetings but also professional development workshops for the delegates of these member schools.

Some of the workshops that were conducted concerned the life of a coop student, using data and analytics to expand student reach within the Engineering faculty, dealing with the problems faced by large Engineering Societies, relations between the University-wide student society (FEDS for Waterloo) and the respective EngSoc, etc. Great ideas were exchanged between delegates throughout these sessions, with hope to improve all the Engineering Societies by making student life more spectacular.

AGM is also the platform where ESSCO executives are elected. The executive for the following year are 75% Waterloo-vians. The positions are as follows: Michael Seliske (Waterloo) – President, Leila Meema-Coleman (Waterloo) – VP Communications, David Birnbaum (Waterloo) – VP Finance and Administration, and Emily Bot (McMaster) – VP Services. A new constitution making multiple changes to the previous one was adopted. At the plenary, after much discussion throughout the weekend, it was finalized that the position of VP Development would be eliminated. It was also determined that Lakehead University would host FYIC for the next year, but the host for next year's ESSCO AGM is yet to be decided.

Now to the exciting stuff. My experience as a delegate from the Waterloo A delegation to ESSCO AGM was truly one of a kind. I learned a whole lot about other schools, how their EngSocs work, what they do for fun, what's great about their schools and much more. I was able to meet FYIC 2012 delegates once again and make a lot of new friends. Kingston itself was also a sight to see. I had never been there before and the view of Lake Ontario from the pier at sunset was truly picturesque. Going to this conference has provided me with great insight on the cogwheels of an EngSoc and what must be done for the greater good. An EngSoc's gotta do what its gotta do.

Pearl Sullivan Commences Term As Dean

THE IRON WARRIOR
NEWS BUREAU

She may have only been in her role since Canada Day, but our new Dean of Engineering, Pearl Sullivan, already has big plans for the Faculty over the five years she will be conducting her term. Dean Sullivan agreed to meet with The Iron Warrior during the week before her term and provided some insight on her academic history, goals, and the engineering profession.

Sullivan's intentions for her term as Dean, which she characterized as educating the "Engineer of the Future", are to focus on retaining our top tier undergraduate standing, raising the stature of our graduate education and promoting the engineering profession. The primary concern with undergraduate education that Sullivan sees could be improved is whether our current teaching methods are effective in developing future generations of creative and critical thinkers; attributes which are needed for a fast-moving profession. To address undergraduate education, Sullivan has broken down the areas of concern into three further components: students, faculty and content. Addressing how teaching is conducted, Sullivan feels it is ripe for renewal.

"[Professors] are teaching the way they've always learned," Sullivan stated. "Everyone is expected to sit down from 8:30 to 12:30. The passive mode of classroom learning, if you look back into history, started in the medieval period. It was a time when books were rare, so the person standing up, or the teacher, was the only person who owned a book. That one person would read the book, and everyone else would gather to listen. We've been applying this model to universities [since then]." She feels that in today's world, many students don't even make use of the books, instead opting to bring tablets or laptops. More importantly, they may attend all classes but quite often do not see the relevance of the theory being taught.

Specifically referring to mechanical engineering, Sullivan observed that the curriculum has not significantly changed over 25 years, although content has been getting progressively denser as new topics are added with the discipline expanding. "We are doing a lot of teaching," she noted, "but the question is, how much learning has occurred?" The main way around this, she says, is through not content but conceptual learning, which includes understanding the wider context of their engineering knowledge and the effects of their work. The fundamental characteristic of engineering, which is solving technical problems, will not change, but the graduate must now also know how to locate, evaluate, and as-

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Letter From the Editor

About Nanos and *The Iron Warrior*

JACOB TERRY
EDITOR-IN-CHIEF

Hello reader who is undoubtedly getting more sleep than I am right now. As usual, I would like to thank you for opening another issue of *The Iron Warrior* and reading all the articles we so lovingly prepare for you every couple weeks.

We have a couple features in this issue, so some pages are a little more picture heavy. We have a few photos from Canada Day which we have shared alongside Emily's synopsis of the day's celebrations. The event was quite enjoyable and it was heartwarming to see Waterloo students do something kind for the community. The fireworks were quite incredible at the end, but I find myself saying that often since I love seeing them. I would like to thank Emily for her countless hours of assistance this past weekend, and for keeping me mostly sane.

The meat of the centre spread is our article introducing the incoming Dean Sullivan, which was primarily based off an interview we had with her in the week before production. Her thoughts are quite interesting and the things she hopes to accomplish seem ambitious yet doable.

Unfortunately, the outgoing Dean Sedra was rather booked during his last week, so we were unable to interview him, but we have included a feature with photos of his farewell celebration, along with a short recap of some of the things he has looked over and well wishes for the future.

Our Waterloo representatives who attended the Engineering Students Societies' Council of Ontario Annual General Meeting (ESSCO AGM) appear to have returned in good spirits, as three of the four executives are Waterloo students. I would like to congratulate Michael, David and Leila for their success, as I am certain they will do a fantastic job in the year ahead.

Other than these few large topics, not much has been happening with respect to engineering at Waterloo. Hopefully for the next issue there is a little more for us to report on. However, I hope you still enjoy the content of the issue. The number of hours that went into working on the interview with Dean Sullivan has had a taxing effect on my ability to function during production, so I am hoping that what we have put out is as great as we always aim for.

Something I would like to address is the idea that *The Iron Warrior* is somehow becoming an enclave for nanotechnology students to band together and fill up a paper of articles tailored to their interests. While it would be cool if we had planned something that slyly, I can assure you that the real explanation for why nano students write so much is not quite as sinister. Yet when even my mom makes the same comment when reading the online edition, I feel it has become something I need to address, as it is something I have had a strong, passionate opinion on since entering this role.

When someone takes on the role of Editor-in-Chief, the success of their term and the method in which they operate the paper relies on multiple factors. From an advertising standpoint, the amount EngSoc opts to donate has an effect on how much else we need to earn in advertising revenue in order to break even at the end of the term. While we do not rely on EngSoc's donations to fund the paper and its operations, it does provide a relief should advertising not be successful that term, and allows the paper to operate in a more stable fashion. The success in advertising ultimately depends on how many advertisers we get and how much they are willing to put into the paper.

When it comes to the operations of the paper, an editor who lands a term where there are many heavily involved, interested over-achievers will have a much easier time filling the roles required to run the paper smoothly. As an editor operating in the spring term, it is already a little harder to get people who are interested since there are less people on campus.

The advertising manager role is one that an editor ideally must select early, often well before their term begins. This is so they have assistance in getting those crucial first few ads and managing relations with loyal advertisers. In this instance, I sent out requests to past advertising managers, who were either unable or no longer willing to hold the role for whichever reason. Emily, who is a classmate of mine, agreed to take up the role if I struggled to find someone willing to do it. After the first meeting, I had not yet found someone willing to take up the role, and it was convenient to fall on a classmate who I know fairly well to fill the position. She has been an incredible amount of help since then, and I hope she goes on to help future editors in the same fashion.

Roy, as the first nano editor back in fall 2010, found great success in getting his classmates involved, as I am sure many other editors were able to. Whether it is a product of the kinds of people in our program or just that they're our closer friends, both Roy's class of 3As and my class of 2Bs have been more than willing to help for the most part if asked. When I'm struggling for more content and most members are not easily accessible, it is easier to contact a friend in the class and ask if they're willing to do some work for *The Iron Warrior*, at which point they will usually agree.

While I do not ask my classmates to write all the articles for me, I am usually able to get them to assist in some way. Looking at previous issues, I was able to get Zac to help me with copy editing one weekend so we could work on our lab sooner, Anjali (who is in 3A Nano) came by to do layout when I was in late one weekend and Emily has been known (as she has this weekend) to do some copy editing or quick articles for me if I ask for them.

While this makes it sound like I can only rely on my peers and friends in my program, the purpose of my editorial is to say quite the opposite. There is so much help that I get from engineering students that are not in nanotechnology that I think it often gets overlooked. For example, Nancy, in 2B Civil, has been writing articles upon articles in addition to her Take Five column. Filzah, in 1B Environmental has regular thought-provoking articles which she has submitted this term. Cody, in 1B Electrical, has been in charge of monitoring circulation for me, and goes to all the racks before the next papers go out to see which ones need more. Kevin, a post-4B software student, has been great at getting web-sourced photos for the entertainment articles and for doing copy editing when there is a dire need.

While I could go on, I'm sure you're starting to see my point. There are many editors and writers in addition to those previously mentioned that have helped out in some way to the paper and it seems unfair to shaft the many other students who assist in the production of the paper in some form. While some people make the joke in a light-hearted manner, that nanos are the only ones really writing for the paper, there is an underlying tone of truth to that statement, or else the joke would not be made so often. The funny thing is, you are the solution to having more of your class represented in the paper.

I have made concerted efforts to bring others into the paper to broaden the diversity of our publication and *Iron Warrior* community. At each EngSoc meeting, I make a different yet similarly worded plea for new editors, especially in younger years, who can take on a long-term role in the paper to help define the style of the paper during their period of involvement. I truly do mean what I say at each meeting, that engineering students of all programs are welcome to come write. I say it to people who come by and to people who have friends who may show interest. Yet it is easier for some to complain about there being too many of one class than to actually change that, either by submitting articles themselves or finding a classmate who is really into that sort of thing. Perhaps if more people showed as much interest as the people who I have currently involved (nano or not), then they would have a better chance at representation.

If you or a friend are interested in helping out with the paper, come to any meetings we have or email me at iwarrior@engmail.uwaterloo.ca to get on the mailing list or just to ask me questions. I am always open to comments, suggestions, criticism, endless praise and love letters, so do not hesistate to contact me if you desire to do so!

THE IRON WARRIOR

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The Iron Warrior encourages submissions from students, faculty and members of the university community. Submissions should reflect the concerns and intellectual standards of the university in general. The author's name and phone number should be included.

All submissions, unless otherwise stated, become the property of *The Iron Warrior*, which reserves the right to refuse publication of material which it deems unsuitable. *The Iron Warrior* also reserves the right to edit grammar, spelling and text that do not meet university standards. Authors will be notified of any major changes that may be required.

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Egypt Holds First Post-Revolution Presidential Election

NINA FENG
1B ENVIRONMENTAL

The Egyptian Revolution made headlines all over the world last year when rebel forces managed to overthrow authoritarian leader Hosni Mubarak in hopes of ending emergency law and promoting freedom and justice. Upon Mubarak's resignation during the revolt, the Supreme Council of the Armed Forces (SCAF) was temporarily in charge of governing the state, leaving the position of President vacant.

Now Egypt has reached another milestone in its history, holding its first presidential election since the revolt. The winner of Egyptian presidency is Mohammed Morsi, leader of the Freedom and Justice Party, which was founded after the revolution by the Muslim Brotherhood of Egypt. His victory marks the first win for an Islamist head of state in the Arab world. Morsi had a narrow win over the opposing candidate Ahmed Shafik, who had been prime minister during Mubarak's regime.

In order to prevent the improper use of military forces by the president, the SCAF has made changes to the Constitution. Unlike during Mubarak's regime, the chief officer in the SCAF is now primarily in charge of the military, and any military orders from the president must first be approved.

The recent election, which occurred on May 23rd to 24th and June 16th to 17th, is the second that actually featured more than one candidate. The previous one in 2005 had established Mubarak for his fifth consecutive six-year term as Egyptian leader. There were originally 23 candidates, but almost half were disqualified for unspecified reasons. Three candidates were disqualified due to their ties to the previous government, including Ahmed Shafik, who later appealed their decision and was granted permission to run. Another candidate dropped out, leaving 12 official candidates in the race. The first round of elections narrowed the candidates to two. The second round's results are broken down into 51.7% for Morsi and 48.3% to Shafik.

Voter turnout in the first round was about 43.4 % of eligible Egyptian voters, which was low compared to the 2005 elections. All in all, the process went smoothly, though a few allegations have arisen, questioning the verity of the results. The interior ministry was accused of handing out almost one million extra ID cards, so that their soldiers could vote for Shafik. An investigation will be held to look into it, though Morsi's victory made such efforts unsuccessful.

The success of the elections and the implementation of a new leader is hope for future peace in Egypt. The freedom and Justice Party will govern based on Islamic Law. They have even voiced their support for women in cabinet. The party also supports free-market capitalism, which leaves the control of the economy with the people. Egyptian enterprises may be run and owned by the citizens, without government intervention. Though there is no way to tell what what may happen in the future, hopefully with the new government, there really will be more freedom and justice for the citizens. It certainly seems to be a drastic improvement over the last one.

What a WiE Week!

ALISON LEE
WIE DIRECTOR

Between the purple shirts, inspiring seminar and conversation, and fun summer barbeque, Waterloo engineering deserves a hand for showing its Women in Engineering (WiE) pride. June 25-29 marked UW's unofficial Women in Engineering week, where successful women were celebrated and Waterloo engineering enthusiasm was shared between all genders.

As one of EngSoc's WiE directors this term, I can say that I'm pleased at what positive reception WiE events have on campus. Based on feedback from previous WiE awareness efforts, we have tried to make this year's WiE events open to a wider audience, including males and females, graduate and undergraduate students. We also tried to reach more students with a whole week of activities in different locations in the engineering buildings.

The week began with unisex t-shirt and bandana sales, which looked great on guys too. Although some guys were hesitant about wearing a '"women in engineering" t-shirt, they realized that the shirt's message "This is what a Waterloo Engineer looks like" is about removing labels and embracing our diversity, not about promoting one thing over another. Breaking down stereotypes is a major objective of WiE, and where you find gender discrimination, you also find other forms of discrimination. Thank you to everyone who wore the purple t-shirts during WiE week, but especially to the guys because they were so open-minded and weren't afraid to support our cause.

We also had a fabulous turnout to hear Diane Freeman, P. Eng, talk about her vision of the "Renaissance Engineer". Diane has thus far had a remarkable career after graduating as a Waterloo civil engineer, working for Conestoga Rovers, being president of PEO, and being a Waterloo City Councillor. Her talk was about how engineers need to consider how best their work can help all people of a community, not just solve the problem that was put in front of them. Her leadership experience and interesting local case studies made for a very inspiring talk with lots of follow-up discussion. Diane spoke to a packed room and it was great to see a mix of undergrads, grads, and professors in the audience.

Anyone who visited our table in CPH or E5 would have also seen some bios of the many successful female engineering faculty members. There were also 2010 UW female engineering enrollments statistics that caught some people by surprise (hint: chem eng does NOT have the most females and comp eng does NOT have the fewest). Many passersby took the time to enter our WiE Trivia Challenge and learned cool facts. For example, Grace Hopper was the inventor of the COBOL programming language, and that Pearl Sullivan is UW's first female dean of engineering. Genius Bowl participants would have known all of this already from this term's WiE trivia round!

One fact I feel is particularly important is that female enrollment in Canadian undergraduate engineering programs is actually trending downwards from its peak of 20.7% in 2001. With all of the positivity surrounding WiE Week and success of WiE's community outreach to Girl Guides and high school girls, it would surprise some to hear that still, a remarkably small amount of young females are considering becoming engineers. Many women still face workplace gender barriers and are limited by occupational and gender stereotypes. This is echoed in workplace studies, statistics, and in personal stories shared at past WiE discussion forums. This is why it is important to have awareness events and generate open and critical minds. More engineers need the sensitivity to identify discrimination and the courage to stand against it.

WiE Week was the product of undergraduate and graduate WiE collaboration, so a new event WiE tried this year was a graduate-undergraduate student meet and greet. Participants were from all types of engineering from nanotechnology to mechanical and more. The idea was to foster mentorship and allow students to ask questions about future career interests. Professors were also there and bubble tea was sold to beat the heat and create a casual environment.

The week ended with a barbeque where lots of people lined up for delicious food, WiE stickers, and more purple t-shirts. Dean Sedra dropped by to chat during his last day on the job and there was a constant line of customers. It was impressive how many editions of WiE t-shirts I saw throughout the week (gotta catch 'em all) and I hope to see them on a regular basis! Overall, WiE week had a great turnout. It could not have been possible without our dedicated volunteers and WiE supporters who came out.

What's next for WiE? Your directors would love your ideas for new events and promotional tools. Your feedback about how we can improve on those things is extremely valuable! We are working on a brand new blog to spark discussion about women in technical fields, plus a web page with useful links and info about WiE at UW. We are always looking for new volunteers for these projects, so give us a shout at av2lee or egruber@uwaterloo.ca. Stay tuned for future WiE events, like our UW Women in Engineering Facebook page, and thanks for a great WiE Week!

Michael Seliske

Past Dean Adel Sedra visits WiE helpers at their BBQ.

IBM's Sequoia Now World's Fastest Supercomputer

NANCY HUI
2B CIVIL

On June 14th, 2012, IBM announced that it had developed the world's fastest supercomputer claiming the title from the Fujitsu K Computer in Japan.

The term supercomputer refers to any computer at the bleeding edge of current processing power, which is usually measured in calculation speed. The earliest supercomputers used only a few cores, but in 2012 consist of massive setups of thousands of processors.

The Sequoia uses BlueGene/Q servers and achieved 16.32 petaflops (or 16.32 quadrillion floating point operations per second) at the Lawrence Livermore National Laboratory using over 1.5 million processor cores and 1.6 petabytes of memory. The BBC likens its calculation power in one second to "what otherwise would take 6.7 billion people using hand calculators 320 years." In comparison, the Fujitsu K Computer achieved 10.51 petaflops with over 705000 processor cores.

Although the Sequoia draws about 7.9MW of power during operation, it is also one of the most energy-efficient supercomputers in existence - a third more efficient than the K Computer, in fact, which consumes 12.6MW during operation. Only 50% of the average data centre's energy consumption and carbon footprint stems from powering the necessary cooling systems. The Sequoia uses a hot-water cooling system. Coolant temperatures near active components such as the processors and memory modules in the Sequoia reach up to 45 degrees C. Water has a higher heat capacity than air, and thus can absorb more heat from the system. Although more effective and efficient than air-cooled systems, water-cooled systems have not gained widespread use in personal computers because of leakage risks.

Like most American supercomputers, the IBM Sequoia is classified as "dual-use" by the United States, meaning that it has both civilian and military applications. The primary purpose of the Sequoia will be in nuclear weapons modelling, specifically in hydrodynamics and properties of materials at the extreme pressures and temperatures that would ensue after a nuclear attack. Furthermore, the Sequoia will peform statistical anaylsis to support the life extensions of existing, aging weapons systems, as the US has not created any new nuclear weapons since the end of the Cold War, in 1991. On the other hand, the US has not conducted any underground nuclear testing since 1992 either, after adequate computing power rendered the need for real-life testings almost completely obsolete.

Possible civilian applications of the Sequoia include modelling climate change, the human genome, or the flow of blood through an artificial heart valve.

However impressive IBM's accomplishment in the Sequoia may be, however, modern-day tech historians would do well to remember Moore's Law. Moore's law states that the number of transistors that can be placed inexpensively on an integrated circuit doubles every two years. Intel executive David House predicted that the period for doubling chip performance would be 18 months. What this means is that you shouldn't expect the Sequoia to sit at the top of the supercomputer heap for too long before it too is surpassed by a new system. Mark my words, we'll hit the 1-exaflop barrier before the decade is through.

The Bleeding Edge of Cryptography

NANCY HUI
2B CIVIL

Researchers in Japan have successfully cracked a next-generation pairing-based cryptography standard, setting a world record earlier this month in the process. Fujitsu Laboratories, the National Institute of Information and Communications Technology, and Kyushu University took 148.2 days to analyze the 278-digit, 922-bit standard, which was previously thought to require several hundred thousand years.

To achieve this, the team used 21 personal computers totalling 252 cores, which was several hundred times the computing power used to achieve the previous world record, combined with techniques including parallel programming methods to increase efficiency. The team also notes that such a task would have been impossible if they had been working with public key encryption.

Public key encryption is more secure than pairing based encryption because, unlike pairing-based cryptography, it avoids the key distribution problem entirely. A message can be encrypted and sent to a user by anyone with the user's public key. However, only that user can decrypt the message with the private key. Because the private key is ideally not shared with anyone else, there is no chance that anyone can intercept the private key to decrypt the message.

However, not all applications are suitable for public-key encryption. Pairing-based encryption, on the other hand, uses a third key generator to obtain a relationship between the public and private keys of two users.

While Fujitsu's feat is more an accomplishment of raw computing power and algorithmic innovation than the discovery of any flaw in pairing-based cryptography, it still shows that such a system, when properly implemented, would take less time to crack than previously expected.

Pairing-based cryptography is not the only method of encryption to have unexpected weaknesses revealed. Quantum cryptography, long-touted to herald the next generation of encryption techniques, has perhaps been superseded by a system based on far simpler physical principles.

Quantum cryptography entails encoding a message using a key generated by photons - massless packets of light. If passed through a polarizing filter, the photon will become polarized and exhibit spin only in the direction of the filter. Different directions of spin can be assigned to different binary digits. The spin of a polarized photon can be measured by the recipient using another polarizing filter.

The primary advantage of quantum cryptography is that any interception will alter the message intended for the recipient, allowing either the sender or recipient to cotton on to the fact that something is amiss.

This is not the first time that a weakness in quantum cryptography has been exposed. In 2010 it was discovered by researchers at the Norwegian Centre of Science and Technology. (Incidentally, one of the leaders of the group, Vadim Makarov, has shifted operations to the Institute of Quantum Computing in Waterloo). They found that it was possible to intercept a message by fooling the human recipient into thinking that the machine is misreading photons. It can be achieved by introducing a laser to "blind" the machine to any errors introduced while eavesdropping, allowing the attacker to intercept the message without anyone being any the wiser.

A new encryption system published earlier this month by Laszlo Kish's research group at Texas A&M University that uses the Second Law of Thermodynamics and a simple electrical connection has been proven to be more secure against passive listening. It works on the principle that if an eavesdropper attempts to acquire more information about a message by sending signals of their own through the circuit through which two users are communicating, the amount of of current will increase. Normally this is impossible, as according to the Second Law of Thermodynamics, the entropy in a system will always decrease. The method will be secure until the Second Law is proven invalid, such as after the invention of a perpetual motion machine.

I wouldn't be too sure that such a method is also infallible, because its implementation - indeed, the implementation of any security system - will pit a machine against human oversight and ingenuity. And Einstein did say that both stupidity and imagination were forces to be reckoned with. While I don't relish the thought of being subject to shoddy encryption, the rapid changes in technology this prompts is undeniably exciting.

Science, It's a Girl Thing!

FILZAH NASIR
1B ENVIRONMENTAL

As Women in Engineering week comes to a close at UW, it might be a good time to take a look at the role of girls and women in engineering and science fields not just at UW, but worldwide. Enrollment of girls in engineering is on the decline, and has been for the last decade. This is not particular to Canada alone as it mimics a worldwide trend regarding women and science. It has garnered the attention of university administrations and government agencies alike. The European Commission (EC), in particular, has recently begun a campaign titled "Science, it's a Girl Thing!" aimed at encouraging young girls to develop an interest in science.

Unfortunately, the EC decided to kick-off the campaign with the release of a video that manages to demean women, scientists, girls and most of the general population. All of this in under 55 seconds. The video begins with a man, a "scientist" looking at a microscope in a lab coat, and is distracted as three young girls, dressed in miniskirts and high heels saunter in to the laboratory. What follows is 55 seconds of baffling images of the 3 girls dancing while makeup products and lab equipment flash against a bright pink background. By the end, the viewer is left puzzled as to what they are viewing. But an advertisement for a popular makeup/hair product would be a fair guess. That is, until the campaign title flashes on the screen at the end, "Science, it's a Girl Thing!" complete with a tube of lipstick replacing the 'i' in science. Yes, you read that right. A tube of lipstick.

The video is demeaning and sexist on so many levels it's hard to decide where to begin. "Science will only be interesting to girls if they can relate it to makeup. Scientists can look pretty too! Science and makeup belong together!" They might as well have yelled out these ideas from rooftops. In fact, the reaction to the video was so strong that the European Commission took the video down the next day. Even the YouTube community was united in their distaste for the video. A united YouTube community is a rare sight indeed and the fact that this video managed to create one is only a small indication of the rampant sexism in the video.

The worst part however, is not the video itself. Sexism and misogyny is omnipresent in society especially in advertisements. As previously stated, the video resembles most commercials for hair and makeup products. But this wasn't a video for a makeup product. It wasn't made by a company that relies on sexism as an advertising strategy and in order to increase their profit margin. This was a video made by a government organization, in the interests of the public. 102 000 euros (of taxpayer money) was spent in making the video. It is meant to promote science and education. Yes, the video is meant to promote education.

So what happened? How did the EC make such a massive miscalculation in their efforts? Who is in charge of this campaign? How did they do their market research? How exactly did the EC come to the conclusion that making and releasing such a video would not only be a good idea, but that it would be an effective method to achieve their goal? What reaction did they expect people would have to this video? These questions will probably remain unanswered, because although the EC took down the video following public outcry they have so far refused to comment on it as well as on the public's reaction. One can't help but wonder if they are shocked at people's reactions. Although everyone as a human being should find the video offensive, the two groups of people most demeaned by it are teenage girls and female scientists. Has the EC ever met anyone from these two groups of people? Although I haven't fact checked this, I would bet good money that at least one member of the EC is probably related to a teenage girl somehow. Maybe that member was taking a sick day when they decided to produce this video. As for female scientists though, had they been interested in meeting one the EC would have needed to look no farther than the very government institution they belong to. The most powerful person in the European Union currently is German Chancellor Angela Merkel, a woman who just happens to hold a Ph.D. in Physics. Yes, the most powerful woman in the world, the head of the European Union, also happens to be a scientist. One can't help but wish that Merkel had been involved in the EC's campaign in some way. Surely she would not have allowed this video to be produced. Sadly, this was not the case.

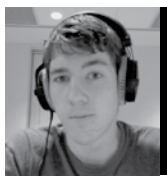
The worst part of the video is that it may have ruined what could have been a great campaign for young girls. The campaign website has some great profiles of real women in science that would peak the interest of any young woman considering a career in science. Unfortunately, after watching the 55 second clip, one does not feel at all inspired to follow the link to the website.

The lack of women in science is a serious problem, one that does need to be addressed by governments. Although the EC have made a massive misstep that has only done more harm than good, it is heartening to see a government organization attempting to solve this daunting problem. The video has been removed and hopefully someone in the EC is working to figure out how they made such a massive miscalculation. But perhaps the rest of the campaign can be salvaged and successful. If only they would remove the tube of lipstick from their logo.

Wired

The European Commission's "Science, it's a Girl Thing!" campaign has seen its fair share of controversy since its release.

Live While the Living's Good



NOAH MACCALLUM
2B NANOTECHNOLOGY

Running a marathon is one of the more absurd things a person can do. The runner pushes herself until the cocktail of lactic acid, adrenaline and cortisol pumping through the body flirts with the line between agony and pain. The joints are abused, the muscles take weeks to heal properly, and the body as a whole is tricked into a run-for-your-life level of stress. Why would people subject themselves to such misery? The chief reason is that those three hours provide valuable rewards: the post-race euphoria makes one feel more alive than ever before, and a stake is put in the ground, saying, "This person sets ambitious goals and is achieves them." Millions run marathons every year – for them, these rewards are worth their weight in sweat.

Students of the world run a marathon of their own, where the currency is hours of solitude, sacrifice, and sleep. Our goals are not unlike those of the aforementioned runners: in exchange for enduring a period of hardship, one has a diploma, an iron ring, and a supposedly bright future to look forward to. However, our marathon is significantly longer, and has precious few rest stops or intermissions.

At an early age we begin to feel the pressures of becoming successful in this world. Overbearing and well-meaning parents regiment the lives of their children to ensure a maximum chance of getting into the best university possible, maintaining an elaborate itinerary to squeeze the most out of every day. As early as grade 11, high schools make students initiate a commitment to math and the sciences. Gone are the days of relaxed summer breaks and unstructured stretches of time to just think, read a book, or relax. This in itself isn't necessarily a bad thing. Our lives are short, and we should try and make the most out of every day.

This being said, we need to recognize that starting in our early teenage years, our lives are becoming more and more like one big marathon. Why? It's just so tempting to put off living until the next big event on the horizon. At the start of each semester, midterms loom and of course become the main focus of your life, "After midterms are over I can look up," we tell ourselves. Within two more weeks, the same process repeats. Then on co-op, we find ourselves working late for a week to push through one more proposal, only to discover the same situation emerging the next week. This is a continuous loop, and the only breaks exist in the brief transition between co-op and school.

It is a dangerous thing to always live in the future. There will always be something to look forward to: the next assignment, the next semester, graduation, getting a good job, getting a better job, establishing a happy family, raising these kids to have a good job, retiring, et cetera. All of these things are admirable things, but it is all too easy to end up at the last step without ever embracing the present. We shouldn't postpone living for some later goal, because a final step is never reached, and we perpetuate a never-ending chase. Middle-aged professionals sometimes lament the unnoticed passage of their lives – they end up somewhere great at the cost of missing much of their most precious years.

Of course, finishing our degree is currently the most important focus of our lives, but this needn't to be mutually exclusive with the other, finer aspects of life. It would obviously be unwise to abandon studying; instead, study most of the week and take a couple of evenings off to pursue things that are important to you. Write a blog post, play an instrument, read a book, go on a date, or party like a rock star. Try to make a good memory or two by the end of each week. I can guarantee that this will have a more positive impact on your life than a few extra hours of studying each week.

A short marathon is reasonable – the rewards do indeed outweigh the hardship – while one that lasts decades is not. No reward warrants the sacrifice of an experience-rich life and the lessons, friendships, and memories that go with it. Live as much for the present as for the future, so someday you can look back on your life as fondly as you once looked forward. Ralph Waldo Emerson said it best, "We are always getting ready to live but never living."

Point Vs. Counterpoint

Will E-books Render Physical Books Obsolete?

POINT

HANNAH HIGGINS
1T NANOTECHNOLOGY

In a world gone tech, it seems that very few aspects of private or professional life have remained unaffected by the massive accumulation of personal devices now available to the average consumer. One of the many activities enhanced through the application of modern technology is the simple pleasure of reading, revolutionized by the growing usage of e-books. By granting people the ability to retain significant quantities of printable media electronically on any compatible device, e-books are changing the way the world reads.

Opposition to the widespread usage of e-books as a general replacement for the more classical mediums of print, that is physical books, stems from the perception that the satisfaction resulting from of the act of reading is partially yet inextricably tied to existence of physical pages. But while the final act turning the last page of an especially long book can be a gratifying experience, it does not really influence the impact appreciation for what has been read. The only factor affecting a person's response to what they read, positive or negative, is the words themselves; the media in which the words are read is irrelevant.

Yet so many advantageous features are available with the introduction of e-books. Reading in darker settings is more convenient when a bright backlit screen is included, as it is with some types of e-readers. And reading anywhere becomes a much simpler task with the ability to adjust the font size at will. But these rewards are relatively negligible when compared to the principle gain to be reaped through the use of e-books, that is, the impressive capacity of most e-reader models.

My first awareness of e-readers and their general existence was in late 2008, when Sony was boasting via magazine article that the new model being launched was not only capable of storing the entire Harry Potter series, but had the scope to do so three times. While back then I considered this to be a semi-extraordinary feat, current e-reader models are capable of even greater exploits in the area of literary storage.

Though the specific rationalities for requiring this measure of access to books and other forms of printed media are widely varied, there is a consistency to the overall tone; people either need or desire the access to the contents of more books, articles, reports, etc. than they can physically carry with any sense of ease. Which, when considered frankly, is not surprising. In our modern times people are demanding more from all other aspects of both professional tools and personal entertainment. More features, more memory, and more compact. And all to heighten the work efficiency or enhance the relaxation periods of today's busy people.

Simply thinking about the potential of e-books always brings out the miserly student in me. Consider the standard practice adapted each term with regard to textbooks, that is, make purchases only when it is absolutely necessary and professor-ordered to do so. But always remain extra-vigilant when and where this book is used, it can be a bit awkward to just tote around without a care. And be sure to find a buyer and sell it off when the term ends, or else you could wind up stuck with a whole box of old textbooks by the time five years are up. Is this ordeal really the best option available? In my estimation, renting the electronic and highly-portable additions of textbooks from the Bookstore on a termly basis makes more sense overall.

It is also important to consider the possible implications in terms of the environment. While I can't bring myself to deem the physical publication of books as wasteful or unnecessary, the fact remains that we live in a consumerist culture in which most everyone wants to own things. If this attitude is to continue its reign sustainably, we have to re-evaluate how we choose to own things. Practically speaking, e-books a whole will require less material to be used in the manufacturing of its components than that required for the individual publication of the equivalent volumes it will hold while in use. But more significantly, e-books also require less in distribution resources because e-books are available for download directly to the given device, no shipping needed.

And can it really be said that reading via e-book will disrupt the natural experience we associate with reading via real book? To be fair, yes, the experience will be different; but any kind of experience is subject to an ongoing evolution. Before there was widespread knowledge of written language, stories were dictated orally. Prior to the development of the printing press books were hand written and illustrated. Yet neither of these advances, that is, written language or its mass production, are said to have ruined the process of storytelling. They simply changed the manner in which it could be perceived.

Everything in existence has been and will continue to be phased adjusted from its status quo, after which the superior process is adopted and the substandard is left obsolete. It is an unbroken cycle which ensures that we continue to progress in all areas of our society. And given the current state of our culture, e-books will be the preferred medium of literature in the coming years.

COUNTERPOINT

KEVIN JOSEPH
3A NANOTECHNOLOGY

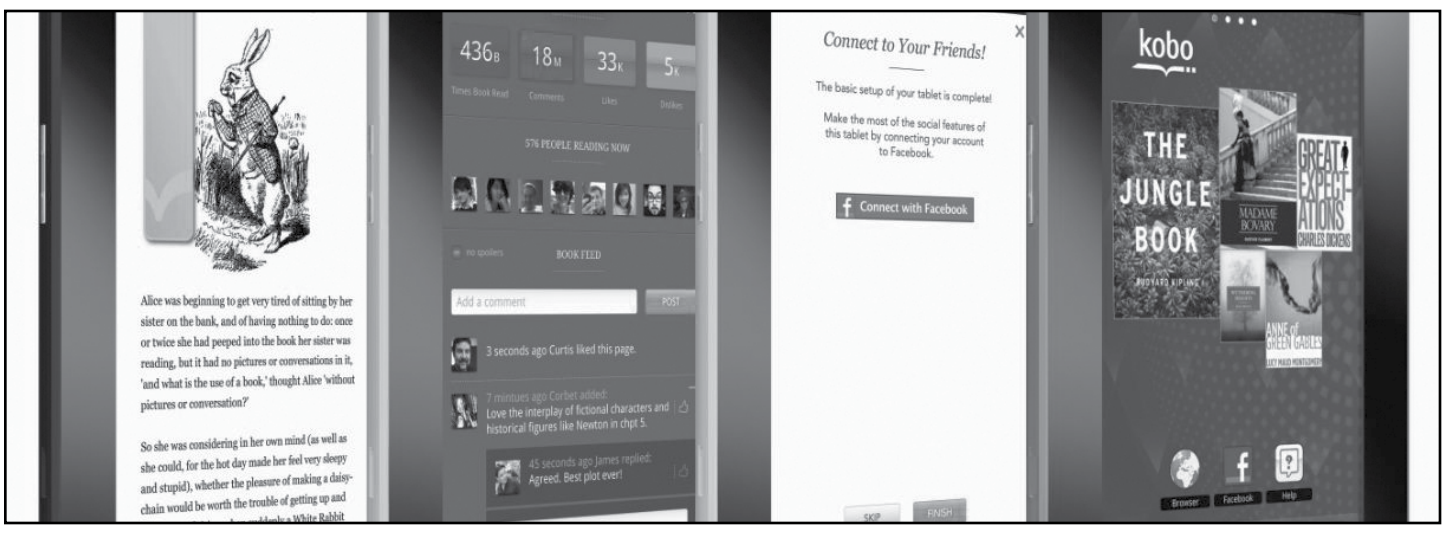
The printing press is easily one of the greatest inventions in the history of humanity. It was a great leap forward not just in technology, but more importantly in social equality. For the first time, information could be widely copied and spread; ordinary people had access to knowledge. This caused fear in the social order as people did not think that the common man could be trusted with information. Heretical ideas could be spread, sacred texts could be "misinterpreted"; the monopoly on knowledge was being toppled as the distribution of printed material changed the world forever. Technology continues to drive forward, and today information is easier and more convenient to access than ever before. The e-book is a child of the modern age which allows people to download digital copies of books and store libraries of information in their purses. I am not going to try and argue that this invention is without merit; the e-reader allows people to access books instantaneously and in the case of literary classics which have entered the public domain, for no charge at all. A ten-year old child can download *Jane Eyre* on a whim one afternoon and learn the quiet dignity of courage and conviction. The e-book also allows for independent authors to bypass publishers and deliver their works to the public (although, there is value in separating the wheat from the chaff, and a flooded market is hardly an ideal situation). However, if one tries to claim that this modern marvel makes the traditional book obsolete, then they are sorely mislead as the traditional book offers so much more than the e-book ever will: the art beyond the text and the physical manifestation a book deserves. Perhaps these reasons seem to wax poetic, but poetry is the matter at hand and something worth fighting for.

A book is a piece of art: its breadth, its formatting and its language. Granted, some texts are purely vehicles of information in which every cigar is just a cigar. These are books for which e-readers are ideal and in which their strength is evident. However, the books discussed for now are far more than the narrative which they tell. Just as a concert is more than a melody, as a painting is more than a picture, as cinema is more than a video, a book is more than its text. Compare the sheer physical presence of the coarse and powerful *Brothers Karamazov* or *The Lord of the Rings* trilogy to the light, almost fragile, appearance of *The Great Gatsby* or *Of Mice and Men* a book can tell a story that runs so seamlessly with its narrative that one can feel it without even realizing. There are some authors who creatively format their space, like the mouse's tale-tail in Lewis Carroll's *Alice's Adventures in Wonderland*, or David Foster Wallace's use of footnotes in *Brief Interviews with Hideous Men*. It has been suggested that e-readers could automatically translate books to make them accessible to any reader. But if one thinks that a translation of an author's work is merely finding analogous terms in another tongue, they are sorely underestimating the writer's language craft. One of the touted strengths of the e-reader is its uniformity and customizability, but sometimes the chef should be left to decide on the inclusion of cilantro.

A book is a powerful symbol. It is the embodiment of the ideals which it houses, and we as humans need symbols in our lives to drive and inspire us. I do not wish to delve into the metaphysical question of how "real" a data-file is as compared to a collection of symbolics we process as ideas, but rather espouse the power and distinction of the latter. Could a congregation of believers be filled with wonder and awe over a flash-drive as they are for a gilded edition of a sacred text? Could people achieve the same catharsis from deleting files of *Harry Potter* or *Fahrenheit 451* en masse as they would at a book-burning (not that I'm condoning the act, but rather referencing the meaning it has for its participants)? A book is a totem for some of the most powerful and provocative ideas to ever grace the planet. Their presence materializes the abstract beauty of literature and its philosophies such that one can literally hold the plight of Blanche Dubois or Laura Wingfield close to their hearts.

A book deserves a body. To turn the pages of *Les Miserables* and feel the paper tremble between your fingers as you fret over the fate of Fantine is to engage in solidarity with a hundred and fifty years of readers. Not unlike how the flavour of natural vanilla extract is made richer for the aromas that are not vanillin, a book's character and romance are greater for its subtleties. The curling and gentle tears of the cream-coloured pages, the creases along the spine of a book opened and reopened, the musty smell of old paper, they all indicate the aging and maturing of a book which grows more prominent with each read, as does the depth with which the soul of the book permeates into the reader's own. Like a favourite pair of jeans or an old teddy bear, a physical book earns its character and place in your heart in a way a digital file never can. When one peers at an e-reader, they may recall the last few books read on its immaculately uniform display, but it cannot rekindle their affection any more than looking at an address book can as compared to seeing the familiar faces of those you love.

The point I'm trying to make is clear: a book is more than a narrative, and that is all which an e-book can deliver. Perhaps an e-book will efficiently and easily deliver the works of J. M. Barrie and Roald Dahl to future generations, but will it be able to replace the feeling of passing down these books from parent to child? Will it fill the void left on the shelf? Will people think to open files on a whim in the same way that passing by the cover of an old favourite compels them to flip through its pages? Has not Jane Eyre done enough to earn a place in one's home where she might be run into on occasion by an old friend or a new acquaintance? Yes, this may seem like an emotionally-driven argument, but that is exactly the point. A book can hold a special place in people's hearts, and deserves more than to be stripped to its absolute essentials.



Stuff Avery Likes

E-books such as the Kobo reader shown here are experiencing a high increase in popularity.

France: The Place to Be on Exchange

PETER H. ROE
DIRECTOR OF EXCHANGE PROGRAMS

If you were to spend a Fall or Winter term (or both) in France, what would you do? You could explore the museums and galleries in Paris; you could take in the show at the Moulin Rouge, or join the night club throngs in Montmartre. You could go to the races at Chantilly, just north of Paris; you could take a cycle trip down the Loire valley and see the famous chateaux. You could visit the Canadian War Memorial at Vimy; you could see the D-Day landings at Arromanches in Normandy, and on the same day view the Bayeux tapestry (an 11th century comic strip depicting the conquest of England by William, Duke of Normandy in 1066). And when you'd done these things, you could visit Marseille for a taste of the true bouillabaisse.

In Normandy at Mont St. Michel the tides rival those of the Bay of Fundy in New Brunswick; they can outstrip a galloping horse. The Côte d'Azur (French Riviera) is as well known for its sunbathers as it is for the sheer beauty of the Corniche, or coastal road. There's something magnificent about the French Alps; Mont Blanc is the tallest mountain in Europe; there you can ski from France into Switzerland, and you don't even have to show your passport at the border crossing on the mountain. If you don't ski, Chamonix is still worth a visit – and there's a lot of good rock climbing there.

You can't think of France without thinking about wine. From the sweet dessert wines of Alsace, through the Champagne districts, centred on Reims, to the full-bodied Burgundies and the varieties of Bordeaux, down to the Côtes du Rhône and the wines of Provence, there's almost an infinite number of choices, and each region matches its wine with its cheese. If you have time, you can return to Waterloo as an expert in each, and as a person who can speak volubly about them in both French and English.

As a vacation destination, France has something for everyone, from prehistoric caves to Euro Disney, and from the famous Cannes film festival to the centres of haute couture in Paris. But you wouldn't be on vacation; you'd be on exchange in one of France's world-renowned Grandes Ecoles, which have been home to the cream of French technical and engineering education since the early nineteenth century. With one exception, these institutions don't feature highly in world university rankings, but make no mistake, they are well-recognized institutions where teaching and research are of high quality; they are just too small and, in some cases, too specialised for the ranking criteria to apply. We have bilateral exchange agreements with eight of the Grandes Ecoles and technical universities, as well as intergovernmental agreements that open the scope for exchange in France even more widely.

Studying for a term or two at a French institution can be very worthwhile. Academically, France has a great deal to offer and I've already referred to some of the touristic and cultural possibilities. Linguistically, there's little to deter you. Almost everyone in Canada has at least a rudimentary knowledge of French from school (or at least from reading cereal boxes); our partners offer intensive immersion courses in advance and during their semesters; more and more of their advanced courses are being taught in English.

When you return you'll be equipped to converse easily with the millions of Canadians whose first language is French; equally and just as importantly, you'll be equipped with the skills necessary for employment in those parts of our country where French is the language of the workplace.

To learn more about exchange possibilities in France, contact Cindy Howe (cindy@uwaterloo.ca or extension 33084) or me, Peter Roe (phoroe@uwaterloo.ca or extension 35175). We have lots of available openings.

Michael Seliske

The French Riviera is one of the sights you could see on a French exchange.

Grocery Shopping Can Be Cheap and Healthy

KATE HEYMANS
3A CHEMICAL

YOUR BIWEEKLY CHALLENGE

Since my stock of food is almost exhausted, the topic of this column will be how not to spend ridiculous amounts of money while grocery shopping and for food in general.

1. Don't go shopping if you're hungry. Have a snack before you leave (everyone loves a good excuse for snacking). Another trick is to watch your mood. If you're angry or frustrated or upset, you're likely to grab more food.
2. Make a list. Do it as you snack in order to maximize your productivity. Or just do it on the bus on the way to the store. The only thing that doesn't need to be on the list is produce since you're better off evaluating the deals and the quality of fresh foods on the spot.
3. Grab a small cart or basket instead of those monster carts. Unless you know that you're actually going to fill up a big cart, save yourself the trouble of lugging that thing around.
4. Take advantage of student discounts. The following stores offer discounts to students:
   Mondays: Value Mart – 10% off
   Tuesdays: Zehrs – 10% off
   Wednesdays: Bulk Barn – 10% off
5. Don't go down the aisles you don't need anything from. There's no point in wasting your time. It will also stop you from being tempted and "remembering" that you needed that one thing (that you don't actually need).
6. Try the foods at the top and at the bottoms of the shelf. Marketers know that we're lazy when we shop so the most expensive food is usually easiest to reach.
7. Buy the generic brand. Although the packaging is generally not as pretty, there's no reason these aren't as good as your usual brand. If you're hesitating, check the nutritional information and go for the product that will get you the most fibre/vitamins or lowest trans fat/salt for your buck. Your health isn't worth endangering; that will be more expensive in the long run.
8. Try to buy food that is less processed: make your own cookies and stop buying microwave-able meals. These are usually the foods that are both less healthy and more expensive. Not to mention that being able to cook your own meal is sexy.
9. Buy in bulk, without buying what you won't need. Share your groceries (and your meals) with your roommates and you're likely to save time and money. Toilet paper etc. are things that you need in bulk so just make one big purchase. However, do not buy food which is likely to spoil before you can finish it.

Keep all those grocery bills and don't forget to add them to your spending tracking system! Hopefully this list should help you reduce that bill a bit. As always, the internet has more resources (coupons anyone?) and more tips.

EngSoc Wiki Coming Soon and MOARE Events

ANDREW FISHER
VP INTERNAL

I hope everyone had a great holiday and is all rested up for the busy month of July! EngSoc is currently in the works of putting together our very own wiki. This wiki is intended to remove most of the static information on our current website, allowing it become more dynamic. The wiki will also be used as a resource for all of our EngSoc Directors to better plan the events and services available to you. We are currently in the stages of migrating information over from the EngSoc website. If you are interested in helping update this information or add new wiki articles, please contact vpinternal.b@engsoc.uwaterloo.ca as we can always use the help. Once the wiki becomes more populated, a Wiki Reading Party will be hosted to ensure all content is up to date before it goes live. Big thanks to Jon Shahen for getting the back end set up, as well as Kevin Veloso for providing the much needed support for the front end.

Over these next few weeks, EngSoc has numerous events planned which tailor to anyone's interests. If you have ever asked yourself any of these questions, then we have an answer for you!

- How do I make sushi? There will be a sushi making workshop in POETS!
- How do I defend myself from a zombie attack? ZUNT, an adaptation of Humans vs. Zombies can help!
- What can I do to relax and get away from the books? Go to Beach Day on July 8th!
- Where can I show off my musical talent? Coffee House; there is an act for everyone!
- I just want to dance while looking fabulous. ENG-AHS Semi formal is where it's at!
- Can standing up in a canoe be considered living on the edge? Try out Canoeing the Grand!
- Is Team Fortress 2 really that much fun? A LAN party with 60 people will definitely give you that answer.
- I love Broadway, but Toronto is so far away. EngPlay is just like the real thing!

The EngSoc event calendar below outlines when these events are. For more details, please check out the EngSoc website, Facebook page, or drop by the EngSoc office.

And Now For Something Completely Different: WEEF!

LAURIN BENSON
WEEF DIRECTOR

Hello again B Soc! The proposals are in and the presentations are complete. Now the fun begins; determining who will be receiving allocations from this term's $60,000! This proposal cycle was a great success, bringing in over 30 proposals from 6 different departments and over 15 student teams and groups. The requests totaled over $140,000, so the Funding Council has their work cut out for them! We were also very excited to see proposals coming from both Architecture and Management Engineering who, historically, have had smaller requests from WEEF.

Another great accomplishment from this term was the successful use of the new WEEF online proposal submission process. With this new system, all proposals were created and managed online, eliminating the need for hard copies of various proposals formats. As the director, this system was amazing and ensured that each proposal was tracked and approved, while also automating many other WEEF activities. As always, WEEF strives to improve all our processes, so if you or your team used our new system, we would love to receive your feedback at weef@uwaterloo.ca.

Further benefits of our new website make it possible for anyone (that includes YOU!) to view the term's proposals online at weef.uwaterloo.ca/proposals.php. If you are interested in who is asking for WEEF contributions this term, please check the website. You will likely find yourself having an opinion about where your WEEF contributions go, which your class representatives are always ready to receive! You may also notice the wide range of items which are requested, from scales to reactors to Arduinos. Your initiatives may be worthy of WEEF funding, so don't hesitate to put in proposals next term!

Looking ahead, our very own Keegan Skoretz has stepped up this term and is working to become the next WEEF Director for B Society. I would like to thank and congratulate him for committing to continue the awesome tradition of WEEF, as the greatest student-run endowment fund in Canada. His new position will be up for ratification at the WEEF Board of Directors meeting at the end of July.

Finally, you will be happy to know that WEEF will be returning in the next IW issue with:

- Funding Decisions!
- Spring 2012 Refund Rates!

Until next time – WEEF IS GOOD!

Learn more at www.weef.ca, or contact your friendly neighbourhood WEEF Director at weef@uwaterloo.ca.

Vice President, Education Candidate

Megan McNeil
3A Systems Design Engineering

Orysia Soroka
2B Nanotechnology Engineering

Hello engineering students! Our names are Megan McNeil and Orysia Soroka, and we are running for the VP Education role within the Engineering Society. Since Nanotechnology Engineering switches streams due to their eight month coop system, we decided to run together as a loving couple. Megan is currently in her third year in Systems Design Engineering and will be on term for Winter 2013; Orysia is in 2B Nanotechnology, and will be on term for Fall 2013. We are very excited about this opportunity and are prepped and ready to represent the student body for all of their academic concerns.

Education is a very important issue, as well as a concern shared by the majority of engineering students at Waterloo. It is something that is continuously growing and changing, especially in regards to topics such as teaching quality, PD (Professional Development courses), and Cooperative Education. Both of us are actively involved within our classes and the Engineering Society, and have kept up to date with the news and updates regarding education. We feel confident in our ability to express ideas shared by students in an effective, professional manner. The opinions of students matter to us, and we will do whatever we can to ensure that the education provided to engineering students at the University of Waterloo is the best it can be!

So What Do You Do At a Conference?

YASSER AL-KHDER
VP EXTERNAL

If you know someone who attended a conference, or heard about an opportunity to attend a conference, then you probably asked yourself that question. Well I'm doing what I probably should have done a long time ago, and tell you what generally goes down in an engineering student conference. Not all conferences are the same, so for the sake of this article, I will mainly talk about what happens in annual general meetings.

Sessions

Sessions sessions sessions. Attending and participating in sessions is major part of a conference. I like to categorize sessions in to two categories. The first type of sessions are speaker sessions; this is where a speaker is invited to give a talk to the delegates. These can range from personal experiences of professional engineers, to political issues such as the importance of engineers in public policy. My favourite sessions were a leadership speaker, Drew Dudley, talking about the definition of leadership and the meaning of being a leader, and a session detailing the steps to effective lobbying.

The other kind of sessions, and my favourite, are roundtable discussions, where delegates from different schools sit down and discuss a certain issue. Issues that were discussed in the past include the EngSoc image, social media and advertising, and traditions and their impact on the society's image. It is amazing to hear what other Engineering Societies do, and what problems they have encountered. Many initiatives that we tried in our engineering society stemmed from what other schools do, such as the creation of commissioner roles, the initiative to make the president a separate type of orientation week leader, and giving out ice cream for midterms.

Internal Administration

As the Vice President External of Waterloo Engineering Society 'B', I sit on ESSCO's and CFES's council, and a huge part of council's work is done during conferences. Some of the work done by council during conferences, particularly in annual general meetings, include electing the new executive team, discussing the future of the organization, and holding a plenary session. A plenary session is basically a council meeting where motions are raised, such as mandating the executive or changing the official documents, discussed, and then voted on. Plenary sessions can get very intense. For example, CFES Congress 2012 plenary session ran for around 10 hours over 2 days, and that's not even considered really long.

If you are a student who does not care about the internal governance of external organizations such as ESSCO and CFES, then you can safely skip these, as there usually are other sessions that are running concurrently.

Social Events

At the end of the day, when we're done with sessions and plenary, we do like to kick back and have some fun. Yes, a lot of the events have alcohol. And yes, some delegates do drink much more than they should. I'm very aware of the stereotypes of VP Externals, and people who go to conferences. It has been a major point of discussion recently, and actually my motivation for writing this article. Unfortunately, these stereotypes do exist. But to be honest, you don't need to get drunk to have fun, and conference organizers have been trying to hold alcohol-free sessions so students all of ages can participate. Personally, I like to sit down with a group of students, chill, and just talk. A lot of the times these talks are more productive than any session I have participated in that day.

I guess at the end of the day I'm trying to say that a conference is what you make of it. If you go to a conference wanting to learn from other schools and share your experiences, then you will learn a lot. If you go in expecting a party, then a party you will get.

Learn All About ECIF

ALEXANDRA COLLINS
VP FINANCE

Hello, friends! Some questions were raised about the Engineering Capital Improvement Fund (ECIF) at Joint Council. What is it? Why does it exist? Where does the money go? Who can make decisions? I am here to answer all the questions!

What is it?

Each term, an amount from the budget is allocated towards ECIF. This funding is used to sponsor capital purchases.

Why does it exist?

In the past, VP Finances from both societies made capital funding decisions independent of student input. With this new approach capital projects are decided upon by students with the interest of all their peers in mind.

Where does the money go?

The money goes towards projects that meet the following criteria:

1. Improvement of the facilities of the Engineering Society
2. Supporting and improving both new and existing services of the Society.
3. Improving the facilities and services of Affiliates (including the Iron Warrior).
4. Other projects that the Committee feels fulfill the purpose of the Fund.

Past projects have included POETS upgrades (new blinds and volume adjuster), a bike repair station, lighting equipment, and future funding for an E7 C&D and student space.

Who can make decisions?

Final decisions for projects are made by an elected committee, but before the committee can make decisions we need ideas from you! Visit engsoc.uwaterloo.ca/services/ecif-application to submit a detailed proposal. The deadline is July 10th.

EngSoc Executive Contact Info

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Gathering Your Input

ALESSIA DANELON
PRESIDENT

This last couple of weeks I have been given the opportunity to visit several of our engineering classes and gather feedback. When I say feedback, I mean anything under the sun: student space, EngSoc governance, student life, academics. You name it, I wrote it down. I did this mainly because myself and the VP Education are given the opportunity to represent the student opinion on several faculty committees. What better way to represent the student opinion than to visit their classes and gather their feedback? I got this idea from my preceding President, and liked the outcome in my Fall Term, but I have been pleasantly surprised with the amount of valuable, actionable feedback that I have gathered this term. Our students seem to really know what they like, what they don't like, and most importantly, how to make things better. I have been able to collect many amazing ideas to bring forward to the Faculty, to have EngSoc pursue, or even to pass on to a wider audience. I love what I have been able to hear, and I want to give more students the opportunity to voice their opinions.

I currently decide which classes to visit by having class reps contact me. However, not all class representatives are aware of this feedback gathering, or how to have their voices heard in general. If you would like me to visit your class, just for 5-10 minutes to gather your opinions, please email me at president.b@engsoc.uwaterloo.ca. I would love to hear what you have to say, to help you have a better experience here at the University of Waterloo.

EngSoc Constitution

OWEN COUTTS
VP EDUCATION

EngSoc has been working on overhauling the constitution to be more in line with the goals of the society. The current constitution has many issues of both structural and procedural nature. The EngSoc exec have come up with a set of new documents. These documents have gone through many iterations and changes over the last year.

One of the largest changes made was to separate bylaws from the constitution. This change allows rules that change with relatively high frequency to be separate from documents that describe our identity and who we represent. Other changes include re-ordering parts and eliminating sections that were redundant. More of a reliance has been place on external documents such as Roberts Rules to give explanation to things that exist outside of the document.

If you would like to read the new documents, check them out at the following link: goo.gl/ricOL. I would love to hear your feedback. Please feel free to email me (vpeducation.b@engsoc.uwaterloo.ca) to share your opinions.

Upcoming Events Calendar

Wednesday July 4	Thursday July 5	Friday July 6	Saturday July 7	Sunday July 8	Monday July 9	Tuesday July 10
EngSoc Meeting 5:30 PM CPH 3607 Running Club 7:00 PM POETS Patio	WEC 2014 Movie Night 8:00 PM POETS	WEC Pubcrawl #4 Running Club 8:30 AM POETS Patio Open Mic 12:00 PM POETS	WEC ZUNT 3:00 PM Engineering Campus	Beach Day 10:00 AM Grand Bend	Sushi Making Workshop 11:30 AM POETS Running Club 7:00 PM POETS Patio	Coffee House POETS Pancake Breakfast 8:30 AM CPH foyer EngSoc Hockey 3:00 PM CIF
Wednesday July 11	**Thursday July 12**	**Friday July 13**	**Saturday July 14**	**Sunday July 15**	**Monday July 16**	**Tuesday July 17**
Running Club 7:00 PM POETS Patio		Float Day CPH Running Club 8:30 AM POETS Patio Semi Formal 9:00 PM SCH	Canoe the Grand 9:00 AM Grand River		Running Club 7:00 PM POETS Patio	**EngSoc Hockey** **3:00 PM CIF**

Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca

Farewell Adel Sedra, Past Dean of Engineering

Michael Seliske

Prof. Sedra held a farewell celebration to commemorate the end of his term as Dean of Engineering at Waterloo.

THE IRON WARRIOR
NEWS BUREAU

After joining Waterloo as Dean on July 1, 2003, Dean Sedra has overseen many of the changes in Waterloo's engineering programs and facilities. Three new programs were introduced during his term: Mechatronics in 2003, Nanotechnology in 2005 and Management in 2007. The School of Architecture also moved from the Faculty of Environment to the Faculty of Engineering in 2005, bringing another program into our engineering family.

He also oversaw the beginning of a renaissance in construction for engineering facilities on campus with the construction of Engineering 5 in 2010, marking the first of the numbered engineering buildings to open since 1971, when Carl Pollock Hall (originally Engineering 4) opened. Engineering 6 opened shortly afterwards in 2011.

Coming into the position to work on the Vision 2010 plan, it seems only fitting that he would leave once having overseen the completion of the Vision 2015 plan, which among other things lays groundwork for Engineering 7 and 8, a program in Biomedical Engineering, and the overhaul of many aging labs.

Always one to enjoy student input and teaching, he co-wrote one of the most widely used textbooks on microelectronic circuits and taught a course on electronic circuits. While *The Iron Warrior* was unable to meet with him in the week before publication, we opted not to leave our appreciation for his leadership for the past nine years unnoticed, and wish him luck in his retirement and potential future endeavours.

Sullivan To Succeed Sedra as Eighth Long-Term Dean

Continued from PEARL on page 1

similate information from many sources. The demands on the engineers of the future will require them to solve increasingly complex problems and venture outside their discipline and culture.

Labs are the greatest component that Sullivan sees needing improvement in undergraduate education, which was one of the points addressed in Vision 2015 with the $8.5 million allocated to lab renewal funding. "For mechanical engineering, we're going to use that [funding] to upgrade antiquated labs and develop engineering clinics." Sullivan hopes to do away with the "plug and play" aspect of many labs currently in place and replace with experiments that will unite the practical and theoretical pieces. "We want our students to have a broader range [of understanding]. Part of her concern was that some of our first year students were not even aware of how a ratchet works, which was likely due to generational shifts in hobbies and interests.

She hopes that professors across the faculty will explore new teaching approaches inside and outside the classroom. One way this could be achieved is through the integration of knowledge using "engineering clinics". Professors Sanjeev Bedi (Mechanical and Mechatronics Engineering), Carol Hulls (Mechanical and Mechatronics Engineering) and Mary Robinson (Chemical Engineering) tested this concept recently with three first-year Mechatronics Engineering program courses: MTE 100 (Introduction to Mechatronics Engineering), CHE 102 (Chemistry), GENE 121 (Computing). "Professor Bedi took the initiative, collaborated with the other professors to develop projects; one was the design of fuel cells, while another was taking apart an entire engine, putting it back together, and seeing how it works. The pilot was a stunning success when student learning was assessed. They could see the connection between computing [and chemistry and mechanics], because the fuel cell had the chemistry part of it, and then you needed to write software for the microprocessor to get it to move. So they saw the connection of three things and they absolutely loved it."

"The wonderful part is, they can take some risks,"

Sullivan believes that such an activity works towards her goal of "engineering clinics", which will be developed for the mechanical and mechatronics engineering curricula as the department prepares the programs for the new CEAB outcome-based accreditation assessment expectations. Students will have outside classroom activities focused on small projects that integrate two or three of the courses they are taking. "The wonderful part is, they can take some risks," Sullivan explained "We tell students, you can get it wrong the first time, but you learn where you went wrong. Just like the engine workshop. Twenty engines were taken apart, but nineteen worked. The one that didn't work, everyone got together to see what went wrong. You learn more from failures."

The second area of focus for Sullivan will be graduate studies. A high priority is to recruit top Canadian and international scholars to Waterloo to work with

Continued on MEET on page 11

Meet Pearl Sullivan, Dean of Engineering

Continued from SULLIVAN on page 10

our professors. There are numerous cutting edge research projects underway in state of the art labs. On the education front, there are plans to meet the needs of both graduate students as well as working engineers. For research students in MASc and PhD programs, Sullivan aims to better prepare students for research through a research methods course. "The caliber of our research work hinges on the ingenuity and abilities of our graduate students. We need to find opportunities for them to work in laboratories in prestigious universities and research institutes around the world." Moreover, she would encourage faculty to "build clusters on campus as part of their longer team research agendas to identify areas of collaboration that would have a global impact, solving larger problems on a scale that would garner international attention".

"Given the rapid technological changes in the work environment, the challenge in the educational domain is no longer confined to universities." Sullivan also has a particular interest in upgrading practicing engineers. Internet-based instruction will be used in order to re-train engineers on the job, as in careers today the technologies are always evolving, and working engineers need to continuously develop their skill sets to keep up. There are already online graduate programs established for Electric Power Engineering and Management Science, where professors teach from their offices. "A new interdisciplinary masters program in Mechatronics Engineering will be launched in late 2013."

The courses and virtual labs will be offered online through the new E5 LiveLink facilities, where classes will be delivered over live, interactive, high definition video conferencing. According to Sullivan, "We have an enviable reputation as an engineering school, the outside world will get to join in the Waterloo Engineering experience."

Citing the statistic that only 30% of engineering graduates remain engineers, while the rest go on to work in management and CEO roles, this is an obviously important aspect to the continuing functionality of engineering graduates. Waterloo will approach the market of what we know best, practical, working engineers. As Sullivan noted, "our strength is our connection to industry".

"our strength is our connection to industry"

Lastly, Sullivan hopes to promote the existing accelerated master's program and provide more entrepreneurship support for students. She says that we "need students to see that they can reach their aspirations", and provide opportunities for students who wish to become practitioners, researchers, and entrepreneurs. The practitioners are already greatly supported through the current co-op program, and have many opportunities for enrichment. For students who wish to pursue research careers, they will be encouraged to enroll in the accelerated master's program. This will allow to students to finish a master's only one year after their undergraduate program. This will be achieved by taking a research position for the last co-op term, where the student will begin their thesis, and then a year later will achieve their master's. Students with very high academic standing will be admitted into PhD programs. For the entrepreneurially inclined students, the Conrad Center for Business, Entrepreneurship, and Technology will offer entrepreneurship focused courses such as BET 300 and 400. In addition, the School of Architecture, which Sullivan notes has the distinction of having the top ranked architecture undergraduate program in Canada, will add a PhD program to their existing Masters within the next five years.

Not content on solely improving education, Sullivan hopes to improve the image of the engineering profession as a whole. "I think the engineering profession is under recognized by the public," she stated. "My highest priority is to promote engineering as a profession that profoundly shapes our technological world through education and research." Sullivan believes that in order to raise the prominence of engineering at Waterloo on an international level, faculty members, administrative staff, and technical staff must all be involved. Sullivan feels that a shared commitment to help each other succeed is critical to the success of our students in their future roles. She hopes that students will be able to think "I know what it is like to get help, and I would like to help others".

She hopes that students will be able to think "I know what it is like to get help, and I would like to help others".

Sullivan feels that Waterloo is as hard a sell is it seems, since it's almost designed to be an incubator for vibrant activity and academics. "I like Waterloo because it is a good place to raise your family," Sullivan stated. "I have three children, and I live close to the university and don't get into a huge traffic jam as I go to work. If I want to do exotic shopping, I go to Toronto, which is not too far. I think it's a wonderful city for attracting academics. We have to offer very competitive salaries to bring in top-notch people. The quality of life is definitely excellent and the cost of living here is lower than either Vancouver or Toronto, and that's really appealing for families to come here."

When asked how she felt acting as a mentor for all females in engineering, Sullivan stated, "If I can help to inspire young women to enter engineering I would be delighted." She wants everyone to interpret it as not just a male profession, but also stresses "I'm here for all the students. My interest is to raise opportunities for all the students" .

Sullivan herself long held an interest in math and science, originally attending university to study science at Dalhousie University, but knew she didn't want to continue be a scientist for a career. "Science was not something I could give up, but it just wasn't enough," Sullivan recalled, "and at the same time, I did not want to go to medical school because I would not cope with seeing blood on a regular basis." Her studies at Dalhousie, while not what she wanted to do, were what first encouraged her to consider transferring to engineering.

"I picked up a brochure in the library," Sullivan explained. "It talked about civil engineering, and how it improves the lives of people, and that struck a chord with me. I was very inspired by the fact that civil engineers really affected the lives of people. But I did not do civil engineering; I did metallurgy, because I was captivated by materials science."

University of Waterloo

Dean Sullivan's initial term will last until June 30, 2017.

Graduating from the Technical University of Nova Scotia (TUNS), which later amalgamated with Dalhousie, in 1985 with a Bachelor of Engineering with Distinction in metallurgical engineering, she then went on to complete a Master of Applied Science in metallurgical engineering at TUNS as well, writing a thesis on wear resistance and microstructure of silicon-modified zinc-aluminum alloys. She attended the University of British Columbia to complete her PhD in metals and materials, where she studied glass-epoxy composite laminates.

Her academic career began in 1991, where she was a lecturer at Nanyang Technological University (NTU) in Singapore, where she was part of the first batch of professors to teach at the new university. Nanyang is now recognized as having one of the fastest-growing and more reputable engineering faculties in the world. "Those four years were a great learning experience for a young teacher," Sullivan recalled, "because I taught cohorts of 1000 students. The classes were large theatres with 500 students."

She moved to New Brunswick in mid-1994 to teach at the University of New Brunswick, where she was a professor for 10 years before joining the University of Waterloo in July 2004. Throughout all her teaching positions, she worked in the equivalent mechanical engineering departments, culminating in her position as Chair of Mechanical and Mechatronics Engineering from 2006 until her role as Dean was announced. She worked in mechanical engineering departments without actually having studied mechanical engineering for a degree, instead having studied engineering mechanics on her own to learn what she needed to know to conduct research. "Every time I tell people this, they laugh," Sullivan joked. "I always tell my colleagues, 'I am not sure why you asked me to be department chair because I don't have a single degree in mechanical engineering.' My first two degrees were in metallurgical engineering, and my last degree was in materials engineering."

Most of her research and expertise are related to failure of composite materials used in aircraft structures. Much of her recent work is based in aircraft repair and characterization of polymers, including the effects of aging and moisture diffusion. "I measure and model how polymers age. Actually, polymers are very much alive. They age over time, and that's why a lot of your polymer materials get brittle. Even if you don't expose them to the sun, they degrade in ambient conditions and lose their original physical and mechanical properties."

While she will likely be unable to work as heavily on her research as she begins her work as Dean, her previous experience demonstrates she will be more than up for the task, and the years ahead should bring many promising initiatives and projects under her guidance.

Canada's 145th Celebrated in Columbia Lake Fields

EMILY GRUBER
2B NANOTECHNOLOGY

On July 1st, as Canada celebrated its 145th birthday, the University of Waterloo again held its annual celebration at Columbia Lake fields. Launched 28 years ago by the Federation of Students, and expected to draw 60 000 - 70 000 visitors, the celebrations feature children's activities, performances, and live music, and many food choices, the day is a popular celebration drawing many attendees from all over Waterloo and Kitchener.

Many different attractions were available, including those run by student groups and groups from the community. The Children's Stage featured performances all day long by groups such as the Unaccompanied Minors, Acabellas, and Warrior Band, while the Main Stage had musical performances by various local bands, such as Juice, Wormwood Scrubs, and Steve Parkinson and the Stony Lonesome. There was an arts and crafts fair with many souvenirs available for sale, as well as an Activity World including games for children run by local Boy Scout groups. MathSoc also ran a Fun Fest for children with games such as sponge toss, parachute, and fishing games. In addition, the University of Waterloo Alumni Affairs hosted a face painting booth, popular with children and adults alike.

As always, the Engineering Society was present and ran a Mini Olympics in order to entertain the children (and Iron Warrior editor) present. The Mini Olympics provided children with an opportunity to collect all the letters of CANADA, and then earn a free freezie for their participation! The different stations included the very popular giant waterslide, a dunk tank featuring many dedicated volunteers, hopscotch, tug-of-war, competitive potato sack races, and Canadian trivia. Also in attendance were the Toolbearers and the Tool, available for photo opportunities and to allow kids to learn about Waterloo engineering.

Wrapping up the whole event at 10:00pm was the fireworks show. As Waterloo Region's largest and most spectacular fireworks display, the show did not disappoint. The fireworks were impressive and varied, lasting 18 minutes, and were a great finish to well-organized and fun day. A big thank you should go out to the engineering Canada Day directors, Katrina MacDonald and Caitlyn Howe, without whom the Mini Olympics would not have happened. Happy birthday, Canada!

Emily Gruber and Jacob Terry

Top three: Canada Day cupcakes (top), Toolbearers give children high-fives (middle), Engineering Society President Alessia Danelon being dunked by the Toolbearers (bottom). Bottom four: Children playing tug-of-war (far left), Noah Hogan and Nolan Finkelstein pose at the sack race (left), Stuart Linley helps children down the water slide (right), the Warrior Band prepares for its performance (far right).

Personal Reflection on Rio+20

Global Conversation Without Political Action

FATIN CHOWDHURY
EWB PRESIDENT

I cannot disagree with the general consensus that multilateralism has failed and the outcome document from the Rio+20 conference was not binding but rather a political declaration. From June 20-22, heads of states from around the world convened at Rio de Janeiro to share their thoughts on sustainable development and adopt the Rio+20 outcome text titled 'The Future We Want'. 718 countries have made voluntary commitments at the Rio+20 United Nations Conference on Sustainable Development. While hopes and expectations were ambiguous heading into this "historic opportunity to define pathways to a safer, greener, and prosperous world", civil society members including NGOs, youth, and indigenous people did not feel the results were strong enough to address the increasingly difficult challenges we will be facing, especially developing nations and small island developing states (SIDS).

While the conference failed in securing political commitments, "the most important outcome in Rio... will be a global call to action" as Jeffrey Sachs said during the panel on "Economics for Sustainability". The level of participation was highest at this conference with over 40,000 accredited delegates and up to an addition 20,000 or more being involved in events around the city. I see this aspect of the conference to be its biggest success. We had the ability to participate on high level discussions and attend the plenary meetings – this level of transparency and access is seldom given to the public. Further, the quality of the side events and the discussions happening at the conference centre in person or in the twitter-sphere amazed me. It made me realize the urgency to act was shared by everyone and that we all wanted to contribute to this global movement. David Suzuki and his daughter Severn Sullis-Suzuki also attended the conference to speak against the lack of action. It was interesting to hear Severn's thoughts as she had addressed the UN body at the first Rio Earth Summit in 1992.

I was a delegate at the conference on behalf of the Students on Ice Alumni Delegation (www.soidelegation.com). As students who have been on learning expeditions to the Arctic and/or Antarctic regions, youth from Canada and worldwide decided to embark on this journey to advocate for the importance of the polar regions in the context of sustainable development. It is our position that protecting these fragile ecosystems is of paramount importance as environmental degradation has global consequences. If these regions are compromised, global sea levels will imminently rise but additionally the global ocean system will be irrevocably affected. With increased ocean acidification, unique threats will adversely impact the marine organisms and the livelihoods of humans around the world. In addition, we are striving to build on the success of the Antarctic Treaty and help achieve a carbon neutral Antarctica. Finally, we have demanded the rights of Indigenous communities are recognized in the context of Arctic resource development. With increased human presence in addition to the effects of climate change, we presented a recommendation paper and worked with national delegations and organizations to provide a voice for the Polar Regions.

With respect to the goals of our delegation, this conference is only the beginning. We hosted a side event where Ambassador Ronald Jumeau of the Seychelles Islands spoke about the connection between the SIDS and the polar regions; Dr. Erli Costa discussed the importance of Antarctic conservation as a research scientist with APECS. Through the relationships we have built with individuals, organizations, and government officials, we intend to continue the conversation and prioritize this issue on a global platform. A recent special report in the Economist highlighted that while we are "likely to lose a lot of the unique Arctic first" even if we get a "grip on global warming" soon, which we must do. The world needs to understand the complexity of climate change and the intricate factors that contribute to it. Although world leaders seem to be focused on adaptation policies, mitigation of the impacts definitely require a focus on the Arctic and Antarctic and monitoring its state closely.

I would encourage you to continue to build your knowledge on these issues. An educated civil society can enable the public to push for change and demand their governments to change their priorities. Peter Kent's speech at Rio+20 on Canada's path to sustainable development did not address any concrete steps but rather generalized and ambiguous sentiments. As a Canadian, I am frustrated and shocked that the country who pioneered environmental changes is now barely audible and is repealing environmental laws to fast track economic development. As a Bangladeshi native, I am also displeased at the government's lethargic pace of action and worried about how the people will respond to the changes that will inevitably come their way.

Despite the failure in achieving concrete actions, I would like to see this conference as another step forward in achieving sustainable development. Admist all the negativity regarding lack of political will, it has been amazing to see the power of public citizens in demanding change. When

Maclean's

Rio+20 was a UN-held conference focusing on sustainable development.

50,000 protestors took to the streets to speak out for the future they wanted amidst the negotiations, I felt inspired and hopeful that we could change. With any movement, it is our moral responsibility to provide the voice for the issues we care about and also to speak for those who cannot speak for themselves. In speaking with Dr. Sylvia Earle, a marine biologist and National Geographic explorer, I was amazed at her conviction as she encouraged the youth to be active. She bluntly stated that "the economy cannot succeed unless the environment succeeds" reinforcing the fact that there should not be a dichotomy between the economy and the environment.

Over the next while, I will be arranging some sessions to share my experience and engage in dialogues about sustainable development. To continue the conversation, contact me at fatin.chowdhury@gmail.com or tweet me @fatinic. Let's join the global conversation!

Side Projects, Friends and Progress

JIMMY EHRMAN
2012 JUNIOR FELLOW

THE LONGER TRAIL

My name is Jimmy 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 on a project called Sustainable Land and Water Management under the Agricultural Extensions team in Northern Ghana. Below are recent thoughts and observations from my life overseas.

I'll be honest and say that my first few weeks here were exhausting and at times frustrating. I found that I often needed to take personal time to regenerate. I found there was a significant energy barrier to engaging in public activities; I had to be very conscious of my efforts to engage socially.

While there were always ups and down, good days and bad ones, on the whole it was very draining to keep pushing myself to integrate, to keep focus and hope in my work, to greet people in the morning.

I'm happy to say that things are looking up! What was initially shocking is now becoming familiar, I'm gaining the comfort of routines and expectations. After several weeks of pushing, I'm making progress at work. I have four field visits set up in the week. I've also been advised to look for side projects which I can use to stay motivated.

Considering this, I'd like to place an open call for ideas for side projects. I have several ideas which I'm making progress on, however I'd love to hear any suggestions from you! For example if you are curious about some aspect of Ghana, the people, or my work I can take the time to gather some information and write a post about it! I'm open to all ideas, so comment or email me if you have something!

As for my own ideas, I have a few things I'm mulling over. These include learning traditional weaving at a nearby vocational school; working at a road-side bike repair hut; recording and gathering a collection of local recipes for a cookbook; and working on a hydraulic analysis of a nearby water hole.

I'm excited about all of these, but I've made a lot of progress on the first one. I'm going to meet with the principal of the school tomorrow to sit-in on some classes. I'll probably also just go for the cookbook idea anyways, it seems many RJFs would kill for some good instructions on how to make Fufu and groundnut soup.

I've also made what I think are my first few good friends. While you can't help but be friends with pretty much anybody you meet here, I've become closer with a few of them in the past weeks.

One is named Clement, he used to work in my office as an AEA. He too found the work environment frustrating, and so decided to take up teaching at the agricultural colleges in Bolgatanga. He is hoping to go to Kumasi and get his master's degree and work abroad for a while to see the world. I told him a lot about Poland (where half of my family is from) and he seemed really excited about it. He is also the first Ghanaian I've met who questions Christianity and holds job satisfaction above income. I don't mean to disparage the others I've met and talked to, but I just can't see eye-to-eye with them when they speak of their spirituality and their perceptions of success. It's really refreshing to speak to him and I'm hoping to meet up with him sometime this week in Bolga for Guinea Fowl and drinks.

The other is name Isaiah, an orphan from Tongo who (with some help from his friend in America, David) has set up one of the only Orphanages in the area. Isaiah has helped me a lot with finding a side project. I met him originally while looking for a place to stay in Tongo; there was an open room in his orphanage where many white people have stayed in the past. I've bumped into him a few times since. He recently invited me to come visit the orphanage and we talked for a long time about the logistics of running the place, and his role as a care-giver for the children there. I mentioned that I was looking for a side project thinking he might have work for me in the orphanage. However he was quite honest in saying there was nothing for me to do there, and instead suggested that I enroll in the vocational school (also built by his friend David). He took me to meet the Chief of the small community there who is also the principal of the school. The three of us shared many bottles of Star beer and agreed that I should come sit-in on a few classes to see which I liked.

On the whole, things are progressing here. I'm making friends beyond those I yell "Hello! Good Morning!" to on my way to work. Even the children and bugging me less as they have learned my name and no longer call me Salaminga (white man). A sure helper for culture shock and isolation is connecting with like-minded people, I'm happy to see that happening. My work is picking up and I'm making progress on my project. Each day I wake up with a little more energy and each day I have fewer and more shallow lows, with higher and more persistent highs.

Even though things are easier here, I still miss home. It isn't the constant distraction I felt before, but I am eagerly waiting to come home and see my friends, family, and my chapter. I'm sure it will happen sooner then I am ready.

Next week I will be travelling to Mole National Park for our Mid-Placement Retreat (we are already at the half-way mark!). I will be reuniting with the 20 or so Ghanaian JFs and we will be sharing learning, star beer, and sight seeing in Ghana's most famous park. Some of the sights include ancient mosques, baboons, and elephants! I will be staying a night in Bolga to connect with some friends I have there, then off to Tamale for a night, then to the park! Plenty of pictures with follow!

Peace, love and happy trails!

Want to read more? Check out my blog for many more thoughts and updates at:

thelongertrail.wordpress.com

More information on the Junior Fellowship program and Engineers Without Borders can be found at:

www.ewb.ca

Microsoft's Renewal Blossoms with Surface, WP 8

JACOB TERRY
2B NANOTECHNOLOGY

T CUBED

For the past two decades, Microsoft's Windows desktop operating system has been nearly synonymous with personal computing, running on over 90% of desktop and laptop computers in the world. Arguably due to complacency with its position in the world and stagnant development cycle, Windows has become a lingering necessity of the lives of people who are unable or unwilling to switch to something else. Windows XP lasted for nearly six years before being replaced by Windows Vista, and in that time barely improved when there was clear areas where it could have been better. With the rise in mobile operating systems and the trend from desktop to laptop to tablet computing, Windows is losing mindshare to more interesting and innovative operating systems.

Microsoft seems to have noticed that people found them getting stale, and have been working on a huge revamped design and brand since the release of the Zune in 2006. While the Zune was not very successful, the brand language Metro has lived on as the new face of Microsoft and its products. Windows Phone 7 was one of Microsoft's first overhauls in 2010, and showed that the technology giant was willing to reinvent itself in an imaginative and creative way. Microsoft is pushing three big product lines this year that follow in its footsteps: Windows 8, which we discussed in Volume 32, Issue 1 (Fall 2011), Windows RT, and Windows Phone 8.

The most surprising thing Microsoft announced about both Windows 8 and Windows RT recently was that they would be supported by a Microsoft-crafted tablet called Microsoft Surface (the giant slab tables that used to be called Surface are now known as PixelSense). This marks a serious milestone for Microsoft, who has always prided itself on having the higher-powered computing devices it supports created by other companies. It comes in two flavours: low-end (with Windows RT, 32-64 GB of storage) and high-end (with Windows 8 Pro, 64-128 GB of storage). Microsoft cleverly departs from the iPad knockoff look of most Android tablets these days by creating an appropriately squared off design and including a built-in kickstand which allows for the tablet to stand up without an extra accessory. The case is interesting from a materials standpoint as it is formed from a molded metal with a fine magnesium deposition layer on top, allowing for incredibly sleek components.

At first, it appeared that Microsoft had copied Apple's iPad Smart Cover, yet their Touch Cover and Type Cover both take a unique and functional twist on the standard tablet case. The Touch Cover integrates a capacitive touch keyboard into the interior of the case, which when coupled with the standing Surface allows for a laptop-like experience. The Type Cover takes it one step further and adds a very thin mechanical keyboard, so users who prefer physical buttons may still type. The concept is an interesting contrast to Apple's dock-and-keyboard approach, and knowing Microsoft's approach so far, will likely allow greater keyboard support. The big downside to their announcement was that there was not much in the way of hands-on demos, which makes me wonder how close these are to being ready for release.

On the more micro-scale, Windows Phone 8 is much like Windows Phone 7 was, except it now is sharing the same core as Windows 8, which one would imagine is similar to how iOS shares a similar core to Mac OS X. The shared core allows for removable micro-SD support, enhanced encryption and devices with multiple cores. The inclusion of the DirectX interfaces, along with the shared core and tools from Windows 8, is designed to allow developers to very easily transfer applications between platforms, making it easier for them to add to the 100,000 apps in the Windows Phone Marketplace. NOVA 3, Asphalt 7, Audible, Draw Something, and Words with Friends are a few of the apps coming to the Windows Phone ecosystem soon, due to increased support for the operating system and easier tools for cross-platform development. A neat little tidbit that got thrown in, likely due to their recent purchase of Skype, is the promotion of VoIP apps to first-class, treating all VoIP voice and video calls like normal ones to the user. This kind of integration is impressive once you see how it works and seamlessly presents Skype and other VoIP calls in a way not seen on other platforms so far.

Mobile payments is a sneaky feature thrown into the mix, building on what Apple is doing with Passbook and Google with Google Wallet. The Wallet hub allows users to add credit cards and other rewards cards into a unified spot, which then gets paid using near-field communications (NFC) payments. This means the main three mobile operating systems now have some sort of financial support built into their devices, which will likely become more prominent as the services are built out more. Windows Phone 8 also supports three resolutions, up to 1280 x 768, and supports applications developed for Windows Phone 7.5. The Start screen is also being slightly modified to allow for more tile sizes, letting users add more applications in one view. Microsoft is partnering with Nokia, Huawei, Samsung and HTC to bring the first wave of Windows Phone 8 devices this coming fall, and it will be seen whether they can gain Microsoft some of the mobile pie that they've lost so dramatically.

The interesting thing about their announcements, or at least the Surface one, was that they have completely redone their presentation style. They have taken a page from Apple's book, in a good way, in emphasizing the user-centric aspects of the products with enthusiasm and less on spreadsheet-ridden monotone presentations. The Windows Phone 8 devices and Surface show signs of Microsoft's new direction, which is even being reflected on their new, beautifully Metro website preview. It is exciting and relieving to see a competitive and attractive option for devices in the consumer electronics world, and hopefully come fall we'll start seeing if these gadgets live up to all the hype.

Wallpaper Passion

Microsoft Surface marks a significant change for a company known for it's hands-off hardware approach.

Get in Shape Quicker With the Magic Molecule

AMMAR MASUD
3A NANOTECHNOLOGY

Taking a supplement to get that perfect body is not a new idea; it has been exaggerated in the world of fiction to the extent of gaining above human strength, agility and stamina. One popular example is the super soldier serum in the Marvel universe responsible for Captain America's powers. Occasionally you will hear advertisements swear by snake oils to lose fat and gain muscle with minimal work* and without side effect but of course there's always the asterisk.

Recent tests on mice administered with a vitamin precursor have revealed that it is nothing like what the people on TV yell at you to buy. It is however the closest you will get based on real research so far. The results were published in the journal, Cell Metabolism, in the June 2012 issue by researchers at Weill Cornell Medical College and the polytechnic School in Switzerland.

A form of Vitamin B3, referred to as nicotinamide riboside (NR), is the fascinating molecule that is given credit for improving mitochondria functionality, the cells source of energy. The mice tested were given a fatty diet to compare with mice without NR under the same diet.

The results were drastic, the effects of NR allowed mice to gain only 60% of the weight gained by mice without the NR supplement. This combined with significantly better endurance and an increase in strength. It's already sounding too good to be true, "but wait there is more" (just practicing). The NR supplements' effect on mice also included lower cholesterol levels and unlike the mice without the supplements, none of the NR mice developed diabetes. It is already being referred to by some as the "miracle molecule".

So what's the catch? Nothing! At least for mice, no toxicity or other side effects were observed. For now the effects on humans is still unknown till further research is done. If you are as curious as I am you'd like to know where NR can be found. Currently no NR supplements exist, and vitamin B3 you find is actually not NR but rather its cousin niacin which is not as amazing. NR can be found in low quantities in milk and beer. Before you go out and buy a six pack, note that the doses are so small they may be insignificant. But do whatever lets you sleep better at night, and in the case of milk you would be taking advantage of its many other health benefits.

While we wait for further testing why not cook rather than go out for that double big mac with large fries. Out of groceries you say? Jog to the nearest grocery store and back. Get a head start on getting fit.

**with a healthy diet and work out plan...than how does the snake oil help?*

Lonesome George Passes Away in the Galápagos

NINA FENG
1B ENVIRONMENTAL

LEAFY THOUGHTS

It is with sadness and a little bit of shock that we report the loss of a very special individual. Last week, the Director of the Galápagos National Park announced that Lonesome George the tortoise had passed on, at over 100 years old. This may seem old compared to humans, but it is well known that tortoises can have extremely long lives. George's subspecies can live up to twice as long in the right conditions. Too bad they're all dead.

We will put environmental technology on hold this week. Instead we will dedicate this issue's story in the memory of Lonesome George. He was literally one of a kind. He will be missed, especially by his caretaker of over 40 years, who found him dead in his pen on the morning of June 24th. A sad day indeed. It is most likely that George died of cardiac failure (in other words 'natural causes') common for tortoises reaching old age. A necropsy is being planned to determine the exact cause of death, and will be conducted later in the week.

George's death marks the extinction of the Pinta Island Tortoises, a subspecies of the Galápagos Tortoise. The species, scientifically known as *chelonoidis nigra abingdonii*, had mostly been wiped out in the late 1800's by hunting, apparently leaving George as the sole survivor. He represented his entire subspecies. Seeing George die is seeing all the Pinta Island Tortoises die.

Afterwards, the Galápagos National Park plans to embalm him and put him on display, to be remembered by future generations. The last of a species. It is an idea made with the best intentions, though it is suspected that a stuffed George on display doesn't quite have the effect of the real thing. He is following in the footsteps of several other famous animals who have made a post-mortem flesh-to-frame transition.

George was first discovered in 1971, and has since been penned in the Charles Darwin Research Centre in Santa Cruz in an attempt to save his species. It failed, unfortunately. Penned with two female tortoises of a different subspecies, it was hoped that he would mate with them and produce viable eggs that would hatch into baby hybrid tortoises. Even hybrid Pinta Island Tortoises are better than no Pinta Island Tortoises. However, all attempts conducted over the years have failed, but not for lack of trying. George did mate with the females on several occasions, but every time the eggs either lost mass and 'died', or would never hatch (were inviable). The subspecies was determined to be 'functionally extinct,' meaning that although there are surviving members in existence, they no longer have the ability to reproduce, or influence the ecosystem, due to their few numbers. George might not have been alone in his final years, but it sure is lonely being the last of his kind.

This might not be the complete end, though: at least one hybrid has been found in the wild, on a neighbouring island, a direct descendant of the subspecies, though not purebred. It is a promising discovery for those who still hope to somehow revive the species, and it is hoped that more will be discovered in time. Maybe someday there will be more Pinta Island Tortoises, though that may be an unlikely event. Poor Lonesome George might well be the last one ever.

putneymark

Lonesome George was the last known member of his subspecies of Galápagos tortoise.

The World's Largest LAN Party

NANCY HUI
2B CIVIL

So, you had a little party in your basement. Think your little twenty-four-hour hot-pocket electronic voodoo fest in the basement was something to boast about? Or that a couple rounds of Starcraft projected on the pull-down screen in the SLC is enough to get you bragging rights to anything?

... Well, it really isn't. Not since around 1994.

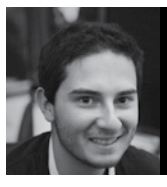
DreamHack originated as a small gathering of friends in a basement in the early 90s, but in 1994 had moved to a school cafeteria and became known by the monker DreamHack. In 1997, the event had become the largest LAN party in Sweden, and set the World Record for the world's largest LAN party, with just over 5000 participants. A bar it has superceded many times in the past.

DreamHack Summer 2012 was held from June 16-19 in Jonkoping, Sweden. It lasted 72 hours and was booked solid through with digital arts competitions, live concerts featuring European metal bands, and studio game expos. The primary draw, though, is the massive LAN party and game tournaments, which have a total prize pool of over a million Swedish krona and attract players worldwide.

Paying top price (550 Swedish Krona, or $80 Canadian) for a ticket gets you a desk, a chair, a LAN socket, and a power socket in the main room for the entirety of the event. Because there is so much to do, the most avid participants never leave the festival and sleep in halls close by. There are other schools of thought, though, who pass out in their chairs, catnap, partake in caffeine, or simply refuse to go to sleep.

15 000 visitors attended DreamHack 2012, with 12 500 unique hosts on the network. Funny thing is, this wasn't even the largest LAN party ever held. DreamHack is held twice a year, and traditionally the winter sessions have higher attendance than the summer sessions. DreamHack Winter 2011 set a world record of 20984 attendees and 13 292 connected devices.

Google I/O: Inside The Developer Conference



SANTIAGO GIL
2B SOFTWARE

For those not in the loop, Google I/O (Input/Output) is an annual conference hosted by Google for developers from all around the world. The entire conference occurs in San Francisco at the Moscone Center spanning a total of three days (June 27-29). During this time, they hold multiple developer seminars and information sessions to help introduce third party developers to their products and upcoming technologies.

The company also took this opportunity to release and announce some of their new innovations. Through the span of two keynotes, Google's executive staff managed to blow people away by introducing their new products. Android received an upgrade with Android 4.1 "Jelly Bean". The main feature is called "Project Butter" which basically introduces a fixed frame rate of 60fps to reduce screen lag and create a "buttery" smooth user experience. It also introduces Google Now, which is a smart and aware assistant similar to iOS's Siri. Their flagship tablet for Jelly Bean is the Nexus 7, a Google branded tablet with a 7" display, about 10 hours of battery power, and an NVIDIA Tegra 3 quad-core processor.

The Nexus Q is a brand new device being marketed as a "social streaming media player". It connects to the Google Play store to stream music, videos and more. The "social" part of it all is that your friends with Android devices can connect to it and also control what's playing. Google Compute Engine, acting as Google's response to Amazon Web Services, allows you to borrow Google's remote computational power for a price.

Google Drive received added offline functionality for collaborative document editing as well as an iOS app. Chrome now covers most platforms, with the introduction of an iOS app, and it was noted that it has surpassed all other browsers in number of users. They also demoed the browser's capabilities by playing Bulletstorm and showing off a Cirque Du Soleil interactive 3D experience. Chromebooks, which are laptops running Google's Chrome OS, are now being publicly sold. They are effectively just a browser and your favourite web apps. However, given the Chrome demos, this seems like a viable option for already existing laptops at a lower price range. Project Glass, Google's wearable computer announced earlier this year, got a "beta" version price tag for I/O attendees at $1500. Not only that, but the company's co-founder managed to demo the device Tony Stark-style with people skydiving, performing BMX tricks, and wall climbing to show off the Glass' video chatting capabilities.

NDTV

However, the best part of all of this were the extended sessions held around the world. For those developers who couldn't make it out to sunny California, Google provided free meetups and sessions in multiple locations around the world. One of these was held at their offices here in Kitchener, at the Lang Tannery Building on June 28. The day was mainly an opportunity to meet other developers and learn about Google's products. It was a conference style day filled with events, demos, raffles and meals. It is also open to students and you manage to get some swag after it all. The day started with a bit of mingling and demos in the showroom area of the Tannery. Eventually, when everyone found a seat and had brunch (featuring pancakes on a stick), they had a Q&A panel made up of Google Engineers and startups funded or acquired by Google in Canada. This being said, you could note that the Google team worked hard to create a day for local developers with an emphasis on Canada. They even managed to invite Hon. Gary Goodyear, Minister of Science and Technology, to answer some questions about Canada's involvement in technology and research.

Later in the day, they featured a live stream of the keynote from San Francisco and multiple developer information sessions. Better yet, the Canadian Googlers even held some of these sessions locally. The schedule was formed in a way for you to choose your own adventure. You had to choose 4 sessions to take part of. These sessions included Rocking the Tech Interview, Integrating G+ into Mobile Apps, Making Great Android Apps, Chrome Developer Tools Evolution, Advanced CSS/HTML5 (Held by Google and Adobe Engineers), and many more.

I must note, they also provided lunch for the day. All cooked by their wonderful Google chefs, it featured sushi, delicious hors d'oeuvres, a salad bar and most importantly an open bar of beer and wine. I encourage any developers or aspiring developers in the area to take advantage of this next year. You gain insight on Google's operations as well as get to enjoy a day in their office. You also get a slice of the I/O experience without forking over the ticket price and travel cost.

For more information on I/O and videos of the conference, including the skydiving, visit developers.google.com/events/io/.

Video Game Companies: Feed Me Money!

JON MARTIN
4A CIVIL

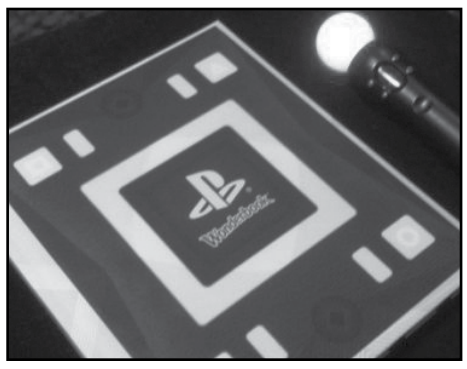
FUTURE OF GAMING

Hello everyone, and welcome to the regular post E3 Future of Gaming – where news is scarce and I get to rant. This is different from my other rants in that this one is new, while the others are only accessible through the Iron Warrior pdf archives. So for this rant: How the big video game companies are approaching hardware and software development, and gouging the general consumer along the way.

The biggest contributor to this problem from the hardware side is Sony, and the numerous controller based peripherals they have released in the last few years. The Playstation Eye camera was initially released with basic games which used very basic video recognition to play simple party style games (Microsoft had their own camera with very similar tech at the same time), and it never really went anywhere. Then comes the motion control craze of the last few years, and Sony's approach was the best approach to get as much money from consumers as possible. While Microsoft went the Kinect "You are the controller" approach, Sony instead decided to release Move, using a dual controller system similar to the Wii remote and Nunchuk – only with higher prices. The Move system also requires the Eye camera to function, so you have to buy one of those if you don't have it already. The biggest cost comparison I can make between Sony's Playstation Move and Microsoft's Kinect is in the integration of multiplayer. When you play a co-op boxing game on Kinect you need the game of course, and a Kinect sensor. When you play a similar game with Move you need the game, an Eye camera, and four Move controllers. The difference between these two scenarios? A couple hundred dollars. Now Sony is going down the same route again with their new Wonderbook augmented reality peripheral. The new 'controller' uses augmented reality type tech to track the controller in 3D and display the game on the standard TV screen – but once again it requires an Eye camera to function. So the price of the gaming experience is not just the Wonderbook controller, it also includes an Eye camera.

Personally my preference for buying any type of technology is looking for multiple purposes, to optimize my purchases and money output. If I buy a new camera and it uses the same type of memory card and battery as my old one then that is a great plus for deciding one that model. If I can buy one peripheral (like a Kinect for instance) and play any game released for it without having to purchase anything else, and automatically have multiplayer built in, then that is the system I'm going to purchase.

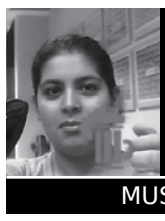
Of course the other classic software example people give is downloadable content, with map packs taking the crown. There are a number of games, where the multiplayer mode is continually expanded with additional game maps to challenge your friends/enemies. The problem comes in when those maps are priced at astronomically high rates, or require every player to own the map in order to play. Then there is the ultimate gouging method: charging for content that is already stored on the game disc and calling it DLC. All of these methods of marketing take advantage of the gamer and continually try to sell just one more thing to empty your wallet. So next time you are looking at a new game/system/ peripheral, just consider how much it is really going to cost – we are students, after all. Keep on Gaming!



IGN

The Wonderbook peripheral is the newest in a line of money-making add-ons.

Songs Celebrating our Maple Syrup-Infused Spirit



NOUHA JAVED
2B CIVIL

MUSICAL MUSINGS

Joel Plaskett | Classified | Maybe Smith | Ohbijou | Harlan Pepper | Caribou

Sunday was the 39th anniversary of Quebec's Moving Day, which Wikipedia tells me is the day when "when many fixed-lease apartment rental terms expire". Unfortunately, since I couldn't find any songs about moving in Quebec, here's a few about that other event that occurred that Sunday: Canada Day.

Joel Plaskett – 'True Patriot Love'

This song is classic Joel Plaskett: you get pulled in by the catchy tune, but stay for the lyrics. And like all great songsmiths, Plaskett can't make up his mind on which side of the line he stands on. He sings "And we raise the white flag/So they can paint it red and blue" before yelling "True patriot love and lalalalala". And also like all Joel Plaskett tunes, 'True Patriot Love' is perfect to sing along to.

Classified – 'Oh, Canada'

I apologize for how obvious this pick is, but I really couldn't resist. Picture the 'I am Canadian' guy from the Molson commercial meets a great beat. For example, Classified spits "I could do this all day it's a part of my routine / but supper's almost done and tonight poutine" with the same smooth seriousness running through all his tracks. It's also the only song I know that references Kids in the Hall, Yahtzee *and* health care.

Maybe Smith – 'You Would Never Survive the Winters in this Province'

Every Canadian can relate to this great Maybe Smith line "You can feel the blood in your veins / Looking for a warmer place". This is the kind of song where vocals are everything; it makes the song flow and stop at exactly the right moments. Be warned though, this will be stuck in your head for a week minimum.

Ohbijou – 'Niagara'

Choosing this song is my attempt to disassociate Niagara Falls from gaudy casinos and shabby motels, and back to simple romance and beauty. Ohbijou's Casey Mecija tries to do something similar, choosing the Falls as a backdrop for her gorgeous love song. Listening to this song makes you feel like you're falling with the water of the Niagara River, close enough to, as Mecija sings, 'feel the water rushing'.

Harlan Pepper – 'Great Lakes'

If you've ever had difficulty in remembering the Great Lakes, you need this song. Alternatively, this would make for a fantastic karaoke song. As Pepper puts it 'A woman asked if I like cake / I said no ma'am, just love great lakes'. A relaxed country tune backs Pepper's lyrics, jumping up when necessary.

Caribou – 'Dundas, Ontario'

I've never been to Dundas (just northwest of Hamilton for any geography lovers), but can catch a glimpse of Caribou's version of his home town through this song. It feels like an exercise in nostalgia. You can almost sense what's going on in his head as he strolls through his past. Each change in beat is a change of memory; each pause is his attempt to hold on. In some way, Caribou has created the soundtrack for everybody's hometown, not just his own.

Scott Pilgrim vs. the World, vs. the Book, vs. the Movie

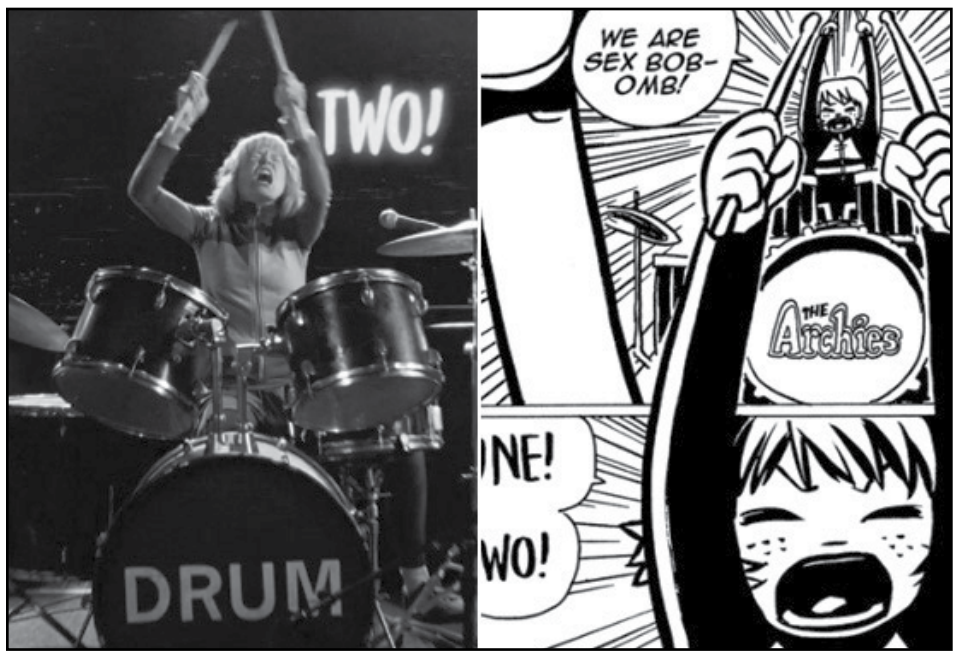
JON MARTIN
OBI JON1138

FROM BOOK TO MOVIE

After going back about a hundred years for Sherlock Holmes in my last article, I figure it's time for something newer and more local. Scott Pilgrim vs. the World, the movie, was released in 2010 starring Michael Cera in the title role. The story itself was based off of the series of 6 graphic novels written and illustrated by Brian Lee O'Malley between 2004 and 2010.

For those of you that don't know the basic premise, here is a quick synopsis: Scott Pilgrim is a 23 year old living in Toronto, Ontario, who instantly falls in love with Ramona Flowers, a delivery girl who recently moved to Toronto. Scott is attacked by Ramona's first ex-boyfriend, and subsequently learns that to date her, he must defeat her seven evil exes. The major differences between the book and the movie are the simplification of the story timeline: where the movie takes place over a couple of weeks, the graphic novel spans almost a full year. In addition a couple of minor characters are glossed over in the movie to focus more on the relationship between Scott and Ramona, skipping over his reconciliation with friend Kim Pine and the story arcs of his fellow Sex Bob-omb band members.

The thing I appreciate most about the book and movie conversion is the attention to detail in converting O'Malley's drawings back into the real world for filming. O'Malley based most of the locations off of real locations around Toronto, and characters off of family and friends. Scott's sister Stacey, for instance is based on O'Malley's sister (named Stacey). Both characters work at a Second Cup, so for the filming of the movie the crew went and found a similar Second Cup and the actress wore her actual name tag. Another well-known location in the book is Casa Loma, which was used for filming to accurately match the comic. O'Malley has a great art style, in that he seems to watch the world around him and simplifies it into such a distinctive style – then the filmmakers made the effort to reverse engineer his drawings back into the 'real' world for the movie.



Universal Pictures

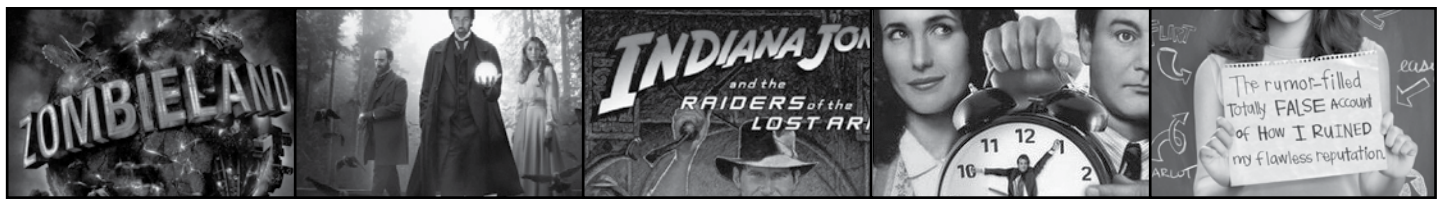
Scott Pilgrim, one of the more prominent Canadian series of graphic novels, was adapted into a movie in 2010.

If you want to read a great comic, and watch an awesome movie adaptation take a look at Scott Pilgrim vs. the World (there is an 8-bit style video game as well). Also keep a lookout for all the hidden easter eggs throughout – this is a book/film that a lot of detail went into, and it definitely shows.

Adequate Date Movies

NANCY HUI
2B CIVIL

TAKE FIVE



Photos from iMDB. All rights belong to respective studios.

The theme for this week's column is date movies. A date movie is a movie that you watch on a date. The problem with this definition is that not only is it recursive, but what is a date? What is a movie? I say, by the time you've moved out of the theatre and a decade or few into the past, then it's a pretty low-key, low-stress, comfortable gathering for two. And if you're planning to take my totally brilliant advice, then... well, truly you are also flat out of ideas and should stay on the safe side.

This lends itself to a set of guidelines about what constitutes an effective date movie. The movie shall have a romantic presence, but it should not be too serious. Under no circumstances should any romantic comedy or romantic drama be watched. Similarly, any movie with a romantic subplot that feels shoehorned in (I'm looking at you, Anakin and Padme) is to be avoided.

The movie selected shall also have enough witty dialogue and/or intrigue to reflect well on your own judgement and taste, but too much of either distracts from the company and the reason for the gathering. I guess it helps if it's a fairly well-known, widely-beloved movie. Such picks are comforting and leave the mind free to wander.

Finally, the movie selected shall have an optimistic ending. Movies with ambiguous endings lack closure and are discomforting. Movies with sad endings run the risk of turning somebody's shoulder into a dishrag. Happy endings will reassure viewers that all is well, the future is bright, and your cat is not out to get you.

So, these are five of the safest date movies made, from my personal perspective. You could also watch them alone and be cheered while not getting bitterly angry at the characters for falling in love.

Zombieland (2009)

Four survivors of a zombie apocalypse take a road trip across the southwestern United States.

Ah, the zombie trend was so several years ago, but if either party has managed to miss out on it, Zombieland is required watching to understand the spread of zombies in popular media. After a zombie apocalypse, one's priorities are simplified. The former antisocial student (Jesse Eisenberg) is looking for the meaning of it all. The two sisters (Abigail Breslin and Emma Stone) are looking to relive a bit of their childhood. And the survivalist (Woody Harrelson) - well, he just wants a goddamn Twinkie. But to get to their respective goals, there are rules to be followed, which are shown onscreen with a touch of postmodernist style. Rules like "Don't be a hero", "Limber up", and "Seatbelts." It is good advice.

Zombieland fulfills the romantic subplot and wittiness requirements quite handily, as well as having a culturally-relevant excuse to watch it. The enjoyment the characters find in "the little things" is particularly lovely to behold when contrasted with the hordes of bloodied undead.

The Illusionist (2006)

In late 1800s Vienna, Eisenheim (Edward Norton) the magician uses his abilities to win the love of a childhood friend, Sophie (Jessica Biel) who is engaged to Prince Leopold (Rufus Sewell). But they are also being watched by the jealous Prince and the Chief Inspector (Paul Giamatti), who is rather fond of magic tricks himself.

You may remember this as "The other magician movie that came out in 2006", but The Prestige is not as suitable, by virtue of being more mind-screwy and less romantic. The Illusionist is definitely driven by a sweet romance underneath its magical trappings. Of course those trappings and plot are what makes the whole movie palatable. On at least one occasion, Inspector Uhl asks Eisenheim the secret to his magic trick with the quick-sprouting orange tree, but Eisenheim declines to share it with him. Little does Uhl know that the brilliance in the design of the orange tree trick is to be later dwarfed by Eisenheim's plans to reunite with Sophie. His epiphany in the penultimate scene is beautiful.

Indiana Jones and Raiders of the Lost Ark (1981)

A professor who moonlights as an archaeologist embarks on a globe-trotting search for an ancient biblical artifact. However, the Nazis are also after it. Don't you know this story already?

Roger Ebert said, "Indiana Jones and the Temple of Doom is one of the greatest Bruised Forearm Movies ever made. You know what a Bruised Forearm Movie is? That's the kind of movie where your date is always grabbing your forearm in a vise-like grip, as unbearable excitement unfolds on screen. After the movie is over, you've had a great time but your arm is black-and-blue for a week." And he's right. But just because Temple of Doom is a terrific Bruised Forearm Movie doesn't make it a good date movie. The romantic subplot in Temple of Doom annoys me because the female lead spends most of it whining and being completely useless and irrelevant to the plot.

So, take a step backwards.

Raiders of the Lost Ark is exciting, iconic, and has a bearable romantic subplot. If there's a person in your movie-viewing party that has never seen it before, then it can only be a good thing that they're finally experiencing Raiders in it's full Nazi-melting glory for the first time. And if, in all likelihood, they already have, then it leaves the mind free to wander elsewhere, doesn't it?

Groundhog Day (1993)

A weatherman (Bill Murray) repeats February 2nd over and over again in a backwater town. He can't break out of the temporal cycle and descends rapidly into depression. Luckily, he can't die while trapped in the loop, either.

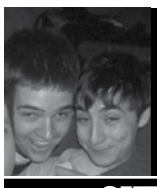
You can watch Groundhog Day and interpret it as shallowly or as deeply as you like. On one level, it's a comedy with Bill Murray. In fact, it's the de facto comedy with Bill Murray. Occasionally he tries to kill himself in increasingly desperate ways, ranging from electrocution in a bathtub to a flaming car crash in a canyon. He spends quite a bit of time trying to win the heart of Rita (Andie MacDowell), his news producer. He does it all with a detached sense of being unamused by his predicament. On another level, it probably says something about finding redemption, discovering meaning in one's life, and the value of true love. If you are to woo an existentialist, consider watching Groundhog Day if you're not up for Waiting for Godot.

Easy A (2010)

In order to avoid camping with her best friend's hippie nudist parents, Olive Penderghast (Emma Stone) lies about losing her virginity to a college guy, which unexpectedly establishes a false reputation as the school bicycle. Olive takes advantage of her newfound infamy by pretending to sleep with the geeks and outcasts of the school to boost their reputations - for a nominal fee. But like all profitable schemes, it's all fun and games until somebody else contracts chlamydia and Olive takes the blame for it.

This movie does not rustle any of my jimmies, which is an incredible feat for a romantic comedy with teenage protagonists, a genre prone to intolerable stupidity. Easy A cheerfully subverted my expectations while being fully aware that it is that sort of teenage romantic comedy, via clever references from Huck Finn to Say Anything. Emma Stone plays a girl with no delusions of being in one of those classic high school movies, facing the world with a jaded eye but a soft heart. She remains so incredibly likeable throughout the movie that I didn't begrudge her happy ending. Olive's parents are also supportive of their daughter, sometimes rivalling Jim's dad in American Pie. Also, Easy A contains my favourite faked orgasm since When Harry Met Sally, which although brilliant and charming, is also an awful date movie.

The Formula More Useful Than Euler's



GRAEME SCOTT
3N CHEMICAL
ERIC EVENCHICK
3N ELECTRICAL

GETTING GOOD HEAD

Hello Engineering People,

Eric: Last week, Graeme said that we would talk about how to pour beer (i.e. Getting Good Head. Wow, it's the title of the article, it must be important!) Well, this week we will discuss this! My roommate/co-Tesla intern Mark and I picked up a bottle of Three Philosophers from the newly opened 'Jane's Beer Store.' It's a pretty awesome store that you should totally check out next time you're in Mountain View, California.

Anyway, this bottle has directions for pouring on it. They read: "Pour slowly so as to not disturb the yeast sediment, but with enough vigour to create a luxurious head and release the sumptuous bouquet."

I'm not making this up... that sounds like directions for some good head. Overly convoluted wording aside, these directions do explain how you should pour beer for optimal results.

Listen up frosh, because here's the directions. You should begin by tilting the glass and pouring the beer onto the side at a 45 degree angle. Do this for about 70% of the pour. For the last 30%, linearly change pouring angle (Θp) from 45 degrees to vertical (0 degrees). This ensures that you create some head, but won't leave you with a cup full of foam. You should do this fairly slowly, taking your time to get it right.

In other words:

$$\theta_p(t) = \frac{\pi}{4} + [H(t-0.7) \times \frac{\pi}{4} \times (t-0.7) \times 3.333]$$

where Θ_p is the pouring angle in radians, H(t) is the Heaviside Step Function and t is the time, given that t = 1 is the end of the pour.

I just poured another glass of Three Philosophers and my roommate commented that I give good head. You see, if you follow this formula, you can receive compliments on the quality of your head.

So let's talk about the beer again. It's a Belgian style beer that is a blend of cherry ale and Belgian ale. It's from the Duvel family of beers, which means devil in Dutch (fun fact!)

Now that we've put the beer in the glass, it is time to drink it. Three Philosophers pours with a pretty thick head. It has a bit of a bitter taste up front, but a nice sweet finish. It's a pretty complex taste; both Mark and I took a sip and said "I don't even know what this tastes like!"

The cherry ale blend probably gives it that sweet fruitiness. It's nice and smooth for a potent beer. Did I mention that it's 9.8%? This made formulating the previous equation a bit difficult. Or as my roommate put it "Three Philosophers use 9.8% on Asian Mark. It's super effective!"

I really enjoyed this beer. A sweet taste with tons of alcoholic goodness. It gets a solid 4.5/5 Surly Bartenders. It's not the most easy-drinking beer, and you wouldn't want it to be at 9.8%. However if you're looking for a good beer to sit down and enjoy, you can't go wrong with this one. Just don't try to operate any heavy machinery afterwards.

Next time we'll discuss the effect of timezones on one's ability to submit articles on time.

Cheers,
Eric and Graeme (and Mark)

Barbara Gordon, The Essence of a True Hero

DANIEL OSORIO
2B NANOTECHNOLOGY

UNSUNG HEROES

DC Comics

Barbara Gordon, who went on to become Batgirl.

A hero's main drive to wage a never-ending war on crime and injustice is usually derived from a traumatic experience or loss of a loved one. Whether it be an orphan from another planet, blaming yourself for not stopping your uncle's killer, or even swearing to protect those who fear and hate you to one day seek peace for all mankind, all the great heroes have a compelling drive. But what about the hero that does it out of the goodness of their heart? What about the hero that simply wants justice for no reason but for the sake of justice? This is the true pinnacle of heroism in its purest form. This is the type of hero where not even after a crippling defeat or death would they allow it to stop them from pursuing justice for mankind. There is a hero that fills this role; one who is strong, cunning, and brave. I am talking of Barbara Gordon, the first Batgirl and Oracle.

Barbara Gordon is the eldest child of Commissioner Jim Gordon. Batgirl was originally created as a retcon to the original interpretation of Batwoman and Bat-Girl. At the time, DC Comics recognized how offensive it was to put a character in the Batman universe to simply act as a damsel in distress and be a stereotypical 50's woman. Consequently, they decided to create Barbara Gordon as a strong female character that could hold her own. Giving Barbara a PhD in library science, computer expertise, exceptional hand to hand combat, and detective skills, Barbara Gordon was a force to be reckoned with. She was first introduced into comics when Bruce Wayne was attacked by the Killer Moth in a press conference and Barbara leaped into action as Batgirl to save him. This rarely ever happens... ever. However, when asked by Batman why Barbara fights crime, she simply stated because it's the right thing for a person to do in the world we live in today. Her parents were not murdered in front of her and she doesn't owe the world anything, but she does it anyway because she is a true hero.

From then on, Batgirl became a well-known in Gotham City, protecting her own section of Gotham. She became so well renowned that she teamed up with many famous heroes like Super Girl, Nightwing, and even Superman himself. She became a constant ally of Batman and eventually became his second sidekick in his battle against Gotham's underworld.

However, things took a turn for the worse for the young hero during the famous Batman story arc The Killing Joke. The Joker decided to prove to Batman that even the greatest of all men can fall, and targeted Jim Gordon. Cornering Barbara in her apartment, the Joker fired a bullet into the center of her spine, paralyzing Barbara from the waist down. In order to drive Gordon insane, the Joker strips him naked and props his eyes open to force him to watch a video of the Joker slowly undressing and defiling his daughter. After Batman rescues them and defeats the Joker, Barbara is rushed to the hospital where she is eventually informed that she will never walk again.

You'd think that a bullet lodged within your spine would be a nice excuse to say "Well, I think I've had enough of the hero business", but you'd be wrong. Barbara Gordon then dreamed of herself as the Oracle of Delphi, and thus became the Oracle. Barbara became a central intelligence operator that would inform heroes of crime in progress, information on current drug operations and illegal dealings, and of any super villain activity occurring. She used her superb computer hacking skills to break into government databases in order to gather current information on essentially anyone. She even became part of the secret black ops team Suicide Squad and created her own team of female heroes called the Birds of Prey. If you didn't think this was enough, she began to train in martial arts, incorporating her wheelchair as well as firearms, bat-o-rangs, and eskrima sticks. That's right - she has no use of her legs and could probably kick all of our asses.

During a mission with the Birds of Prey, Barbara became infected with a techno-organic virus from the deadly DC villain Brainiac, one of the most feared villains in all comic book history. The virus began to transform Barbara into a cybernetic organism that could be controlled like a computer to perform Braniac's every whim. However, out of sheer will power Barbara was able to overcome Braniac's control and single-handedly save the world.

Let's do a quick recap on Barbara. We've got a super intelligent martial-arts expert and computer hacker with a genius skill set. She has teamed up with the greats and is part of some of the most elite super hero teams in the DC universe. Crippled and violated by the Joker, she still chose to fight crime. Even while in a wheelchair, she trained to become a skilled fighter and expert in an array of weapons. In addition, she put together her own super hero team and defeated one of the fiercest villains of comic book history with sheer will! Barbara Gordon has, in the simplest terms, the essence of a true hero.

Top Ways to Make Money

WADE WILSON &
EDWARD BLAKE
3Z HANDSOMENESS

TOPZ (WITH A Z)

When researching for this article, we read the philosophies of famous economist Adam Smith. In his eponymous work, "The Wealth of Nations", he wrote "I get money; I get paper; I get girls of different flavours. I buy Gucci; I buy Prada; I spend dolla after dolla." This was the unquestioned economic mantra for decades until Karl Marx radically suggested in 1848 that "If I want a manifesto I got my own; even if you were broke my love don't cost a thing". With all due respect to Comrade Marx, we here at TOPZ believe that cash rules everything around us. So, in light of this industrious disposition, we've compiled a list of the top ways to make money. Because after all, while bullshit walks, money will allow you buy things which you determine is of value.

Make Short-Films

With the age of the internet, independent artists have more prominence and a shot at fame-and-fortune than ever before. It isn't surprising that the market has been flooded with people clamouring for this money shot, so you, from your Point-of-View, might be asking, "How can I get discovered?" The key is to create from what you know: start by just filming the beauty in everyday occurrences. Document visits from delivery-boys, plumbers, masseuses, and Japanese octopi. Don't be afraid to hop on buses of potential opportunity until you find yourself on a big-wig's casting couch.

Be a D-bag

Yes, celebrity is a great way to make money but what if you don't have the artistic prowess to be discovered in film? What if you don't have any discernible talent at all? That's okay, you can always fall back on what comes natural to humans from every walk of life: act like a total tool. Now, being a standard jerk won't get you far. Being a committed asshole can take you places in the business world. But to really make it big for no reason at all, you have to be an absolutely horrible human being with no real decency, such that viewers can feel better about their own shortcomings by saying, "well at least I'm no Snookie!" The situation may seem rough, but hey at least you're rich for doing something that others don't do because they have a ridiculous notion of self-respect.

Cash for Gold

While researching late-night television, we happened upon an intriguing economist who has earned the highly esteemed ranking of "Cash Man". From what we understand, yeah, he's the cash man: he'll give you money for your gold! Of course, the question arises of where to get gold. Guess what, computers have gold in them! Just open up your computer and take out the gold (don't worry, it's not in the keyboard or screen which are the only parts you use anyway) to sell for money! You can also just go to the computer shop and buy more computers: they all have gold in them! Apparently IBM stands for "I Bleed Money". Au yeah!

Lottery

Were you all aware that there are people who will give out millions of dollars if you get the correct $5 ticket? Ridiculous, right?! But it's true. The catch is that only one ticket out of many sold will award the winner with the big bucks. But go-fish MIT, uWaterloo has a new gambling strategy to break the system: double your chances by buying TWO tickets.

Bend the Law

Now, we would like to clarify that illegal things are bad. But, theoretically, if a bad apple wanted to make bad money, this is how they might do it. The black market may seem like a shady endeavour, but some argue that it is the inevitable consequence of a fundamentally flawed system waging an unwinnable war. Legalization would not be without consequence, but perhaps it is the only route to take. But until then, there is money to made, and movies to pirate. Yes, by pirating your movies online you will save a ton at the box-office and Blockbuster Video.

Pirating

Whether online or offshore, pirating is a very lucrative endeavour. Shiver your timbers, and don your eye-patch, peg-leg and crippled Somali economy, the Dread Pirate Roberts is leaving port and there's room for one more buccaneer on his ragtag crew! Do you yearn to earn the fear of lords and lady preachers? Do you wish to descend upon the earth from the skies? To command the very souls of unbelievers? To make ends-meet in a civil-war torn coastal wasteland? Then, challenge the mighty titan and his rebel-groups and set sail on the seven seas of Rhye!

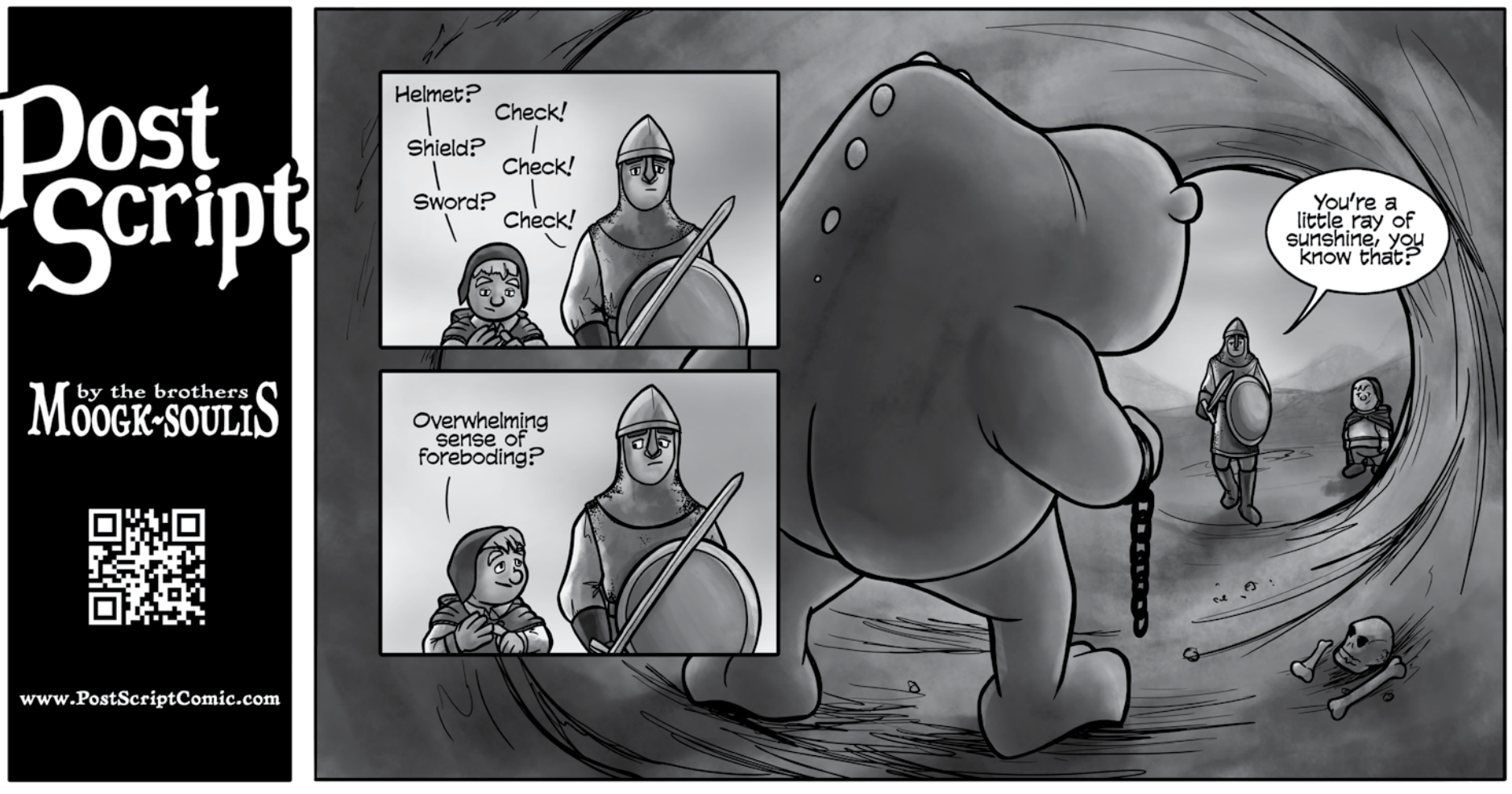
Save Africa

There are those who take exception to plundering and pillaging; some people feel the noble call of social responsibility. It turns out that political turmoil in Nigeria has put many princes in the Nigerian royal family in serious financial jeopardy. Presumably due to our increasing journalistic clout, we at TOPZ have been personally contacted by a Dr. Clement Okon, on behalf on the monarchy, who outlined a very perilous plight indeed. The reason we're discussing this here, though, is that, in return for assistance, they will offer us over a million dollars of the fortune we're protecting! They were more than willing to compensate additional people when we said we could round up support, which is where the opportunity comes in. We're launching a huge Facebook campaign to save Nigeria. There's going to be a YouTube video, and stickers and posters and lots of status updates! Nigeria 2012!

Well, well, J.D. Rockefeller, stick to our foolproof guide and you'll be rolling in the Robert Bordens in no time. But lastly, as a word of advice: do not go money diving à la Scrooge McDuck: money is filthy and you would in all likelihood contract some kind of disease. Don't hesitate, however, to wear a top hat and no pants. It feels good.

Walt Disney Pictures

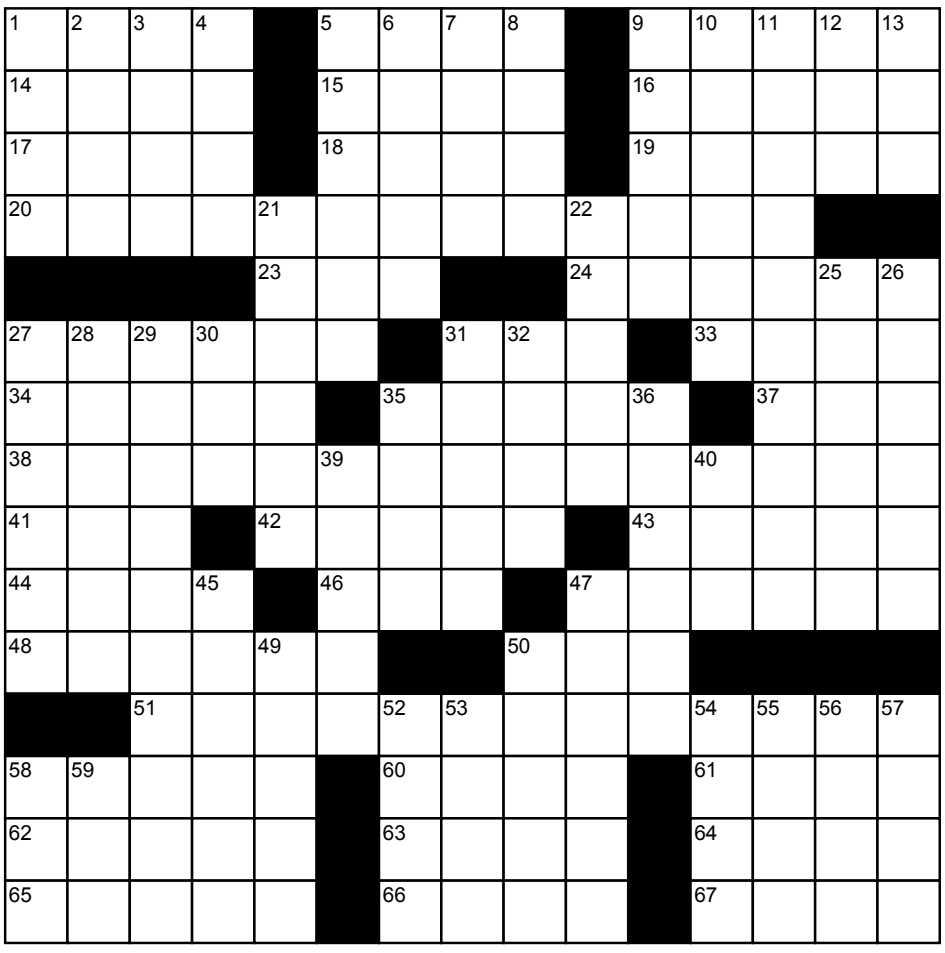
Piracy was one of the earliest professions where many men and women in their young twenties became instant millionaires post-graduation.



The Iron Crossword

Farewell Adel

STUART LINLEY
3A NANOTECHNOLOGY



ACROSS

1 English rudiments
5 Fly
9 Parrot, e.g.
14 Bound
15 Low brass
16 UV blocker
17 Zero
18 Years
19 Complains
20 With 38-Across, get a replacement
23 Understand
24 'Nice' granite
27 Posers
31 Starr hit
33 True that
34 Canadian 2005 Juno album winner
35 Plane
37 Mitsubishi Lancer
38 See 20-across
41 Raging Bull inits.
42 Sample
43 _____ Nous
44 Persia, today
46 Audis
47 Grouped
48 African tropical tree
50 Styler
51 'Last two words' of 38-Across
58 Molts
60 Radiate
61 Uh-uh
62 Betrays
63 Connector
64 Knots
65 Pasta go-with
66 Like a good cheese
67 Chances

DOWN

1 Choir voice
2 Sweetheart
3 Shopping or go go-wth
4 Erupt
5 Avers
6 Should (to)
7 Aid, criminally
8 Careless
9 Fool
10 Flower, e.g.
11 Toppers
12 Army or fire
13 Author Anderson
21 Endow: '_ _____ you...'
22 Wader
25 Harsh
26 Blocked (in)
27 Old consoles
28 Actress Bullock
29 Captors
30 Record label
31 Lamp units
32 Hurt
35 Props hand
36 Everyone
39 Tend crops
40 Indices, often
45 No reason
47 Disappeared (away)
49 Lariat
50 Map, e.g.
52 Russian river
53 Haze
54 Avid about
55 Nothingness
56 Mimed
57 Famous Loch
58 1 bar, freezing
59 Tone

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

Sudoku

#2012-09

JACOB TERRY
2B NANOTECHNOLOGY

Easy

4	5			7				
							6	9
2		3	6	5		4		1
						6		3
5		7	9	8	6	2		4
9		2						
3		9		6	4	1		7
1	7							
				3			2	8

Medium

		2	9					
	6	7		3	5	1		
			6		2			
2		6			3		8	
4	1						2	7
	8		2			6		1
			3		9			
		3	7	2		5	4	
					1	9		

Hard

	4				1			
5			7		2			4
8	3	7					1	
		2						
			1	4	9			
						7		
	6					5	3	2
3			5		7			6
			3				8	

Issue #5 Deadline:
Friday, July 13 at 6:00 PM
Send your submissions to:
iwarrior@engmail.uwaterloo.ca

THE IRON INQUISITION

Jsoh Fenning, 2B Nanotechnology
Nan Huang, 2B Nanotechnology

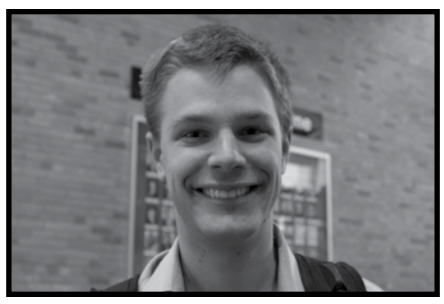
"Which course in your program do you think has the highest fail rate?"

MTE 140 - Algorithms and Data Structures
"It doesn't sound like a first year course."
Fraser Moore, 1B Mechatronics

NE 224 - Biochemistry
"Thank god she curved the hell out of that."
Mina Labib, 3T Nanotechnology

CHE 121 - Engineering Computation
"MATLAB :("
Amina Qureshi, 1B Chemical

CHE 311 - Chemical Reaction Engineering
Marcus Pang, 4A Chemical



ECE 332 - Electronic Circuits
"Two words: Jim Barby."
Cameron Winterink, 4A Electrical

"Calc in general."
William Fu, 4A Computer