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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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Oktoberfest – it's Wunderbar!

REBECCA CAMERON
4A GEOLOGICAL

Traditional Tapping of the keg at the Oktoberfest Opening Ceremonies

Oktoberfest first began over 200 years ago in Munich as a celebration of a marriage within the royal family of Germany. It began with horse races and dancing, but in 1892 the first beer tents were added to the festival. Oktoberfest is now the largest beer festival in the world with a mind boggling 6.4 million visitors in 2010 alone. But why does Kitchener-Waterloo have the second largest Oktoberfest festival in the world? Well, this is due to the large German population in KW – the Concordia Club (one of KW's many German clubs) had it's own celebrations each year. In 1969 a group of people decided Oktoberfest would be a great way for KW to celebrate it's German heritage and decided to run the very first KW Oktoberfest festival.

These days KW Oktoberfest has grown, and there is a lot more to do than drink beer (if you want to know more about Oktoberfest beer please refer to the Beer Buzz article in this issue). For starters, the biggest Canadian Thanksgiving parade runs on Thanksgiving Day on King Street in Kitchener Waterloo and attracts more than 150,000 people each year. Another popular event is the official tapping of the keg ceremony signifying the start of the festival. There is also an Oktoberfest run, a keg rolling contest, a free pancake breakfast, Rocktoberfest (a large rock concert), and much more.

For those interested in partying, the festhallen are the places to be. Festhallen serve beer and German food, and generally have traditional German dancing and music. Traditional Oktoberfest foods and drinks include schnitzel, Oktoberfest sausages, pretzels, beer nuts, apple strudel, sauerkraut (pickled cabbage), German potato salad, beer, and schnapps. Most festhallen also sell cotton candy, Belgian waffles, candy apples, and other fair food. Some festhallen have midways with archery games, ring toss, etc. Generally most festhallen are huge beer tents connected to a permanent building (some are year-round German clubs) or a large sports auditorium.

Oktoberfest has its very own style of dress as well. Festhallen are usually casual dress, however if you want you can wear traditional German costumes – dirndls for the women (a dirndl is a bodice, blouse, full skirt and apron and can be made from anything from simple fabrics to embroidered silks) and lederhosen for the men (breeches made of leather that fall knee-length or higher). You can buy these costumes online or at stores around KW (local stag shops offer sexier, cheaper versions around Oktoberfest). Another Oktoberfest tradition is felt hats with big feathers and commemorative pins (each year several new pins labelled with the year are introduced). Other accessories include decorative cowbells and small ceramic beer steins hung around the neck. All festhallen have souvenir booths where you can buy Oktoberfest accessories and pins.

This year there were 18 official festhallen, and more are added each year as the festival grows. Which festhallen should you go to? Well that depends what you are looking for – if you want traditional German Oktoberfest (or at least as close as you can get outside of Germany) go to one of the five major German clubs: The Alpine Club, Concordia Club, Hubertushaus, Schwaben Club, or Transylvania Club. These festhallen are guaranteed to offer the traditional music and dancing, and sometimes (if you know where to look) real Oktoberfest beer from Germany (read the Beer Buzz article for more info). If you want Top 40 music and one or two polkas, head to one of the University Nights at Bingeman's, the Aud, and a few other locations in KW. University Night at these festhallen are also a lot cheaper for admission and food (but not beer, it's expensive everywhere).

Above all, it is essential that if you want to go Oktoberfesting next year that you plan early – I bought tickets for Friday, October 14th at Concordia Club back in June, a number of other nights were already sold out at that time! A ticket allows you to enter the festhallen early without having to wait in line outside and guarantees you admission as long as you arrive before a time listed on your ticket. I strongly encourage you to go out Oktoberfesting during your time at UW – it's a ton of fun and is something very unique that KW has to offer! Prost!

Waterloo Professor Looks to Technology to Help Treat Tuberculosis

ANGELO ALAIMO
4N ELECTRICAL

Some say more pictures are taken everyday in today's world than in the first 100 years of photography's invention. That's a lot. Some also say that over 1,000 photos are uploaded to Facebook every second - that's over 30 billion photos uploaded to just one social networking site every year. These numbers show how much the digitizing of a once analog format has propelled its usage astronomically. Taking photographs has never been so easy, so instant, and also, so cheap.

But that's not the purpose of the article. The above is to demonstrate what can happen with technological breakthroughs. In the previous case, we have millions of people sharing more stories through images to their friends and families around the world, but technological breakthroughs can happen anywhere in society, and one place where a difference can really be made is in medical imaging.

Most people have had an X-ray at some point in their life, whether dental or to diagnose another medical condition. In the analog world, large film sheets specially coated with phosphors would be used as a radiation sensitive medium to produce X-ray images. Today, in the digital world, much like the typical visible light digital image, silicon is used to replace film as a medium. It's not an absolutely new technology, but one that could be used to diagnose and treat illnesses around the world easily, instantly, and cheaply. One Waterloo faculty member, Associate Professor Karim S. Karim of the Department of Electrical and Computer Engineering wants to do just that.

Utilizing X-Ray pixel technology developed at the University of Waterloo, Karim sees a world where cheaper X-Ray images are used in the diagnosis of some of the more common illnesses in the third world, and one example is tuberculosis (TB). According to the World Health Organization, TB is a contagious lung disease which is easily spread through the air by infected persons. The WHO estimates over one-third of the world's population is infected with the disease and over 1 million people die every year worldwide due to the illness. TB is very treatable with antibiotics, but it first must be diagnosed and as mentioned, can be diagnosed with the help of a digital X-ray imager; however, Karim says the high cost of digital X-ray imagers is preventing widespread use of this diagnosing method. As digital X-Ray images are a fairly new venture in the world of Medicine and are focused on hospitals which there are relatively few in the world, individual imagers can be very expensive due to the technology involved and low demand.

Karim's vision is to see the creation of tuberculosis clinics in countries where the disease is very proliferate. Instead of having Doctors in hospitals diagnosing the medical condition, many tuberculosis clinics would be set up and would use the X-Ray imagers to easily diagnose patients. As Karim puts it, "If I want an oil change, I could take my car to the dealer, book 3 days in advance and get essentially the same thing at Mr. Lube which can be done in 15 minutes." Doctors are very expensive and can lead to inefficiencies in the system when their time is taken up diagnosing easily detectable infections such a TB. By having trained staff inside of a small clinic, the cost of detection can be reduced allowing a greater throughput for treatment. Karim also mentioned how lower numbers of hospitals in heavily populated countries would make it impossible to screen and treat everyone for TB, thus the small clinics are necessary. Having small, cheap clinics is a great idea, but it also requires the right technology.

The technology behind the device is very simple. Take amorphous silicon and place it together with a TFT panel (similar to one inside of a computer monitor), and a low cost, large area optical imager. As this panel would be targeted towards Asia and the Middle East, cost savings can be found in reducing the total image area of the device. Typically, each column of pixels would get their charge own amplifier to read out the sensor; however, by using simple multiplexers in tandem with pre-amps on each pixel, the number of charge amplifiers can be reduced to save even more money. With high numbers of clinics being installed, a high volume of individual imagers would be present. The high volume would allow manufacturers to create the devices at a substantially lower cost that Karim is targeting at $1000. Although the focus of the imager would be TB, it is also possible to detect and treat other medical conditions such as pneumonia and broken bones. As Karim put it, "You've basically opened up low-cost X-ray for the developing world."

Karim is looking to propel his idea forward and has entered his proposal into a competition held by Grand Challenges Canada. The whole idea behind grand challenges is based on a book called "The Grandest Challenge – Taking Life-saving Science from Lab to Village" by authors Dr. Abdallah Daar and Dr. Peter Singer. The winning proposal is set to gain $100,000 to help fund the development and implementation of the idea. Anyone can view Karim's proposal video online and vote to support the idea. To check out the TB_ View 1000 proposal visit:

http://bit.ly/otNhWg

Letter From the Editor

Beyond Academics - What Does Orientation Mean To You?

JON MARTIN
EDITOR-IN-CHIEF

For this issue I had been drawing a blank on what to discuss for my editorial, then I found out that Frosh Week was under attack again, and now I can rant for quite a while.

On Monday October 3, I attended a 'focus group' meeting which was described as being about the future of Frosh Week, but ended up being entirely about the Student Success Office's new plan to extend the first year transition through all of first year, not just the first couple weeks. Near the end of the meeting we were all blind-sided by news of a motion going before Council and Senate to shorten Orientation Week by two days, and re-allocate those days to 'Success Days' in October. Despite many questions we were never able to get a firm answer as to whether the SSO representatives who led our meeting actually knew about this motion or if they were as in the dark as we were.

At best this discrepancy shows a worrying disconnect between different branches of the SSO, if one group is gathering student input and concerns before drafting a new program, while another group is pushing through a change actively disregarding student concerns, then that is a big problem.

At worst this was a diversionary tactic to try and avert student's attention away from the Senate and Council motion so that the SSO could avoid the protest that happened a couple years ago when the University administration tried to shorten Orientation Week. For the people who don't know, or weren't here at the time, this has all been attempted before, and students managed to organize in time to show their concerns and stop the motion from going forward. Look at Andrew Fisher's Frosh Week article in the EngSoc Executive Reports on page 7 to learn more about the plans this year and how you can get more information.

One major concern I have about the proposed changes to Frosh Week is the lack of planning and firm deadlines that have been set forward. The two days that would be moved have not been technically allocated beyond being study days, or 'student success days' while the Thursday and Friday of Frosh Week would now be classes instead. Personally I think this is a waste of time and resources, as you really aren't gaining any time for either first years or upper years. First years are losing two days devoted to meeting new people, learning about University resources, and gaining that feeling of really belonging to the University and faculty environment. Upper years lose two days of vacation, or potential co-op money in exchange for a long weekend in October when they can't actually use the days to relax because professors could take the opportunity to assign longer assignments.

The other concern I have with re-allocating these two days is the impact on Frosh Week, as I am sure the SSO and the administration will not want to lose any of their programming during Frosh Week. Friday has traditionally been used for 'Jumpstart Friday', or 'Conerstones' as it was known this year, where First Years can attend seminar type talks about topics like money, living off campus, and adjusting to University Life. Obviously the SSO is trying to increase the amount of programming they have for First years through these Student Success days in October, so I seriously doubt that they will be dropping Cornerstones. This means that Cornerstones will probably be pushed into one of the other days of Frosh 'Week' – probably at the expense of faculty events. First years still need to write the ELPE and attend other University run events, so where will this time come from? Again, it will come from sacrificing faculty time.

The proposed changes to Frosh Week can really be boiled down to a simple balance of alternatives, welcoming frosh to their faculty and University and making them feel a part of the community, or focusing on the academics and services to improve retention. This seems to be the attitude of the SSO and the administration many times. The last time the attempt to shorten Frosh Week was made one member of senate said that Orientation was pointless because the best way to orient a student to the University was to have them attend classes. At the time I thought that was the worst argument I have had ever heard - and I still do.

What I have learned about University is that there will always be difficult terms, bad profs, too many assignments, and not enough time to sleep. There will always be ups and downs, times when you feel completely overwhelmed and think that there is no way you can ever pass that final exam. What gets me through those times is not the lessons I learned at Jumpstart Friday (to be completely honest I didn't go when I was a frosh), or the knowledge that there are counsellors or academic help sessions, it has always been my friends and the community I'm a part of.

During Frosh Week you get the chance to meet hundreds of your fellow first years, as well as dedicated upper year leaders - you know they are dedicated because they are crawling through the mud and having pancakes made in their hardhats when they could be relaxing at home before they have to start classes again. As leaders we sacrifice what little time we have before jumping back into classes because we want the first years to have the greatest Frosh Week they can possible have, because leaders in previous years did the same for us. Everyone who has participated in Frosh Week has earned their hardhat, has been a human chair for EDCOM (I was a footstool, but lets not get into technicalities), and met the Tool.

Whenever I needed help in first year I always ended up going to the TAs for my concepts course rather than the WEEF TAs hired for each subject, or I would get advice from upper year students who I had met as leaders during Frosh Week, all of whom are some of my best friends years later, even after many have graduated. It is the personal connections and relationships that form the integral support network that people need to succeed and prosper at University, not the seminars and motivational speeches. Those things help, but unless a student has the support behind them to try new things and seek out help when they need it (or even admit to themselves that they need help) then they will never take those necessary steps.

I don't think these study days or student success days are going to have a measurable effect on the retention rates of the University, or on the mental health of students. It may just be me, but if I am struggling with a topic I seek help from friends in my class, or talking directly with the professor if required, I don't go to Needles Hall to see a counsellor, I don't need a one hour seminar on study skills, I just need the help and support of my friends and family. If a first year is struggling at this point, as this is approximately the time the SSO has identified as a good 'check-up' time, I doubt they are going to have the initiative to go to theses seminars, or will be able to effectively use the study time. Most will probably take the time to sleep, as Reading Week usually is used for me, or will go home to visit family and friends.

The great thing about Frosh Week is that it can create the feeling of home within your University community, it can also be the home of some of your best friends, friends who are going through the same things as you and can give the support you need. Every September since my own Frosh Week I have spent the week before classes being a leader for Orientation, because it recharges my love of Engineering and the University of Waterloo. It gives me the opportunity to welcome the next year of future UW grads, letting them know that they are a part of the community and there are people who can help them.

Think about what Frosh Week means to you, and to those around you, and decide if you want people in the years to come to have the same opportunity.

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Sleep: What to do if you aren't getting enough of it

NANCY HUI
2A CIVIL

Whether by procrastination or by necessity, sleep deprivation has turned from a passing state of mind into a painful consequence of the university lifestyle. Some will revel in it and boast of their superhuman caffeine consumption and every all-nighter pulled in pursuit of a passing score. But most will simply endure, resigned to their sleep-deprived fate. It doesn't have to be that way.

The most important factor in successfully balancing sleep with wakefulness is to set a schedule and stick with it. It doesn't matter if you're attempting to follow the XCKD-endorsed 28-hour day, the Uberman, the Siesta, or the vanilla eight-hours-a-night regime (more about that later). Hard boundaries must be set. Sleep at and wake up at the same times every day, including on weekends.

Rationalize that sleep is more important than pictures of cats or the problem set that should have been done yesterday. Realize that as the night deepens, mental ability deteriorates. Homework completion and cat picture enjoyment will become difficult, but luckily they will still be there in the morning when you can properly appreciate them.

Other strategies which help:

- Avoid drinking too much of anything before sleeping, including caffeine (it skews sleep schedules) and alcohol (decreases sleep quality) to avoid having to wake up to go to the washroom multiple times during the night.

- Avoid strong artificial light at night. Ever wonder why Reddit keeps you up at night but books don't? Artificial light fools the brain into thinking that it's still daytime, decreasing melatonin, a hormone which regulates the Cicardian cycle and makes you sleepy. If possible, dim the lights an hour or two before sleeping to simulate sunset and be sure to sleep in complete darkness.

- Exercise in the morning was found by a 2003 study by the Fred Hutchinson Cancer Research Center to help people sleep, though exercise at night was found to do the opposite.

- Certain foods such as milk, chamomile tea, turkey, bananas, potatoes, oatmeal, and whole-wheat bread are said to enhance sleep.

- Reduce noise. Earplugs are a good investment.

- Sleep on a comfortable surface. 400-count silk sheets are also a good investment.

If, however, circumstances make eight hours of sleep from roughly 11 to 7 impossible (e.g. roommate screams bloody murder in sleep, can only study in the dead of night, internet is only interesting at 2AM), the student years are also an excellent time to try alternate sleep schedules! Attempt at your own risk.

The Siesta

Six hours of sleep at night and a twenty minute nap in the afternoon. Many students already follow this pattern unknowingly when they nap in class.

The Everyman

This covers a range of schedules centered around two to four hours of sleep at night and two to four twenty minute naps throughout the day. Keep in mind that missing a nap will leave you more sleep deprived than when following conventional sleep schedules.

The Uberman

The name is awesome and so is the concept - six 20 minute naps at three hour intervals. There are people who would give their appendixes to only need two hours of sleep a day.

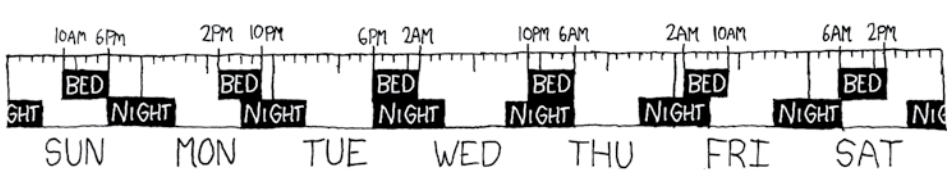
Too good to be true? Nah. Adapting to The Uberman takes approximately a week of feeling like a zombie. Even after the schedule has sunk in, the naps must be taken on a strict schedule - miss one and it'll take days of sleep deprivation to recover. Not everyone (profs, coworkers, exams) will be willing to accept that you need to sleep every two hours. Plus, without a regular core sleep period every night to divide each day in your mind, the days will appear to stretch on endlessly.

The Twenty-Eight Hour Day

19 hours awake, and 9 hours asleep. Sleep onset is regulated by exhaustion rather than nighttime. I can say from experience that it is physically easy to adapt to the Twenty Eight Hour Day, but difficult to sync up with classes and exams.

So, if it's 3AM and you're still awake, the time has come to rethink your sleep strategy. Don't put it off too.

The author, the Iron Warrior, and the University are not responsible for any insanity or ennui that may result from following any of the above



Jobs' Impact on the Tech Job Market

ANGELO ALAIMO
4N ELECTRICAL

The Apple flock lost their shepherd several weeks ago. While the herd still has a shiny new gadget to distract themselves with as they mourn the loss of their leader, I've taken to reflecting on how Mr. Jobs affected the industry in a larger picture. When I first came up with the idea of this article, I thought about my current co-op job in the imaging section of the smartphone industry. Would I have my job if the iPhone wasn't invented? It's a question I wanted to answer.

As most people know, Apple first released their iPhone in 2007, but as they may not have known, the smartphone industry existed years before then. At that time, the market hadn't penetrated the consumer market just yet. In fact, even in 2010, only 18.5% of all mobile phone sales were smartphones, so there's still much room for this market to grow in the coming years.

Apple entered the market adding a consumer touch to the smartphone. A sleek candy-bar style device with a large touchscreen encompassing the majority of the front facing device real-estate. Instead of using some type of joystick navigation or stylus, users would use, as Steve Jobs put it, "the best pointing devices everyone already has." In case you haven't already guessed it, that would be your fingers. As most now know, the impact of the iPhone has been huge. It completely changed the smartphone game, and today, we're still just getting started.

What does this mean for those of us working right in the middle of this smartphone game? If Apple hadn't released their iPhone back in 2007, would the smartphone market be the same today? Would there be as many jobs in this industry today? I contacted CECS for job data from several major handset and technology companies to try to find a trend. I specifically look at how many students were hired by Apple, Google, RIM, Palm, and Qualcomm.

From 2006 to 2007, student job growth by these employers hit 27.5% year over year and hit 18.1% between 2007 and 2008. Job numbers with these employers fell back 1% in 2009 likely to do the financial crisis but sprung back up to 13.7% growth between 2009 and 2010 once the market recovered. In 2011, student employment numbers fell 10% from 2010 in this market which is likely to do with Research In Motion's hiring pullback, but this decline is still not certain.

In terms of smartphone shipments over the same period, 2007 showed 79.7% growth over 2006 with shipments of 115 million smartphone units. In 2008, growth slowed to 31.3% while the financial market began to falter. In 2009, this growth slowed even further to 15.23% before exploding in 2010 with 70.47% growth and shipments just below 300 million units.

To my dismay, these numbers don't really show a definitive impact of the iPhone on the increase in student jobs and smartphone shipments as I would have hoped. They do however show a general increase in the popularity of the smartphone. It's possible Jobs' iPhone product release, which did, as I mention, revolutionize the smartphone industry, pushed for faster consumer-friendly features in smartphones. Better form factors, better interfaces, better cameras; you get the trend. A push for these features and at a higher pace would put demand out for more talent to deliver upon the requests of the market, increasing jobs in hardware, software, marketing, sales and other aspects of product development.

Also, if one talks about iPhones, one must also talk about the impact of applications. Entire companies have been created with the sole intention of developing applications for these platforms. In Apple's more recent product release, the company mentioned that over $3 billion has been distributed to developers through application sales. That's a lot of money in a few short years. Other companies have increased their user participation by developing applications for these platforms, allowing their users to utilize services in the mobile domain. Take Twitter for example – by releasing Twitter-branded applications on BlackBerry and Android, mobile participation increased an astonishing 62%!

Bottom line – even if the data I found in a short period of time presented in this article does not prove my theory for sure, it's hard to deny that Apple's competitive push to evolve and create new markets has not created increased opportunities for students and people alike to work in such a fast paced and exciting industry. Although it's hard to see sometimes, in short, competition is a good thing.

Upcoming Events Calendar

Wednesday October 19 EngSoc Meeting 5:30PM CPH 3607	Thursday October 20 Running Club 5PM POETS Patio	Friday October 21 Open Mic Pubcrawl #2 WEEF Proposals Due	Saturday October 22 UW Goes Paintballing	Sunday October 23	Monday October 24 Charity Pancakes 8:30 POETS Foyer	Tuesday October 25 Running Club 5PM POETS Patio	**Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca**
Wednesday October 26	Thursday October 27 Running Club 5PM POETS Patio	Friday October 28 Arts - Pumpkins MOT Party 9PM POETS Exchange - Hockey Games	Saturday October 29 Exchange - Potluck 5PM POETS	Sunday October 30	Monday October 31 Charity Pancakes 8:30 POETS Foyer Halloween For Hunger	Tuesday November 1 WEEF Departmental Presentations Running Club 5PM POETS Patio GleePO	

10 Places to Visit on Campus

ANISH BHUTANI
4N CHEMICAL

This article was originally going to be a countdown for the 10 (count em ten) places that you should visit on campus. However, as time went on, I realized that all of these places are pretty cool, and that putting a number on any of them would be unfair. So, without further adieu, here are the 10 Places on Campus You Should Visit Before You Die (or Graduate, whichever comes first).

1) Tunnels connecting South Campus Hall and Arts Lecture, going through the Tatham Centre. The orange and yellow colours will always put you in a good mood. The only warning this writer will give is when you go there for the first time, be sure to be in a somewhat soberish state, because otherwise the walls WILL trip you out.

2) All the CnDs run by the faculties. While the Engineering one is pretty awesome, you need to experience all of them before you can get a good feel of what is available. Engineering has 50 cent refills on coffee. Science has their 50 cent pop, and Math has a ton of variety in their CnD.

3) Speaking of the Math CnD, right next to it is the Math Comfy Lounge. Sit back with your computer or read on their comfy chairs. Best part is: no one there will check whether or not you are in Math. It is also a great place to sleep, especially when you are on campus late at night and aren't able to make it all the way home.

4) The physics observatory, located in the physics building (surprise, surprise), is a great place to go if you want to enjoy a night of looking up at the sky and experiencing the feeling of being one with the universe. They do public tours at the beginning of each month. At these tours, they show you around the observatory, have staff available to answer questions, and you get to gaze out into the night sky.

5) The next suggested place is the BMH green. Although its size has been dwindling over the past couple of years, it is still a great place to play some soccer (or cricket) with some of your classmates, or eat lunch with a few friends. You might be thinking to yourself that the geese try to take over during that time, however, if you go with a big enough group of people, the geese won't bother you.

6) Next up on the list, and conveniently as number 6, is the newest of the buildings on campus, Engineering 6. Why? Solely because it is the newest building on campus. If the Quantum Nano Centre had opened already, I would be saying that you have to visit there instead. One thing to check out is how all the labs are setup. While you can't legally go into the labs (I personally don't endorse risking your life) you can look through the windows. They also have a setup outside the elevators where the wall is made of different materials on each floor.

7) Heading up north we get to the Columbia Ice Fields, and more specifically, where the fire pits are overlooking the lake. This is a great place to hang out with a bunch of friends, catch up on what is happening in your lives, and not think about school. You can even book a fire pit alone and watch the magical fire do its dance.

8) One of the highest points on campus is Dana Porter, DP (get your head out of the gutter). Go to the 10th floor of DP and look out the windows on all four sides. It is the perfect view to just sit and stair out at the scenic view that is the University of Waterloo and the surrounding area. Look out at the sun set in the west over the beautiful buildings we call home.

9) Do you like Art? Neither do I. But that didn't stop me from making point number 9 the East Campus Hall Art Gallery. "East Campus Hall?" you may ask! Well yes, East Campus Hall. The building next to the new Engineering 6 on Phillip Street is a great place to see art for free. Yes! Free! It is also a way to relax after finishing your calculus and thermo assignments by letting you see the beauty in the world.

10) If you are not dead yet, there is one last place you should visit before you die. I myself have never been here, however, legends have it that back in the day, there was a tunnel connecting the Village 1 residences with the Student Life Centre. The Legends also say that this tunnel still exists, and has been locked up from student use. Now as I mentioned before, I don't encourage that illegal behaviour some kids like to try, but if you get the opportunity to explore those tunnels, I think it would be worth your while.

And that concludes the 10 places you should visit before you die (or graduate, whichever comes first). What you should all do now is put down this paper that you are reading, find a pair of scissors, cut out this article, and post it on your wall. Check them off one by one until you accomplish all 10! Once you achieve this accomplishment, you are truly ready to die (or graduate).

Ontario Election: How it Affects You

ERIN MATHESON
3B CHEMICAL

Although it's already been pushed out of most people's minds, remember it or not there was a provincial election in Ontario on October 6th. Despite the recent Conservative swing seen in the recent Federal election back in May, especially within the Greater Toronto Area, the provincial level 'jump-to-the-left' was not as strong, with the Conservatives picking up only 12 more seats and the Liberals hanging on to a minority government that's only one seat short of a majority. Speculation about the Conservative party's attack add tactic to lingering wounds from the days and destruction of Premier Mike Harris has been made to try to explain this, but despite the reasons behind it, this is the government we are now left with. The question now remains, how does this Liberal-Conservative mix with a side of NDP (who are acting as a third party with a total of 17 seats won) affect students?

Leading up to election day, the general topic of education was brought to the forefront by most parties, with emphasis this time around on post-secondary education. Even before the election began, it's become increasingly clear how out of control tuition in Ontario has gotten. Ontario boasts the highest average tuition rates in the country, and they are also the highest they have ever been. Previously, the provincial government would contribute more funds to each institution's operating budget than fees, but some Ontario schools (Waterloo being one of them) now collect more of their funds from their students than the government. Waterloo Engineering has had a long standing reputation of being one of the top programs in the country, along side one of the overall top undergrad tuition rates as well – apparently we have to win in all of the categories. Thankfully, the provincial parties did recognize the value of post-secondary education this time around and chose to address the tuition problem. How they would address this problem, however, varied greatly from party to party.

If the Liberals in past years have made anything clear, it's their obvious obsession with an arbitrary tax and grant system. I'm always perplexed as to how occasional cheques for arbitrary amounts of 30-something dollars from the government is supposed to offset a 13% tax on everything I buy, but nonetheless it's the essence of the system that the Liberals choose to implement. Right out of the gate, the Liberals announced a plan for a grant that would cover 30% of average tuition for both college and university programs. They also assured that this would not affect OSAP coverage in any way, nor would it reduce the Ontario Student Opportunities Grant, which covers OSAP costs above $7,300 in efforts to reduce student debt. Full time students from families with an income of $160,000 or less would be eligible for the grant, and if elected it could be brought in as soon as January 2012. On the surface it appears to be a great plan that would be helpful to students under the current tuition crunch, but specific details regarding the funding of this grant as well as what limitations on overall tuition increases would be implemented are still unclear.

The Conservative party took a much different approach and primarily targeted OSAP in hopes of reducing the required parental contribution to funding tuition. By eliminating the 75 Trillium scholarships the province offers to international PhD students, greater loan amounts (and grant amounts as well in some cases) would be allowed for students applying to OSAP in the mid-range family income brackets. No mention of adjusting or freezing current tuition rates was made by the party, although they have pledged to increase the total number of post-secondary education 'spaces' (read: higher enrollment rates). What the Conservatives failed to mention is that these changes would result in greater opportunities for OSAP loans, and not necessarily grants. This plan would reduce the crunch to pay off school expenses now, but only for the burden to return with interest later on.

Although there is often fear of lack of action in a minority government setting, being only one seat short of a majority should not hamper the Liberal's tuition plans too greatly. The NDP's plan was primarily focused on creating a tuition freeze at the current rates and to eliminate provincial interest from student loans, so it's safe to say they're more likely to steer clear of the Conservative's OSAP loan-based plan and support the Liberal grant system. The issue now remains as to whether or not the system can be implemented by the proposed January 2012 date, and whether or not the current gaps in the plan can be bridged so it could be implemented at all. At the end of the day, despite the typical lack of student interest in politics – take note! We could be seeing a positive outcome in more ways than one on our next tuition bill.

POETS

MOVIE SCHEDULE

SHOWINGS BEGIN AT NOON

Wednesday **Oct. 19** **James Bond Marathon**	**Thursday** **Oct. 20** **Jackie Chan Adventures** **The Big Bang Theory**	**Friday** **Oct. 21** **Scrubs** **UW Metal Mavens** **5:30-7:30**	**Monday** **Oct. 24** **Game of Thrones** **How I Met Your Mother**	**Tuesday** **Oct. 25** **Last Train Home** **Waste Land** **March of the Penguins** **With Respect To Time**
Wednesday **Oct. 26** **Kuch Kuch Hota Hai** **Devdas**	**Thursday** **Oct. 27** **Burn Notice** **The Big Bang Theory**	**Friday** **Oct. 28** **Its Always Sunny** **MOT**	**Monday** **Oct. 31** **Scream Marathon** **How I Met Your Mother**	**Tuesday** **Nov. 1** **Resume Critiques** **5:00-7:00** **How I Met Your Mother**

Neutrinos Speed Through the Multiverse

KEVIN LIANG
2B CHEMICAL

Researchers at Europe's CERN have discovered something quite startling. Everyone should have heard by now that neutrinos sent 730 kilometers from a particle accelerator near Geneva, Switzerland to the OPERA detector in Gran Sasso, Italy arrived 60 nanoseconds faster than the speed of light. These results have been previously demonstrated by a Chicago team in 2007. However, the accuracy of their equipment deemed the measurements statistically insignificant. CERN says that their margin of error is only 10 nanoseconds. CERN themselves want other research groups around the world to help verify these results before claiming the discovery. CERN spent three years on this project checking and rechecking the results before announcing it on September 22nd.

Before divulging into the explanation to these results, it is important to have a general understanding of the subatomic particle in question. Neutrinos are uncharged, fundamental, subatomic particles with mass close to zero. Since neutrinos have no electrical charge, they can travel through ordinary matter largely unaffected by electromagnetic forces. In fact, of the four fundamental forces of nature, it is only affected by weak nuclear forces. The majority of neutrinos penetrating the Earth come from nuclear reactions occurring on the sun.

Many critics say that CERN's findings are absurd and that the measurements must contain some sort of unseen error. But this is merely an excuse to avoid finding an explanation and continuing our understanding of the universe. The distance between the neutrino source and its detector in Gran Sasso is known within 20 cm. Time is also measured with extremely high precision using GPS timing signals and a cesium atomic clock. Measurements and probability distribution functions were used to calculate the specific time the neutrinos left the source and arrived at the detector. By utilizing GPS signals, small moments from the Earth can be tracked. This method allowed the researchers to account for the 5.8 magnitude L'Aquila earthquake in 2009, which moved the detector by 7 cm. Physicists also took into account many other variables, such as day, night, and seasonal changes that could contribute to erroneous results. It is unlikely that the measurements contain any significant error. OPERA stated that the measurements have been confirmed at 6 sigma.

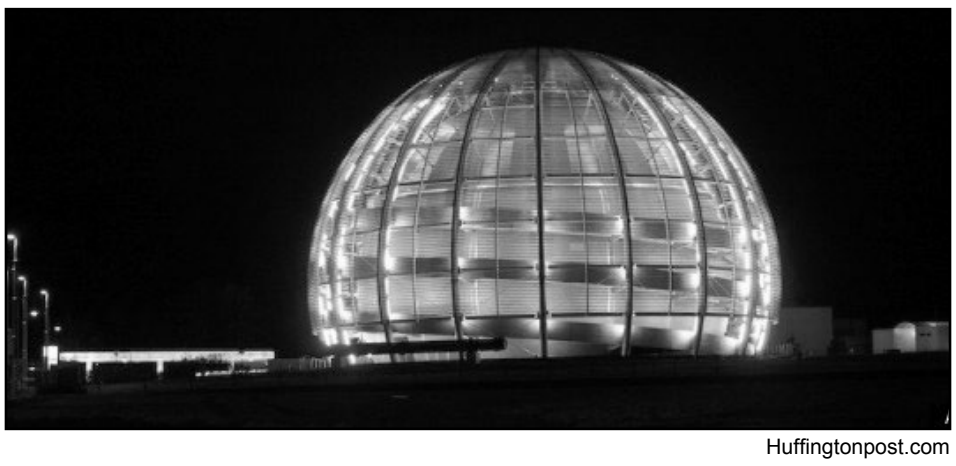
So why are people freaking out about this? Various sources state that superluminal velocities violate special relativity. Special relativity has two main axioms, one of which, states that the speed of light, c, is constant and is independent of the inertial frame of reference of the light source. Special relativity underlies all laws in mechanics and physics and has been proven with countless experiments. Without this fundamental concept, everything we know about everything will change.

Since the announcement of superluminal neutrinos, more than 80 publications have emerged, each trying to explain CERN's observations, and doing so without violating special relativity. Many introduce the concept of Lorentz violations and invariance in neutrinos.

Some papers suggest the presence of extra dimensions as a possible justification of superluminal velocities without violating special relativity or causality. Our three dimensional universe can be viewed as a three or more dimensional membrane inside a higher dimensional or the bulk space. This is called the membrane universe. The membrane universe, in which we reside, is analogous to a plane existing in a three dimensional environment, the bulk space. Inside our membrane universe the maximum velocity c is the speed of light. In the bulk space, the maximum velocity can be several factors larger than velocity c. The reported neutrino velocities can be explained with this knowledge. During very high energy collisions, excitations may be shot out into the bulk space. As stated earlier, neutrinos react very weakly within our membrane universe, so they can escape into the bulk space more easily than other particles. Once neutrinos exit the membrane universe and enter the bulk space, their velocity will increase past the speed of light. The bulk space acts as a shortcut through our membrane universe and it will appear that neutrinos are actually travelling faster than the speed of light when they reenter. During the high energy collisions at CERN, neutrinos 'jump' orthogonally into the high dimensional space and travel perpendicularly along the membrane universe.

While electromagnetic, strong, and weak nuclear forces are bound to our membrane universe, gravitational forces are universal and affect the bulk space. Gravity, although weak, may pull the neutrinos back into our membrane universe. The high energy collisions at CERN may only shoot the neutrinos a few meters out of the membrane universe, so gravitational forces will quickly pull the particles back. Another possibility of why neutrinos reenter our membrane universe is the existence of multiple, parallel membrane universes that all constitute our own packed at some distance apart. Once the excited particles leave into the bulk space, they soon collide with a parallel membrane universe, which is actually the membrane universe they came from. Once they collide with the parallel membrane universe they get stuck and the neutrinos come back to normal neutrinos with velocities under c.

This is just one of theory that attempts to explain the observations at CERN last month. Many more go more in depth with their explanations and include some concepts that are very abstract. From the surface, superluminal neutrinos appear to be impossible. All it takes is some thought to make sense of it.



Huffingtonpost.com

CERN Neutrino Detection Lab, Swiss- French Border

Web hosting on Nexus

NANCY HUI
2A CIVIL

Four out of five surveyed undergrad engineering students* are unaware of the presence and purpose of a small folder nestled in the N: Drive between "Netscape" and "Software". T'is a waste, I say, t'is a waste. For verily, the public_html folder is a wealth of untold possibilities.

The public_html folder provides every Nexus account holder with a modicum of web hosting space. This means that any file saved inside the public_html folder can appear online with a url starting with "eng.uwaterloo.ca/~yourid/" and ending with the filepath. What does go up is entirely up to you, subject to federal law, university policy, and any other applicable piece of legislation, of course. Go forth, young mariner, and follow the gleam!

Sorry, that was a bit cryptic.

The most obvious answer as to what to do with your newfound power is to build a landing page and take control of your Google search results. If your good name was ever eclipsed by the influence of convicted meth dealers and Michael Bolton impersonators who just happen to share your name, I know how you feel. Long had I lived in the shadow of a Cathay Pacific flight attendant.

But no longer. Early last year, I constructed a page to host my resume and visual proof of hobbies gone amok, and have since moved upwards at least a dozen results pages. Maybe even take it a step further and showcase a portfolio of professional projects and academic papers without contracting to an outside company. Tributes to cats, EDCOM, and left-handed underwater basket weaving are also acceptable uses of the public_html folder.

If building a useable webpage is beyond your time constraints, no need to fear that the few cents of your tuition allocated to maintain the Nexus servers will go to waste. Occasionally you may want to share a large file with multiple people. Instead of subjecting it to the guidelines of rapidshare, megaupload, and their ilk, save a copy in the public_html folder and email a link to everyone who you wished to see it. The file will remain there for as long as you need it to stay (no deletion after ninety days) and not a moment longer. Upload and remove files at whim without having to create yet another account with a fake birthday, postal code, and social security number to manage the uploaded files.

But be forewarned: the standard N: drive quota of 2GB still applies. Therefore it is not viable, for example, to upload a video of your twelve-hour solo commentary on the Lord of the Rings trilogy. A selection of forum signature images, short but legendary family videos, and a selection of pictures of cats that look like Hitler are more feasible. Additional space will have to be obtained elsewhere, for example from the Computer Science Club for $2 a term. I have no idea why I bought five terms worth of storage but you never know when you'll need something until you need it.

In truth, I don't know any more details of the "wealth of untold possibilities", except that they do exist, and that they are untold by me. You're better off checking the details with the fine human beings at the Engineering Computing Help Desk.

(http://www.eng.uwaterloo.ca/twiki/bin/view/Engcomp/EngineeringComputingHelpDesk#Personal_Home_Pages.)

*Study is flawed, skewed, and toasted on a ciabata bun with cheese.

EngSoc Executive Reports

Waterloo Engineering: Why you should be proud to be a student here

ALESSIA DANELON
PRESIDENT

It was the privilege of the President and VP Education of the Engineering Society to attend the Dean's Dinner on Thursday, October 6. The dinner awards excellence in teaching within the faculty, research, milestones, as well as accomplished alumni in the areas of community service and contribution to the profession, as well as the school.

Throughout the night, individuals and teams were awarded for their efforts in bettering the Faculty of Engineering through their various contributions. As the evening progressed, it became more and more obvious of the talent and hard work that has gone into this Faculty, and how many accomplished individuals have attended Waterloo and been positively influenced in their time here. One award recipient remarked "Whenever times get hard, I remember going through Computer Engineering at Waterloo and knowing I can get through it". Regardless of the reminder of stress that this remark brings along with it, the comment tells a promising truth. Waterloo Engineering prepares you for something, for the trials and tribulations of the real world. A successful, well-spoken and intelligent young individual felt that his education at Waterloo gave him something to help him make it in life.

It is often difficult for students to see the rewards of their hard work and demanding curriculum at Waterloo while they are studying for midterms or pressed for time to complete a project. However, I think it is worth noting that every alumni award recipient at the dinner seemed genuinely thankful for their years at Waterloo and the lessons they learned, both academically, and in life.

The dinner, aside from giving recognition where recognition was merited, shows something that is quite valuable to the average student; you are surrounded by gifted people. Your professors win awards for their teaching and research, your classmates win awards for their work, and whether you want to pursue those paths or not, you have the opportunity to learn and grow form these fantastic people around you. That is a great benefit of your education, to be influenced by people who are down to earth yet inspired. It is an opportunity that you should never pass up, and that we hope continues at this school now and in the future.

Waterloo Engineering Awards Dinner

(left to right) Savvas Chamberlain and his wife, a huge contributor financially to Waterloo Engineering; Martha Nelson, Director of Advancement for the Dean's Office; the Provost of the University, Geoff McBoyle; Tim Jackson, the Associate V.P. Commercialization for the university; the Dean of Engineering, Adel Sedra; Alessia Danelon and Owen Coutts

Defence Against Unfair Midterms

OWEN COUTTS
VP EDUCATION

Midterms are coming up for most of us, but this term they might be just a little bit easier. In September, additions to policies on midterms were passed at Senate. Senate is the University's decision making body and has the ability to change Examination policy.

Previous B-Soc VP Educations have worked hard to bring these policies to faculty and makea difference for students.

What does this mean for you? All the policies surrounding midterms and term tests are defined on page 6 of a document at registrar.uwaterloo.ca/exams/schedule.pdf.

The highlights include the following:

- Material tested should be introduced at least two days prior to the exam/test.
- Nobody can be required to write an exam/test that is outside 8:30 to 10:00 Monday through Friday.
- Tests and exams should not be held during the last 5 days of the term unless it is a lab course.
- Instructors should attempt to accomodate students who have co-op interviews conflicting with an exam.

What should you do if these rules are not followed? Talk to your instructor, they may just be oblivious to these rules. Show your instructor the examination policy document and explain to them why you are negatively impacted by the rules. If talking to your prof is unsuccessful, try escalating it to your undergraduate chair. If you need advice on how to deal with a tough situation don't hesitate to email me at vpeducation.b@engsoc.uwaterloo.ca

Fall 2011 Budget

ALEXANDRA COLLINS
VP FINANCE

At the second Engineering Society Meeting (October 5th), the Fall 2011 Budget was approved. The budget shown was chosen by the Society over four other proposals including an External Consultants recommendation to purchase Titanium nightclub with the assistance of WEEF.

This is the first term that 15% of student fees was allocated to the Engineering Capital Improvement Fund (ECIF). Despite this large contribution, all directors will receive the funding requested for their events or services. In addition, $3500 dollars was set-aside for Bettering Engineering External Relations (previously referred to as donations). Members of student teams, clubs, and EngSoc affiliates have been invited to the third Society Meeting (October 19th) to make proposals to receive a portion of this funding.

The Fall 2011 Budget Requests and Proposal

Estimated Income	
Photocopies	$500.00
Student Fees	$53,366.25
Less: ECIF	$8,004.94
Total Income	$45,861.31

Fixed Costs	
Bank Charges, Payroll, Utilities, Office	
	$18,500.00

Society Expenses	**Requested**	**Assigned**
President		
Exec Review Committee		$50.00
Speaker	$4,150.00	$4,150.00
Executive Discretionary	$4,000.00	$4,000.00
President Sub Total	**$8,150.00**	**$8,200.00**
Student Life Directorships		
Arts	$144.90	$144.90
Athletics: Rock Climbing	$450.00	$450.00
Cardboard Boat Racing	$220.00	$220.00
COMENG	$570.00	$570.00
Charities	$731.00	$731.00
Eng Play	$575.00	$575.00
Enginuity	$15.00	$15.00
Environment		
Exchange	$59.26	$59.26
Frosh Mentoring	$143.59	$143.59
Historian	$166.00	$166.00
Genius Bowl	$400.00	$400.00
Jazz Band	$1,750.00	$1,750.00
Remembrance day	$17.00	$17.00
Mental Health Awareness	$274.98	$274.98
Music	$850.00	$850.00
Novelties	$50.00	$50.00
P**5	$1,210.00	$1,210.00
Santa Clause Parade	$1,173.35	$1,173.35
Scunt	$700.17	$600.00
Semi Formal	$411.00	$411.00
TalEng	$383.00	$383.00
TSN - EOT Video	$50.00	$50.00
Year Spirit 2012	$370.00	$370.00
Year Spirit 2013	$200.00	$200.00
Year Spirit 2014	$50.00	$150.00
Year Spirit 2015	$106.52	$106.52
Year Spirit 2016	$300.00	$300.00
Student Life Sub Total	**$11,370.77**	**$11,370.60**
Student Services		
POETS Manager	$810.88	$810.88
Class Rep	$30.00	$30.00
Academic Rep Advisors		
Resume Critiques	$648.70	$648.70
Scholarships	$350.00	$350.00
Student Services Total	**$1,839.58**	**$1,839.58**
External		
WEC	$1,657.36	$1,657.36
EWB	$50.00	$50.00
Shadow Day	$617.70	$617.70
WIE	$670.00	$670.00
External Subtotal	**$2,995.06**	**$2,995.06**
Total Society Expenses	**$24,355.41**	**$24,405.24**
Total Expenses	$42,855.41	$42,905.24
Net	**$0.00**	**-$2,043.93**
DONATIONS	$3,005.90	$3,500.00
Iron Warrior		$500.00
Gradcomm 2012		$500.00
FOC		$500.00

Chat With Alumni

OWEN COUTTS
VP EDUCATION

The Faculty has put out a new service for engineering students. They have created the "Ask Eng Alumni" website, a portal for communication. The goal of it is to put current students in touch with former students. The portal can be found at eng.uwaterloo.ca/askanengalumni/ and you can log in with your Nexus account.

The portal has different set discussion topics. Students and Alumni can start and respond to various sub threads. The alumni come from diverse backgrounds and often add many different perspectives to questions asked by students. Right now, some popular questions include weighing the value of Masters of Engineering as well as the pros and cons of living off campus.

One of the best parts of PD Eng was the alumni community that interacted with students. With the advent of Wat PD, there was no longer a way for students to communicate with alumni. The faculty recognized that this was an important resource and helped build a tool that allowed continued students-alumni contact.

Ultimately, the tool is what you make out of it. Try it out and ask alumni a question at eng.uwaterloo.ca/askanengalumni/.

The Tale of Captain Jack Sparrow

SMOKEY THE BANDIT
5A CIVIL

So you want to hear my story? Well you can't. It's on paper. But you can probably read it.

I suppose I should start from the beginning. Where it all began. Chapter 4:

Many decades had passed since the tragic oreo-induced death of my aunt Ethel. To this day, I cannot look at a box of Oreos without weeping with combined joy and disgust. This does not prevent me from eating them....no, dear readers, for truly the Oreo is the cookie of the gods, but I digress.

As I stood under the neon glow of Big Al's 24 Hour Morgue's "2 for 1 special" sign, I contemplated the whirlwind of events that resulted in me ending up here. I contemplated many things, actually. Things like, "Why am I here?", "Didn't I already ask that?", "Where DID all the cowboys go?", and "Why haven't I seen this place before?" That last question stuck especially in my mind, as Billy's godmother had mysteriously died the same night as my aunt Ethel, and we really could have used that deal.

I don't know how long I stood staring at that sign, but it must have been quite a while, as my leg started to itch from the small family of iguanas building a nest in my left pant leg. "Oh well, let them roost." I thought, as I finally mustered up the courage to enter Big Al's store. The jingling of the bells on the door was almost melodic, like the sounds that melodic bells would make if they were just slightly less melodic.

"How do you like my melodic bells? I just had them installed yesterday. I had them take out some of the melodic, though, because, well, this is a morgue, after all." The man behind the counter said, very racistly.

Who was this mysterious man?

"I'm Big Al." Well, that answered that question. "What can I help you with today?"

I eyed Big Al melodically. A seven foot tall man stood before me, his tinfoil sombrero cocked to the side in a manner that suggested "I care about my looks, but I don't care if you care about my looks." His hairy, shirtless chest seemed out of place next to his elegantly pressed The Flash Underoos. No matter. I came here for a reason, even if I don't know what that reason is.

"Big Al? The old man in the sea told me to tell you....the kumquat has transcended to the realm of the elephant lords."

Big Al growled low and grabbed the collar of my torn Argyle poncho. He pulled me close. I could smell the oreos on his breath. "Old Salty send you, boy? You better not be playing me like the bilingual mute he sent before you."

I shook my head and offered him an oreo. He seemed both saddened and overjoyed at my gift. He leaned closer.

"Your Aunt Ethel?" he whispered. The smell of oreos was almost overwhelming now. I resisted the urge to eat his nose. "She's alive."

Frosh Week Say What?

ANDREW FISHER
VP INTERNAL

Background

The Student Success Office (SSO) is currently developing a proposal which will affect the academic calendar for the 2012 fall term. In this development the following are a focus:

- Mental Health and Wellness
- Retention
- Student Engagement
- Campus Culture

Using research to back them, the SSO feel there is not enough support for students year round, and are developing changes which could involve having classes start on the Thursday of Orientation Week. The two days that would normally be Orientation could be reassigned around midterm week or Thanksgiving as two study days. It has also come up that these days may contain programming associated with Success Week and used as a time to check-up on students. For more information on their proposal, please visit (www.success.uwaterloo.ca/feedback.html).

What does this mean?

As it stands, there could be a proposal brought to Senate this term to pass the shortening of Orientation Week in order to add two extra days off in October or November. We feel there are still many finer details which need consideration by the SSO before anything gets put into motion. These include:

- Timeline for implementation – this is happening all too quick
- The SSO is striving to increase retentions rates to levels similar to Queens and Western who both have full Orientation Week programming
- The SSO is comparing the University of Waterloo to other Universities who are not considered co-op focused
- CECS must continue to run interviews on the study days as they cannot afford to lose any more time in the first round. This will likely prevent many new students and upper years from taking the time to go home – something the SSO hoped new students would do as a stress reliever.
- The shortened week reduces the amount of time new students have to acclimatise to Waterloo before the stress of class sets in
- The shortened week provides less opportunity for new students and upper years to make strong mentorship connections
- Those on co-op in the summer will have to leave work sooner in order to make it back for class on Thursday, reducing total pay available in the summer term
- It is possible that upper year students will miss the first two days of class in order to work a full week or to move-in if from out of province or country
- Anyone participating in Orientation as a leader or new student will have very little recovery time between the high energy of the week and the start of classes
- Leader retention for Orientation could suffer which in turn could cause a reduction in quality of Orientation programming – something which contradicts what the SSO's goals are

Important Dates

Tuesday, November 8th, 2011: Senate Undergraduate Council Meeting

There is a strong likelihood that the proposal to shorten Orientation Week will be brought to this council for a vote. It must be passed by this council in order to be added to the agenda for the meeting below. If it does not pass, the calendar change will not likely occur for Fall 2012.

Monday, November 21st, 2011: Senate Meeting

This is the last governing body which needs to vote in order to pass the proposal to shorten Orientation Week. If it is brought to Senate and is not passed, the calendar change will not occur for Fall 2012. If it is passed, it will be unlikely that Orientation will return to the way it was before.

Your Call to Action!

A consultation process, facilitated by the SSO and the Federation of Students, is underway to gain feedback about the student transition to university. If you would like to provide feedback or voice your opinion on this topic, please email success@uwaterloo.ca with your thoughts or leave a message on their Facebook page 'University of Waterloo Student Success'.

Scholarships!

YASSER AL-KHDER
VP EXTERNAL

Hey there Timmy, do you like studying and having someone else pay for it? Well then, drop your lead based paint and check out these fine scholarships. The full details will be sent out to the mailing list in the "External Opportunities" email.

CEMF Scholarships For Women in Engineering

The Canadian Engineering Memorial Foundation (CEMF) is offering five $5,000 scholarships for female undergraduate engineering students, one for each region in Canada; Atlantic, Quebec, Ontario (that's you!), Prairies, and British Columbia. The scholarships are targeted towards young women across Canada who are proven leaders, active volunteers, and act as mentors to other young women to encourage them to pursue a career in engineering.

CEMF is also offering three $10,000 scholarships to women enrolled full-time in an accredited undergraduate program at a Canadian University in any field of engineering who have an interest in mining, metallurgical or related field and hope to use their engineering expertise to work in the Canadian mining industry.

The deadline for applications is January 13 2012. For more info and details, visit www.cemf.ca.

3M National Student Fellowships

The Society for Teaching and Learning in Higher Education (STLHE) is honouring up to ten college and undergraduate university students who have demonstrated qualities of outstanding leadership and who embrace a vision where the quality of their educational experience can be enhanced in academia and beyond. Each of the winners will receive a $5,000 award to be spent at the discretion of the winner, and be invited to join other award winners and the Program Coordinator at the annual STLHE conference.

The deadline for applications is January 7 2012. Visit www.stlhe.ca/awards for full details.

PEO-GRC First Year Scholarships

Professional Engineers Ontario – Grand River Chapter (PEO-GRC) is awarding a $500 scholarship to each of the two students:

-In the first year of an engineering program at the University of Guelph, University of Waterloo, or Conestoga College.

-Have attended high school in the Grand River Chapter area.

Preference will be given based upon extra-curricular activities, community service and interest in pursuing a career in engineering as a licensed Professional Engineer.

Deadline for applications is October 31, 2011. A copy of the application can be found at http://grandriver.peo.on.ca/

Again, all the details will be on the "External Opportunities" email.

And that's all I have, for now.

EngSoc B Executive

Executive (Top to Bottom): Yasser Al-Khder, Alessia Danelon, Andrew Fisher, Alexandra Collins, Owen Coutts

EngSoc B Executive	executive.b@engsoc.uwaterloo.ca
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Exchange to France or Switzerland

PETER H. ROE
DIRECTOR OF EXCHANGE PROGRAMS

France and Switzerland boast some of the best things to enjoy in life, such as their fine wines and gourmet cheeses, their cuisine in general, their mountains, scenery, people, bistros, beaches, history, literature and culture, to name but a few. Also, the French and Swiss are justifiably proud of very advanced and exceptionally high-quality universities and institutes of Engineering education. In addition, these nations have been in the forefront of engineering innovation. So, why not consider going to France or Switzerland for a term or two of study on exchange?

Consider this: French is the first language of about half a million Ontarians. New Brunswick is officially bilingual, and about a third of its people primarily speak French. In Quebec, over 80% of the people claim French as their mother tongue. Altogether this makes about seven million Canadians whose first language is French. Just remember, French is not a foreign language in Canada. But only about 5.5 million Canadians can communicate verbally in both languages. In this world, engineers need to be capable of working anywhere and certainly Canadian engineers should be able to live and work anywhere in Canada. For this reason, if for no other, Waterloo students should take advantage of the chances available to make themselves proficient in both Canadian official languages.

So, what is stopping Waterloo engineering students from taking advantage of our exchange programs in Switzerland and France? The most frequent answer to this question is: "My French isn't good enough.", or words to that effect. The language of Engineering is largely mathematics: how much did you know when you first came to Waterloo? Did your lack of calculus, differential equations or linear algebra stop you from becoming an engineering student? Why then should your rudimentary French stop you from studying in France or Switzerland? Here's what Andrew Akers, (EE) who went to Lyon a couple of years ago, said in his report:

Do you speak French? You will by the end of your exchange. If you attended public school in Canada then you're already on your way to getting by in the country. You may think you've forgotten everything since grade 9, but don't worry, it's still buried in your head somewhere. Even if you have never learned French, you won't be alone; many exchange students came with absolutely no knowledge of the language. Waterloo usually requires [some high-school] French plus one university level course to be considered proficient enough to go on exchange, but this requirement can be waived if you attend the intensive French course [offered to exchange students in most French engineering schools in August].

The higher education system in France has always been uniquely French – different from everyone else. However, the situation is changing as a result of the Bologna Treaty, which standardizes degree programs across Europe, and by European student mobility. This causes a great demand for courses in English, especially in the fourth and fifth years after high school. More and more courses in English are available for exchange students and concerns about learning in French are becoming less and less.

We have had many successful exchanges with the Swiss Ecole Polytechnique Federale de Lausanne (EPFL) and the Swiss subsidize our exchange students with a bursary of 2000 Swiss Francs (1 Franc ≈ $1.00). France has three kinds of post-secondary Engineering institutions, Grandes Ecoles, Technical Universities, and Institutes of Applied Science. We have exchanges with examples of each, making it possible to do almost anything there. We also participate in the government-sponsored Ontario/Rhône-Alpes agreement, which provides bursaries for studying in places like Lyon and Grenoble. No one has returned from either country and expressed regrets for going on exchange. To quote Andrew again: An exchange is a fantastic experience, probably the best you can have in your university career. ... Your university days are possibly the only chance to have an experience like this. Living and studying with other exchange students is a cultural experience that blows away any boxed tour from your local travel agent. What are you waiting for? Allez-y!

One of the advantages of international exchange is that it gives you experience - experience that globally-thinking employers will take to heart. Going on exchange to a French-speaking environment enhances the possibilities, especially in Canada. For example, as a Waterloo engineering graduate you might want to make a career in Aerospace. Two of the world's competitive aircraft designers and builders are Bombardier (based in Quebec) and Airbus (based in Toulouse, France). Or perhaps you will join an international engineering and construction company, such as Montreal-based SNC–Lavalin. While it's true that you can make a career in any of these organizations, having an international, especially French, component of your education is bound to give you an advantage. What about the Canadian Space Agency? Its work environment is bilingual in either Ottawa or Montreal; however, you would be at a distinct disadvantage if you couldn't communicate in both languages. Certainly, making your way to the top, or at least to a position of leadership, would be tougher without a good working knowledge of French. You can build a foundation for this by studying in France or Switzerland on exchange.

France and Switzerland are great places to go to on exchange. You will come back after your exchange with a good working knowledge of French, the first language of millions of Canadians. You will also have had a life-changing experience. "Switzerland was an opportunity to study abroad, experience different cultures, and make friends with people all around the world. [The experience] changed my views on the world by opening my eyes to a different way of living, language, and cultural norms, especially in an international environment." (Kevin Cheng, SYDE).

Come to the Faculty Exchange Office (CPH 1325) or visit the Engineering Exchange Opportunities website, www.eng.uwaterloo.ca/~exchange, for more information about how and where you can profit from an exchange program in France and Switzerland.

Future Of Gaming

Making a Good Licensed Game = Embracing the Character

JON MARTIN
OBI JON1138

Lets be honest - licensed games have been pretty horrible for the vast majority of the video game industry. Games using high profile characters like Batman, Superman, Green Lantern, Rocky and Bullwinkle (awesome old cartoon - look it up), Harry Potter, and the LOST show, are just some examples of games that traditionally take a license that has generated millions of dollars and yet they fail to impress gamers.

In my opinion, the main cause of this is the failure of development studios to embrace the characters and environments of the license. Instead, studios often try to simply drape the license onto a pre-existing genres or games, rather than put in the effort to make an original game.

There are a couple of examples of great licensed games that have gone beyond the original source and led to critically acclaimed games - or at least awesome games, even if they weren't that well known.

The most obvious examples are Batman: Arkham Asylum, and its sequel Batman: Arkham City (which was released the day before this paper). Both of these games take the entire comic history of the character and the vulnerabilities of a real human. This is also the reason why most superhero games like Green Lantern and Superman fail, because the gamer cannot escape into the game world because it will never be real enough. Superman is an invincible alien from another planet with amazing super powers, but you get beaten up in the game by a group of thugs on the ground. Green Lantern is a regular guy, but he has a power ring allowing him to create 'constructs' of ANYTHING he can possibly imagine. In the game, however, all you can do is shoot energy blasts, create a giant hammer, and use a sword.

I won't even spend much time on Rocky and Bullwinkle because most people won't know what the hell I'm talking about. Lets just say they took a funny cartoon about a moose, a flying squirrel, and a mountie, and turned it into a boring party game while slapping some clips of the cartoon into the loading screens.

Harry Potter is both an example of good and bad licensed games, as they have gone through an arc from acceptable, to good, to horrible. The first couple games were limited more by technology than by design, but they used the books as inspiration more than the movies (something I am always in favour of). As each movie and its accompanying game came out, the graphics, environment, and general storyline improved. Personally I think Harry Potter and the Order of the Phoenix was the best of the games (and also the last one I played), mainly because the developers created one giant world encompassing the entire school and grounds of Hogwarts. Instead of the game transporting you to the necessary areas for the story, the game was instead a completely open world, allowing you to wander the entire school at your leisure before heading over to the next objective area. The more recent games have basically turned the Harry Potter series into a first person shooter, focusing entirely on blasting faceless enemies while sacrificing the entire storyline.

In all the cases I've mentioned the common thing that makes a good licensed game is the ability to believe in the character's abilities and actually be absorbed into the game world. Until more producers learn from the Arkham Batman games and actually embrace the character license, we are going to see a lot more licensed games that we would rather never existed. Here's hoping that doesn't happen, but in the mean time, keep on gaming.

The Internationally-Minded Engineer

JENNY CHAN
AIESEC LAURIER

Kitchener-Waterloo Region, the University of Waterloo in particular, is a hub of professionally aggressive engineering students. Competition is high among peers and ability to differentiate one's self is paramount in the industry. Take a leaf out of Mitul Desai's lab book and expand your horizon onto the international platform.

A recent 2011 UW graduate in the Masters in Mechanical Engineering program, Mitul joined AIESEC Laurier in January 2010 and actively took on a leadership role as Vice President of Communications, he became engaged in local university projects that propelled him to develop his leadership potential and led him to seek a long-term internship abroad. Originally from India where he completed his undergrad, Mitul applied to engineering positions worldwide and was matched with a 52-week placement on December 1st, 2010. He was out of the country by February and ready to work.

A student organization that facilitates international business networking through global internships, AIESEC helped Mitul obtain his technical internship with the Swedish manufacturing and service company, Electrolux. There is an untapped network of reserves that hold real value propositions for the UW academic, and as a student, finding the right connection to the global world has a multitude of tangible values from meeting others from diverse cultures, to supplementing education with a real-world business perspective.

Mitul now works in Australia in Orange, New South Wales with two other interns – one from Colombia and another from the Dominican Republic. "It takes a lot of time to solve some of the quality issues here and so we contact other branches in Europe or Latin America, to learn how the issue was tackled at their plant," the Quality Engineer speaks of his work seven months into his internship, "Working for Electrolux has showed me how things are done in multinational companies as they have to have good co-ordination with the other plants too."

International experience is becoming critically in demand and students should be reminded to take a holistic view of university education and encouraged to take challenges through whatever venue may facilitate building their leadership potential. Clubs and exchange programs are intended to compliment the university curriculum and well worth the effort; from international co-op services, to Engineering Exchange Programs to student organizations like AIESEC, the university community is ripe with venues that facilitate the UW student in developing a full portfolio that ultimately translates into a company seeing you as a value investment.

One might be surprised at how extensive just one student network can be. "When I came to Australia, I already had friends who had helped me with the initial arrangements and visa applications. We had never met personally but we were already good friends." Mitul now knows people working in Sweden, Mali, Netherlands, France, India and many other countries. "These student organizations help you to tap into a huge network of highly motivated people. It has not just helped me find an internship, but it has helped me develop myself both professionally and personally."

Campus is ripe with resources that facilitate these professional drives and teaches students about real world networking and business relationships that even the unrelenting PD courses fail to address. Mitul recounts his experience fondly, "I had a feeling joining AIESEC was going to be a big turning point in my life, but it all started when I showed the initiative. I was dedicated to my work and eventually I had impressed others with my zeal and enthusiasm that I was offered the opportunity to be a Vice President, for which I had no hesitation to take."

Mitul, a self-prescribed introvert, attributes his growing confidence and professional development to these various guidance programs. Mitul saw the advantage in connecting his engineering academia with real world business acumen and says of his training, "I used to be very shy and couldn't speak in front of people, but I gained a lot of self-confidence after I challenged myself and became a VP."

The UW grad now looks to finish his internship with Electrolux on February 6th 2012. His future is bright and he attributes much of his good-fortuned opportunities to finding the right venue through which to direct his ambition and motivation. Through leveraging the right resources, Mitul has since met students from all over the world and urges students to be open to new opportunities as he was, insisting that the doors are right before us.

Opting Out of Social Media

LEAH KRISTUFEK
1A CHEMICAL

Spontaneity is dead. It died when the cell phone became more common than the bicycle and when Google became a noun. What was life like before Microsoft Word became savvy enough to capitalize the G in Google? Our generation is always being told to 'be unique'. That's our thing, much like sixties peace and love and nineties slicked black hair. But being an individual is synonymous with loner, we still want to share our individual awesomeness, to interact with our peers in a meaningful way. In fact, with cell phones and social media, we have come to dislike being alone, choosing instead to be individuals with other people who are unique in the same way. We are constantly keeping in touch with a variety of people at all hours of the day. To text or not to text is more of the question. People are connecting like never before, revolutions are begun through internet platforms like Facebook, people can be mobilized at the touch of a mouse, and society is changing in previously unforeseen ways.

What if you decide against it? Though I'm sure most of us are early adaptors, there are the few who decide contentiously or otherwise to opt out of the social media experience. One person I talked to in fact insisted they would lose all shreds of his manhood before becoming a part of the online community that is Facebook. So I guess to some people this is a bit of a touchy issue. I personally do not have a phone, though I am a Facebook member. Twitter is still a little beyond my understanding because pictures speak a thousand words. Being largely unreachable means I actually have to see a person face to face to talk to them which also means I miss invitations to eat with my friends sometimes. Is that such a bad thing though? I've found that in my spontaneous lifestyle it is far easier to get to know more people. Every day turns in to an adventure as I carry out my plans completely alone without a cell phone notifying me of everyone else's lives..... What will happen next? Being connected to a social network online is a little like sharing and caring intimate moments between friends with everyone on line. The things you post to Facebook, or tweet on Twitter make you seem more open and trustworthy, be it your current love of anime bunnies or your parties with friends last weekend. The scary thing is that those things don't go away either, and will be read out of context by the entire world the next time Facebook updates its privacy settings without notifying you. Sometimes the whole thing can be a bother, but that's okay because at the end of the day we all know that there are lots of friends out there that we can rely on just a couple of clicks away. Instant rewards for all our needs be they beer crawls (which of course this paper does not condone) or homework questions. (Here's a thought, why do profs have office hours anyways when they could just have a Facebook group?)

For many people, being with a group is about safety as much as it is for personal enjoyment. There is always a lingering threat of the unknown, and the safeties put in place in our parent's time have largely been replaced by the presence of the cell phone which lives habitually in your pocket. At the cost of only $25 or so dollars, $300 annually, you can feel relatively safe no matter where you are, even if walking back to REV late at night. Emergency medical services will now look for a cell phone as a method of contacting relatives quickly after an accident; they look for 'Mom' or Dad' in the contacts list and call the number.

In a world filled with social media everything is relative. Acts of spontaneity are often co-ordinated rather than just performed and we all know that any person we meet has the option to just go add us on Facebook. To contact someone a number is no longer needed, just a name and some reasoning skills. The world is no longer set up for those of us who choose not to make use of cell phones or computers, land line phones are becoming fewer and fewer. It is a big world out there, but to those who are plugged in to social media, it seems smaller and smaller every passing year. To an extent that is good, but it also makes the greatness of the spaces around us a lot less magnificent.

Tim Hortons in Dubai

ABY MAHMOUD
2A MANAGEMENT

People in Dubai are loaded with money; do they really care about having cheap coffee and donuts?! Well, apparently YES! Tim Hortons has a huge line up already, packed with home-sick natives. It is a big success; everyone in Dubai is talking about its opening and debating whether it will put Starbucks out of business! Frankly, with Timmies' cool Iced Capp at such a low price in the hot weather of Dubai, it might do just that!

Timmies is selling at its regular low prices with each timbit costing one Dirham (the Emirate currency) which is about thirty cents, and coffee costing seven Dirhams which is about two dollars. The staff there have also been trained to understand typical orders such as double-double. The menu is identical (except the absence of 'everything' bagels) and the donuts and muffins are made fresh every morning. They've managed to make it exactly the same, aside from not having drive-through.

There are still 119 more outlets planned for the Middle East over the next five years with the first of those set to open in Abu Dhabi (the capital of UAE which is the country Dubai is in) later this year. And judging from the crowd of about 50 diners and the constant stream of customers threatening to spill out of the front door, the franchise is already poised to be a runaway success.

Following in the University of Waterloo's footsteps, Tim Hortons sets its ground on the east side of the world. This is not an easy decision to take because unless a citizen in Dubai or the Middle East has been to Canada, he/she wouldn't know who or what Tim Hortons is. By keeping itself local for so many years, Timmies made a great job at not being popular. Starbucks, Costa and Seattle's Best Coffee are much more well known. Why would anyone want to try it? For now, the vast majority of customers of Tim Hortons in Dubai are people who have lived in Canada at a point in their lives. Question is whether these will be the only customers Timmies will see in its lifetime in the Middle East or will it grow beyond all the well-known coffee shops and gain greater exposure. Besides its low prices, Timmies does not offer anything more than any other coffee shop.

I saw a comment on the Internet saying that Tim Hortons is "pretty low class". Is that an insult?! Is Timmies not good enough for Dubai's modern, shinny look? Living in Dubai as a child, I always had a maid at home who cooked breakfast for me and my siblings every morning. Unlike Canadians who start off their day with Tim Horton's breakfast combo, most residents of the UAE don't. So why did it open there?! Were the engineering students of UW in Dubai feeling lonely without their beloved Tim Hortons? Did they need some timbits as they struggled to get their assignments done? For whatever reason someone was brave enough to franchise it there, they did it! And it is indeed a hit (for now…).

Is this great opening of Tim Hortons in Dubai in fact a great opening? Only time will tell. For now, enjoy your great Canadian coffee Dubai-ians!

Sr
COUNTDOWN

DEFENDERS

TOPZ (with a Z): Top Future Technologies

WADE WILSON &
EDWARD BLAKE
2Z HANDSOMENESS

The future: it's filled with uncertainty. What does it hold? What does it promise? Normally, you're trapped in a small block of time; because this block is inconsequential, unimportant and ultimately forgettable we call it "the present". But wouldn't you love some magical technology that could allow you to peer into that vast unknown we call the "future"? Well, don't hold you breath. That's being flat-out techno-illogical. But what we can offer is our expert opinions on what the future of technology might offer. So lo and behold, we present to you the list of top future technologies to look forward to!

Wheel: You have heard of the AMD shoe, more recently their sled, and now they have outdone themselves again with their new 500,000,000nm wheel. Get this, it does not have any corners, this allows it to be cross platform compatibe with grass, dirt, sand, and even rock. Leaks from within AMD even suggest potential for working on extraterrestrial terrain such as the moon. However, it goes downhill from there for consumers because, while it is rolling, it does not collect any MOS, therefore it is incompatible with the industry standard SeaMOS technology. Environmental concerns have also risen about this "wheel" technology; AMD's response to the criticism is to point out this is the first generation and gravel emissions would not be a concern in future models. We look forward to hearing more from AMD soon.

Fire: Destined to revolutionize every aspect of our way of life, the recently announced "fire" from the hacker consortium, Prometheus, is planned to be open source, making it free to use and reproduce. The fire will heat your home, cook your food, and provide light emitting torches (L.E.T.s) for your home even after the sun sets. Speculation exists over threats to release fire early due to a lawsuit filed by Olympus Co. that may delay the release indefinitely. Olympus Co. is not worried about the early release due to their position after surpassing previous industry titans. Furthermore, mention of a new "Pandora project" was hinted at by Olympus Co. Z. Jupiter during a recent press interview. Only time will tell how this quarrel turns out.

Tablets: Sceptics are criticizing the recent announcement by tech giant Hammurabi to release new tablet technology late next quarter. Hammurabi claims their product will revolutionize the status quo, making it easier to solve your problems with their patented chisel-and-hammer interface, combining the best of both worlds. Government interest in tablets is expected to comprise a large portion of their initial market for legislative branches, though Hammurabi hopes to capture the consumer market. Consumers, on the other hand, are holding out for later iterations of tablets. Industry analysts project the next generation of tablets will be more user-friendly, utilizing new energy-efficient OLED displays and AMD's rumoured new Kal-El ARM-based mobile processors. Sadly recent patent disputes are slowing the process down.

Augmented reality: The main goal of augmented reality is to enhance how we perceive the world around us by actively modifying perception of reality. Recent breakthroughs in psilocybin mushroom research at Other-Castle Labs have been able to demonstrate how the "shrooms" can be used by travellers to enhance their appreciation of famous tourist attractions with tests performed in Europe. It's not all smooth sailing at Other-Castle Labs due to advancement in the competing augmented reality technology in LSDs at Koopa R&D. Consumers have developed interest in both and predictions on which will persevere have begun to be made, but it is most likely that consumers will try both and pick what they believe offers the most out of this world experience. Competition is always good, allowing companies to shell it out for what is best for us.

Gravity: The wizards at Apple have done it again. Up-and-coming star Newt Issac announced at a recent conference the release of "Gravity", to be easily integrated into the Calcul iOS, as early as next quarter. Industry competitor Gottfriend Co.'s investors are starting to worry, but CEO Niz Liebe ensures that he is confident that "Gravity" will be compatible with their d/dx operatoring system. Issac says Gravity will revolutionize the way we do everything from the way we exercise to how we orbit our planet around a giant ball of flaming gas. Apple has been on a roll ever since acquiring Research in Laws of Motion and industry analysts are wondering if they can do anything wrong. It is these writers opinions, though, that there are many gaping, black holes in Apple's promises. For example, whenever asked to explain in detail exactly how Gravity is supposed to work, Apple CEOs tend to resort to vague answers and references to shaky ideas such as "other dimensions" and "fundamental forces of the universe". So will Gravity be the next hot thing, or are techies due to a great fall of disappointment? Only time will tell, but we don't think you should get your hopes up, the potential energy in a mob of disappointment can drive down share prices.

Voice Control: We sometimes wish that instead of having to open certain apps and websites to get a task done, we could just be able to say it to our smartphones, making our lives much easier. Tech companies have taken notice and are now SIRIous about implementing such usability in their devices. Some consumers consider the idea cool but mostly useless as they would prefer to type out what they want rather then talk, specially when in the public eye. Situations where we prefer to send texts rather than make a phone call come up frequently rather than allowing everyone around to listen in. RIM's OS7 Blackberry phones have had audio universal search added onto their regular universal search feature with rumours of more implementation in future updates, including the possibility of being an integral part of their future QNX based smartphones. Now Apple has come along and released SIRI which fans are already going crazy about. With talks of Icecream Sandwich Android OS on the new Nexus phone it is Google's move now.

So, are you ready for this new and exciting era? Let us know what you think at the alley behind the McDonalds, near the dumpster.

T Cubed: Who Said It Was An iPhone 5?

JACOB TERRY
2A NANOTECHNOLOGY

October marked one of Apple's traditionally more significant media events, where they release all their traditionally iPod-centric news for the next year. As the iPod has been declining in popularity due to the prevalence of media player functions in newer smartphones, the event mostly centered around iOS 5 and Apple's new iPhone, the iPhone 4S.

The iPhone 4S looks almost exactly like the iPhone 4 it succeeds, but features primarily internal upgrades. It has the Apple A5 processor of the iPad 2, enabling it to process graphics about 7x faster and other computing processes about 2x faster than the iPhone 4. It manages to keep the battery life about the same as the iPhone 4, but talk time on 3G has been boosted to 8 hours.

Data speeds have been improved incredibly, as Apple has designed the phone to switch between two antennas to transmit and receive data. This allows for a theoretical maximum download speed of 14.4 Mbps, which is the same level as many phones currently branded as 4G. The phone combines CDMA and GSM capability, which is an improvement over the old iPhone's independent CDMA and GSM models. Phones that are purchased unlocked, however, must be used on a GSM network. This doesn't mean much in Canada, where all three major carriers run GSM networks, but in the US, the carriers are fairly split between GSM and CDMA.

The camera has seen some major upgrades as well. The resolution of photos is now 8 megapixels, and to make up for the higher density of the photo sensors, Apple claims the backside illumination on the iPhone 4S can gather 73% more light than the iPhone 4. It also claims photo capture speeds 33% greater, with photos taking 1.1 seconds on average for the first photo and 0.5 seconds for all subsequent ones. The video recording quality has been upgraded to 1080p, allowing for full HD video, and comes with built-in image stabilization and noise reduction.

Internal upgrades arguably pale in comparison to what could be the iPhone 4S's most intriguing feature, Siri. Siri is a self-described "humble personal assistant" who is aimed to be an improvement on the more rudimentary voice commands found on other phones. Instead of asking it "Call First Name Last Name", you can speak to it in plain English, such as "Siri, can you call my manager?" or "Book an appointment at 6:30 on Monday to meet with Jacob" and Siri will reply conversationally. Siri replaces the Voice Control commands on the iPhone 3GS and iPhone 4, which could be activated by holding down the home button for a few seconds. Siri works across iOS, so can be used in all applications. While the commands will lead primarily to Apple's built-in applications, you can use Siri to dictate into any text field in any application. Siri also connects to Wolfram|Alpha, Yelp, and Wikipedia to answer questions.

Even though the iPhone 4S dominated much of the presentation, the iPod line is still alive and somewhat kicking. The Nano got a new update, primarily presentationally, to fix issues people had with using multitouch on the small screen. The Touch received updates primarily through iOS 5, with Apple pushing its ability to send iMessages and use iCloud, as well as how it now comes in white.

The iPhone 4S was released October 14, and iCloud, iOS 5 and the new iPods were released October 12. I had a chance to play around with iOS 5 and iCloud, and have a pretty positive opinion of each so far. iOS 5 may borrow a couple things from other operating systems, but it does happen the other way more than most would be willing to admit, and there are changes that are arguably much needed, particularly with concern to notifications. iCloud is good in the sense that you don't notice it working, since almost everything in iCloud is built to work as far into the background as possible.

While I didn't get a chance to try out the iPhone 4S, initial reviews seem positive so far, but if you read the news about the phone's release on the day of the announcement, you would have thought Apple was going off the deep end and releasing something so awfully unimaginative that they would be sent to bankruptcy. Stock prices went down and the media flooded the tech world with words like "disappointing" and "failure", but once the phone was actually released, stock prices rocketed back up and the media was praising the benefits of Siri. Why is there such a swing, and why was everyone so disappointed in the first place? Because of the iPhone 5.

No, there wasn't an iPhone 5 released this month, but rumour sites were plastered with rumours about this 4G phone with an Android-like large screen, a tapered design with an aluminum backing, a widened home screen and internals made from a bezoar, five snake fangs and a dash of unicorn horn; all naturally backed up by case designs from China and leaked factory photos from Taiwan. When Apple didn't release this magical phone that the rumours sites built up suspense for, no wonder everyone was disappointed.

The situation is quite similar to the iPad's release, except that one was built up even higher. When it turned out to be a larger iPod touch with an emphasis on larger applications, everyone deemed it a failure and expected it to go the way of the Newton. Instead, it's perhaps the most successful tablet in the last decade and seems to be getting more and more popular as more iterations are released. Based on Apple's record-breaking 1 million preorders for the iPhone 4S, and American carriers AT&T and Sprint claiming record activations for the device, I have a hunch that the iPhone 4S won't be doing too badly either. Naturally, the iPhone 5 rumours have popped up again already, so it seems next year's product announcement hype machine is already starting.

The media doesn't just overhype Apple news, or even just tech news, but in the technology world, it's surprising how people fall for the same tripe every time websites blow things out of proportion, then when a company announces their real plans, people get disappointed. I know someone who thought that Apple had actually promised an iPhone 5 would come out months ago and was now pulling back on that promise, because the rumour coverage has been that consistent and in-your-face.

RIM seem to suffer from this as well. People have built up expectations of what RIM should announce, and when they don't, there's a level of disappointment among observers and investors. It probably hasn't helped their fragile situation that in the week that their BlackBerry Messenger service went down, Apple pushed out their iMessages service alongside many other competitive product releases.

Next time you read about a device being announced, a rumour about a famous figure or any other unconfirmed information, take it lightly and assume it's untrue until proven correct. If it's a new product you're excited for, you won't be as disappointed when it doesn't turn out to run on fairy dust and rainbows. If it's about a public figure or government overseas, then untrue and unnecessary judgement or bias against said figures will be passed as people won't buy into the hearsay spread around by the so-called news outlets looking for extra hits on their websites. Maybe then we can truly appreciate what is in front of us and not what we are told to expect.

Make the Most of Your University Career

ALEX HOGEVEEN RUTTER
4N ELECTRICAL

Explore engineering

You are lucky in that engineering is probably the most active faculty on campus. There are a plethora of student teams to get involved with and even if their expertise is slightly outside your core competency, give it a shot. If you are passionate and willing to learn they will be glad to have you.

Volunteering with the Engineering Society is a good place to get some volunteer experience without having to go too far, and there are lots of activities to help you release tension and meet people. There are also opportunities to engage your artistic side such as EngPlay, Jazz Band and the like.

Finally, I would strongly recommend you compete in the Waterloo Engineering Competition at some point in you university career. It is fun, you learn a lot, there is good prize money, and it is a great talking point in interviews. If building things is not your forte, try consulting, debating or technical speaking.

Venture outside of Engineering

While engineers often have a somewhat shaky relationship with the rest of the school, there are lots of positive experiences volunteering for FedS if you take the time to look. Getting involved with a non-engineering club can be very rewarding, in terms of meeting non-engineers, enjoying your time at Waterloo, and developing non-technical skills.

Even if you are not good enough for varsity athletics, join an intramural team or a sports club. Learn a new sport by playing squash at the PAC or joining the fencing club. Heck, join the gamers club or the D&D club if that is your thing (though I would generally encourage you to try something new). I always laugh when my peers complain, 'everyone cares only about technology'. There is a diverse world just across the pathway.

Venture outside of UW

Don't forget that you are part of Kitchener-Waterloo, not just UW. There are lots of free or cheap things to do outside of UW. Explore our many parks and restaurants, experience the free festivals and live concerts in Town Square. Go skating and see plays or other acts at Centre in the Square.

University is also a good time to try various lifestyles. A part of me dies every time I hear someone tell me they still don't know how to do laundry. Learn to cook, clean and shop. If you spend your weekends in Waterloo, you'll realize there's actually a lot to do. For example, while I'm not fond of clubbing, I'm glad I gave it a shot. Believe it or not, Waterloo actually has art galleries and museums and bike paths and a variety of different 'scenes'. Try some.

I've often heard that engineering doesn't give us an opportunity to relax or learn a broad number of skills. There are lots of courses you can take free or cheaply in the community like yoga, dance, pottery, art, etc. These can also be a good chance to meet people from the 'real' world.

There are lots of other institutions in the community to be involved. Volunteer at the YMCA, tutor high school students, take a business course at Laurier, and go to free public lectures at Center for International Governance Innovation (CIGI) and Perimeter Institute (PI).

Venture outside of Waterloo

The most obvious way to get out of Waterloo is an exchange. I have yet to meet someone who regretted an exchange, and it is also a good excuse to learn a new language (though there are plenty available in English).

The Outers club has fairly cheap rentals for camping gear, and you can often get weekend deals on car rentals. A road trip has long been a formative experience of University years, and you are no exception. There's something about travelling with friends and seeing new places; the inevitable drama and memories that will ensue will shape who you are.

Question Yourself

Now is the time to generate stories about your "crazy college days" (as they would say in the United States). There is no better time to question your religion, political views, sexuality and other values you may have held dear and constant all your life. I'm not saying you need to change who you are, but even if you do return to your initial viewpoints, you will be stronger and better equipped having asked yourself the tough questions.

Make Your Academics Interesting

Don't take 'bird' courses. Unless you absolutely will fail without a mark booster, take complementary and technical electives that are going to be interesting and relevant. Having some breadth in economics, law, the environment or a language can be useful. Ideally, take multiple courses in the same area to show some depth. An option is always nice, but don't force yourself to take courses you hate just to put it on the piece of paper. Electives are your opportunity to show an employer your individuality and discover what other areas you are interested in and what kind of people you want to work with.

For the academically ambitious, you can even get a minor. By taking an extra course most terms, distance ed courses and perhaps one extra term you can get an entire extra degree in a field like economics.

Finally, one of the best academic experiences is probably an undergraduate research assistant. While you might not be responsible for profound scientific achievements, you will get a leg up for grad school, a little extra spending money and unique opportunity to shape your education.

Make Your co-op Interesting

I am always dismayed to hear of people who pick their co-op job based on proximity to home. While it might be nice to save on rent once or twice, co-op is the chance to learn about new companies, new jobs, and new places. While you should return to a previous employer at least once (ideally in a better job, with more responsibility), you should still try to live in 3-5 different places, and at least get 3-5 different experiences.

Take extra courses on your co-op, experience the community you are living in, or work harder than you ever have before. Co-op is supposed to be a break to regenerate and relax, but it can also be an opportunity to try things you are too busy for while at school.

Learn Something New Every Term

Whether you are learning a new technical skill, enhancing your professional skills, or learning about yourself, try and learn something new every term. You have 8 terms here in Waterloo, and it is easy to become stagnant in your routines. While you should choose one or two activities to really commit to and develop some expertise, I challenge everyone to learn something new each and every term. You won't regret it.

Nobel Prizes 2011

KRISHNA IYER
2T NANOTECHNOLOGY

Physics

The Nobel Prize in physics this year was given to Saul Perlmutter, Brian P. Schmidt and Adam G. Riess for " the discovery of the accelerating expansion of the Universe through observations of distant supernovae". This is a very important contribution to astrophysics and has widespread implications. The fact that the Universe is expanding was discovered almost a century ago in the 1920's by Edwin Hubble and other scientists. One would presume the expansion rate of the Universe should slow down due to the attractive force of gravity. On the contrary, this year's Nobel Laureates' work has revealed that the Universe is in fact expanding at an increasingly fast rate (i.e. accelerating), in opposition to Einstein's equations for the homogenous and isotropic Universe. The scientists used Cosmic Microwave Background (CMB) radiation for type Ia supernovae to test their claims experimentally. This was done using the COsmic Background Explorer (COBE) satellite which is in fact the subject of a previous Nobel Prize (2006). This seemingly innocuous discovery has far-reaching implications on the understanding of "dark energy", which is thought to comprise 74% of the Universe and may even take us one step closer to ending our energy dependence on fossil fuels.

Chemistry

Dan Schetman received the prestigious Nobel Prize in chemistry for "the discovery of Quasicrystals". Quasiperiodicity of crystals is analogous to decorative tiling in medieval Islamic mosques. This discovery ushered in a paradign shift in the field of crystallography. A quasicrystal is a structure that is ordered but not periodic. There are a lot of mathematical theorems to explain the diffraction patterns resulting from these crystals and only recently have we been able to model the positions of atoms within. Despite the first investigations into quasicrystals almost fifty years ago, only recently has their potential been uncovered. There are many novel properties of quasicrystals that could be exploited for future research. For example, due to the highly-ordered crystal structure, electronic propagation in these crystals is further enhanced by phonons and Bloch waves, opening up a new avenue of research for semiconductor materials. Additionally, these crystals have a small surface energy, which reduces adhesion and cohesion thus highly reducing friction. Quasicrystals have also been reported to naturally occur in geological samples from Khatyrka river in Russia (deriving their name khatyrkite).

Physiology/Medicine

This year, the Nobel Prize for medicine was awarded to three scientists. The official release states that "the Nobel Prize in Physiology or Medicine 2011 shall be divided, with one half jointly to Bruce A. Beutler and Jules A. Hoffmann for their discoveries concerning the activation of innate immunity and the other half to the late Ralph M. Steinman for his discovery of the dendritic cell and its role in adaptive immunity". There was great controversy as this was one of the few times a Nobel Prize has been awarded posthumously. The subjects of these Nobel Prizes have important implications in healthcare. Understanding what our body does and replicating it for fighting diseases is essential for development of the entire human race. Autoimmune diseases like AIDS can be circumvented by a complete understanding of immunity and the way our body normally handles pathogens. The research of this year's Nobel Prize recipients has paved the way for development of novel drugs and vaccines which are more effective and posses fewer undesirable side effects. Additionally, with market analysis pointing to the fall in use of small molecules as drugs, there is an ever growing market for protein- and nucleic acid-based remedies that mimic the mechanisms of action of the innate immunological responses of these pathological pathways.

Literature

The Nobel Prize in Literature 2011 was awarded to Tomas Tranströmer "because, through his condensed, translucent images, he gives us fresh access to reality". Tomas Tranströmer is often called the most important influence to Swedish literature and has influenced creativity all over Scandinavia. He published his first selection of poems in 1954 and has since made an everlasting contribution to poetry. In the 1960s, he used to work as a psychologist assisting the rehabilitation of juvenile offenders. In 1984, Tranströmer went to Bhopal, India when he heard about the tragic loss of life due to toxic fumes from an industrial accident. He took part in a poetry reading session alongside noted Indian poets to express solidarity with and to commemorate those who died in the disaster. Furthermore, it has been recently revealed that his contributions were so valuable that he had been nominated to receive the prestigious Nobel Prize in literature every year since 1993. His study of psychology influences his poetry and is shown as he reveals the mystical intricacies of human mind through seemingly simple imagery from everyday life. Despite a debilitating paralytic stroke that left Tranströmer unable to speak, he continued to write and publish poetry until the early 21st century. Tranströmer became the first Swede recipient of the prize since 1974, despite the Swedish origin of the award.

Economics

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2011 was awarded jointly to Thomas J. Sargent and Christopher A. Sims "for their empirical research on cause and effect in the macroeconomy". In an economic season like this, work of economists like the recipients of this year's Prize in Economic Sciences is of prime importance in order to maintain a stable atmosphere of growth and success in a nation. These economists are famous for their studies of the effect of economic policy on the health of a nation's economy by studying the relationships among GDP, Inflation, Employment and other such parameters. The tools and methods developed by both Sargent and Sims are essential in macroeconomic analysis and are used the world over by both researchers as well as policymakers. Understanding the two-way relationship between policy and economics will influence future decisions about wages, savings and investments.

"Fat Tax" Thins Danish Wallets

ZAC YOUNG
2A NANOTECHNOLOGY

As of October 1, 2011, fatty foods in Denmark are subject to a tax of $3.51 per kilogram of saturated fat if over the 2.3% limit. In an effort to curb increasing instances of obesity and heart disease, the outgoing Danish government has passed the first ever "fat tax" in the world. Now Danes can measure their growing waistlines in dollars and cents.

The announcement of the new tax in late September caused a frenzy of fat food hoarding in the country as storeowners and consumers alike lined their shelves with all the fattiness they could fit. One of the country's major margarine producers reported a 500 metric ton increase in orders for September. If margarine's saturated fat is estimated at 15%, over $75 000 in tax was saved on just these margarine orders.

Whether or not the tax will last would be a lengthy debate, but consider if this trend caught on worldwide. In Denmark, approximately 1 in 10 adults are considered clinically obese. While this number may seem reasonably high, it pales in comparison to over 1 in 3 adults considered obese in the United States and over 1 in 5 in Canada. Take a look in your fridge and your cupboard and do a quick count of what foods you have that would be pricier in Denmark. It isn't too bold to assume that within the student community this tax would be pinching the wallets and waistlines of many.

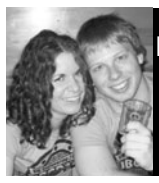
Hungary also has been pursing the food taxes, with a recent "chip tax" plan that includes a fee for foods "too high" in salt, sugar and fat as well as increasing the tax on liquor and coffee. Many thanks should be given to the fact that Canada hasn't done the same. Not only would inebriated nights become much more expensive, but so would the morning recoveries.

While these taxes are passed for a noble cause, saving us from bad foods by make them hurt the piggy bank, it raises the question of whether taxation is the real solution. The Danish government is expecting $415 million revenue from the new tax, which should probably be put towards weaning the population off bad foods without the threat of tax. Whether through more public health education or the pursuit of stricter food regulation, it makes sense that this tax should essentially work to eliminate the need for it. The means of imposing restrictions on the national diet don't have to come through a form of tax, but the government is evidently drawn to the revenue it will create.

Hopefully, this tax will have some positive impact and not just cause Danes to fork over (no pun intended) more money to maintain their current living style. As this new tax is scrutinized, it can be hoped that it will spur more interest on food content regulation instead of putting the burden on the consumer. The business of fat foods in the world is hard to disrupt, but it is time for the market to be put on a diet.

Beer Buzz:

Oktoberfest Style Beer and German Beer at KW Oktoberfest



REBECCA CAMERON
4A GEOLOGICAL
ERIC COUSINEAU
4N ELECTRICAL

The world of beer held its most well-known festival in the last month - Oktoberfest! And KW Oktoberfest is the second largest Oktoberfest festival in the world (you'll have to go all the way to Munich, Germany to experience the biggest).

The history of the Oktoberfest beer style pre-dates the festival itself (which started in 1810). You may find it called by many names including: Oktoberfestbier, Märzen, and Märzen-Oktoberfestbier. The name Märzen translates into the English phrase March beer. In medieval Bavaria, beer could only be brewed in the colder months of October to March, due to the bacteria in the air during the summer. In order to have beer available during the summer, Bavarian brewers worked overtime in March to make and store extra beer to last them during the summer months. They stored the beer in dark caves with ice cut from nearby ponds. This beer would last them all summer, and as October approached they would hold an autumn festival to consume the remaining beer and make room for new beer in their casks.

The traditional Oktoberfestbier (or Oktoberfest Beer) name is trademarked by The Club of Munich Brewers and may only be given to lager brewed and aged within the Munich city limits. With today's modern brewing technology, Oktoberfestbier can be brewed at any time of the year. Also, brewers usually prefer to ship their beer as soon as possible as opposed to the expensive alternative of aging it for the six or so months that used to constitute the summer. As a result, Märzen beer aged for only six to eight weeks is marketed without the Oktoberfest suffix, and beer aged 12 to 16 weeks is marketed with the Märzen-Oktoberfest suffix. Traditionaly the beer has a higher than average alcohol content in the range of 5% - 6.2%, and a deep amber colour.

Oktoberfest style beer is surprisingly hard to find at KW-Oktoberfest. This is because the beer contract was bought some years ago by the Molson Coors Brewing Company, so most festhallen (tents or halls with Oktoberfest celebrations) serve the generic Molson Canadian or Coors Light. Pitchers of these beers sell for around $20, which is way too expensive for what you are buying! However, real German Oktoberfest style beer can be found, if you know where to look (for non-beer related information about Oktoberfest see Rebecca's article in this issue of the Iron Warrior). Generally, you can find German Oktoberfest beer by going to one of the five major German clubs: The Alpine Club, Concordia Club, Hubertushaus, Schwaben Club, or Transylvania Club. You won't find the German Oktoberfest style beer at the bigger bars in the festhallen - you need to go and find the permanent, year-round German bar at the club.

See Beer Buzz on Page 19

Occupy Wall Street Comes to Canada

NINA FENG
1A ENVIRONMENTAL

What started as a simple proposal from the Canadian activist group Adbusters has now spread across the United States and into Canada. The 'Occupy Wall Street' protests began on September 17 with a few hundred people in New York's Zucotti Park. Since then, more than 200 American cities have been occupied by thousands of activists, young people, hippies, union members, and the unemployed. Brooklyn Bridge was a scene of chaos as police resorted to brute force in an attempt to subdue the initially peaceful crowd of protesters.

In Canada, where the first calls for change were seen in the 2011 federal election with the surprising appointment of the NDP as the Official Opposition, the movement is expected to touch down on October 15th, though some protests have already unfolded, most notably 'Occupy Bay Street' in Toronto. Demonstrations are expected to be held all over Canada, in cities including Vancouver, Calgary, Edmonton, and Montreal, and even Charlottetown. In Vancouver, more than 2,500 are expected to show up in an attempt to convey their message to the Canadian government.

But what really is the message? Despite the growing interest and overwhelming turnout for the movement, there is still a slight lack of organization and no obvious goal in the protests. Grievances brought up by the protesters range from climate change, to animal testing, to bank failure. Both Prime Minister Stephen Harper and Ontario Premier Dalton McGuinty believe that things will be different here than in the U.S. Harper especially believes that, due to factors such as our performance in the global recession, most of the issues do not translate in Canada. Our banks held out, and jobs were even created. However, it is the view of several protesters that Canada might very well go the way of the U.S. Canadian protesters are expected to bring up topics related to the economic future, poor environmental policies, high tuition and militarization, caused by an increasingly money-oriented government. With such a broad number of issues, the protests can be considered as a symbolic way to demonstrate the unrest and irritation in the majority of the people. With a bit of luck, it will act as a wake-up call to the ruling parties for change. Because all of this traces back to the government, a common topic of interest is power, and its relations to economic justice.

Inspired by the successful pro-democratic protests in Cairo earlier this year, the main objective of the protests is to reclaim democracy so that the government works for the public, or the majority of the population. It's an attempt to separate money from politics, an effort to obliterate the influence of large corporations on government legislations. Prominent in the movement is the '99 per cent' concept. The idea is that while 99 per cent of the population is vulnerable to financial crisis, there is 1 per cent of the population that still gains profits in harder times. Though it's especially true in the United States, the same can be said for Canada, especially during the economic crisis. In both countries, a very small group of people abuse a colossal amount of political and financial power at the expense of the middle and lower classes, who make up the majority of the citizens. Protesters believe that the income gap between the 'rich' and the 'poor' is simply too high. To emphasize the point, it is said that the wealthiest 400 Americans are richer than the poorest 150 million combined. The vast majority of people (the 99 per cent), must work long hours for the basic necessities of living, and must suffer from a lack of financial means and unemployment. Many Canadians have enormous amounts of debt, because they are paying for everything but ending up with nothing. This goes to show that 'the rich get richer and the poor get poorer.' Thus, at its core, this is a war of the classes, where equality is everything and corporate greed is the main enemy.

Though tackling such a broad and complicated issue may seem like too big of a task, there is hope that such a large revolution will garner enough attention to initiate change, though the lack of concrete demands and organization may dampen the efforts slightly. As a symbolic way to voice our opinions, however, the ample media attention received by the events can even be considered a success on the part of the people.

But until we begin to see some change, the protests are expected to continue indefinitely … or at least until the Canadian winter hits and it gets too cold outside.

Balance in Chaos

Photo from "thelinknewspaper.ca"

A metal more precious than Gold or Platinum?

KRISHNA IYER
2T NANOTECHNOLOGY

That's right people. There is one metal that has been going up in price at one of the fastest rates in history, all thanks to the technological revolution. It is Indium. A lot of you may not have heard about this story, but the world supply for Indium is going down while its demand is increasing exponentially. For those of you that don't know about Indium, let's have a short introduction. Indium is a post-transition metal with the atomic number of 49. It is named for its bright indigo spectral emission line. The single largest production facility of indium is in Trail, British Columbia at the Teck Cominco Refinery, with the yearly production going down at an alarming rate globally. Some of you may not have any idea why this is an important issue. Let me break it down for you.

Indium was first used commercially in World War II to coat bearings in high performance aircraft engines. With the advent of semiconductor electronics, tiny beads of Indium started being in transistors as collectors and emitters. Furthermore, due to the low melting point, it is also used in RoHS-compliant lead free solders. The real revolution came in the late 1980s with the advent of LCD displays. Indium is an extremely interesting element owing to the fact that along with tin and oxygen, it forms one of the best performing transparent semiconductors. Indium Tin Oxide (ITO) is a solid solution (like glass) of indium(III) oxide and tin(IV) oxide. Due to the metal oxide nature, it can be easily deposited using classical semiconductor fabrication methods such as physical vapour deposition (PVD) and sputtering. Due to its large bandgap, it remains transparent in the visible spectrum of light, but is opaque in the UV and IR regions of the light spectrum. Due to this nature, it is used widely in optoelectronic components such as lasers, solar cells, LEDs, LCDs etc. Additionally, due to the fact that it is transparent, they are widely used in touchscreens.

Of late, due to the booming demand for LCD displays, RoHS compliant electronics, and touchscreens, there is an explosion in the demand for ITO. Four years ago Indium was about $100/ kg, and now costs $800/kg. A recent spike drove the price briefly to $1000/kg. Indium is a metal that has more worldwide production through recycling than through mining. Proper e-waste disposal has meant that for the past few years, the supply of Indium has met the demand. However, with market predictions for Indium skyrocketing, scientists are busy looking at alternatives. Here at the University of Waterloo there is intense research going into the quest for alternatives for ITO using organic materials. Dr. Hany Aziz from the ECE Department is a leader in research into organic electronics and his research has yielded flexible materials that may eventually enable displays that wrap around your wrist.

Burning the Ozone at Both Ends

ZAC YOUNG
2A NANOTECHNOLOGY

In a recent report issued by Nature, an international science journal, a record-breaking hole in the ozone layer was observed over the Arctic in the winter of 2010/11. Through ideal and sustained circumstances for ozone depletion, the first Arctic ozone hole comparable to the one observed over Antarctica has been recorded.

Early each spring, both polar regions of the Earth experience some chemical ozone destruction. Since the 1980s, almost complete degradation of the ozone layer has been observed in Antarctica, growing in size since it was first discovered. Generally, the Arctic is much more variable and lower in magnitude, however a combination of persistently cold stratospheric temperatures and strong wind patterns developed record setting levels of depletion. These levels were as high as 80% in regions at 18-20 kilometers altitude, with the hole covering an area five times the size of California as reported by Nature. They have said that future events of this magnitude or higher can be predicted, however the ideal conditions presented may indicate that this will be an infrequent occurrence.

The ozone depletion at each of the poles is centered in the lower stratosphere of the polar vortex, a large cyclone that forms each winter and lays stagnant at the poles. The exceptionally cold temperatures of the upper atmosphere at the poles combined with a layer of condensed water molecules and nitric acid create ideal conditions for ozone destruction. Here chlorofluorocarbons (CFCs), previously used for things such as refrigerants, release chlorine molecules which in turn attack the ozone. This reaction converts the UV-radiation absorbing ozone into regular oxygen and consequently destroys the protective layer.

The questions surrounding this event are centered on what these findings imply for the state of the ozone in the Arctic. Normally, the Arctic depletion is lower due to higher temperatures than the Antarctic, but it was shown that for small time spans, the hole stretched to inhabited regions of Russia, Mongolia and Eastern Europe. The increased exposure was short enough to have little effect but it raises concerns of larger holes in the future. In previous years the Antarctic hole has had years so large that it covered the entire continent and stretched to parts of South America. It can be reasoned that these conditions were of low probability but the risk of increased skin cancers from UV-ray exposure isn't something to be taken lightly.

Since the initial signing of the Montreal Protocol in 1989, ozone-depleting chemicals such as CFCs have been in steady removal from industrial standards globally. As of 2009, 196 countries, including all of the United Nations members, have ratified the Montreal Protocol. It has been observed that the atmospheric concentrations of the most important CFCs have either leveled off or decreased. Predictions state that if all signed countries follow the requirements of the treaty the atmosphere should return to pre-industrial levels by the year 2050.

Ozone depletion and the enormous impact that it has on the world, both in nature and human society, is something that serves as a reminder of the negative impact of human development. Understanding the consequences of what we produce and consume is crucial to prevent scenarios of similar or greater impact. While complex, protecting society from these problems is an important moral obligation to consider as both a student and professional.

Heavenly Palace Rises

China's First Foray Into Manned Space Labs

JACOB TERRY
2A NANOTECHNOLOGY

The American space industry appears to be going through a lull as NASA plans their next generation of space vehicles. In this period where the United States isn't testing new rockets and Russia isn't sending out any manned missions, China seems to be doing its part to help fill the space exploration gap. On September 29, the world's most populous nation launched its first inhabitable space lab module, Tiangong-1.

Tiangong-1 is a space lab with a planned lifespan of two years, designed to test and demonstrate China's ability to dock modules in space, which has not been attempted by the Chinese space program yet. The docking technology will be tested with three of China's Shenzhou spacecraft: Shenzhou-8, Shenzhou-9 and Shenzhou-10. Shenzhou-8 is to be launched in November, and will be the first to attempt docking with Tiangong-1.

The space lab was launched to booming orchestral music and released alongside an official China Central Television animation in a statement of pride and accomplishment. In true China fashion, the animation was bizarrely released with America the Beautiful as its soundtrack. For a moment of Chinese achievement, it seems strange they would pick such an American patriotic song.

Shenzhou-10 is expected to bring Tiangong-1 its first astronauts and possibly China's first astronaut. These astronauts will be interacting in the first of the space lab's primary components, the experiment module. This is the primary living area for astronauts to sleep and do work. The experiment module is powered by two solar arrays located in the second primary component, the resource module. The resource module also contains the propellant and rocket engines.

This is the first step towards China's plan of building a 60-ton space station by 2020. In 2013, China is expected to launch the Tiangong-2, a larger station prototype, followed by Tiangong-3 at a later date. The rate at which China is accelerating their space program is incredible, considering China's manned spaceflights only started in 2003, with Yang Liwei piloting the Shenzhou-5 spacecraft. By the end of the Tiangong-1's lifespan, they hope to have gained enough experience to comfortably operate space stations and repeatedly dock small spacecraft to their other spacecraft. All of this leads to China potentially landing someone on the moon by 2020.

Many observers have seen China's hastiness in pushing its space program further as a sign that it views space exploration as a sign of being a superpower, on the same level as Russia and the United States. Some countries are uncomfortable with China's further exploration into space, worrying that it could lead to China having greater military dominance since technological advancements typically find their way into the military. China naturally maintains that its space program is based on peaceful exploration to extraterrestrial regions. Undoubtedly, we will find out what China's true goals are as they continue developing their space program. As the main spacefaring nations roll back on their programs, it's good to see China picking up on their slack and advancing our space technology further.

Visual Art and Design Pilot Program

RYAN CONSELL
VISUAL ART AND DESIGN
PROGRAM COORDINATOR

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

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

This is an exploratory pilot program, the first of its kind in Engineering at Waterloo. Feedback and suggestions are encouraged and the hope is to continue to develop comprehensive series of studio sessions for future terms.

The first session is scheduled for Monday, October 31st from 4:30 to 6:30 in E2-1303 and will cover the use of line in art and introduce some practical drawing exercises. Future sessions will be held at the same time every week thereafter. These sessions are free and voluntary, however in order to ensure adequate space and materials are available, students will need to sign up ahead of time. The deadline for registration for each session will be the Friday preceding it.

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

Bill C-51
Security vs. Privacy

HANNAH HIGGINS
1A NANOTECHNOLOGY

Bill C-51, proposed at the federal scope of parliament possesses the potential to drastically revolutionize Canadian investigative process, but at a potential cost to personal privacy. Seeking to reform and modernize current practice of criminal investigation, the bill features legislative adaptations in response to contemporary technology and communication. If passed, Bill C-51 will grant more power to law enforcement agencies regarding online investigation.

The purpose of the proposed legislation is to correct several of the perceived shortcomings associated with current criminal investigation. Should the bill be passed, police will be able to identify all online networks linked with the transmission of data, and the communication traced to a suspect. This access would include information on routing, but not private content. Telecommunications servers would also be required to store data temporarily so that it is not lost or deleted prior to the need of law enforcement. Bill C-51 will also increase international co-operation with respect to online crime outside Canadian borders.

Bill C-51 aims to achieve these purposes through several amendments to Canadian criminal law. Under the bill, it will be recognized that hate propaganda initiated by an identifiable group can be spread via any means of communication. These issues are addressed in clause four, which recognizes national origin as an identifiable group, and clause five, which addresses more technically advanced means of promoting hate propaganda. Under current legislation, it is illegal to possess, manufacture, or sell a device for the theft of telecommunication services; clause eight of Bill C-51 seeks to also illegalize importing or promoting the availability of such a device. Possession of a computer virus for the purpose of committing mischief will be made an offence, addressed in clause ten. According to clause eleven, offences involving harassment and false or indecent communication will be extended to include all forms of telecommunication, from the current limitation which specify means.

Bill C-51 will also introduce new methods of obtaining specified information in the process of a criminal investigation. It will become possible for law enforcement to demand the preservation of electronic evidence, or obtain a production order to this effect. According to clause thirteen, this action will involve a preservation demand, which is attained from a judge, for a telecommunications service provider to preserve computer data for a period of up to 21 days allowing time for a proper warrant to be obtained. Warrants will be required to obtain transmitted data in real time, as opposed to historical data available through a production order. The data seized will be descriptive of the communication, but not private or privileged content.

Under clause seventeen, police will also have increased ability in administering tracking and recording devices for transmitted data. At the present, warrants permit tracking devices may be secretly installed on objects such as vehicles, allowing police to predict a suspect's location. However, the bill proposes that similar devices might also be installed on an object that is more likely to be carried or worn, such as cell phone. Furthermore, the bill indicates that such pre-existing technology may be remotely accessed by police. In addition, the bill aims to allow law enforcement access and track to online communications in a manner similar to that of tracing telephone lines.

This proposed legislation was originally introduced to parliament in 2009 as part of Bill C-46. While the bill is intended to assist law enforcement in managing crime involving modern technology, it would also grant police access to private citizen information and communication that is unprecedented in Canadian criminal investigation.

Biking Etiquette

KEVIN LIANG
2B CHEMICAL

For many people, biking is their main mode of transportation. Where most major roads contain bike lanes, and bike racks are a plenty on campus, it makes sense to bike in Waterloo. Because of the bike friendliness of Waterloo, it would also make sense for people to know the rules of biking. But this is not the case.

Far too many times have I witnessed bikers on the sidewalk trying to dodge oncoming pedestrian traffic when there is a perfectly clear and safer bike lane not a meter to the side. If there is a bike lane, use it. That is why it is there. I've heard arguments against this stating that they're dangerous. These people think this way because they do not know common safety rules. I will try to explain some basic rules every biker should follow.

The best way to think about biking in heavy traffic is not who has the right-of-way but rather, "How will I stay alive?" It does not matter if another vehicle runs a red light. The biker will be the one to regret not looking both ways before crossing an intersection at a green light. The biker must make their intentions as obvious as possible to everyone else on the road. This means using hand signals, shoulder checking, being aware of their surroundings, and not make sharp movements. Treating others on the road like they're T-Rexes is a good start. The mere act of shoulder checking will let drivers know a turn in that direction is intended at some point. Drivers expect cyclist to follow the same rules of the road as everyone else. So learn them. It is important to realize that in Canada, people drive on the right side of road. Bikers should ride on the right side of the road too. It seems odd that I should mention this, but I think it is needed. Stop at stop signs, especially if they are 3-way or 4-way stops. Knowing who has the right-of-way in each 4-way stop situation will greatly help other drivers know what the biker is going to do or else confusion will ensue.

Do not stop at a crosswalk in the bike lane and turn onto the sidewalk to pass the red light. Cyclists seem to think they can switch between pedestrian rules and vehicle rules at their will. Try to avoid this mind set. Bikes are vehicles. By dismounting, one can become a pedestrian. If a left turn is required, it is actually possible to turn into the left turning lane. I do it all the time. Hand signals do wonders to let drivers where the biker is going. However, use common sense in these situations. If one is riding at night, get some lights. Remember the "how will I stay alive" part? Lights will greatly increase the chances of staying alive while riding in the dark. The lights are not to give the ride a headlight to see in the dark, but rather to let other drivers know that there is a cyclist on the side of the road. I would recommend that the rear light would be the best option to invest in if money is an issue since bikers are now riding on the right side of the road.

There are situations where a bike lane is not present, so biking on the sidewalk might be the only option. Biking on the sidewalk comes with its own rules and safety concerns. In this case, a bell to warn pedestrians of an incoming biker is favourable. One could also shout "BIKE!" every time one needs to pass a pedestrian from behind if finances are an issue. I like to break ever so slightly so that my pads make a high pitched screech. Since the sidewalk is for pedestrians, bikers should make every effort to accommodate the pedestrian for allowing them to bike their territory. Slowing down to a comfortable velocity is also required. Unlike biking in the bike lane, people will feel uncomfortable if a biker flies pass them at high speeds, no matter how in control they are. This is the most crucial component of biking on the side walk so I will repeat: slow down on the sidewalk.

I hope this has enlightened bikers about biking etiquette for both on and off the road. It is true what they say: "They are more afraid of you than you are of them." Drivers are extra careful when they see bikers on the road. The last thing they want is to run over a biker.

Movie Review: The Three Musketeers

NANCY HUI
2A CIVIL

Let me take a minute to say that I have not yet read Duma's The Three Musketeers. But when I heard of the chance to obtain four passes to an advance screening on Saturday morning, I eagerly jumped at the opportunity. Unfortunately I was unable to find three other takers and ended up watching the movie alone. I am glad I did, as I would have been deeply embarrassed to waste two hours of anyone else's time.

The Three Musketeers, helpfully subtitled "IN 3D", is clearly not a serious movie. It does not need to be historically accurate. It is exempt from the laws of physics. It is a popcorn movie, and only needs to be reasonably entertaining for two hours. In its latest reincarnation, three disgraced musketeers (Athos, Porthos, and Aramis) and a plucky young recruit (D'Artagnan) unite to save the French throne from a beautiful double agent and her villainous employer.

Sounds like a setup for good swashbuckling fun along the lines of Pirates of the Caribbean, eh? Well, The Three Musketeers has beautiful women with bosoms heaving out of pimped out dresses, and gorgeous men in capes and feather hats and 17th century style leather jackets (leather doublets?). There are swordfights during heists, and heists that use dirigibles, and dirigibles with swordfights on them. Later on a dirigible rams another dirigible and flambés it with a flamethrower. In the movie, they call them "war machines" but I think that "dirigible" is a much more evocative word. I think the whole movie is supposed to suggest "steampunk" but I can't be entirely sure, nor do I care, because it looks awesome. Yet there is something horribly, horribly wrong with The Three Musketeers that no number of CGI dirigibles can fix.

Let's start with the protagonist, D'Artagnan, played by Logan Lernan. The filmmakers succeed in portraying the young D'Artagnan as hotheaded and overconfident. Unfortunately, D'Artagnan displays absolutely no character development. Cocky he began, and cocky he remains. He also scores with his designated love interest (played by Gabriella Wilde) before the movie is halfway over. Given how appallingly unidimensional her character is, they totally deserve each other.

None of the supporting characters are quite as irritating, but they occasionally come close. The musketeers are joyless caricatures, and their banter is painful and stilting. Every one of the French King's scenes made me cringe as much as the color of his puffed pants. Almost everyone else is ineffectively trying to squeeze what they can out of the script, or has given up on the movie altogether. And why not? The script is weak enough to include multiple jokes about bird shit and horse droppings.

By far the most interesting part was watching Orlando Bloom prance around while wearing a goatee and high heels as the villainous Rocheford. Yes, Orlando Bloom. I could feel his enthusiasm for goatees, high heels, and Milla Jovovich as Milady De Winter radiate off the screen. He is the best part of the movie because he is the only one who seems to be having the least bit of fun, and that is why, despite the dirigibles, The Three Musketeers is ultimately a failure.

By the way, The Three Musketeers also ends with the clumsiest sequel hook I've ever seen. Ladies and gentlemen, brace yourselves.

Mission From Mars

Navigating 'Home Away From Home'

LEAH KRISTUFEK
1A CHEMICAL

"Imagine that you just landed on Mars, but you took a course in English. I translate in to mathematics." –Lorenzo Fatibene. (Imagine him saying this in an Italian accent, it's funnier.) For many of the staff and students here at Waterloo, this coming school year is not just about learning the course work but about learning to fit in to a new culture. For me, the latest in a long line of Canadians from a smallish Ontario town, getting to university and seeing all the different ethnicities was an exciting event! What I wasn't originally expecting so much was to find that so many of my colleagues are from out of province or from a whole other country. The bravery these people show to completely leave everything familiar behind is inspiring.

I can only imagine coming here with a couple of English courses under my belt just to realize that the symbols I see in math class look familiar, but the names certainly aren't! Physics, calc and chem all seem to have a language of their own which is unfamiliar even if you do speak English. (Just ask a Laurier student!) In English class, between describing the colour orange and how it fails to rhyme every time, there is little time to teach the vocabulary used in engineering, medicine or psychology when the students span many disciplines. For profs who have spent decades immersed in their field (such as linear algebra or calculus), the rich mathematical vocabulary we use when talking to each other now has to be overlaid with new words and associations. As many of us probably know from co-op terms and summer jobs (my personal experience) it is easy to seem like you know what you are doing and way harder to have the slightest clue what's going on. Fabrication may work for a while and hopefully understanding will eventually come but it is also helpful to have someone helping you out along the way.

For those of us who wish to continue on in the academic community to become profs ourselves, it will be a wide reaching journey. In today's age, learning is a collaboration which criss-crosses the world. You will be expected to communicate with tons of different people and attend conferences in different countries. Academia spans continents and bridges the gaps between countries. You may need to effectively communicate with a cab driver in any of them or stand at risk of being left in a pile of camel dung in the middle of a desert. In all seriousness though, as math-science kind of people we are not particularly inclined towards new languages. It is yet another tool. Sometimes it can be like excel when it crashes –down right frustrating– but other times it can help us meet new friends and further our journey towards being global citizens. There are lessons to be learned here, for one on collaborative projects we should decide on units before hand; the universe doesn't need any more arrant space junk! But there is also fun to be had. There is always a time in our lives where we hit the ground running. Sometimes the coefficient of friction isn't always great enough to keep our feet from slipping but hopefully there will always be someone around to pick us back up again. So keep in mind the challenges people are having and make a new friend today. Remember; Men are from Mars and women are from Venus but we are all from the same universe and it's pretty darn big out there!

Ontario Provincial Election

The Result that Actually Matters

ROB REID
EWB CONTRIBUTOR

With the poorly attended provincial elections concluded and federal parliament resumed, encroachment on the campus bubble by political issues will likely be minimal for quite some time. There are definitely groups working on social, environmental, and economic justice issues on campus and within Engineering, fighting for bulletin board space with a new FedS restaurant or a tech start-up. However it's safe to say that peer discussions about the realities experienced by the majority of people in the world are largely marginalized, let alone actually touched on through our curriculum.

A very negative portrayal of students would be self-absorbed, apathetic, privileged people who don't bother to vote. Yes, we all have a lot of class and extra-curricular activities to worry about and certainly anyone lucky enough to be at Waterloo is incredibly privileged, no matter how hard they and their families have worked to get here, but we are working with a system that doesn't favour our involvement.

The provincial election hit a record low turnout of 49.2 %. This result is impressively high considering that we aren't told the issues and we aren't given a real voice in the political system. There are many reasons contributing to this situation; the incredibly short attention span of popular media (what, there's still a famine in east Africa?), selective and biased reporting (ever heard the TED talk "A radical experiment in empathy"?), consumer disconnection from production (what, my electronics are full of conflict minerals? my fruit was picked by an indentured labourer?), the inherent weakness of first-past-the-post (what, the popular vote doesn't matter?), and the difficulty of accessing and becoming involved in government projects (what, I can't see this document without submitting a Freedom of Information request and waiting 12 months for it to process?). No matter what reason is stopping us from getting more involved, the cause is there is no incentive for involving students (or the rest of the public). Governments and private-sector organizations have a very easy job doing whatever they want when no one knows about them or has a way to participate; it makes no sense to invest in improving public awareness and decision-making power.

We are being set up to walk into a future with a lot of challenges. Issues like global warming may be past the point of reversal in a short number of years, and political and economic destabilization in the face of resource scarcity can only promise more unnecessary wars (and less overt violence). As students at Waterloo we are members of an economic and intellectual elite with the resources and ingenuity to make a big difference in the way our society progresses. Last week, after telling a group of students that a political discussion group was about to start in the room I had booked in E5, I overheard one of them complaining "Why is there a political discussion in Engineering?" If engineers do rule the world, then we'd be silly not to be discussing it, and I think we could probably find some time in our schedules to think about problems outside of our course load, take action where we can, and make the old people in power care about what we think.

Combat Invisibility Cloaks

NINA FENG
1A ENVIRONMENTAL

When Harry Potter needed to get around without being seen, he used his dad's old invisibility cloak. Though us Muggles haven't figured out how to get one yet (though not for lack of trying), the Swedish company BAE Systems has succeeded in conjuring up its own version of it, if only for military use. A sort of 'invisibility cloak' for battleships, tanks, and helicopters... at least in the thermal/infrared spectrum.

In our technologically advanced world, we often use infrared or other electronic frequencies in combat to detect other unknown forces, especially when fighting in the dark, over large distances, or underwater. The system relies upon the thermal (heat) radiation given off by the combat vehicles. This early detection not only notifies them of the presence of most of the vehicles, but also gives them an idea of their number, size, and positions. Quite often, this poses a problem for the combatants, especially when the need for stealth is concerned.

BAE Systems' new form of stealth technology, called the ADAPTIV invisibility cloak works to alter the thermal signals that would have otherwise given away the positions or nature of the tanks, ships, or aircrafts. To achieve this, the vehicles are plated in sheets of hexagonal panels (called 'pixels'). Metallic and lightweight, each of the pixels can be heated or cooled independently with semi-conducting technology, as directed by a specially developed software program. They may also vary in size, according to their specific use.

Depending on the situation, the pixels can be used in many different ways. For example, to go undetected by enemy forces, the pixels can be commanded to sense and then mimic the temperature of its surrounding environment, thereby rendering it invisible to infrared detection. In other cases, certain pixels may be heated in such a pattern so as to create the silhouette of a small car or another traditionally harmless vehicle in an attempt to fool or disguise its true nature. Furthermore, as fatalities caused by friendly fire are unfortunately common in combat, the pixels may be heated to display a sort of thermal signature to its own allies. These identification tags may come as a coded signal or simply as a large X displayed on the side of the vehicle as a signal to friendly forces.

The ADAPTIV cloak is expected to be adopted for use in combat in the very near future, and its use may change combat tactics substantially. Though this may not be the true cloak of Death, it certainly is a force to be reckoned with.

What to Do When You've Failed Your First Set of Midterms

HOBYUNG LEE
3B MANAGEMENT

By the time this edition of the Iron Warrior hits the stands, many, if not all, of you will have gone through at least 1 midterm, gone through or are going through one of the absolute joys of engineering that is colloquially known as "Hell Week'. Or "Week-of-a-lot-of-exams-that-is-metaphorically-referred-to-a-real-bad-place-that-doesn't-exist" for the agnostic folks. It has been said ad nauseam before, but I'm here to tell you again: your marks will take a beating. Of course, we're all going to know someone in our class or in our apartment that will be able to get 103 percent on their midterms after not going to a single class or handing in a single assignment. And I'll bet that that person isn't you. But the reason I bring this up is to let you know that that is all part and parcel to coming here to UW. And it isn't the end of the world.

Now, I'm not going to tell you to not try or to be complacent with barely passable grades (if it comes to that point). What I am trying to tell you is that when and if you get your midterm grades back and it isn't what you wished it was going to be or if it wasn't even close to what you would accept, relax.

It doesn't mean you're going to be screwed for the rest of the term. Actually, the worst thing you could possibly do is to throw in the towel. So what do you do when you get back your PHYS 115 midterm marks back and it better resembles a mediocre batting average than a school grade? What can you do to right the ship and steer yourself to the next semester and some really bad cliches? The first thing I would recommend is to take a step back (figuratively, but actually taking a step back from where you are at this moment might help) and ask yourself a couple of basic questions:

1. Do you actually pay attention on class?

Before you answer this question, i think it's safe to say that "being in class" and "paying attention in class" are 2 similar but totally different things. Going to class and then opening up your laptop to creep on Facebook for 50 minutes while occasionally putting your head up to see if the prof has noticed you being on Facebook is like jogging for 15 minutes to justify eating a BK King Deal: you're guilt free but who are you really kidding?

2. Do you actually study outside of class?

There are many rules of thumbs and guidelines that exist in the anecdotal world that range from "for every hour of class you should study an additional 10 outside of it" to "what is a 'study' and why would I need to if I attend all my lectures?". Besides the the fact that studying 10 hours for every hour of lecture would amount to way too much school and not enough cool, we are all different. The point is this: from the day school has started until now, could you count the number of homework and review hours you've had in 1 hand? 2 hands? If you've gone out more times than you've stayed in, time for a change. By the time this Iron Warrior edition hits the shelves, we will officially be at the halfway mark of the semester, and not being able to recollect the times you have sat down and studied is a surefire way to explain the grade that you got.

3. Are you studying effectively?

In addition to you asking if you've actually put in any effort so far this term, ask yourself if you've been able to take away anything from your study sessions. For your midterms, did you put in the time to study but still didn't get the grade you thought you would? Then you have to ask yourself if the way you've been studying has been most effective for you. For some people, simply reading over the class notes is more than enough; for others, they might have to crank our page after page of sample questions before things start to sink in. Everyone is different, and if you think you've put in your study due diligence and it still isn't giving you what you wanted, maybe it's time to change how you approach studying a bit.

4. Have you been sleeping?

This is one of those ones that I know you've heard before: "make sure to sleep your full 8 hours of sleep every night blah blah blah...". So ask yourself: have you been sleeping a good amount every night? It might not be exactly 8 hours every night, but have you been sleeping? Now, I'm no sleep doctor, but you won't retain anything in class if you're up all night playing Battlefield of Duty on the latest WiiStation720. You won't. You need sleep to actually retain information. Just because you're awake doesn't mean you're actually awake.

These questions are only a couple that you can ask yourself if you had a bad round of midterms. And if you had a good round, then great! Keep at it and get'r done. But if not, don't panic. You still have half a term left. Just don't keep doing what you've already been doing.

The Zeitgeist of Steve Jobs

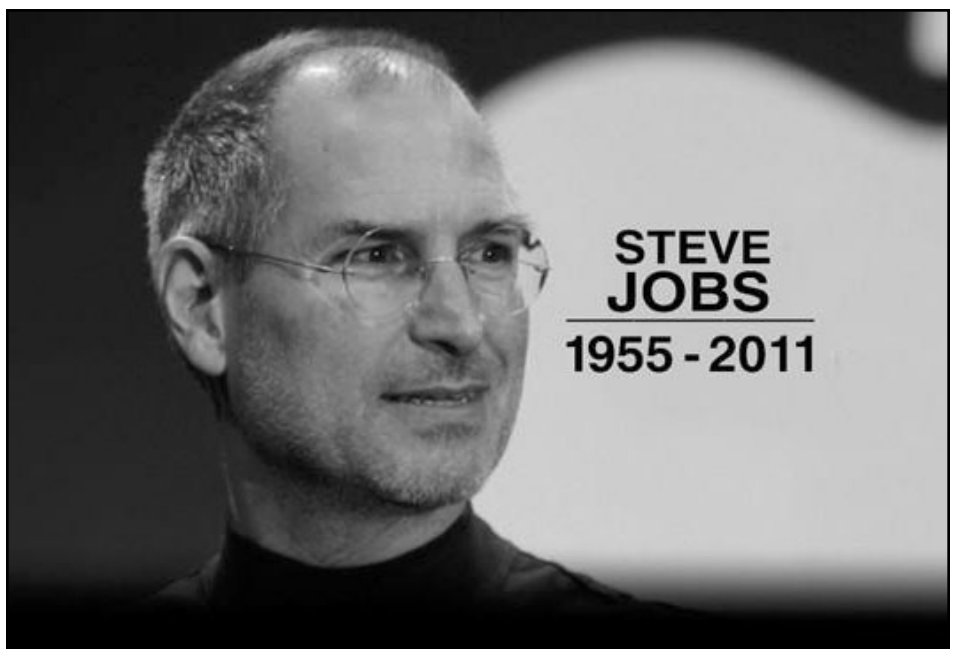
JACOB TERRY & CHAD XU
2A NANOTECHNOLOGY &
2T MANAGEMENT

Not often will millions of people unite to mourn the passing of a businessman, but to many, Steve Jobs was not just a man selling devices but a representation of a computing ideology of simplicity, minimalism and the combination of arts and engineering. Passing away at the early age of 56 due to pancreatic cancer, many Apple fans and critics alike left words of remembrance and sorrow on websites and at the Apple Stores around the world.

Born to a Syrian professor and a Swiss-German American speech pathologist in San Francisco in 1955, Steve was quickly put up for adoption as his maternal grandfather did not approve of his parents' marriage. He was adopted by Paul and Clara Jobs and moved to Mountain View, where his father taught him rudimentary knowledge about electronics. After his high school classes, he would drop in on lectures at HP, where he was later hired as a summer employee, working alongside future Apple co-founder Steve Wozniak.

Steve enrolled in Reed College after high school graduation, and although he dropped out after a semester, he continued to audit classes including a calligraphy course he said was later instrumental in his decision to implement typefaces and proportionally-spaced fonts in the Mac. He slept at friends' rooms, ate free meals at the local Hare Krishna temple and returned Coke bottles for food money to manage to keep going to his classes.

After college, Steve worked at Atari and took a spiritual trip to India, where he returned as a Buddhist and experimented with LSD, which he considered one of the most important things he had done in his life. In a few years, he cofounded Apple with Steve Wozniak and Ronald Wayne, and together they sold the Apple I and the Apple II, which became one of the first successful mass-produced computers. Steve brought PepsiCo President John Sculley to Apple as CEO in 1983, and the following year they released the Macintosh, which was the first commercially successful computer with a graphical user interface. Due to differences between Sculley and Steve, he was fired a year later and went to found NeXT Computer. One of the workstations sold by NeXT was used as the world's first web server, when CERN's Tim Berners-Lee designed the World Wide Web, which serves as a fundamental component of the Internet today. Apple bought out NeXT, marking Steve's return to Apple.



Now that he had become CEO of the company he had founded, Steve finally had the ability to properly unleash the vision he had for technology upon the world. Beginning with the colourful iMac, he brought Apple's product line under control and pushed an emphasis on design. Over the next fourteen years, his leadership brought products such as the iPod, iPhone and iPad to the masses, shaking up the music player, smartphone and tablet industries. The iTunes Store, initially designed to push cheap music downloads, grew to encompass potentially anything a user would want to use on a mobile device.

iCloud, Steve's final big announcement, is the cap on Apple's computing solution, designed to bring everything together. With iCloud, Apple's vision for electronics becomes clearer, and in true Steve fashion, it's clear he and Apple have been working towards this goal for over a decade, yet it only appears clear to us now. While we think we may have seen Apple's end goal, it is certain that Apple is working for that which we will see in another ten years, something we have not yet come to grasp. That forward thinking vision we come to expect from Apple is a trait inherited from Steve, who always played a few moves ahead of anyone else.

Yet, Steve's most meaningful contribution to the world lies not within the the cold slated-glass of any specific product that Apple makes nor can it be found within the entirely new industries he had helped create. No, his true gift to the world was the much-needed and sublime reminder that art and engineering are in fact philosophical complements to each other. Just as how a poet can communicate to her readers through written language, Steve was able to communicate in the same artful fashion to the common consumer through Apple's products.

The externally minimalistic design and intuitive user-experience are all factors that help foster a sense of emotional connection between what would otherwise be a cold and distant object with the user. Steve's ability to convey emotion through a blend of art and engineering helped not in the least to affirm his affinity with the "global citizen" when the world received news of his passing.

In a rare occurrence of events, it would appear that the general population mourned the death of a "celebrity" not for its definition, but for the actual significance and impact that Steve had had on their lives. The recent death of Dennis Ritchie presents an interesting juxtaposition that articulates the importance of what form is to function, what emotion is to material being, and what art is to engineering. Part of this realization lies at the heart of understanding why the creator of C, and by corollary, the founding father of all modern computing paradigms received little to no recognition outside of the engineering community.

The life story of Steve is also a paragon of the essence of which the American Dream is composed of; an embodiment of hope, passion, and perseverance. It is also through this transcendent effect that he was to allowed to be established as the head of the colloquial "Cult of Apple." Clearly, Steve himself will still be the subject of many newspapers, magazines, and online blogs to come, perhaps with the anticipation that there would one day be a second coming of sorts in the tech industry.

Beauty, as defined to be all that of which protrudes the human soul, is said by Dostoyevsky to be the savior of the world. Steve's brief time on this planet, through the morals of his life experience and the ideals he advocates, are all within themselves examples of true beauty. He did not, by any stretch of the imagination save the world. But if more people could see beauty in the notion of staying hungry and staying foolish, of being true to themselves, and following their passion, then the world may still have a chance after all.

How to Occupy Bay Street: A Practical Guide

CHAD XU
2T MANAGEMENT

"There's something happening here, what it is ain't exactly clear." Such were the wise words immortalized by Buffalo Springfield at the height of the hippie movement of the 1960's, where millions (don't quote me) of privileged college students demonstrated their opposition to the Vietnam War. Not to be outdone by their parents' generation, the American youths of today are "occupying" public spaces all across the States in an attempt to address the rampant corporate excess and greed that is rotting their nation.

Of course, as Canadians, we are always late for the party whenever there is bound to be one (though there is nothing wrong with being late as long as it's done in a fashionable manner). Should this particular American movement seep into our border and fester its ideals within the minds of the Canadian populous, it is then the purpose of this article to adequately prepare the students of the University of Waterloo for the upcoming protests. After all, looking out of place at a party is just so faux pas.

The first order of (anti)business is to get yourself to downtown Toronto, specifically to the heart of the financial district where your enemy awaits you. Stop! Leave that gas-guzzling, crap-box excuse of a car of yours in the driveway. Instead, make your way to the Student Life Center and purchase a one-way Greyhound ticket to Toronto (emphasis for the one-way ticket since this will be a long battle where you might not make it home). FedBus works as well if your pedigree is rooted in the lower-middle class. Next, give yourself a pat on the back for actually getting off of Facebook and taking the first step in making a commitment that is greater than yourself.

As you are about to embark on your two hour trip, be sure you keep your iPod close by and ensure that it contains at least two Bob Dylan albums (John Lennon can also suffice as a substitute). If you happen to have an iPad, Kindle, or PlayBook it would be a wise move to bring those along as well, as it is particularly helpful to have the entire eBook collection of Marx and Engels' work in front of you, since knowing your literary and intellectual history will help legitimize your voice during the protest. Plus, using eBooks will save paper, which is good for the environment.

Having arrived in downtown Toronto, you will likely find enclaves of protesters concentrated either at Dundas Square or on Bay Street, where most of the financial services are headquartered. It matters not where you, as an individual, will demonstrate your dissatisfaction towards corporate greed. All that matters is that you follow the crowd and march where the collective marches, say what the collective says, and occupy where the collective occupies. You may occasionally walk against the grain of the crowd to demonstrate your own unique values, but do this no more than twice, since it will very distracting to those around you.

Should you ever need to take a break from loitering on the fat cat's marble sidewalk, you may find solace in one of the many Starbucks in your vicinity where fresh, organic, and fair-trade coffee is served and where free Wi-Fi is abound for the people. That's right ladies and gentlemen, now is the time to log on to Twitter and tweet about how you've just been manhandled by that brutish police officer. Remember folks, freedom of information is an abstraction that can never be silenced by the keepers of oppression! Use it to your power! However, be wary as to express your thoughts without disturbing the unique ambient mood that Starbucks is known for.

As you venture out again to the battlefield, your nose picks up an all too familiar scent. That of course, is the smell of enlightenment brought to you by mother nature's own, cannabis sativa. Simply relishing in its haze will bring you into a state of trepidation and where you, upon a momentary lapse of thought, will be graced by the full forces of reason, love, and creativity. The cloud expelled from the lungs of that hippie chick next to you is in fact a metaphor for the biophilia that is innate in all of us, a union between human and nature as she welcome another toke into her own earthly vessel. Everything will be alright. There will be a job waiting for everyone after the double-dip recession. A double-dip recession caused not in the least by the banks which you now stand in front of. Or was it Goldman Sachs and their friends? Well, certainly no one in this crowd will remember. Picketing in front of Bank of Montreal will do for today.

Now it wouldn't be a true occupation if everyone went home at the end of the day. Luckily there is a Canadian Tire adjacent to the Eaton Center where you may, for a reasonable price of $13.99 purchase a "mummy-style" sleeping bag (seriously, go look on their website, it's there). Alternatively, you may prefer the au naturel method and find comfort in the remnant cardboard box of a 52" Sony Bravia laying behind BestBuy's loading dock. Both methods will quite adequately shelter you from the chilly autumn night that is fast approaching. In fact, the cold air is a blessing in disguise, as it lends the opportunity for you to camp close to your rebels-in-arms free from minding the social nuisance known as personal space -- personal space that coincidentally belongs to a rather aesthetically-pleasing specimen of the opposite sex (or same, whatever floats your boat).

You probably don't need much more guidance at this point, now that you've settled in. Simply follow your heart and do your part in bringing down the corrupt capitalist society that this generation has been entrenched by. As a closing note, be sure to spread the word and show this article to all your friends in the Arts department, as they are the ones who are going to need it the most in an economy like this.

Fight the power!

KW Oktoberfest

From Beer Buzz on Page 14

They will probably have a few choices available, and since Oktoberfest is high traffic for the clubs chances are the beer will be pretty fresh. Usually these bars are relatively quiet compared to the rest of the club - a welcome change for those who like to savour their beer!

For the last two years we have been going to the Concordia Club - it is the most massive club with a capacity of almost 4,000 people. It also boasts an enormous beer tent and excellent German music and food. At Concordia, there are tickets sold for the tent, the hall, and the Schenke. The tent and hall are both very large and serve beers from the Molson Coors lineup, but the Schenke is small and operates year-round as a bar and restaurant. Also take note that no matter which ticket you buy you can travel anywhere within the club - you just can't bring drinks from one place to another. The Schenke typically has a few German beers and maybe one or two German Oktoberfest style beers. Sadly Eric is in BC and wasn't able to be there, but Rebecca drank Weihenstephan Hefeweissbier and Paulaner Original Munich Premuim Lager. Neither of these beers are true Märzen-Oktoberfestbier, but with the rise of lighter flavoured beer around the world Oktoberfestbier has declined in popularity. Both of the above beers are served at Oktoberfest in Munich.

The Weihenstephan Hefeweissbier was served in a small goblet glass with a lemon. It was cloudy and orange with about an inch of thick, white head. Unfortunately the lemon served with the beer completely obscured its scent, even once the lemon was removed. The initial taste is that of banana, bread, and cloves, which fades away into a dry and slightly citrus feel.

The Paulaner Original Munich Premuim Lager was also served in a small goblet glass (disappointing as a lager should be served in a lager glass but oh well). It was a pale, straw yellow with about a third of an inch of bubbly head which did not last long. It had a faint malty, grainy aroma very characteristic of a good pilsner. The taste begins with a light malty sweetness with a hint of bitterness and transitions into a mild floral hop taste.

If you missed Oktoberfest this year we strongly encourage you to go next year - tickets go on sale online in May and sell out very quickly. Oktoberfest is a very fun experience, and if you are willing to look for them there are some good German beers available locally. Best of luck on your midterms, and, as always, fear no beer!

Musical Musings

NOUHA JAVED
2A CIVIL

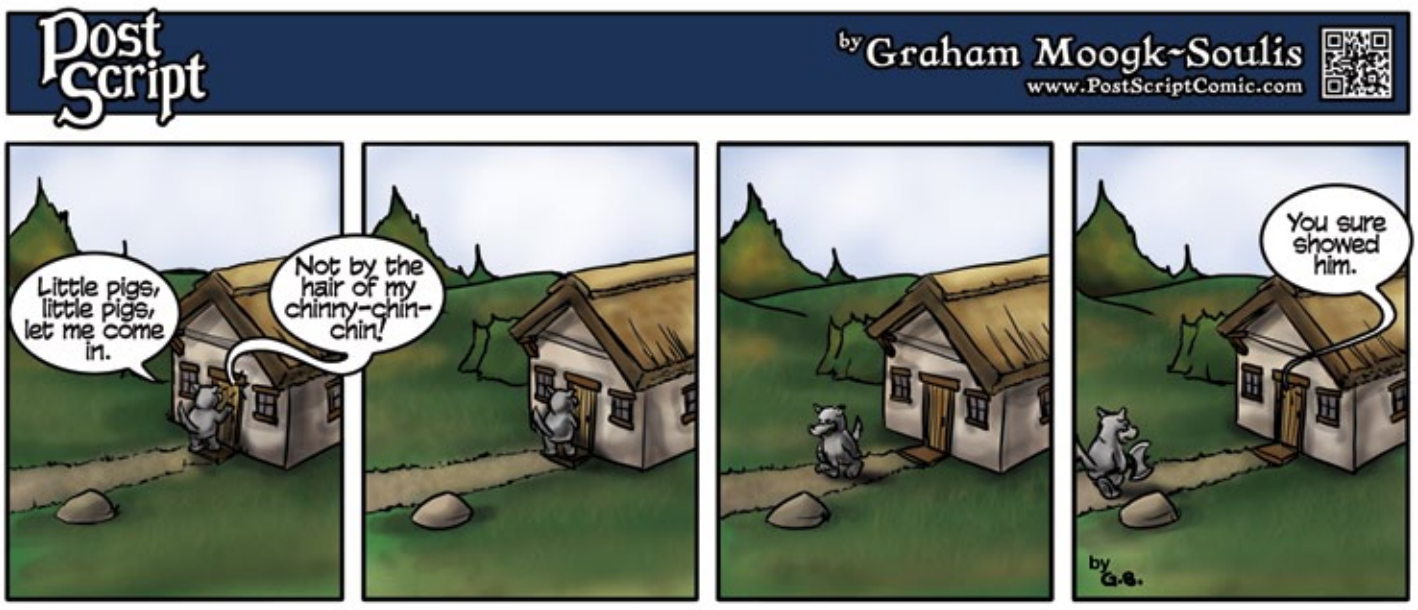
Artist: Mother Mother
Album: Eureka

Listening to Mother Mother is a bit like reading a stranger's diary. The specifics of events and emotions are different, but are completely relatable. The hope, frustration and disappointment are the same, even if theirs is over a broken relationship, and yours is about missing a bus. Don't get me wrong, these guys are a pessimistic bunch of people (The sunniest lyric? "I could explode/Oh, what I'd give to be a supernova/ Oh, if I could be blown to bits"). But the doubts and hesitations are the same ones that we text to our friends, and Facebook status update to the rest. And it doesn't hurt that their music makes you want to dance in an erratic and irreverent manner. I dare anyone to listen to the first 12 seconds of 'Aspiring Fires' and not tap something in time with the amazing carnival-on-acid melody.

The very first 'Mother Mother' song I heard was 'Hayloft', from their 2008 release 'O My Heart'. The story is a simple one; a couple of teenagers go up to a hay loft to get to know each other better, and a father shows up with a gun. Calling it a story is a misnomer actually, it's more of a moment. A moment, despite being verbally described by just two verses, is conveyed completely by the music. The background is set from the very first note, one steeped in more heavy anticipation then any axe murder movie soundtrack. This is true for all of Mother Mother's work; the lyrics are simple, razor sharp and are supported completely by the music. And it's this combination that makes sure that nothing gets lost in translation; your heart starts beating in time with the drums, and your brain realises that you know exactly what's being sung about.

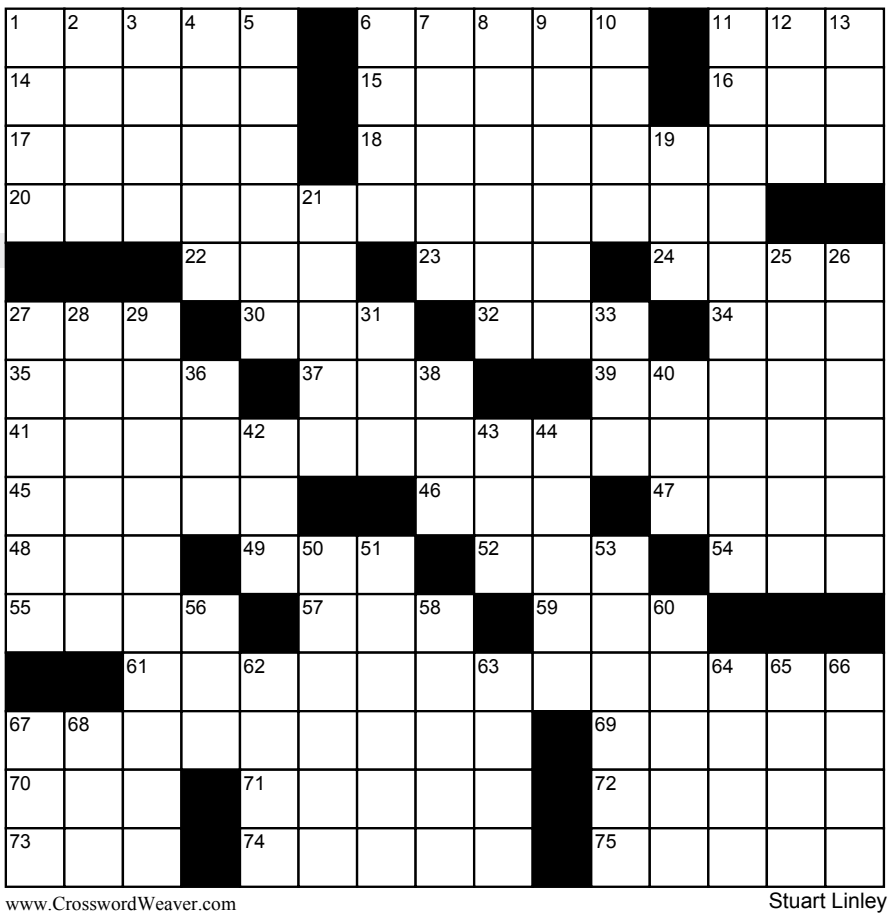
Take 'The Stand' for example. It's my favourite of the bunch, and starts off with what basically is a melodic interrogation. Sound matches content; the music is dark and closed during the questioning, and then suddenly opens up as soon as we hear the words "Let's talk about space". Now it feels like we're floating, but we can still clearly see the Earth, where Ryan Guldemond "can hardly stand the sight of it all". The ending is as decisive as the accompanying beats that make it; there's no doubt about the state of humankind as Mother Mother sees it (and it's not very print-friendly).

And decisive is what this band does best. Who else could sing "I'm a loser/A disgrace" repeatedly, without making it sound like an anthem of self-pity. Guldemond makes it sound like a fact of life, something you do not mess with and try to make better. But this less-than-shiny view on life is not something to bring us down, or depress. Like that stranger's diary, it's not meant to be the gospel truth that's meant to followed. It's merely something to think about before moving on with your day. Something to tweet about, keep at the back of your mind, and then go on with life. It's "something to consider/ When you come for dinner/ At my place."



Everyone Is Craig

David Cross(word) You'll Joseph Gordon-Love it!



www.CrosswordWeaver.com Stuart Linley

Across

1 Severe
6 Catholic vestement
11 Don't erase acronym
14 Andrew Lloyd Weber musical
15 Sub scanner
16 Not ewe
17 Happen repeatedly
18 Food characteristic
20 Prices paid to see Seven or Troy?
22 Part of a min.
23 Experimental facul.
24 Turns down
27 Terran builder
30 Demo. opponent
32 Anaphylactic pen
34 Mich. city
35 Enabler
37 Utah aboriginal
39 XX:59, for example
41 A literary version of Juno or Inception that you just can't put down?
45 Extract by solvent
46 Bearded antelope
47 Smasher or bomb go with
48 Lip
49 NFL goals
52 Building wing
54 R u for real?
55 Fruit content
57 Supped
59 Policemen, with 'the'
61 Desires to see Apollo 13 and Toy Story?
67 Reddish gemstone
69 Perfect
70 King in the ring
71 After
72 _ ____ of Two Cities
73 Mythic bird
74 Swiftness
75 Rigged, as an election

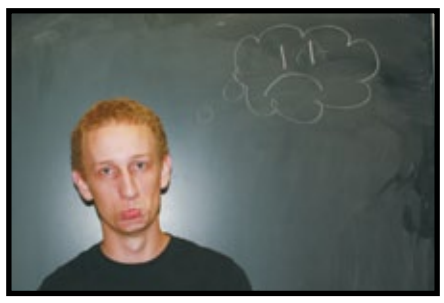
Down

1 Medicinal plant
2 Say truthfully
3 Costa ____
4 Breeding horses
5 Prime Minister elected in 2006
6 Aide, abbr.
7 Medeival crocodile locales
8 Like a bride
9 Feline treat
10 Mr. Clapton
11 Danelon and Allen
12 Vegas go with
13 Bhuddist mantras
19 Flanders
21 Freeze over
25 Crater culprit
26 Rages
27 Guides
28 Lassie, for example
29 Some flasks
31 Edu. association
33 Note of debt
36 Allow
38 Ovum
40 Gun advocates
42 Butterfly or fish go with
43 Hydrocarbon suffix
44 Central French town
50 With 'Black', famed 1947 murder case
51 Colours
53 Rodeo rope
56 Put on
58 Make into law
60 Area component
62 Grid
63 Leg joint
64 Close
65 High wind
66 Smote
67 Cable or dining go with
68 'Hi', to a Cockney

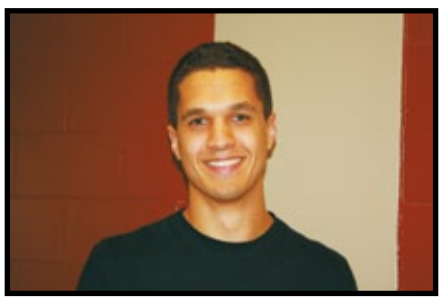
THE IRON INQUISITION
Leah Kristufek, 1A Chemical

"When you heard about Steve Jobs, where and what was your reaction?"

DWE 3522: "I find it crazy that the thing Steve Jobs invented, told me that he died"
Daniel Koetsies, 1A Environmental

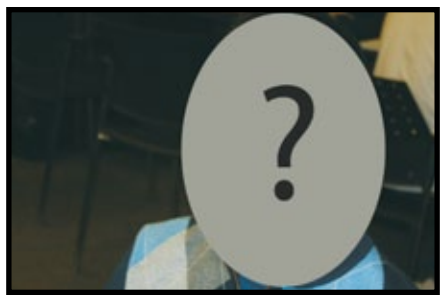


E5 at the Apple recruitment session: "Sad face, giant sad face"
Benjamin Weiss, 2T Mechanical

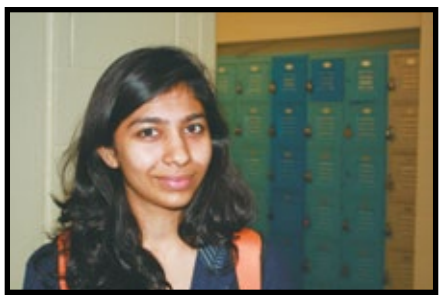


WEEF lab studying managerial accounting: "Go Android!"
Mike Kiss, 2A Management

At the gym: "So CBC didn't lie"
Amy Zhang, 2A Management



Res cafeteria: "Shocked"
Jhyn Smyth, 1A Mechanical



"In the bus, going home"
Mahin Khan, 1A Management