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QNC Opening Marks Milestone for Leading Edge Research

DUSHANTH SEEVARATNAM
3B NANOTECHNOLOGY

Friday September 21st, 2012 was a momentous day for not only the University of Waterloo but also the region of Waterloo with the opening of the long awaited Mike and Ophelia Lazaridis Quantum-Nano Centre (QNC). The 160 million dollar building, that will be used to create a vast array of powerful technologies, was opened with great international attention. The impressive ceremony even contained speeches from world renowned physicist Stephen Hawking, and co-founder of Research in Motion (RIM), Mike Lazaridis.

The opening began with an introduction by George Dixon, Vice President of University Research, who started by saying "we stand on the threshold of discovery," and eventually lead the ceremony into a video of the QNC. The video highlighted the impact that this building will have on field research and how with the opening of the QNC, "the future of Nanotechnology is in the centre of Waterloo" said Pearl Sullivan, Dean of Engineeringat the University of Waterloo. The video was followed by the moment that many people were waiting for, a speech by Stephen Hawking. He described the building as having a "global scientific significance" and how it will help assist in advancing our understanding of Nanotechnology and "illuminate the deep mysteries of science." Up next were a set of members from the Canadian Parliament, who stressed the importance of education and how these resources will help grow both Waterloo and Canada to new scientific heights. Furthermore, they emphasized the fact the major scientific projects, such as the Mike and Ophelia Lazaridis Quantum-Nano Center, have helped to not only reduce the "Brain Drain" effect that Canada has experienced over past few years, but reverse the trend entirely.

The Members of Parliament were followed by significant figures from the University of Waterloo such as Feridun Hamdullahpur, President of University of Waterloo, Raymond Laflamme, Director of the Institute for Quantum Computing (IQC), and Arthur Carty, Director of Waterloo Institute for Nanotechnology (WIN). These members highlighted the structural, personal and global significance of the building. This one-of-a-kind building has a total area of 285000 square feet and meets the strictest scientific standards for laboratory environment control. Special features, like floating, one meter thick, carbon-fibre reinforced waffle slabbed concrete, were used to minimize vibration and electromagnetic radiation within the 10,000 square foot clean room and high sensitivity metrology labs to unbelievable levels. Furthermore, it is easy to argue that the structure and design of the building is elegant, but the true beauty of the QNC is much more than that. The QNC is considered to be "3-fold" in many ways. First, the building itself is three buildings put into one. It is comprised of, one, the Institute for Quantum Computing facility, two, the Nanotechnology Engineering undergraduate and research laboratories and finally, the third region is the nanofabrication clean room and high sensitivity metrology labs. In addition to that, from a human interaction point of view, the QNC primarily provides researchers with the tools necessary to work on the nano-scale. Secondly, it promotes collaboration by allowing people from many different fields to come together and work collectively, and at last, the building itself is inspiring. The almost decade long project has managed to produce "one of the greatest architectural and scientific marvels of the world" said Feridun Hamdullahpur, the President of University of Waterloo. Globally, the building has brought the University of Waterloo a great deal of attention. It has caused rapid growth in both IQC and WIN, leading the University of Waterloo towards Quantum and Nanotechnology dominance.

Krishna Iyer

Quantum Nano Center

Then it came time for Mike Lazaridis, donor of 100 million dollars to the QNC, to make his speech. The slightly emotional co-founder of RIM described the opening of the QNC as a milestone in a plan that will transform human life. He went on further to emphasize that though this building is a very significant presence and will contain all the resources necessary to make many discoveries, the QNC is nothing without its people. One importance of the building design was to bring together the brightest people from around the world under one roof and use this unity to achieve what was once thought to be unachievable. Mike Lazaridis then boldly stated that the QNC will be known as the "Bell Laboratories of the 21st century" and similar to how the original Bell Labs transformed San Jose into Silicon Valley, the QNC will transform Waterloo into the new technological center known as the "Quantum Valley."

The speeches were wrapped up, once again, by George Dixon, who followed up on absolutely outstanding speeches from three current University of Waterloo students. At last, the ceremony was concluded with the honorary cutting of the University of Waterloo ribbon, officially opening the highly anticipated Mike and Ophelia Lazaridis Quantum-Nano Center. Now only time will tell about what magnificent discoveries are lurking just around the corner.

"EDCOM Makes Us Moist!"

VINCENT ZHU & MEAGAN CARDNO
1A CHEMICAL &
1A NANOTECHNOLOGY

Clouds hung over the Light Green frosh's head, both literally and figuratively, that fateful Tuesday morning as he headed out to the first day of orientation. With his eyes following the green string of destiny taped to the ground that would lead him to his headquarters, he raised his head to find that he had stepped into a strange land of imagination-- his world had suddenly become Hyrule, his idol, the Triforce, and his princess, Zelda. Consumed by a strange mixture of excitement for all the new experiences, as well as anxiety over all the new challenges, he felt disconnected from the loud and enthusiastic Zelda themed cheers, where a loud, "WHO GOT THE TRIFORCE?!" was met with a resounding, "LIGHT GREEN!". However, as the week progressed, he felt his anxiety slip away, replaced by the hoarse voice of way too much cheering.

The Light Blue frosh had a similar story to tell. She had donned her shirt with a certain immediate pride, the kind that made her immediately smile at anyone she spotted wearing the same colour and Greek designs. Her destination in the vast world of Imaginationland was Olympus, where walls were adorned with homages to Poseidon, Hades, and even the mighty Zeus. She had quickly learned the songs of her people. When asked her profession, she would unhesitatingly cry out "AHOO! AHOO! AHOO!", and reminding the other competitors that "We will, we WILL smite you!" But above all of the others, she learned the mighty hymn shared amongst all engineers, the one that would unite the other colours into a single, shouting rainbow. "We are, we are, we are the engineers!..."

The festivities began as the frosh sat in the crowded lecture hall to meet the Dean. The sombre and refined air suddenly dissipated as the room went dark. Amidst total confusion, in marched a chain clad, unsmiling party of people with awesome hair and tools who were also wearing suave shades. As they stood commandingly over the lecture hall, they spoke with absolute authority, totally ignoring the bewildered expressions plastered on the faces of the frosh. They are at the top of their classes- some were even TAs. Specially trained in safety and anti-smiling, they had thrown away their names in order to become simply one entity- EDCOM. They were not to be taken lightly. When being addressed, nothing less than "sir" or "ma'am" would suffice. They were omniscient. They never made mistakes. They decided all. Imaginationland ran by the rules of EDCOM, and disobeying was simply not an option. It became clear to the frosh that all the events, activities and competitions of the week would boil down to one thing. IMPRESS EDCOM.

That opportunity came earlier than expected as the frosh were hurled into a series of events to earn their yellow hardhats. However, by that time, the (literal) clouds overhead had begun to pour rain, disrupting many of the events. For instance, the path of Bigs that frosh had to step on in order to cross the mud pit was replaced by wooden planks (The light green frosh did not know there was actually a plank he was supposed to walk on…). Furthermore, the outdoor obstacle course was now moved into the cramped hallways (Again, he did not know there was an obstacle course- it just seemed like a huge line up). On the other hand, van stuffing went on without a hitch, and the spontaneous, EDCOM directed reenactment of another team's theme was absolutely hilarious. Despite the rain making everyone wet and moist- except the light green frosh who had anticipated rain and brought an umbrella- there were deafening cheers when the long sought-after hardhats were finally presented. Everyone bore the same yellow head protection, yet the frosh left their headquarters brimming with a newfound sense of accomplishment and pride.

See "EDCOM Makes Us Moist!" on Page 8

Letter From the Editor

Another school year, another set of new faces

FARZI YUSUFALI
3B NANOTECHNOLOGY

To the reader of this editorial, I welcome you (back) to theUniversityofWaterlooand am glad to see that most of you are (again) ready to soak up the craziness that is Engineering atWaterloo. Like most of you first years, I am experiencing a pseudo-first as well; I am experiencing my first case of writer's block (and I've been writing regularly for three years!). Maybe, it's the pressure of having a full page allocated for me to share whatever wisdoms I have. I also feel that advice to first years on how to survive your first year in university or how to get involved has been played out so many times in the last couple of weeks that I'm sure you all are now tired of hearing it. Instead, I think I'll share some highlights of my life in university as it is slightly informative, definitely amusing, and is a great way to eat up space in an editorial *thumbs up*.

Before, I get into all the fun stuff, let me introduce myself. I'm Farzi, a nanotechnology engineering student about to finish third year this term. I finished high school in the almost non-existent town ofAjax-and, since so many people ask, I spent the majority of my childhood in the city ofNairobi,Kenya. Like most of my classmates, I chose the program I currently reside in because I didn't know what I wanted to do with my life and the name of the program sounded cool. With that said, my interests go past just science and span from English literature to Renaissance art. While this may interest you as well, I differ in one significant way – once I am interested in a certain topic, I must learn EVERYTHING about it. This can be a good thing or bad thing depending on the situation of course (and, trust me, I've experienced both). In being prone to try to learn about most topics, I also consider it an asset that I am an avid reader.

In my 1A term, save Orientation Week where even the meekest go crazy, I was too shy to introduce myself to others and was too reluctant to go out to meetings out of fear of judgement. Yes, that's how bad my insecurities were in first year. I clung onto my high school friends for dear life and kept the friends I made during Orientation Week close due to the fear of being totally alone in this unfamiliar environment. This was quite contrary to my role as a "bridge" in high school where my friends would be distributed among the extremes of cliques in our school; yes, we had cliques.

Then, one day in the middle of my 1B term, I was dragged to a meeting by a classmate and was promised sustenance in exchange for my company. I was pulled by the hand into the room and was actually on a couch with a cookie in hand and proceeded to sit through the hour of mindless gabble. What I didn't anticipate was my planning the same hour-long sessions of mindless gabble exactly three years later.

What you'll find at the end of first year, like me, was that your group of close friends materialize out of thin air. I, to this day, can't figure out how I met most of the friends I have today. With attaining this set of friends and losing most of my fear of outside judgement when second year began, I really started to enjoy my time in university. Besides, increasing the amount of out-of-classroom activity in my life, which includes sports and clubs, I, so to speak, began to have a social life as well. For example, on one amazing night after attending a house party, I was given twenty dollars in exchange for my silence, given ten free salsa lessons for being too perky for 4 in the morning, and given the best early morning snack at Mel's Diner for free. If you are curious about hearing more about what happened this one night, feel free to drop by the Iron Warrior office and ask me about it. In fact, I might just be extra nice to you (and possibly give you food) in gratitude as this proves that you read the editorial that was all too painful to write! By the time I started my third year, my priorities shifted again such that I wanted to implement the ideas I had to make university life for the average student a little bit better. With that, I assumed more responsibility by notably becoming a member of the Board of Directors for the Waterloo Engineering Endowment Fund (WEEF) and assuming the position of Editor-In-Chief of the Iron Warrior newspaper. Never fear, I had fun of a different kind by taking on projects that were inherently fun to work on because of its nature. I could spend another few paragraphs talking about all of this but I think it would just be easier if you ask me about it than my writing it out. Before I continue on, I want to apologize to all my friends as most of them will be learning about these stories for the first time. Unfortunately, I am usually secretive of all things that pertain to me as a person or my past of which my friends have noted many times over. Believe me, it was one of my many idiosyncrasies that I've resolved to change.

One event that I'm sure will be a highlight of my time in university was the opening of the Quantum-Nano Centre (or QNC) last Friday. Among the common reasons for noting this as an important event, one of which being that our program has a central space to congregate in, there are a couple of unconventional reasons that makes the QNC special to me. For one, while most marvel at the potential functions of this building and the promise it holds for the future, I am awed more by the building itself. Let me explain; when I was given a tour of the building a month before the opening by Scott Nicoll, the Special Projects and Facilities Manager for the Faculty of Science, I was given a blow-by-blow of the architectural and functional features of the building. Maybe this catered to the visual artist in me (yes, this is another one of my hobbies), but I was completely floored by the awesome-ness of this building. After doing more research on the building as a result of this one hour tour, I was in love by the end of the day. The amount of thought and innovation within the framework of the building so impressed me that I almost forgot about the ridiculous amount of time it took to build the QNC and the fact that I would not step foot into until my 4A term. What impressed the most about the building was the amazing amount of functional flexibility that's almost unheard of in a building that requires such strict requirements and constraints. For example, every room is equipped to house a fully functional wet chemistry lab space and is supported by a framework that can handle the weight of large instrumentation above it and adheres to experimental specifications of most instruments that would be used for any type of analysis. I don't know about you but the ability to supply nitrogen gas to every single room in a building is a pretty sweet deal research-wise.

Now, that I've read back through the rest of the editorial to finally make a not-so-sucky conclusion, I've realized that I've implicitly kept a common theme throughout this entire editorial. What I seems to be a commonality over this entire editorial is my appreciation for the adaptibility.

Between high school and university, a first year needs to be able to adapt to this drastic change in surroundings in order to keep sane. However, this does not mean that there is a void of change through the next five years of university. Given the growth I experienced as a person from year -to-year, changes in priorities, and even changes in my group of friends, it is safe to say that such variations in surroundings are still as drastic as the day when you moved away from your mother's home cooking and laundry services.

With this thought in mind, I will afford this one piece of wisdom: do not be afraid of adaptibility. My own obsessive-compulsive tendencies have been lessened as a result of my learning how to adapt to new situations and have helped me relax a little amidst the chaos of university life. However, my tendencies have not diminished so much that I overwrite given the space I have. This is my sign-off as I refuse to change the layout of this article: Bye!

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Libyan Civil War Intensifies After US Ambassador's Death

LEAH KRISTUFEK
2A CHEMICAL

The death of a US ambassador to Libya has wreaked havoc on the North African nation of Libya, which is currently embroiled in a civil war. Chris Stevens and three other Americans were killed on the evening of September 11th, when responding to protests outside of the US Consulate in Benghazi. Protests began in response to the release of the movie *The Innocence of Muslims*, which depicts Islam in a light that is offensive to many in the Muslim world. However, the attack itself was highly organized and is thought to be the work of Islamist extremists. Matthew Olsen, director of the U.S. National Counter-Terrorism Center, even goes so far as to characterize it as a terrorist attack, perhaps using more benign public protests as a cover. The attack becomes especially significant due to the timing, which took place on the anniversary of the September 11th terrorist attacks. Extensive fire power was used, including mortars, employed 6-7 hours into the attack.

In the wake of the attack, there has been more violence as the people of Libya rise in anger against those who caused this incident, attracting international attention. Anger is aimed at the many militias which have replaced a cohesive government security force in their country. Since the death of dictator Moammar Gadhafi, militia groups (small groups of highly armed people) have become increasingly powerful and dangerous. The people of Libya want the violence to stop, but the militia propagates more violence and death.

To understand the circumstances of the attack on the US Consulate, it is important to look at the reactions to the video *The Innocence of Muslims* across the Muslim world. Violent protests occurred in Egypt and Pakistan, resulting in dozens dead and hundreds wounded, while other countries were forced to use government power to ban protests and public gatherings. Anger was further exacerbated by the release of cartoons mocking the Prophet Muhammad in the French newspaper, *Charlie Hebdo.* Protests have caused western nations such as the United States (where the video originated) and France to close embassies and consulates, cultural centers, and schools in dozens of countries.

UWPEA Increases Energy Industry Awareness

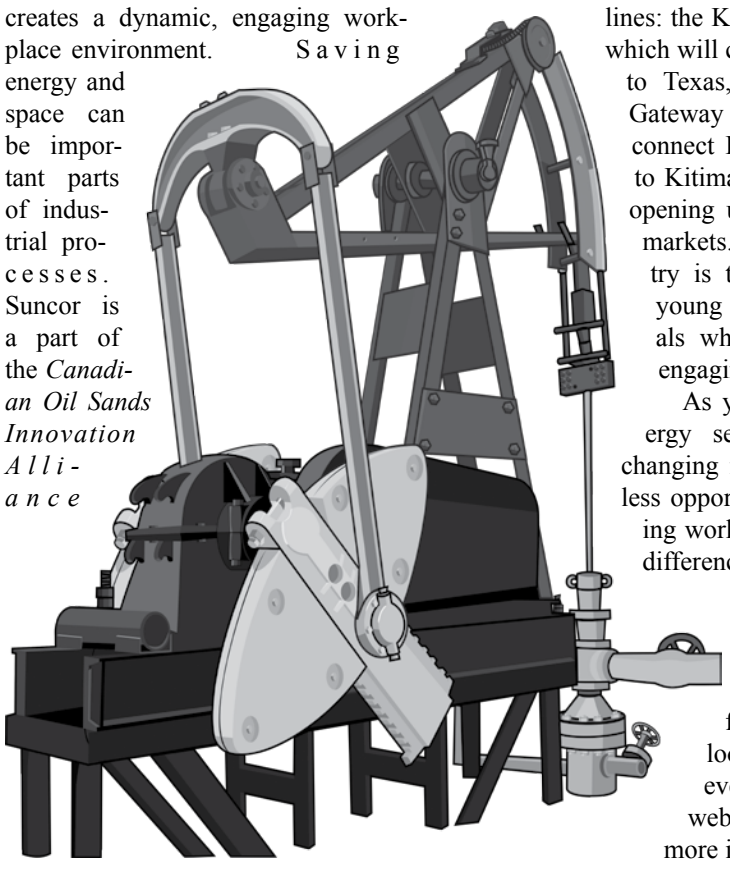
LEAH KRISTUFEK
2A CHEMICAL

The UW Petroleum Energy Association (UPEA) held its inaugural public event on Wednesday September 19th with guest speakers R. Howard McIntyre and Dean G. Wilcox P.Eng from *Suncor Energy Products Partnership* (the product of the 2009 merger between *Suncor Energy Inc* and *Petro Canada*). The presentation was an opportunity for students to learn more about the oil and gas industry as it figures into the Canadian economy and the benefits of oil and gas companies as prospective employers. UWPEA is a new student association created to fill the perceived gap between students and the energy related careers available to them. Their goal is 'to educate and empower students about the energy industry,' which is exactly what this presentation did.

McIntyre and Wilcox discussed how sustainable development, where emphasis is placed on a healthy environment, strong economy and good social well-being, is an important part of any successful business. In the petroleum industry some of the biggest issues are the land disturbances required as part of the crude extraction process and the amount of energy (BTU's) that go in to the production of each barrel. Innovation is needed to improve the sustainability of the oil and gas industry which creates a dynamic, engaging workplace environment. Saving energy and space can be important parts of industrial processes. Suncor is a part of the *Canadian Oil Sands Innovation Alliance (COSIA)* aimed at using collaboration among it's 12 member companies to reduce the oil sands impact on the environment.

Some examples of Suncor's efforts to increase sustainability include the addition of solar panels at Wilcox's Mississauga lubricants plant (an effort carried out by co-op students). Suncor has also developed a new method to reclaim tailings ponds which requires only 7 – 10 years for reclamation compared to the traditional 40 years. Tailings ponds are used to settle out fine particles which are separated in the extraction process. These ponds can be similar to quicksand and are a danger to unwitting birds that land on it. For more information on Suncor's environmental remediation efforts check out the Suncor Website (*www.suncor.com*) under 'responsible development'.

The Canadian oil and gas industry is well positioned for expansion, while senior experienced workers will be retiring over the next decade. It is estimated that the industry will be 900,000 workers short in the coming years. According to an independent Calgary think tank, the *Canadian Energy Research Institute (CERI)*, over the next 25 years Alberta based oil and gas companies are expected to employ 1 million more people and add $3.5 trillion to Canada's gross domestic product. This will strengthen the Canadian economy as a whole. Constant investments in updated infrastructure will be a big part of this growing industry. The most recent planned investments include two pipelines: the Keystone XL pipeline which will connect the oil sands to Texas, and the Northern Gateway pipeline which will connect Bruderheim, Alberta to Kitimat, British Columbia opening up Canada to Asian markets. The energy industry is the prime place for young talented professionals who want fast paced, engaging work.



As you can see, the energy sector is a quickly changing industry, with limitless opportunities for interesting work which will make a difference. I am very happy that UWPEA has been created to connect students with representatives from this sector and I look forward to future events. Check out their website, *uwpea.com* for more information.

Riots, Romney & Rumble

IRON WARRIOR
STAFF BUREAU

AROUND THE WORLD IN 14 DAYS

1) *The Innocence of Muslims*

"Every non-Muslim is an infidel. Their lands, their women, their children are our spoils."

The last couple weeks saw the world witness numerous protests, the apex of which precipitated in the death of the US ambassador to Libya. Muslims everywhere were incensed by an anti-Islam video posted on Youtube entitled The Innocence of Muslims. The video targets Prophet Mohammad – insinuating that the revered religious figure was an illegitimate child who started a cult-like following to persecute non-Muslims, particularly Christians. Curiously, the video has garnered 34,757 likes, while the US government has rejected the video and condemned the violence stemming from it. When responding to why the US government has not proceeded to ban the video, Secretary of State Hilary Clinton cited a citizen's right to free speech. However, interestingly enough, while the First Amendment protects "abridging of freedom of Speech", it is not binding providing for categorical exclusions such as "Fighting Words or Offensive Speech". But as always the law is layered and definitions murky. Add to the equation a federal election, and we begin to see why the government's most proactive measure has been to encourage Google to review whether the video violates its content policies by disseminating hate speech.

2) Asian superpowers faceoff over territorial dispute.

Is this really about a quintet of islands? Five minuscule uninhabited islands, located along subjective boundary lines, are on the verge of permanently severing the precarious relationship between China and Japan. The standoff is the latest manifestation of a long standing animosity that started with the Mukden or Manchurian Incident of September 18th, 1931. Imperial Japan invaded northern China under the pretext of retaliating to alleged Chinese insurgent led destruction of a Japanese-owned South Manchuria railway. The pervasive bitterness is owing to Japanese subsequent war time actions and Tokyo having never fully taken responsibility for its actions. The anniversary of the incident fuelled ongoing nationalist protests in several Chinese cities. The resulting political impasse has severed trade ties, which produced $345 billion (US) last year, as several Japanese brands such as Nissan, Honda and Panasonic have ceased manufacturing operations in China. This has an enormous impact on the global economy as it recovers from the recession. Tensions continue to mount as 1000 Chinese fishing boats are apparently headed to the islands which could potentially lead to an ill-advised military confrontation.

3) The Put Students First Act, Bill 115. Teachers and students react with protest.

The Ontario Government passed Bill 115 before the school year which freezes teacher wages, cuts benefits, and bans strikes. This was done to reduce the deficit and ensure teachers went back to work in September. In addition to various protests in response to the bill, the Teachers' Union has asked its members to pull out of extra-curricular and volunteer responsibilities. This means that many schools throughout Ontario won't have sports, clubs, parent-teacher nights, tutoring, plays, concerts, dances and even a prom. There have been walkouts and protests made by students at many schools since the Union made the announcement. Many students need the extra-curricular activities to get into post-secondary education. Opinions seem to be mixed with some students supporting the Union and some the provincial government, but the one thing they all agree on is that they want the conflict to stop.

4) Canada closes embassy in Iran. Gives Iranian diplomats 5 days to leave.

Earlier in September, Canada closed its embassy in Iran and expelled all Iranian diplomats from Canada. The announcement came as a surprise after Foreign Affairs Minister John Baird said that Canada was officially designating Iran as a state sponsor of terrorism. Baird said: "Canada views the government of Iran as the most significant threat to global peace and security in the world today." Baird also cited safety concerns to embassy staff and referred to the attack on the British Embassy last November. Stephen Harper has been a supporter of Israel and critic of Iran, particularly Iran's military support for the Syrian regime, its nuclear program, and its human right's violations. Iran has called Canada's actions "hasty and extreme" and that it "served Zionists". Italy is currently representing Canada in Iran. It is hoped that they will assist in advocating for Canadians in Iranian prisons of which two are on death row.

5) Republican Presidential Candidate Mitt Romney's controversial 47% comment.

In yet another gaffe, Presidential candidate Mitt Romney recently wrote off 47 % of American voters as ''victims'' who are ''dependent on government'', ''pay no income tax'' and will vote for President Barack Obama ''no matter what''. This statement hurt the Romney cause because he is trying to appeal to the middle and lower classes of American society. Democrats have seized on the opportunity to lambaste Romney as an out-of-touch plutocrat who does not care or know how to help most Americans. Fellow Republicans, however, feel that this could be an opportunity for Romney to attract more voters to the cause and a chance for the former governor to distance himself from the President's ideals. Whatever the fallout from Romney's comments, the path to victory is narrowing as polls are showing that Romney's overall support and voter support in key swing states is falling as current President Barack Obama increases his chance of securing another four year term.

Why Cheating and/or Plagiarism is ACTUALLY Bad

ELIZABETH SARLSBERG
1A NANOTECHNOLOGY

Okay, frosh (and other fine engineering students of this prestigious institution): it is time to wake up. It is your first lecture, the professor is babbling on about boring stuff, and you're slowly falling asleep. Your midterm is worth 30% of your mark and the final is worth 60%, but there's more: that last, seemingly insignificant 10% comes from assignments.

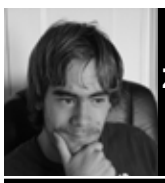
Upon hearing this, most students think one of two things: "why bother with the assignments when they're worth so little?" or, more likely, "what an easy 10%! I will just steal the answers from the class genius", (or from other sources that shall remain nameless for the purpose of this publication). The professor is still rambling on and then suddenly he or she says academic offenses will not be tolerated. Students suspected of these offenses will be dealt with in accordance with university policy... OUCH! You don't really want to get caught now, do you?

Besides the usual I-would-really-rather-not-get-kicked-out-of-university, there are other reasons not to copy, seize or otherwise acquire the answers to these assignments illegally. For starters, 10% is just not all that much. It often happens that you will end up having more than one assignment; you may have four for example. That works out to 2.5% per assignment. It seems kind of ridiculous to risk getting booted out for 2.5%. If you really don't have time, for your own sanity and for the sake of saving time, just don't do it!

Allow me to rephrase that. Do the assignment so you have some sort of idea of what may (or may not) appear on the midterm or final, even if you do not make the due date. More importantly however, you will (if you have not already) realize that not understanding concepts before an evaluation puts you at quite the disadvantage come exam time. It may take some time to drill in this point, but the reality is that understanding comes from doing work. We can therefore equate understanding with doing those assignments, which then leads us to the inevitable conclusion: cheating on assignments benefits neither you, nor your mark. No matter how good you may be at math, 2.5% will never equal 60%.

So there you have it. Like it or not, cheating (or plagiarism, take your pick) is bad. It is bad for you, it is bad for your mark, and it probably has other negative side effects. You really ought to consult your physician (ie: your brain) before trying it.

Back to the Beginning



ZACHARY GINGRAS
1A NANOTECHNOLOGY

MUSIC THROUGH THE (P)AGES

Hello everyone! My name is Zac, and I have a passion for music that I want to share with you! From classical through jazz to rock, I've listened to it all! Throughout the term we'll explore the diverse musical culture of today, and find some great music to listen to along the way. So, if you've ever wanted to expand your musical horizons, this is the right place to be!

To properly start our musical journey, we must travel back to the beginning, and look at the genre that has survived through the longest; instrumental music. As the name suggests, this is music with no lyrics, created only for instruments. It is important to first have an appreciation for this music, because it forms the basis for all of our modern day lives. The root that all songs are built from, the essential bread and butter of movies and games, incredibly beautiful to listen to on its own- our lives would be very different without instrumental music.

To fully appreciate this wide genre, we can look at it from many different views. We can listen to more classical instrumental music, from the times of Bach and Beethoven when orchestral music permeated the world, or observe a more modern day style,embedded in every form of media. However, no matter how we look at it, there is one essential thing to note about music: Music is a form of literacy. Every song tells a story. This is even truer for instrumental music, because the instruments tells the story to our emotions. Each person will interpret the music differently, creating freedom within the story, while still feeling a core connection with the piece. Keeping that in mind, let us delve into this complicated genre.

Classical

This has been the main form of music since the early 14th century. Technically, classical music refers specifically to pieces from 1750 to 1820, but is often erroneously used to refer to any piece composed by dead German farts or at least played on "classical" radio. This music is often composed for a full orchestra, giving it a very rich sound through the strings, brass, and woodwinds, but can also be composed for smaller groups or even a single instrument or voice, though the focus of this week's article is on instrumental music. Classical music is usually the most complex style of music. Composing it is a constant balance between creating precision for conveying emotions or technical prowess, and leaving freedom for the piece to be interpreted by the audience.

Instead of just talking about classical music, we could better understand it by listening to Jupiter by Gustav Holst, a beautiful piece of art. By listening to it, we can see how classical music has this ability to speak to us through conveying only the most fundamental and powerful emotions within us. From joy to sadness, anger to fear, you'll find every part of life woven into these classical chords.

Modern Instrumental

This is a much more current style, one that permeates our daily lives. It is used throughout the media to help empower certain emotions. The difference from classical is clear in Heart of Courage by Two Steps From Hell. Music like this is woven through the ages, creating emotionally powerful movies and games.

With modern media being so common in our lives, I would like to pose a challenge to all of you. First now think of your favorite game, movie, TV show, or any sort of media. Got it? Good. Now go and listen to its soundtrack on youtube. You will be amazed by it! In honor of the light brown team winning Frosh Week, I'm also going to suggest "The Black Gate Opens" from the soundtrack of The Lord of the Rings: The Return of the King.

I hope you can see how fundamental instrumental music is in our lives. There is a reason it has lasted hundreds of years and will last many more; it is because this genre speaks directly to our core being through the raw emotions of the instruments. Next week we'll be diving into the complex world of Jazz music. Until then, keep your passion alive!

The Copperbelt and Competition

ZAC YOUNG
2012 JUNIOR FELLOW

ZAC IN ZAMBIA

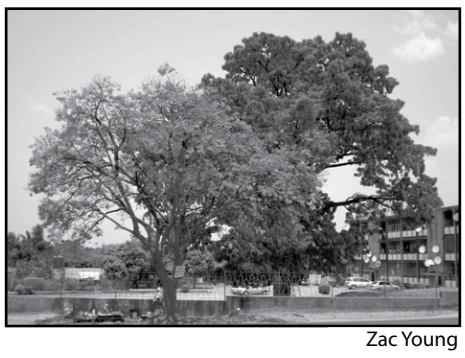
This week marked my first trip outside of Lusaka and onto new horizons. Luyando and I headed off on Wednesday evening to Kitwe, the second largest city in Zambia. Kitwe is located in the Copperbelt region, north of Lusaka, and is the central point for some of the largest copper and cobalt mining operations in Zambia.

The bus ride was the first highlight of the trip. Having arrived in Zambia under the cover of night, I had not yet seen the Zambian countryside. We went to the bus station and were met by a crowd of men trying to hustle us towards different buses. As with the minibuses, the station has an informal crew working for the commission on attracting customers to different buses. After finding our first choice had already left we ventured towards the next ticket center. Having heard where we intended to go, the efforts of the men intensified such that Luyando and I found ourselves being led, or nearly carried, by both arms toward a bus we didn't want. With some effort we managed to leave them behind and get to the ticket center to find the last two seats remaining. Phew! After a few minutes wait on the bus we were off to the Copperbelt.

The trip out of Lusaka was one that painted many images of the lifestyles of Zambians. We passed affluent, gated neighbourhoods of clean homes and green lawns; second-class shops and compounds; and a shantytown in the northern Lusaka limits. Even in the city I have spent nearly four weeks in, there were still sights that were new, revealing with clarity that I was only accustomed to a small fraction of the city. Beyond the city limits there were further contrasts; both large commercial farms and small rural villages of mud and thatch homes. It is easy to default to simple images of regions around the world, but the bus window resolved to a more complex tapestry of Zambia. There were moments where I couldn't have determined if I was on a rural road in Canada or Zambia, and others where picturesque, foreign villages lay just off the roadside. I hope to learn more about every motif I can in the coming months.

Unfortunately, having been the last two on the bus we were relegated to the middle of the back bench of the bus. Not wanting to make myself be extra "touristy" I declined the urge to lean over laps for a few snaps out the window. Hopefully next time I'll get a prime picture position.

Arriving in Kitwe, we were picked up by our host, Luyando's older brother Cipo. We stayed at his flat just outside the downtown area of Kitwe for the following two nights. In the morning we made the first visit to Copperbelt University (CBU), where the engineering design competition will be held on October 4-5. We met with the Vice Chancellor who wholeheartedly endorsed our efforts and then headed off for a short notice interview of one of the lecturers, Mr. Luwaya, who has been a strong leader in preparing for this competition. The interview was for the Zambia National Broadcasting Corporation (ZNBC) evening news feature, Focus. It was a great interview and our first publicity in preparation for the competition.



Zac Young

I think I'll just bring one home with me … will it survive the Canadian winter?

I also managed to finally capture a picture of one of the beautiful and mystifying purple trees in Zambia (yet to learn the species name). Since I have gotten here the intensity and foreignness of the colour have had me gazing so much so that Luyando has found my fixation comical.

The remainder of the day at CBU was an exciting meeting with a few lecturers who have been busy crafting the design question for the competition. Though I obviously can't spoil the surprise here, it was a great opportunity to work with their vision of a challenge that was both appropriate to real life scenarios in Zambia, and pushed for a multifaceted solution. I felt very welcome to offer my own perspective from my participation and mentorship in FIRST Robotics, which helped bring out a design question I am really excited to see in action! More on that in a couple weeks…

Mealtimes were good too. A local shawarma joint called "After Ten" made for some good homesickness busting food. I'm sure more than a handful of you reading this will know of (and potentially share) my affection for a good chicken shawarma. I also had the pleasure of meeting up with the CBU student representative to Kulemela, David Kanabashi, with whom I had some great cross-cultural conversation, sharing of our perspectives on engineering and the allure of cutting edge fields. For myself, that attraction was nanotechnology, for David, it was telecommunications, which is a critical and ever-growing part of Zambian business and social spheres. It is not hard to see that while our educations may come from institutions the world away, and have some variances their delivery, our foundational passion for engineering remains the same. Hearing such similarities is inspiring and makes me believe ever more in the investments Kulemela strives to make in education and engineering culture for students in Zambia. There is just the same potential and passion here in Zambia as there is in Canada!

Another notable occurrence on the trip was when Cipo was taking Luyando and I out to dinner and we ran out of fuel. Cipo, having worked his typical tiresome week as a supervisor at Mopani, the large local copper operation, had forgotten he needed to fill up on his way home (leaving quite late as it was). To our good fortune he was able to get a few more fumes through the engine and turn us around and back down the hill we were on towards the gas station. We would have made it via gravity if there hadn't been a small incline up to the gas station entrance. So, like any sensible young man would have I hopped out and began to push us on our last leg to the pump. Only once I was behind the car pushing it the last few feet through the intersection and up the incline did it occur to me how peculiar a young Canadian male pushing a gasless car towards the pump probably was in Kitwe. I suppose there is always a time for firsts! And so we got filled up and had our dinner without much other event than Cipo feeling a bit little embarrassed and us all sharing a laugh at the comedy of the situation.

We returned home the way we had come early Saturday morning, seeing the sunrise on the downtown Kitwe street. Again, we managed to be the last two people on the bus by some miracle and were off within minutes of boarding. To anyone who has being traveling by bus in such places before, it's ok if you are a little jealous because our collective station waiting time for the round trip was about ten minutes. Then again, we paid for our time luxury with our same seats at the back of the bus. After about five and a half hours we were back in Lusaka, weary from the travel but feeling accomplished all the same. It was a wonderful trip and one we are to repeat again this coming week. Hopefully some more pictures and less text when I report about the next one!

One Does Not Simply Walk Into POETS

ISABEL VILCHIS
1A ENVIRONMENTAL

On Friday, September 14th, first and upper-year students alike got ready for the Beginning of Term party (BOT), the first of three pub nights this term. It took place at the POETS Engineering Lounge, which is run by POETS Managers for the Engineering Society. After surviving the first week of classes, there was no better way to blow off some steam and celebrate with your new group of friends than by enjoying a night out of partying and dancing (or swaying awkwardly to the music), perhaps with a slice of pizza and a drink. The Lord of the Rings theme paid tribute to the winning team of Frosh Week, Light Brown. Although there weren't as many people in costumes as you would expect, the decorations remained true, with signs that included a picture of Boromir, with a quote of which I had to consult my nerdy roommate for recalling: "One Does Not Simply Walk into POETS". Besides the hobbits and elves, the most anticipated and memorable part of the night was the epic appearance of The Tool and Tool Bearers, as well as a humorous video of Orientation Week highlights, which was produced and administered by skillful Media Gurus. Following long-time engineering tradition, students praised The Tool and chugged beer, although the latter was not possible for the first-years, as security made sure that didn't happen with some help of the notorious marks on our hands and wrists.

The doors were open from 7:00-9:00PM, although most first-years left, no doubt exhausted, along with the Tool Bearers after 8:45; and if, like me, they weren't driven to the Outdoor Concert by their more enduring friends, they went straight to bed. The general attendance for the night resulted in fifty or so engineering students, plus the occasional crashers from the Faculty of Environment. Sure, the night was awkward at first (especially for first-years like me), but with the help and enthusiasm of upper year students, freshmen eventually got into the rhythm and managed to have an overall good time. The way to remember this experience is as a great chance to meet new peers that you found things in common with, and as the prologue for many more fun times to come this term at the University of Waterloo. One week down, fourteen more to go… So keep on studying hard, and look forward to upcoming chances to party.

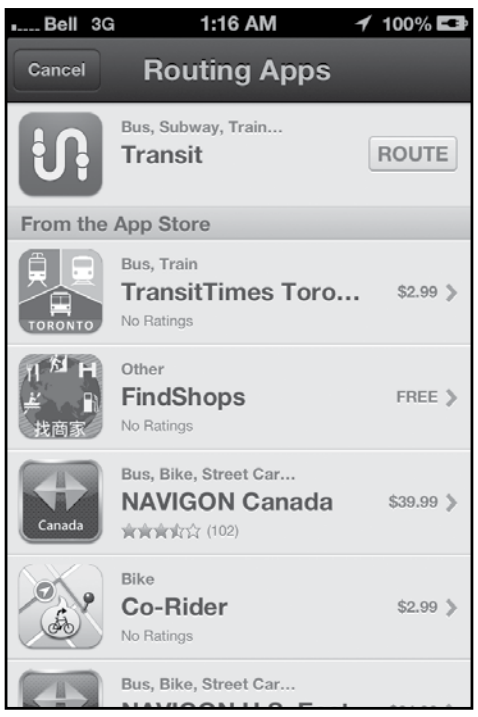
The Good, The Bad and the Ugly of the iOS 6 Maps App

JACOB TERRY
2B NANOTECHNOLOGY
T CUBED

Entering a mature market composed of companies who have products with a competitive edge is incredibly hard. Microsoft, for example, is having trouble bringing back the popularity of its smartphones. There are many reasons for this case, from a lack of support from network operators to a lack of well-advertised hardware, but a big part is the lack of apps. Most people who buy smartphones want to know that they're getting a good investment on what they bought. They want to play the games they enjoy, use the social networks they like, and most importantly, just want things to work. Having a low number of available apps, even if the ones available are probably all the ones the average person would ever want, signals to a potential purchaser that this won't do as much as an Android phone or an iPhone that has a number of apps on an order of magnitude higher.

Stretching that metaphor a little bit, Apple appears to be wading into a similar problem with the Maps app in iOS 6, which removed the information from Google's database in favour of their own fledgling map solution, with support from various partners. Google Maps had been the default on iPhones and iPads since their inception, and was part of what made the Maps app one of the most used and celebrated features in iOS. Of the few obvious changes in iOS 6, Maps is the one that has been the most divisive among those who have upgraded or are looking to upgrade.

To its credit, the first thing you notice upon opening Maps it is that it's laid out beautifully. The map drawings in standard view are all vector based, so you're able to zoom in and out with smooth re-scaling. This is one Maps' benefits over Google Maps, as it probably saves a fair bit on data usage as well. Unfortunately, you also notice how bare it is. While Google Maps has only really boosted its building and point of interest locators within the last two years, it's at a point where it's expected that you should be able to find most of what you're looking for without having to resort to the Satellite or Hybrid views.



This is where confusion can sink in, because Apple has a lot more in its database than it lets off, especially with respect to restaurants. Yelp integration provides accurate, fast search results for any restaurant you enter. Apple even places some of those restaurants on its maps in little circular icons. Looking at Uptown Waterloo, there are at least seven food locations that I could point out with those circular icons identifying them. When you move over to the plaza, nothing shows up except a giant beige rectangle. Searching the restaurants in the plaza will have them come up in the search listings, but they don't appear visible on the map without searching first. Why Apple wouldn't add more icons to the map when you zoom in far enough is perplexing, since it gives the appearance that Maps doesn't know that anything is there.

Restaurants are a special case though, because there are other categories for points of interest that just don't have data, hidden or visible. For example, a search for my elementary school in Barrie (Willow Landing, in case you're curious) turns up nothing, not even a zone with a special colour to denote something is there. This isn't uncommon. The only things I've been able to consistently find that are visible and searchable are gas stations, parks, and shopping centres, but even then the app will still be missing a few. While the occasional missing thing isn't a big deal, there are so many big things that are clearly missing in Maps, and there are instances reported online where people are finding missing or extra roads, missing towns, and misreported airports, among other things. The good thing, or bad if you consider the time commitment required, is that usage of the app will improve Maps's ability to gather data, both through observing which areas receive more traffic and through the Report a Problem feature, which I made liberal use of during my first few days looking for errors.

The most controversial omission from Maps is public transit, which is really unfortunate. There is still a public transit option when searching directions, but it will now take you to a list of apps on your phone and on the App Store that can process the locations you entered. Then, Maps will send your routing information to the app you select and it will launch that app with your requested direction. This is going to bother some people who would prefer everything be in one spot, but even as a fairly heavy transit user and transit advocate I have not found this to be as bad as I expected. I ended up installing The Transit App as my public transit service, which is a very inexpensive, subscription-based app run entirely by two guys in Montreal. It's more slick and a little more limited than Google Maps, but it has all the transit services and features I regularly use, plus enough cities around Canada and the US that I would rarely need to tap into the Google Maps web app. They add cities as fast as they can and are also open to feature requests, which is a great feature you don't often get to enjoy from giant behemoth corporations. It's not the only option out there, so there are many options for people who have different transit needs.

As for Maps, it's understandable that Apple may not be able to source a huge transit database without having an app that's launched, since it would require much effort on their part to contact every transit provider around the world that provides data to Google. However, with the market power they have and their typically persuasive negotiating, you would think that they would have something more substantial, not just for the transit option, but for the app in general. The biggest impression you get is that it's unfinished, and it feels like they could have used an extra year to really polish up their data. Unfortunately, one of the best ways to build up a database is through crowdsourcing, and the best way for them to improve Maps is likely by getting all the users to run the app and report issues, while shutting off Google from gathering even more information from iOS devices.

Calling back to my metaphor at the beginning, entering a digital mapping market against companies with massive mapping databases won't be easy for them to do. They have significantly less data, and rely a lot more on their partners than Google probably does now. Time will tell whether Maps will become a comparable product in its own self. For now, it is still fairly reliable for most travel, and transit apps fill the gaps very well. If Maps isn't working for you though, you can always save the web version of Google Maps to your home screen, and it will be just one tap away.

A Whole New World

BRIAN SO
1A NANOTECHNOLOGY

The moment your grade-school teacher or your favorite TV show (*Magic School Bus*) mentioned the existence of atoms, you would be shown an image of electrons orbiting a nucleus like planets around a solar system. You were hopelessly in love with such a beautiful thing… The symmetry alone was just gorgeous! Oh, what you would have given to see it in real life. But soon, your heart would be broken the moment you were taught that such a model was wrong. No orbiting electrons! Just a cloud of the stuff! They just exist. Bonds? They exist only in equations and theories… Not in pictures!

OR DO THEY?

That's right, barely a week ago, on September 13th, pictures of a small molecule (pentacene) were released. These weren't ordinary pictures though: they were so detailed that even the type of atomic bonds between the atoms were visible. For this, we have to thank an IBM team based in Zurich. The team used a slightly different form of atomic force microscopy (AFM) to obtain these images. Regular AFM uses a metal tip to pass over the desired object multiple times, very much like a record needle. The team put a slight spin on this method in that they used the metal tip to pick up a molecule of carbon monoxide, and used that as the tip instead.

The experiments were so delicate that the images show how long the atomic bonds are, and the density of the electrons (a brighter image means less density). All of this shows us what types of bonds are present and how many pairs of electrons the atoms share. Instruments had to be kept constantly cooled at a temperature near absolute zero. Additionally, any vibrations coming from the surroundings would have jeopardized the experiments, thus the AFM had to be carried out in an isolated environment on chemically within the molecules.

This was used to study graphene (single atom-thick sheets of pure carbon) under a new lens. Graphene holds a lot of promise as it has many applications in electronics and research, and with this new imaging technology we now have a higher degree of detail in studying small molecules, such as the aforementioned pentacene. The world (of possibilities) just got a little larger!

Engineering Students Win E-Launch Scholarships

NACHIKET SHERLEKAR
2A NANOTECHNOLOGY

A couple of University of Waterloo engineering students were recently awarded scholarships worth $4,000 dollars each distributed by the Enterprise Co-op (E Co-op) program. This program is administered by the Conrad Business, Entrepreneurship, and Technology Centre. The E-Launch scholarships, awarded at the start of each term, are the result of a donation from University of Waterloo graduate and entrepreneur, Nigel Stokes. Five winners were announced from a total of 16 business pitches on Friday, September 7th. The judges had a difficult task of choosing the winners from the several contenders.

Stephen Holiday, whose start-up SmugData won him a spot in the top five, is a 3B Computer Engineering student. The idea for his start-up was to use content-based image search to help corporations make sense of data. His conception is based on the fields of machine learning and computer vision, both related to artificial intelligence. Broadly, the idea is for an algorithm to take input data, in this case images, and analyze them in order to extract useful information and make intelligent decisions based on this information.

Jon Joel, who just finished his 2B semester in Nanotechnology Engineering, was another recipient of the E-Launch Scholarship. Along with his partner Lindsay Brock (3B Nanotechnology Engineering), he founded JoLi Cosmetic Solutions, a platform to provide premium in house products for salons, make-up artists, dermatology clinics, and photographers to create exclusive high-end lines of colour cosmetic products. An idea for the possibility of such a company was formed about six months ago, when Jon and Lindsay decided to start making lipstick in his kitchen.

"We take care of the tough chemistry by creating a bunch of product bases, and bringing our lab to the client, where we help them mix and match bases, effects, colours, etc. We also take care of the supply chain details, containers, and packaging," said Jon. "The goal is to help our customers stop selling someone else's products, and start creating a local beauty culture, even though this isn't LA, Paris, London, New York, or Milan. We know there are incredible trendsetters hidden all over, and we're going to find them, and start empowering them."

Since its conception in 2011, the E-Launch Scholarships have resulted in many success stories from people of varied backgrounds. The E Co-op program is sure to enjoy a long and successful run in the University of Waterloo, where ideas are conceived all the time and are just waiting to change the world.

Hey Look, New Consoles!

JON MARTIN
4A CIVIL

FUTURE OF GAMING

It has been an eventful couple of weeks since the last *Future of Gaming* article, back when I had to complain about Nintendo – purely because they haven't done anything appreciable in months. With the declining sales of the Wii console, Nintendo has been putting all of their resources into the 3DS with the new 3DS XL. But now, Nintendo has officially unveiled the release date and price of their next generation console: the Wii U.

The Wii U will be released on November 18th in North America, November 30th in Europe, and December 8th in Japan. The release date is perfectly placed to take advantage of the Christmas buying season, which can hopefully turn around Nintendo's sales slump. The console will be available in two tiers: a basic model with 8GB of memory in white for $300; and the premium black version will retail for $350 with 32GB of storage and a charging dock for the Wii U tablet gamepad.

Both systems come with a packaged HDMI cord, an important part of Nintendo's foray into high definition gaming. It seems interesting that the first of their 'Next Generation' of gaming consoles is only now reaching HD graphics, with the claim that the graphics will actually surpass the Xbox 360 and the PS3. This may help Nintendo in the short term to reclaim lost sales, but it will fall far behind when Microsoft and Sony finally release their new consoles. Nintendo has succeeded in the current generation because of their unique control scheme and the family friendly games that dominate the Wii game market. But what happens when their new console is almost immediately surpassed by Microsoft and Sony? And how is Nintendo going to convince the casual gamers that they actually need to upgrade their console? I think these are serious questions that Nintendo has failed to answer so far, and with Sony and Microsoft's 'Next Generation' consoles anticipated in about a year, Nintendo doesn't have much time to come up with an answer.

Sony has also made the news in the last week with the announcement of a new Slim version of the PS3 (or I guess it is the Slimmer PS3), as some people have taken to calling it. The new system is approximately 50% the size and weight of the original PS3, and is about 25% smaller in size and weight to the current Slim model. Sony is increasing the storage capacity of the system as well, offering two versions with 250GB and 500GB of storage space respectively. The new PS3 systems will be released late this year, again taking advantage of the holiday rush. In an interesting move to differentiate models, the 250GB model will not be offered in Phase Alternating Line (PAL) regions; instead, there will be a 12GB flash memory-based version. All systems will be the standard Charcoal Black, with a white model available in Japan.

The move towards releasing slimmer versions of consoles is a very pervasive trend in this gaming generation, with both Microsoft and Sony releasing improved versions of their consoles midway through their life cycles. Nintendo has not released any new major revisions of their Wii console, but they have released numerous different versions of the DS handheld system, so they fall into the same boat. This trend towards gradually improving the system is a great benefit to the parent companies, as they can continue to improve the cost-effectiveness of the system while still offering price drops to draw in new consumers. Microsoft ran into problems with the original Xbox because they used licensed components, which prevented them from changing parts as technology improved and more efficient components became available. In contrast, the Xbox 360 has gone through many minor revisions throughout its life cycle, in addition to the major change when the Slim version was released. With each new version of the Xbox 360 a new chipset was introduced, reducing the size, heat, and cost of the system, but the general consumer never really saw a difference. The only visible change in the system came from the addition of an HDMI port on the back of the console: otherwise the system remained relatively unchanged in appearance, until the case redesign of the Slim model. The problem with these continued changes is the potential for consumers to be left behind. One of the biggest draws of a gaming console is the guarantee that any game manufactured for the system will be playable from the beginning of its life to the end - there is no worrying about whether your graphics card can handle the game, or if you have enough RAM. But this is a limitation, because a console could be rapidly surpassed by computer games and become outdated tech. So what should a company do: increase the technical specs of their system and risk leaving early adopters in the cold when games start to be developed that can only be played on the newer version; or should they focus just on efficiency improvements and leave the system capabilities alone? I think the obvious choice is the second option - it may not be as desirable for gamers who want the best game possible, but it does not alienate anyone. Unfortunately, it does introduce a hierarchy among systems, with original systems viewed as unstable and not worth the risk of purchase.

I think we are going to continue to see this gradual change into the next generation of gaming, but the question remains when that next generation will truly start, and how the final systems will stack up against one another. I don't think there is any doubt that Nintendo will continue to be the 'child' of the group, but this time they are going to be effectively almost a generation behind their competition. They had better hope that they can make enough money off the Wii U before their competition arrives, or that all the seniors homes running Wii bowling tournaments decide that the competition would be better in HD. In any case, I am not predicting good results for Nintendo, but we will have to wait several years to actually see – and by then I can totally deny this prediction if needed.

So now is the time to take advantage of the newest revision of the PS3, or jump into the 'Next Generation' of video games with the Wii U. Have fun, and Keep on Gaming.

"EDCOM Makes Us Moist!"

VINCENT ZHU
1A CHEMICAL
MEAGAN CARDNO
1A NANOTECHNOLOGY

From "Edcom Makes Us Moist!" on Page 1

The pride was like a drug, where being part of such an exclusive (and obviously fantastic) group just gave the light blue frosh a desire to do as much as possible to show her pride visibly.The helmet was a mighty crown, but needed a robe to match. To satisfy the insatiable, she found herself rising at an ungodly hour, whilst the other faculties still lay slumbering. The sun itself had not risen in time to witness the procession of the plummers. But if the frosh had learned one thing during her week, it was that masochists seem to accumulate in the engineering faculty. There could be no other explanation for the dozens of frosh who would return to their residences with purple arms, legs, hair, and mischievous smiles. The truth of that morning still remains a mystery to many...

The days that followed brought many exciting new events and competitions. The twelve teams were pitted against each other in a massive competition known simply as Junkyard Wars. A massive pile of junk stood at the center of the Village 1 Green as the frosh were led into the field and the leaders paraded in with the team mascots (Light Brown, representing LOTR, brought the Eye of Sauron on a giant tower!). As the competition begins the frosh were split up to compete in the various outrageous events ranging from providing shade for EDCOM to constructing a gigantic catapult. The Light Green frosh joined the I'm on a Boat team to create a floatation device that would hold the greatest weight in a kiddy pool (pillows float, right? RIGHT?!). While the frosh were busy building their creations, EDCOM was busy concocting their own creations. Human hotdogs were only one of the items on the menu, and the ingredients were none other than the Light Green Bigs and Huges, without, of course, any shortage of delicious condiments. That Thursday morning saw the birth and death of countless outrageous and outlandish creations.

As the winners of each event were announced and the cheers died down, the time to meet the Tool drew closer. To make room in the hearts of the frosh for the 60" chrome plated wrench known as the Tool, EDCOM completely destroyed all the mascots. After all, according to EDCOM, the only mascot the engineering frosh should now have was the Tool. Packed into FEDS Hall, the frosh and orientation leaders eagerly awaited the arrival of the engineering mascot, chanting, "TOOL! TOOL! 60 INCH WRENCH!" Finally, the masked personal guard of the Tool appeared, holding in their arms the long rigid wrench (it was so rigid), and the hall erupted in cheers. Unable to touch the Tool with their unworthy hands, the frosh had to satisfy themselves by simply stroking the mini-Tool. The sight of it reminded the frosh of the many years of hard work that will follow before they finally become worthy of feeling the Tool.

The frosh soon learned that EDCOM were not merely good-looking, hard-working, bear-wrestling enforcers of safety. They were wise upper years, who knew their way around campus better than most people know their own house. They were willing to pass on some of their wisdom to the frosh through a complex and mythical process they called the "Passage through the Polyverse". Champions of each colour were selected to demonstrate the proper mastering of university life, including helping Froshie McFirstyear write their co-op résumé, keeping a balanced diet à la Swedish Chef, dodging EDCOM's balls to stay healthy, and resisting the wet, spongy distractions of the internet while doing homework. In the end, one final brawl between the champions would decide a winner. Using the tools that they gained through their voyage of the polyverse, the battle signified how cruel the battle for survival outside of the university's walls truly is. In the end, there was one victor per division; however, all the Light Blue fresh can remember of the gruesome battle was that her champion, armed only with EDCOM's pussy cat, was unable to beat all of the contenders. That was unfortunate.

The final orientation event kicked off at the team headquarters. Even after watching EDCOM brutally tear apart the Triforce, Light Green's spirit still burned brightly in anticipation for SCUNT, the faculty scavenger hunt. SCUNT was comprised of several small events, with, of course, an actual scavenger hunt going on in the background. However, the items on the list could be described as unconventional at best, in fact, most of which were impossible to obtain, at least, legally. As a result, it seemed fitting, since the frosh were in Imaginationland that points would be rewarded for imagination (Let's make a ship out of space and call it a spaceship!).

In Imaginationland, things were never as they seemed. This should have tipped off the Light Blue Frosh of the true natures of the events to follow. However, she had never seen a game of chess played by EDCOM's rules, where pieces moved less often than they were suddenly given laser vision and mirroring abilities, fought in a Pokémon battle, or spontaneously had all the amazing powers of sizzling bacon. In retrospect, a modern-day version of chess probably should include a nuclear warhead option, where the biggest explosion wins.

Meanwhile, the Light Green Frosh followed his leaders to join Sheep Herding. Greeted by EDCOM in the V1 green, the leaders were soon set against their frosh as they became the shepherds whose duty it was to herd the sheep-- now the frosh, into an imaginary pen in the center. The rules of the game were simple enough, except with EDCOM, things were never simple, and in this game, EDCOM rules. Constantly changing the rules, EDCOM made the game more fun and enjoyable for the frosh ("Frosh! Sheep don't walk on two legs!"). In the course of the game, some frosh became wolves in sheep's clothing, the leaders became loud lawn mowers (They had to chase the frosh with their heads touching the ground at all times), and for nearly half the duration, EDCOM 'blindfolded' the leaders.

Alex Trebek had nothing on EDCOM when it came to trivia. They were always positively supportive of the frosh when they made mistakes ("That sounds wrong, frosh.") and would resist the temptations to jeer at some of the answers the sleep-deprived teams would give ("When have you ever heard the term "peachy brains" used, frosh?"). Once the winners of the Jeopardy! round were decided (EDCOM won by a landslide of 10 000 points), they would move on to the charades round. However, when the Light Blue Frosh was told to charade "Sweden", to say she was slightly dismayed would be putting it lightly (trying to become a dancing queen proved very much futile).

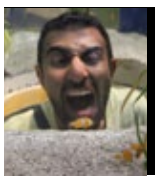
In the meantime, gathering in the foyer of Carl Pollock Hall, a select group of individuals sent from each team stood impatiently for the next event-- Leader Chase. It was a simple manhunt, and the targets were the leaders. Capturing a leader would net only one measly point, however, the frosh were allowed to challenge them double or nothing for an additional one point! The leaders were given a head start before the frosh were unleashed into the night. The Light Green Frosh, among his fellow teammates, searched the forsaken alleyways for an elusive leader. Much to their delight, they discovered one of the leaders lying inside a dumpster. The leader declared that his condition for coming with them was that they had to carry him all the way back to the foyer from the dumpster. After a back-breaking struggle (Somewhere along the way, somehow the team found themselves in a dogpile trying to hold the leader down), and after tying the shoelaces of the leader together to ensure that he wouldn't escape, the team finally made it back to the foyer. They decided to take the point without challenging the leader, feeling extremely satisfied that they were able to capture at least one of the leaders.

The round of redemption for the Light Blue Frosh came when her team rallied a group of people to perform at EDCOM's personal version of High School Musical. The teams all performed various songs and dances from the epic trilogy, but with a University twist (that the Light Blue team apparently failed to receive on Mount Olympus) and afterwards, critiqued and rewarded, if they found it worthy of praise. They saw enough talent in the Orange team in particular to the point that they named and marked the debut of the "Orange Sensations", quoted by EDCOM as "sounding like a sundae". Of course, no musical would be complete without one gigantic sing-along at the end, and frosh did not disappoint.

The end of the scavenger hunt marked the conclusion of the engineering-specific events of frosh week. While other faculties merely hear the legends of the Engineering Frosh Weeks of yore, we had the honour of being part of the most fantastic events. Earning our bright yellow hard-hats enlivened that dark stormy Tuesday, and the Junkyard Wars on Thursday certainly did arouse our ENGinuity. Beyond that, the cult-like meeting of the Tool could only be matched by the silly, yet extremely informative "Passage through the Polyverse". Finally, the Orientation SCUNT definitely was an unforgettable night. No other faculty could even hope to compare to the spectacular week; however, in all fairness, none of them can really compare to the subsequent workload either. To look back on the week brings nothing but fond memories and smiles to many a frosh, and the only real problem that anyone could name was that it ended far too soon.

Engineering Orientati

Fitting In As a First Year Engineering Student



NIZAR HASAN
2011 CIVIL

I remember being very nervous. I remember not knowing what to expect and suddenly being distracted by all the excitement around me. I remember that everything was new, and I was slightly overwhelmed at realizing that this was all normal. So how did I become "normal" and fit in?

I started writing this article with the intention of sharing some tips about just that – fitting in. In the process of thinking about the points I'd make, however, I realized something so basic, so fundamental, that it actually shocked me. And so, as a true test of your patience, feel free to read on as we work through this sporadic thought process together:

• The first piece of advice is: Believe. There is no need to put on running shoes and turn up the soundtrack to Rocky; all I'm saying is don't lose sight of what keeps you going as you start your University adventure. It may be God, your friends, family or your goals; but whatever it is, it will be what gets you through the tough days (and don't worry, there are always good days that follow).

• Don't be afraid to speak up! Tell whoever asks who you are, what you enjoy, what drives you, what your religion is, where you've travelled, and what you hope to become. To this day, it continues to baffle me how unaccepting people are, especially in Canada and even more so in a university setting. No one is in a place to judge; so have some faith that people will look past the label and welcome you.

•Whatever you choose to do in your upcoming 5 to 7 years, be it academic, extracurricular or personal, do it for the right reasons. There is absolutely no better way for your passion to shine through. So, do what you love, and if you're not sure (I sometimes wasn't), then just give it time. The bottom line: time fixes everything (even if it is getting over failing your first, second, or fifth midterm).

•Take some risks and surprise yourself. Tell your parents the truth, say "Hi!" to someone you may be subconsciously stereotyping, open up to a new group of people who can teach you something new, smile for no reason, and remember to always be thankful for these experiences. And when those risks turn sour, just remember that someone else always has it tougher than you, so please be thankful.

BY FAR, the best part about university for me was the people. People are amazing! That is where your education lies. Just like the points above, all people have something they believe in, everyone has a different form of expression, every student works towards something, and all of you have taken at least one risk by attending this university.

See, you, yes you, are a person too (unless you're a scientific genius on the Big Bang Theory). So, all the above applies to you, and all the above applies to your roommate, the person who sits beside you in class, the person who sold you food in the caf, your professor, and the people who will come to inspire you in your future.

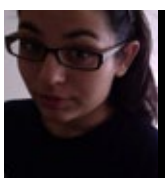
So, my epiphany about "fitting in"?

You don't need to figure out how to fit in because you're no different from everyone else around you. Just say "Hi!" and just be yourself.

Frosh Week 2012 Media Gurus

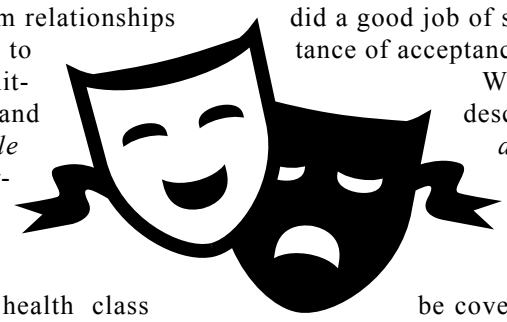
ion 2012 Aerial Photo

Single and Sexy: A First Year's Perspective



FARWA N.
1A SOFTWARE

After a fun, yet exhausting, day of running around outside in the heavy rain during the first day of frosh week, I wanted nothing more than to head back to residence and take a shower. However, there was one more event scheduled for the afternoon. A performance on everything from relationships and academics, to sexually transmitted infections and pregnancy. *Single and Sexy* primarily sounded like those plays that we had to make for high school health class that were usually cheesy and forgettable. Much to my surprise, the play was captivating from beginning to end!



Opening with a parody of Starships by Nicki Minaj, I was already entertained. Each of the actors played their characters with enthusiasm and credibility. The progression of the subplots within the play was interesting and many of them intertwined so as to create a very powerful play.

One subplot revolved around the effects of the university social environment on a first-year student, who was otherwise very innocent and sober in high school. Another followed a couple whose relationship changed from cute to abusive, and touched on suicidal and depressed emotions. One very commanding subplot was the one revolving around the homophobic and racist attitudes of two of the characters towards each other. I think both issues are still prominent around campus and the play did a good job of showing the importance of acceptance and tolerance.

When I first read the description of *Single and Sexy*, my initial thought was to question how so many different issues would be covered in an hour and half, but I was genuinely surprised at how smoothly everything was covered, while at the same time providing useful information about where help can be received on campus. Overall, I was happy with my decision to attend the play, rather than going home, and enjoyed it thoroughly. "Whether you're mounting your bike, or mounting your partner, always remember to protect your head!"

First Year Life: Off-Campus Experience

SARAH YOUNG
1A SYSTEMS DESIGN

Hey OCC, how do you feel?!

It's been just under a month since the Off Campus Community (OCC) of freshman students met at the beginning of Orientation Week. If you're one of the select few that are a part of OCC, by now you no doubt know your way around campus (or at least where your classes and restaurants are), and might even be beginning to feel comfortable on the University of Waterloo campus. Finding your way around campus isn't the only challenge, no. It's getting to campus that can be the most challenging part of the day (except for classes).

There are those of us who are fortunate enough to have the funds available for a car, gas, and maybe even insurance and a parking pass to go with it, but what about those OCC first-years who don't? There's always the option to walk to school, but some of us don't live conveniently close to the University. A lot of us could always try biking, or getting a ride from family, friends, or neighbours, but we wouldn't want to be a free loader all the time…right? So, let's offer some gas money to our drivers or join the students already using public transportation!

The GRT bus routes are well used by University of Waterloo students, and why wouldn't they be? WatCards double as a bus pass (among other things), and using it is as easy as presenting it to the bus driver as you get on. Don't feel comfortable climbing on a bus alone for the first time? Either push past that knot of awkwardness in your gut or find a bus buddy – maybe it'll be that new friend of yours that you haven't seen since the first day of OCC anyway!

Bus buddy or not, the only way to get used to a new bus system is to use it. Sure, there may be the odd time where you'll be preoccupied texting a fellow 1A engineering student about an assignment and get on the wrong bus, but don't panic! Once you realize the error, either get off at the next stop or make your way towards the (usually) friendly and helpful bus driver. They should be able to give you a better idea of what bus you need to take in order to get where you need to be.

The best way to avoid bus mix ups (which make great embarrassing stories to tell friends later) is to plan out your route ahead of time and be aware of where bus stops are located, along with the approximated time that it will arrive there. You should be able to pick up route specific pamphlets or a map from information centres both on and off campus, but the GRT website (www.grt.ca) is just as informative.

If you're at a bus stop without a clue as to when a bus will show up next, simply use a cell phone and text the four-digit code on the bottom of the bus stop sign to the number 57555. You will receive a reply with the bus number and times of the next three buses coming to your stop.

Finally, DONs are there to answer your questions – transportation difficulties included!

A Warm Welcome from the President

LEAH ALLEN
PRESIDENT

Hey Everyone,

It is great to see everyone back on campus and also to see a whole bunch of new faces around. If you are just starting first year, welcome to the campus. I want to give you some basic information about the Engineering Society simply due to the sheer volume of new students picking up this paper for the first time.

First of all, the Engineering Society exists to provide the engineering undergraduate students with three main things: representation, services and events. The EngSoc executive makes representing the students opinion our top priority because it is important that our students voices are heard on academic, social, and general university matters. We provide many services to our students throughout the term including (but definitely not limited to) our exam bank, resume critiques, and various workshops. In terms of events, we host over 50 events per term, from scavenger hunts, comedian shows, talent shows, frosh mentoring events, etc. We do all of this through our 5 executives, 4 commissioners and countless directors.

Now let's get into my update on President business...

Are you a first-year engineering student? Did you receive a black frosh kit during frosh week? Did that black bag contain a black book? If you answered yes to all of the questions except for the last one, head on down to CPH 1327 to pick up a free copy of "THE BOOK" that should have been in your frosh kit. The book contains a TON of useful information which will help you get through your first year of classes.

Have you ever been working late on a week night at the school and wished that you could get a really cheap cup of coffee without walking to the plaza? Well I have news for you! The C&D will now be open until 10 PM Monday through Thursday. Come on down and enjoy a nice cup of coffee with perhaps a little treat on the side.

A little more than a week ago now, myself and the rest of the EngSoc executive headed to Toronto to take part in the ESSCO PM conference. This conference is geared towards other Engineering Society executive all across Ontario, so it was a great opportunity for us to learn what other schools are doing and what we can be improving with our Society. With that being said, if there is something about the student experience that you think can be improved please do not hesitate to contact me to discuss it. The EngSoc executives are planning to meet with the Dean a couple times this term, meaning we can always mention things that can be done to improve the student experience during those meetings. As well, the Dean will be coming to our 3rd EngSoc meeting of the term on October 17th at 5:30 PM, so feel free to come out and ask some questions.

That's all I have for you right now. As always feel free to contact me with any questions and/or concerns. (president.a@engsoc.uwaterloo.ca).

COVIES AND BUDGETS AND DOCS, OH MY!

DAVID BIRNBAUM
VP FINANCE

Hello everyone!

My name is David Birnbaum, and in case you didn't read above, I am the Vice President of Finance for the Engineering Society. There will be a lot going on this term, so I hope you are all as excited as I am for it.

Documents: For those of you who don't know, our Society is in the process of improving our governing documents. I will be hosting a forum on Thursday September 27th to discuss all of the changes that have been made to the documents throughout this process. I hope that you all come out to this meeting, as we really want to get as much student feedback as possible. If you have any questions about that, please email me at vpfinance.a@engsoc.uwaterloo.ca.

Budget: First and foremost is the budget. Budget proposals were due on Friday September 21st, and I will be bringing my proposed budget to council on Wednesday October 3rd. Please review the budget and come to the Engineering Society meeting if you have any concerns or would like to discuss it more.

Coveralls: Also on Wednesday October 3rd is COVERALL DAY!!! I know that everyone reading this article is super excited about coveralls, and you should be. This coverall day we are offering an amazing deal of $75 for a pair of coveralls AND SEVEN PATCHES!!! That is a savings of $20! Be sure to come to CPH Foyer between 11:30AM and 1:30PM on that Wednesday for the great deal. Also, everyone should be wearing their covies that day as we will be giving away cookies to everyone in coveralls and will be having patch draws!

Patches: On the patch front, please remember that this term we are starting a directorship appreciation patch program, and every director this term will be getting patches! If you are interested in ordering patches of your previous directorship, you can email me and we will be able to get everything figured out for that.

Engineering Capital Improvements Fund: ECIF is now accepting proposals for what our over $8000 this term should go to. We are looking for any ideas that you think will improve engineering student life at the University of Waterloo. If you have any ideas please fill out the form, or send me an email! Also, I will be doing class visits later in the term to gather feedback from you all on what you would like to see.

Sponsorship: The sponsorship committee is up, and soon to be running. Congratulations to the six members that got elected to the committee at the first engineering society meeting. We will be sending out a call for sponsorship requests soon, and will be proposing our allocations at the fourth Engineering Society Meeting.

I hope that wasn't too long for all of you, and that you all come and check out all the great new novelties items.

As always, if you have any questions or comments just send me a quick email; vpfinance.a@engsoc.uwaterloo.ca!

Fall 2012 Budget Requests and Proposals

Directorship	Asked	Proposed
Estimated Income		
Photocopies		$1,000.00
Student Fees		$55,126.40
Total Income	**$56,126.40**	**$56,126.40**
Fixed Costs		
Bank Charges, Payroll, Utilities, Office		$21,885.00
ECIF (15%)		$8,268.96
Sponsorship (15%)		$8,268.96
Contingency (4%)		$2,205.06
Total Fixed Costs	**$40,627.98**	**$40,627.98**
Expenses		
Exec		$2,000.00
President		$1,000.00
VP Finance		$200.00
VP Education		$100.00
VP External		$100.00
VP Internal		$100.00
Total Expenses	**$3,500.00**	**$3,500.00**
Directorships		
Prez		
Historian	$70.00	$70.00
CRO	$389.00	$389.00
Speaker	$2,000.00	$2,000.00
Prez Subtotal	**$2,459.00**	**$2,459.00**
External		
Charities	$150.00	$150.00
Community Outreach	$155.00	$155.00
Engineering Ambassador Program	$500.00	$50.00
Environmental	$140.00	$60.00
Santa Clause Parade	$562.95	$562.95
UAE Outreach	$300.00	$200.00
WIE	$500.00	$500.00
WEC	$1,542.00	$1,542.00
External Subtotal	**$3,849.95**	**$3,219.95**
Operations		
Course Critiques	$200.70	$0.70
Mental Health Awareness	$128.20	$128.20
POETS Managers	$700.00	$700.00
Remembrance Day	$25.00	$25.00
Resume Critiques	$350.00	$350.00
Welcome to the Real World	$200.00	$100.00
Cooking Workshop	$260.00	$260.00
Sushi Workshop(2 of them)	$506.50	$506.50
Crossfit	$30.00	$30.00
Operations Subtotal	**$2,400.40**	**$2,100.40**
Internal		
Archineering	$300.00	$300.00
Arts	$105.00	$80.00
Athletics	$277.75	$277.75
Cardboard Boat Racing	$333.40	$289.40
Crossword Competition	$25.00	$25.00
Eng Play	$634.95	$634.95
Exchange	$47.50	$47.50
Frosh Mentoring	$306.75	$306.75
Genius Bowl	$432.00	$382.00
Jazz Band	$1,455.00	$455.00
Music	$660.00	$260.00
P**5	$1,500.00	$850.00
Running Club	$50.00	$50.00
Scunt	$412.40	$412.40
Semi Formal	$0.00	$0.00
TalEng	$100.00	$100.00
TSN - EOT Video	$240.00	$240.00
Year Spirit 2013	$200.00	$200.00
Year Spirit 2014	$325.70	$325.70
Year Spirit 2015	$300.00	$300.00
Year Spirit 2016	$182.00	$182.00
Year Spirit 2017	$250.00	$250.00
Internal Subtotal	**$8,137.45**	**$5,968.45**
Directorships Total	**$16,846.80**	**$13,747.80**
Net	**-$4,848.38**	**-$1,749.38**

Events and More Events

ANGELA STEWART
VP OPERATIONS

Hello beautiful people.

Feel like there's something missing in the rush between lectures, lab sessions, and homework parties? The Engineering Society is here to provide academic and professional support along with social, athletic, and cultural events. Check out what's going on in the next two weeks!

Are you in first year and have questions about school, co-op, and UW life? Are you an upper year who has years of knowledge and wisdom to impart? If yes, come out to the Frosh Mentoring Goose Chase. Exploring campus and connecting with upper years starts in POETS at 7:45PM on September 27th.

Join us when EngSoc goes paint-balling at the Flag Raiders outdoor complex in Kitchener on September 29th from 12:00-4:00PM. Tickets are $30 and will cover your entrance fee, equipment rental, transportation, and 100 paint balls. Spots are limited so hurry into the EngSoc Office (CPH 1327) to get your tickets today!

CrossFit is the strength and conditioning program used by elite athletes worldwide. Meet at the POETS patio for an amazing outdoor workout at 2:00PM on September 30th. Stick around after for a nutrition workshop in the POETS lounge at 3:00PM. Join us to learn how to properly fuel your body for peak academic and athletic performance.

Lace up those sneakers, because the UW Engineering Running Club back! Meet at POETS every Monday and Thursday at 7:00PM.

Make up for the caloric deficit at the super popular sushi workshop! Learn a new skill, meet new people, and eat everything you make! This always fills up quick, so look out for registration on the EngSoc Orifice door. Miso excited!

You can check out these events (and many more!) on the EngSoc Google calendar at engoc.uwaterloo.ca. Want to stay on top of opportunities? Sign up for the mailing list at bit.ly/mailengsocA and stay in the loop!

ESSCO, CFES, and More!

MICHAEL SELISKE
LISA BELBECK
VP EXTERNALS

September is one of the busiest times for a VP External when it comes to external matters, such as the Engineering Student Society Council of Ontario (ESSCO). On the weekend of September 15th, all of the executives attended the ESSCO Presidents Meeting (PM). This was a great conference with a lot of good discussion! One session talked about succession training, and made sure that all executives knew that it is important to mentor and push younger students into leadership positions. There was also a discussion about the relationship between the Professional Engineers Ontario (PEO), the Ontario Society of Professional Engineers (OSPE), and the undergraduate engineering students across Ontario. On the weekend of September 22nd, I will be attending the Canadian Federation of Engineering Students (CFES) PM, where all VP-Externals across Canada and will come together to discuss issues affecting students, and vote on things such as the CFES budget.

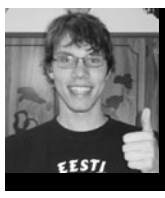
The other side of the external portfolio, community outreach, is getting busier as the term goes on! The first charity event was the combination of Free Float day and a meet and greet with EngSoc! That was a successful event and raised some money in donations. The Women In Engineering (WiE) directors are being awesome, and have started the WiE mentorship program, that has already had two events including a very successful BBQ. The BIG charity event of this term will be MOVEMBER. Movember is MOAWESOME! Boys, grow your 'staches, and ladies, support your brothers by rocking a 'stache. I am advertising this already (in September) because I want us to win the Best Campus award by raising the most money. Book Thursday, November 1st, 7:00-10:00PM, on your calendars for a Movember Launch party in POETS!

We always have Engineering Society representation at the Kitchener/Waterloo Santa Claus Parade, with a float and friendly faces handing out candies in coveralls and their hardhats! This is a fun event, and the community gets to see the tool! If you are interested in helping make the parade float, please email me, and I will forward your names to the directors.

Lastly, I am a big fan of charitable and community events, from community races, to helping plant trees! If you have any awesome ideas, I would love to hear them and we can make them happen. Also, check out Engineering a Difference and make a difference in your community. I hope you had a fantastic first two weeks of school and you will be hearing from me soon.

Cheers,
Lisa Belbeck

POETS Hosts Open Mic



MICHAEL LAANVERE
2B MECHANICAL

On Friday, September 21st, before Pub-Crawl, there was an open mic in POETS from 3:30-6:00PM. The open mic was run by the EngSoc Music Directors Farmin, Jenna, and Jacob. Open mic is an event where a bunch of artists from engineering and other faculties drop in and play music. It's a really fun time to hang out with your friends, or meet new ones, and listen to some sweet music.

Friday's open mic was a complete success. There was a great turn-out for audience members, as well as performers. There were lots of artists from engineering, as well as some from other faculties, who played a variety of music, from pop to rock to country. Performances were well done; there was a great mix of covers, instrumentals, and even some banjo-playing to round it out. So, if you want to hear some awesome music just drop by POETS during the next open mic! You don't have to stay long, just drop by for a bit and listen to some great music (and get some P**5 points for your class while you're at it!). The next EngSoc music event is the Coffee House on October 11th, venue to be determined. After that, Band Wars will be taking place at a later date. For any questions about open mic, any EngSoc music event, or to sign-up as an artist for an event (like the Coffee House on Oct 11th!) email Farmin at *f2zaman@uwaterloo.ca.*

Co-op, WatPD, and Jobmine Updates

DEREK THOMPSON
VP EDUCATION

It is your friendly neighbourhood VP Education checking in! In this bi-weekly edition of the VP Ed report, I'm going to be presenting some information to you, the students, and subsequently asking for some feedback. Let us begin.

First, the university is invested in having PDF resumes usable in Jobmine. The last required piece of hardware is not yet on campus but much of the software is ready to be implemented once the hardware is available. This investment pretty much ensures that PDF resumes are a reality in the near future. This update has been a long time coming and it is exciting to see the major HTML issues of Jobmine ending very soon.

Second, there are new WatPD electives that will be available for those on co-op in the winter term! When enrollment time comes around, keep an eye out for a PD course on intercultural issues and a course on professionalism and ethics in the workplace.

Finally, there are some changes in the university's ability to endorse co-op jobs outside of the country. For those countries with a Foreign Affairs and International Trade Canada (DFAIT) level of 3, students must present a strong and valid case to the university in order for the university to provide credit for the co-op job. For those countries with a DFAIT level of 4, the university will not endorse a co-op job within said country. This change mainly affects international students. What I need feedback on is the kinds of support that might be provided to students from these countries who would have otherwise gone home for their first or later co-op position. If you have further questions, come find me, Derek Thompson (look for the red stripe), in POETS (CPH 1337) or the Engineering Society Office (CPH 1327) and I will be happy to field the questions asked of me.

Thanks for reading this edition of the VP Ed report. Until next time, work hard, play hard!

Point Vs. Counterpoint

The Proposed FedS Building on Grad House Green

POINT

KATE HEYMANS
3B CHEMICAL

It has to be recognised that as our campus and our student population grows, we are going to need more student space and more study space. FedS has announced potential plans for a new building to be built on Gradhouse Green in the corner nearest to RCH and Physics. This new building could meet the needs of future students for space for services, food, study rooms and club space. Some would argue that we can simply gain this new space by using existing buildings more efficiently, but the fact is that we do not have a history of using the buildings on this campus to their fullest extent. If future generations of students are going to have enough room to run their clubs, study, eat and worship, then we need a new building.

The location of the new building is also important. The common complaint regarding the existing Student Life Center (SLC) by engineering students is that it's "too far". It probably takes a full ten minutes to walk from most engineering buildings to the SLC, and as the campus expands in the direction of E5 and E6, it will take even longer. Having a new student building closer to us will not only make it easier to access FedS services, it will also encourage more engineering students to mix and mingle with the rest of our wonderful student population. The expansion of the campus makes it difficult for our student body to feel unified; this new building may help fix that.

Although a new building always represents a significant cost, the FedS report outlines that the cost of the new building will be covered by the services using it and even private funding is being researched which should help reduce the cost to students even further. It's these new generations of students who will be paying for the new building anyway so there is no reason current students should be worried. It is important to remember that the decisions that we make will probably only minimally affect us, but they will affect future generations.

The businesses and services inside the building have also been picked for the benefit of all students. This is a building for students and therefore it is important to take into account our very small wallets. FedS seems to have done so and the report implies that some of the space will be occupied by cheaper student necessities such as a dollar store and affordable food outlets.

FedS will have to answer questions as to how some of the services and offices which are located in the SLC at the moment will be redistributed between the new building and the SLC. Part of the report published by Feds mentioned that some of the space in the new building will be used for offices and clubs currently located in the SLC. It is also important that the vacated space in the SLC be used effectively. Although the hub of student life will be split in two separate parts geographically, it shouldn't prevent FedS from operating effectively and reaching out to all students on campus equally.

As this building will be at the core of the campus, construction traffic will undoubtedly be an issue for students. However, this is a price to pay for a new building and, as the mostly recently opened Quantum Nano Center showed, even five years of constant construction at the core of the campus can be survived (and lead to an amazing building). In the presence of the new beautiful and technologically-advanced buildings on campus, the SLC is beginning to look old despite its refurbishments. A new, more naturally-lit, comfortable, and environmentally-friendly building would represent our student population the way we want to be. If the construction of the building is well-timed and well-planned, it will minimise the disruption of traffic and provide us with a wonderful new building.

The Feds report outlines the importance of maintaining the limited amount of green space that we have left on campus. It is true that Gradhouse Green serves as a wonderful space to casually meet friends, to hold orientation week events and even for studying. It is one of the last remaining green spaces on campus; however, the plans for the new building seem to promise that it will add a new green space on campus by adding an accessible rooftop garden. The new building also promises plenty of social spaces which, if well-planned, could become great ways for students to gather casually or meet new people.

Overall, the news of a new student building on campus is great. Many questions still remain to be answered but they will be answered with the input of students. It will help connect with more students. Although it's difficult to please everyone, if the current recommendations for the new building are adhered to, the majority of the student population should be able to benefit from the majority of the building. Hopefully, at the time of the referendum in the Winter term, all students will be able to form an educated and positive opinion of the new building.

COUNTERPOINT

SPENCER GOOD
2B MECHANICAL

In a recent document released in July of this year by the Federation of Students, a new student-run building has been proposed for construction on the Grad House green. The main concerns expressed by students in an online survey are related to the inconvenience presented by long term construction at the centre of south campus, the removal of vital green space, and the impact on the Grad House. On top of this, engineering students should be particularly concerned because this building will be constructed in, what is largely, our corner of campus.

In response to concerns of diminishing green space in south campus, the report merely cited that students want to preserve green space and provided no solution as to how this could be done. Firstly, the Grad House green is some of the only green space located near the 'engineering corner' of campus. Largely dominated by utilitarian, ugly, brick buildings, the green space near the Grad House is one of the few serene spaces engineers can go to relax and take a break from the stress of studying. Also, this green space is by no means expansive. Covering a space that is approximately forty metres by forty metres, Grad House green is a compact contrast from the bustle that is south campus. Constructing a building of any meaningful size on this plot of land without making the green space negligible would be impossible. This is especially true for a four story building containing a cafeteria, a study area, club rooms, and offices. If this building is constructed there will be no more green space in south campus. This is unhealthy and unfair to all the students of the University of Waterloo, but especially the engineering students, whom for the most part already put up with a dank, scholarly environment.

The proposal also provides a serious threat to the Grad House, one of the few buildings on campus with a storied history. The building was at one point a farmhouse located in south campus, and now operates as a private club mainly for graduate students with regular, live entertainment. Although it may be possible to prevent demolition of the Grad House, the atmosphere surrounding the property will be destroyed. Instead of looking out to trees and green space, members of the Grad House (who, for the record, are some of the University's most distinguished students) will instead have the pleasure of looking at the new FedS building. The destruction of the green space enjoyed by graduate students is made even more painful by the fact that most of the services and clubs provided in the new building will be geared towards undergraduate students, and will provide graduates with little benefit.

One of the largest worries expressed by students was an extended period of construction that impedes movement into the core of campus from the south, or vice-versa. This concern is well warranted. Building a four-story building in the heart of south campus is going to take at least a year. An entire school year will be dominated by construction-related traffic in the form of dump trucks, bulldozers and equipment. Moreover, there will be a lot of construction-related noise that will surely be heard from South Campus Hall, J. R. Coutts Hall, Douglas Wright Engineering, Dana Porter, and the Tatham Center. Also, the Grad House will surely have to be closed for an extended period of time as construction and movement will become much more difficult as students will likely be corralled through narrow pathways and scaffolding during the peak of construction. Delays, inconveniences, and general distraction during classes and studying will become a major problem.

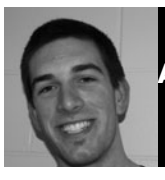
One of the most relevant issues to all Waterloo students is how the costs of what will surely be a financial behemoth will be passed on to tuition. Any predictions on how this will affect how much it will cost students to attend the University is purely speculation. However, it will surely be a multi-million dollar project that will likely get passed on to the students. The real question a current student has to ask, are there not better things for the school to spend money on, then what will essentially be a duplicate of the Student Life Centre complex? This is an especially valid question for those students in engineering because it is largely our corner of campus that is getting ripped apart to construct this building.

The first floor of the building will essentially be a replica of the Student Life Centre, complete with food kiosks, social seating and an information centre. The second floor will consist largely of FedS offices and what are only described as 'services'. The third floor will be for 'study', while the fourth floor will consist of space for clubs. None of these attributes, other then those on the first floor, will play a significant role in the lives of engineers at this university. To be frank, engineers have a tendency to participate in engineering-related activities, clubs, and events. Most of these events lie within the confines of our engineering buildings and in our corner of campus. As for study areas, complaints of a lack of study space at our school are largely unwarranted. Unbeknownst to most students, most classrooms inside the engineering buildings remain largely vacant during exam times and provide ideal areas for quiet or group study. As far as 'social seating' is concerned, all this building would do is take away a serene social setting and replace it with a loud, high volume indoor environment. Why should we give up one of the only nice areas of the engineering corner of campus for a building that will do very little for us?

The reality is that the green space surrounding the new FedS building is one of the few areas in a convenient location of campus that remains undeveloped. The threat of development in this location will remain present even if the proposed Federation of Students building is never built. What we must ask ourselves, especially as engineers, is: why would we support a building that destroys the one area of serenity in our corner of campus, threatens the storied Grad House, would provide at least a year's worth of construction-related headaches, and provide very little to help the interests of engineering? I sincerely hope the university takes into account the issues I have raised and subsequently rejects this proposal; not only will this building destroy the Grad House green, but it will also take away the little bit of soul and character left in what is largely the engineering corner of campus.

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

Another Hockey Season in the Balance



ANDREW MCMAHON
2B ENVIRONMENTAL

The previous Collective Bargaining Agreement (CBA) between the National Hockey League (NHL) and the National Hockey League Players' Association (NHLPA) expired Saturday September 15 at 11:59pm eastern standard time. NHLPA executive director Donald Fehr and NHL commissioner Gary Bettman were unable to agree to terms in their ongoing negotiations to form a new CBA.

The players receive a defined percentage of NHL hockey related revenues, and that percentage is drawing the most attention during negotiations. After the 2005 NHL lockout the player's share began at 54% before rising to 57% in 2011, while the NFL reduced players' shares to 46-48% in their new bargaining agreement last year, and the NBA owners and players receive approximately equal share of revenues. It would appear the NHL players' share is rather high in comparison but NHLPA members will argue that the other leagues define sports related revenue differently.

The Collective Bargaining Agreement (CBA) being proposed by the NHLPA is for just 3 years while the agreement proposed by the NHL is for six years. Both time periods seem to be irrelevant due to recent history, which suggests that the expiry of each CBA will result in another work stoppage.

The most discussed issue has been the players' share of revenues but there are a number of other issues under review during current CBA negotiations. Some of the issues proposed by the NHLPA include extra draft picks for struggling teams, and putting a cap on the amount that a team can spend on off-ice expenses. The owners also have a number of issues they would like to change including increasing the number of years a player has to be in the league before qualifying for unrestricted free agency, limiting the number of years a player can be signed for, increasing the number of years players must be restricted to entry level contracts, eliminating salary arbitration, and introducing non-guaranteed contracts as in the National Football League (NFL) where a player is not guaranteed contract salaries when cut from a team.

In light of the recent shortened NBA season, many supporters are optimistic the NHL season will not be completely lost. However, those same optimists took another blow this past Thursday, when the league announced they would be cancelling all preseason games through September 30th, and the Kraft Hockeyville preseason game scheduled October 3rd in Belleville, ON has been postponed to 2013. The fate of special events like the much anticipated Winter Classic on January 2nd, 2013 remains uncertain.

As a result of the lockout many players are currently looking to play in Europe. Some big name players who have already signed deals to play abroad include Jason Spezza, Jaromir Jagr, Pavel Datzyuk, Tyler Seguin, Anze Kopitar, and Alex Ovechkin.

Once again our hopes for the upcoming hockey season rest in the hands of lawyers negotiating behind closed doors. It is unfortunate that the NHL along with the other North American professional sports leagues seem to be consistently plagued by the threat of a lockout.

Lance Armstrong Stripped of all Tour de France Titles

SARAH YOUNG
1A SYSTEMS DESIGN

Lance Armstrong, the United States-born cyclist who survived cancer, has decided to end the battle to fight for his innocence against drug charges. Armstrong has been accused of using banned substances, including blood booster EPO, steroids, blood transfusions, and actively participating in and leading systematic doping on his Tour de France winning teams. As a result, he will be stripped of all Tour de France titles and banned from competitive cycling for life.

In 1996, Armstrong was diagnosed with testicular cancer; however, he had managed to ride with it for most of his career. His condition spread to his abdomen and brain, and eventually, he discovered he had large tumours forming in his lungs. The chances of resuming his cycling career appeared to be bleak and his chance of survival was between 20-50%. His career was put on hold as his fight for survival began. Lance Armstrong was not one to give up; he fought hard during intensive chemotherapy and in the end, he succeeded. One year later, in 1997, he celebrated his life with his return to cycling. He never gave up hope and successfully fought the odds of survival, and continued his strenuously active career.

Armstrong won seven Tour de France titles after fighting his battle with cancer. A man who fought so hard then is now going to throw it all away, and not fight the charges held against him. Many would say that it's because he is guilty, but why would a man do illegal substances to throw it all away? After fighting so hard to beat the odds and coming back to win many titles, why would he participate in using drugs to have it all taken away again?

All of his titles and records stand to be erased as a result of his decision to give up his fight against the U.S. Anti-Doping Agency, however, he claims he is innocent. "I am innocent. There comes a point in every man's life when he has to say 'enough is enough,' for me that time is now. Over the past 3 years, I have been subjected to a two-year federal criminal unconstitutional witch hunt. I will no longer address this issue, regardless of the circumstances." With many accusations held against him and team members willing to testify against him, it does not look good for the record holder who fought all odds to survive cancer.

A Highly Variable Crisp Recipe

CAITLIN MCLAREN
1A CHEMICAL

A HIGHLY VARIABLE [X] RECIPE

So, autumn is quickly approaching. The weather is getting cold and windy, and there is nothing better than some hot food, preferably dessert. Fall is about muffins, pumpkin pie, apple - what are you dreaming about? It's the beginning of term! You have calculus homework! You have a lab tonight! You don't have time to cook!

Whoa there, calm down. Take a deep breath. Take several. Here is a secret. Cooking is easy! It doesn't take long. You can change recipes so they suit your cupboard and schedule. This is a variable apple crisp recipe that will warm you up and keep you going. Most of these ingredients can be substituted for whatever you have. It's your crisp so mess around all you want.

First, you need a fruit base. Apples with raisins works best, but you can use pears, plums, peaches, blackberries, you name it. Knock yourself out. Use an unholy combination of kiwis, bananas, and durians. If your fruit base is very liquidy, drain it as much as possible, and mix in some oats or, better yet, tapioca. The softer the base, the more topping you should use. Chop up your fruit and put it in a glass pan. Heck, use a frying pan or a bowl. Use what you have.

For the topping, you need four ingredients:

Oats. This is the most important ingredient. It helps to divide the oats into four parts: four cupfulls, four litres. The kind of oat doesn't matter- you can even open those little packages of instant oatmeal.

Butter. You will need about half as much butter as oats, but it depends on the brand. Melt it. The third ingredient is the one you have been eagerly anticipating, sugar! Brown sugar works better than white sugar. If you only have white sugar, here is a secret:

White sugar = brown sugar - molasses.

Rearrange the equation:

White sugar + molasses = brown sugar.

You will need two to three parts sugar for every four parts oats. Add more if you like, but if you add too much the topping will burn.

Finally, some flour improves the texture if you add a bit. Mix those four ingredients together. Using your hands works best. Stop complaining that your hands will get dirty- that's the best part.

When you finish mixing the crust, it should stick together, but still be crumbly. If it doesn't stick together, add more butter. If it sticks too much, add more oats. If you taste it and it isn't sweet enough for your liking... figure it out yourself.

When the topping is done, sprinkle it on top of the fruit base. You will note that there are no actual measurements in this recipe. Of course not! It depends on how you like your crisp, and how much you want to make. Thirty-two square feet is a good amount to start with.

When the crisp is in the pan, put it in the oven: 350 Celsius is a good temperature. How long? This is a crisp. Bake till it lives up till its name. It does take a while to cool down, so make it in advance, eat it with ice cream, or put it quickly into bowls so it cools faster.

Crisp is good with ice cream, pudding, whipped cream, fried snails, and everything else.

Enjoy your crisp and- what time is it? Hurry up, you have class in five minutes!

Top Things You Didn't Know About the QNC

WADE WILSON & EDWARD BLAKE
3Z HANDSOMENESS

TOPZ (WITH A Z)

Friday September 21st, 2012 was a grand day for not only the University of Waterloo but also the region of Waterloo with the long awaited ~~visit of Dr. Stephen Hawking to campus~~ opening of the Mike and Ophelia Lazaridis Quantum-Nano Centre (QNC). The $160 million building, that will be used to create a vast array of really cool-sounding and hopefully non-cancerous technologies, was opened with spectacular glory. However, there are many details about the QNC which are not common knowledge, and it is our duty and privilege to report here to you our list of top things you probably have not heard about the Quantum-Nano Center.

Why exactly it took so long to build: Many people are wondering why this building, originally slated for opening in time for use by the Nanotechnology Engineering class of 2010, was so delayed. The primary reason was difficulties in construction given the nature of the building and facilities it would house. For example, when designing aspects of the building, the architects could not be simultaneously aware of how quickly it would take to build and where things would go. Furthermore, construction workers were not allowed to observe what they were working on, lest its form collapse instantaneously. Lastly, the initial plan which required years to design was to take a top-down approach to construction and build a much larger facility which would be successively scaled down. It was later decided that this was ridiculous and bottom-up approach was opted for instead.

It *still* isn't done yet: Many classes, graduate students and researchers have been promised the QNC for years, and at long last it is finally ~~complete~~ almost complete. Despite the fact that the building itself has been erected the lab spaces are currently more barren than your sister. Yes, while everything was pretty enough for the ribbon-cutting, what most people didn't realize is how much of it was smoke-and-mirrors. In fact the most advanced piece of technology in the QNC on its opening was Dr. Stephen Hawking. For example, the yellow rooms for fabrication were actually just behind tinted glass, and the physics written on the white boards which line the corridors was mostly just gibberish transcribed from Nanotechnology Engineering students' attempts at their Quantum Mechanics assignments. One whiteboard, however, was actually adorned with a famously unsolved problem in quantum physics and left overnight; the next morning the heads of the IQC were stunned to find that it had been solved despite the fact that only custodial staff had access to the building. Though, upon closer inspection it was discovered to be, in fact, a crudely-drawn penis.

Noise-Proofing: Many of you have probably heard that special care was taken into the construction of the QNC to ensure that the highly-sensitive and persnickety experiments could detect actual signals and not be affected by a grad student dropping the bass from his seafood lunch and producing miniscule vibrations in the structure. However, few know the extent of the actual steps taken. At the suggestion of contractors from S.H.I.E.L.D., vibrational interference was minimized by coating the entire building in a vibranium alloy imported from Wakanda. Electromagnetic radiation is another potential source of error for many precise quantum experiments. To minimize this issue, very little steel is used in the building and rebar reinforcement is made from fiberglass to prevent electromagnetic induction effects. Additionally, the walls are lined with PowerBalance ion wristbands containing negative ions from volcanic ash. Builders had to visit 743 mall kiosks to supply the entire building, a contributor to the delay in opening the center. Finally, the building also has protection for and from its most valuable resource: ideas. Tachyon-emitters have been designed to interfere with the psionic abilities of would-be intruders and sources of interference.

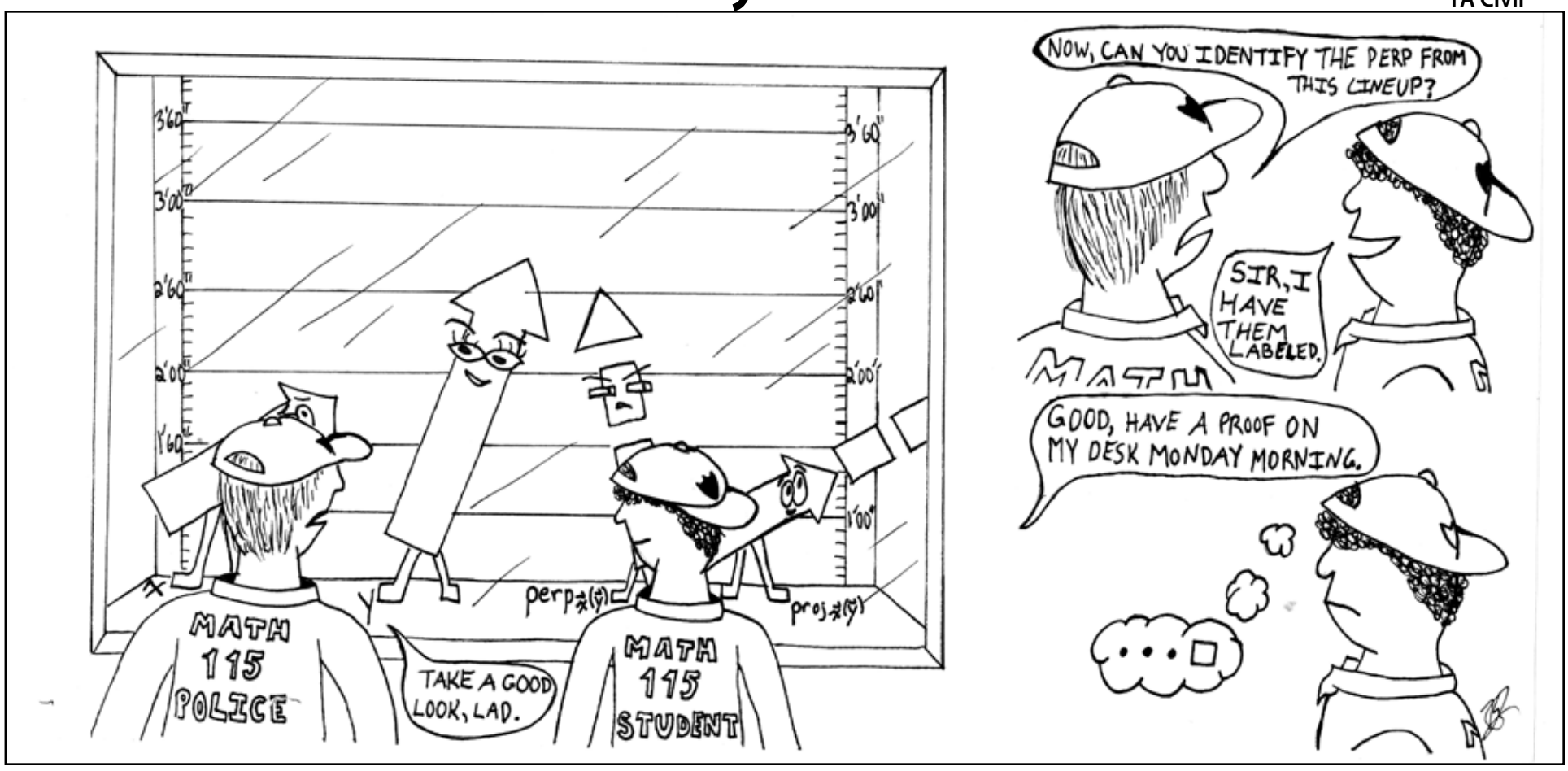
The Longevity of the Building: The QNC is designed to facilitate the cutting edge of research, but the cutting edge of the future is hard to predict and we want to remain relevant. To ensure that the facility will be useful for many years to come, great care has been taken to ensure the versatility and long lifespan of the QNC. Many labs are actually not at all structurally supportive, such that they can be totally demolished and renovated to accommodate for the needs of the future and catastrophic accidents of the present. To ensure that no other building could be built to rival its majesty the Sultan of Engineering ordered the hands of all the workers who built the center to be cut off. To take a step further, the researchers at WIN are currently working on a grey-goo of nanobots that will be sent out to consume competing facilities, ensuring the QNC's supremacy.

The Generous Contributions of Mike and Ophelia Lazaridis: There is a reason that Mike and Ophelia's names appear on the building: they have personally donated the enormously generous sum of $100 million to this project about which they care deeply. What you might not know, however, is that Mike has been so personally invested in the QNC project that many ideas of his were used, though some have drawn criticism. Concerns have been raised over the operating systems and small screen-sizes of the equipment within the facility being suboptimal and that many functions would run much more smoothly through the use of humanoid robotic aids (android devices). Also, they find that the app world leaves much to be desired.

So now that you've heard about the inside-story, be sure to take a tour of the fabulous QNC on its public open house Saturday, September 29th and keep in mind all of the little details which are behind this exciting new step for Waterloo. To quote 3rd year Nano student Madailine Libby, "Think small, but dream big."

Too Geeky for Humour

By Kyla Rodgers
1A Civil



Pixar's For the Birds

JOSHUA KALPIN
2A SOFTWARE

THE SHORT SHORT REVIEW

Greetings, readers, and welcome to the Short Short Review, where I'll attempt to review a short film or story in a really short number of words. This week, I'll be reviewing Pixar's *For the Birds* in exactly 327 words as the film is 3 minutes and 27 seconds long.

For the Birds was originally released in 2000 alongside *Monsters, Inc.* and won the Academy Award for Best Short Film in 2001. The film tells the story of a number of small birds, a big bird and a wire. Describing the story any more really spoils it so I'm just going to talk about the awesomeness of these birds.

The little birds resemble little feathery balls and make the most adorable squeaking sound. Both the sound and the animation give off a cutesy but irritating vibe from these critters. The big bird looks big and dopey and sounds like a car horn. The electrical wire is well… a wire. Now onto relevant review stuff!

The animation in the film is fantastic for the time period. You can see every single feather individually moving on the birds and the beak animation is amazing. It's easy to see why they paired this film with *Monsters, Inc.* because many of the same animation details that are used in *For the Birds* appear in *Monsters, Inc.* except with fur instead of feathers.

On the other side of the presentation, audio, the film shines. The soundtrack composed by the band Riders in the Sky is comical, but yet at the same time sets the mood for the simple road and electrical wire setting of the film. As mentioned previously, the sound effects are also outstanding. From the squeaks, to the wind, to the squawks, the sound editing is top notch.

Overall, I'd give the film four and a half feathers out of five, because the other half of the feather fell off somewhere in the process of writing this short short review.

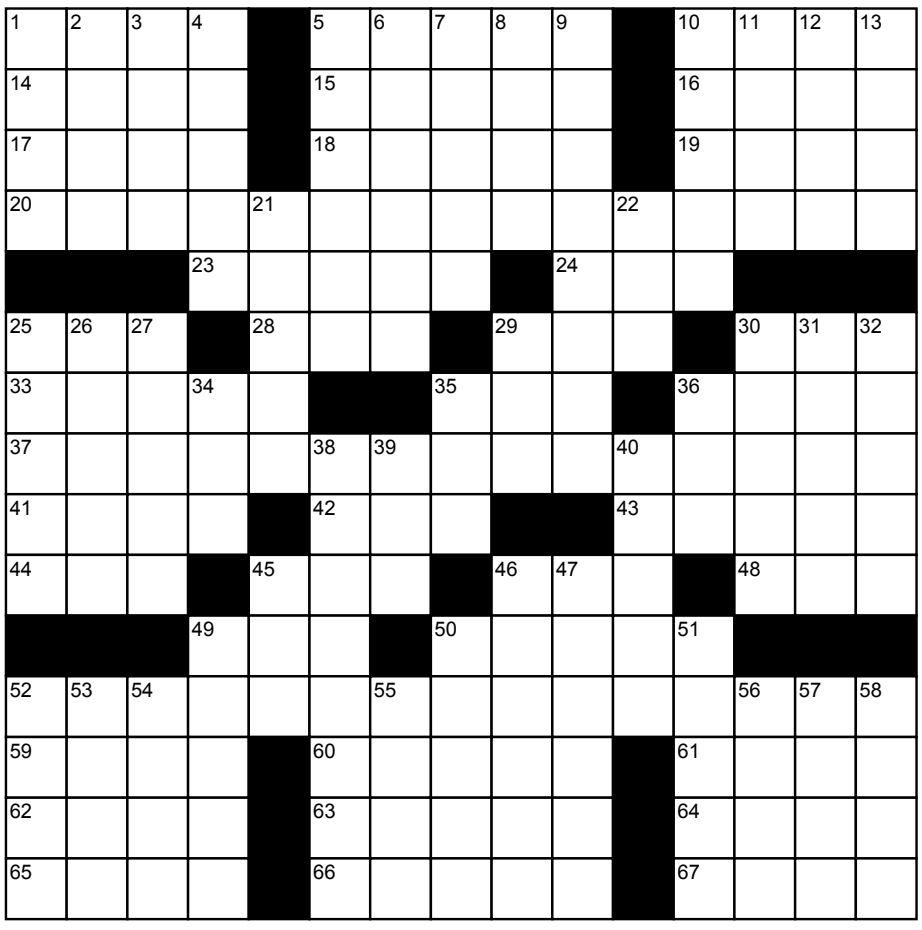
Fin.

The Iron Crossword

Second Week Scramble

STUART LINLEY
3B NANOTECHNOLOGY

Submit your completed crosswords in the EngSoc Office (CPH-1327) before next Wednesday to compete in the bi-weekly crossword competition!



ACROSS
1 Kids
5 Orange type
10 Pollution
14 'Once' follower
15 Glass crystal
16 Arrived
17 Papa partner
18 West African people
19 Pizazz
20 *I'm late!*
23 Tries
24 Part of a bray
25 Castrol, eg.
28 ___ and outs
29 Pierre's refusal
30 Downhill, eg.
33 Grin
35 Broadcast
36 Benefit
37 *Where is it!?*
41 Like good cheddar
42 Cool, like the 90's
43 Type of space
44 Merlot, eg.
45 Like Merlot
46 ___ carte
48 Tam or bowler
49 Pierre's acceptance
50 Got up
52 *OH CRAP!*
59 Good opposer
60 Audible
61 Hawaiian dance
62 Assist
63 Short
64 Like some exams
65 Winter horse vehicle
66 Organic compound
67 Not all

DOWN
1 Antacids
2 October birthstone
3 Text
4 Breaks
5 Country
6 G-men
7 Dracs
8 Sicilian spewer
9 Sheltered cove, eg.
10 Act part
11 African nation
12 Arabian peninsula country
13 Hereditary unit
21 Looter
22 Pearl Jam album
25 Mr. Peterson
26 Reproduction
27 Like streets
29 Zilch
30 U.S. to us
31 China neighbour
32 Argon, eg.
34 Business abbr.
35 Sum
36 Energy unit
38 Cause a rash
39 Aye opposite
40 _____ guard
45 Batman and Robin, eg.
46 Wake up
47 More volume
49 Eyed
50 Stop
51 Sense of right
52 Costs
53 NASCAR track shape
54 Ascend
55 Brews
56 Franc replacer
57 Bash
58 Fable

THE IRON INQUISITION

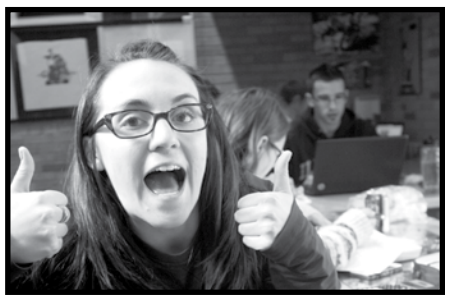
Nicole Jiang and Vincent Zhu, 2A Computer and 1A Chemical

"What would you like for second breakfast?"

"Assuming pancake for first breakfast, then a large bowl of sauerkraut"
MacLean Kuraitis, 1A Electrical

"CHEESE! CHEESE! CHEEEEESE!"
Monica M., Anusha S. and Pinremola O., 1A Civil

"Potatoes, boil'm mash'm stick'm in a stew!"
Suzy Patchett, 2A Nano



"CHOCOLATE OVERDOSE :D"
Liz Celentano, 3B Chemical

"Coffee via an IV line"
Kevin Nause, 2A Computer

"Trixxie Hobbitsies"
Brendan O'Hanlon, 2A Nano