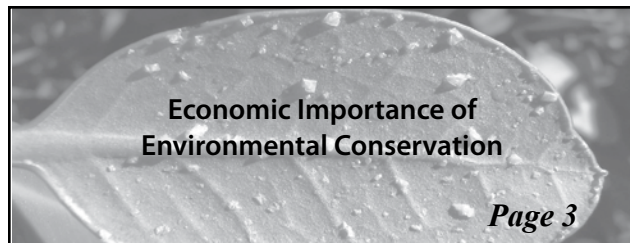


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Economic Importance of Environmental Conservation

Page 3



PCP: SOPA Threaten Personal Freedoms on the Internet

Page 13



Future of Gaming: CES 2012

Page 17

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Pearl Sullivan Recommended as the Next Dean of the Faculty of Engineering

THE IRON WARRIOR NEWS BUREAU

Dean Adel Sedra's recommended successor is finally known. After the six month search finally ended, Geoff McBoyle, Provost and Chair of the Dean of Engineering Nominating Committee, sent a memo to all Engineering faculty, staff and students to announce that the committee was unanimously recommending Dr. Pearl Sullivan to succeed Dean Sedra as leader of Canada's largest Engineering school. Her term will start on July 1st, 2012.

Dr. Sullivan first came to Waterloo in 2004, as a Professor in the Department of Mechanical Engineering, before being appointed Chair of the department in 2006. It was under her tenure that the department graduated the first class of Mechatronics Engineers, saw large expansion in undergraduate and graduate enrolment, and, ultimately, grew to become the Department of Mechanical and Mechatronics Engineering we know today. Prior to coming to Waterloo, she spent 10 years at the University of New Brunswick, as well as three years at the Nanyang Technological University in Singapore.

Before Dr. Sullivan is officially appointed Dean of Engineering, two important events must occur under Policy 45, the university's governing policy for appointments of Deans. First, a secret vote by regular faculty and staff must occur with the results only to be known by the committee, in order to show support for the candidate's recommended appointment. Should support be shown by the vote, the candidate's name will then be formally recommended to the Board of Governors, the highest governing body of the university. The Board will then vote on the recommendation of the Nominating Committee, and if they choose to accept it, the candidate will be officially



Courtesy: Pearl Sullivan

Current Mechanical and Mechatronics Department chair, Pearl Sullivan, has been recommended as the next Dean of the Faculty of Engineering

appointed.

The recommendation of Dr. Sullivan comes after a six month search pe-

riod that saw candidates from around the world apply. The Search Committee was composed of representatives from

all stakeholder groups including faculty, staff, undergrads, grads, and the university administration. The official commencement memo, sent in June 2011, asked some guiding questions that the committee was looking for feedback on, including the challenges and opportunities the Faculty faces, recommendations on potential successors, and the direction the Faculty needs to head towards in the future. Extensive consultation with stakeholders occurred at this point as well.

Based on the consultation process, the position profile was created and posted throughout the summer. A global array of candidates applied. After going through submissions, the list was narrowed down and interviews of selected candidates took place. Based on interviews and in-depth referencing available to the committee, members unanimously agreed to recommend Dr. Sullivan for consideration by the constituency as the next dean of the Faculty of Engineering. To make the appointment official, the previous outline steps must be carried out.

While it's disappointing to see Dean Sedra reach his term limit, members of the Engineering community should be excited to see another strong researcher, teacher, and leader taking over in his shoes. Dr. Sullivan has more than enough to keep her busy for her potential 5-year initial appointment, with challenges such as: finalizing and implementing the Vision 2015 plan; fundraising for new facilities; balancing the needs of a Faculty that stretches from Waterloo to Cambridge to Dubai; and increasing teaching quality and keeping all the existing operations still chugging along.

A link to Dr. Sullivan's CV, candidate statement, position profile, committee members, and all other public documentation, is available through the official memo e-mailed to all students, staff and faculty.

New Civil Department Chair To Be Appointed

GRIFF FERGUSON 4B CIVIL

Since the Fall 2011 term, the Department of Civil and Environmental Engineering has been planning to nominate and elect a new chair. Neil Thompson, the current chair, will be leaving his position to con-

tinue his work at the University. The potential for a new chair opens up discussion for students to have their say in the direction of their curriculum. So far, nominees have not been named, but a forum opened to let students have their say and talk to the committee making this decision.

The forum took place on Monday Janu-

ary 16th, 2012 and many students participated in the discussion. Topics of interest included the future direction of the department, and what kind of leadership it is looking for. Furthermore, the committee is looking for nominee suggestions from students. If there is a prof you feel has done especially well in their position and can

provide the kind of leadership and guidance the department needs, then now is the time to speak your mind. If you did not attend the forum, it is still possible to have your voice heard. Talk to your academic reps about the changes and improvements you would like to see in the department, and in your education.



The Iron Warrior wishes you a Happy New Year

Letter From the Editor

Welcome to Winter 2012



**CHRIS
LETNICK**
EDITOR IN CHIEF

Welcome to the Winter 2012 term.

I will be your Editor In Chief (EIC) for this term. I will begin this editorial with a few notes about my role as EIC.

Being EIC means several things. Most notably, I am in charge of organizing and motivating writers and production staff. I am responsible for the financial success of *The Iron Warrior*. I will be writing an editorial in each issue of *The Iron Warrior*. Also, I am responsible for all content published in *The Iron Warrior*.

I encourage anybody who has considered getting involved in *The Iron Warrior* to attend a general meeting. The general meetings are on Mondays at 5:30pm in E2 - 2349A. Whether you would like to write one article, many articles, take pictures, learn about layout, or just have an article idea, you are welcome to attend.

As the dictator of allowed content, I will not hold back articles due to personal bias. However, articles will be held back if they are so poorly written that the copy editors refuse to edit them, are too inappropriately biased, contain false content, are more of an advertisement than an article, or are unacceptable due to several other technical reasons. Writers will be provided with opportunities to correct any concerns about their articles.

I am accountable to an advisory board. This board is made up of the incoming EIC from the off-stream term, the current EIC, an elected member from each society, and a member of the EngSoc Exec from each society. This board's primary function is to make decisions on any action that will affect *The Iron Warrior* beyond the term of the current EIC. The advisory board can also be used as a resource by the current EIC for gathering input towards decisions.

It's a new term, it's 2012, there are many new students on campus, and A-Soc is filled with new Exec so 2012 is going to be a very exciting year. Many of you will graduate. Technology will continue to surpass our expectations for how integrated it can be into our lives. Some claim that the world is go-

ing to end in 2012, but I don't hold anything against the Mayans for getting tired of listing years after 2012. For instance, there is a drop down box when entering my credit card expiry date online. It has dates ranging from the current year to about ten years out. I don't take that to mean the world started this year and is going to end in ten years. But, if somebody found this list of ten years far in the future, they might be inclined to believe that all these actions have a specific reason. (Translation: the Mayans didn't actually predict the world was going to end in 2012, the same way credit card companies aren't predicting the world will end in ten years. The Mayans just didn't want to keep listing more years in their calendar.) Thus, no, I was just ordering a pizza. I wasn't ordering the end of the world.

There are many new students on campus. About a fourth of students on campus started last September. I welcome those people to campus. Now, there are some things you should know about the winter term. First, our engineering societies are different. The executives, directors, and members are all different. The geese spend more time in hiding. They, like many many things, move slower in the cold. The used book store is full of books. This term is the term prior to graduation for many fourth years. Due to this, they are taking the time to unload their unwanted textbooks into the used books store.

Jobs: this is your first term looking for jobs. Make sure to pay close attention to JobMine. Differentiating yourself from your peers is one of the most important tactics in getting good interviews and job offers. Take the time for cover letters. It is better to do a good job at applying for a few jobs, than to do a poor job at applying for 50. Any program with a 4S stream is in luck this term. Many of the upper years are either graduating or going to be on campus for the spring term as well. If you are in a program that also has a 4S stream, you should be bold with your job applications.

Like most terms, some people are likely to have told themselves that *this* term is different. This term, they will not slack off. This term, they will not miss sleep. This term, they will attend all lectures. Well, good luck. The truth is that living up to these expectations is very hard. I have told myself this

many times, but have failed almost as many. There is always that show I wanted to watch, that book I wanted to read, that web site I wanted to surf, and that thing I volunteered for that took up all my time. Fortunately, I am starting to learn how to pull through.

The first important part of pulling through the tougher terms is to know your schedule. This includes knowing when your classes are, when your meetings are, when you need to work on your deliverables, and when your deliverables are due. Storing calendars electronically can significantly reduce the mental overhead of this task. Knowing your schedule will allow you to plan in advance. Look for when a bunch of deliverables are due at once, and distribute the times you plan to work on those deliverables.

The second component is to know how much time you need for completing tasks. Waterloo has high entrance averages. This means that most of the people in your program were the top in their high schools. Now, the university still needs to be able to distinguish how we perform relative to each other. I have learned to admit that some of the people around me are smarter than me. They know more about certain subjects. Most importantly, they get better grades than me with less work. This is something I had to accept. By accepting this, it has helped me to plan my time accordingly and work towards the third element of pulling through.

Saying 'no' is very important to success. I am starting to find that out now. Hopefully, you can learn from me here. I am extremely busy this term, and my ability to say 'no' to people will determine if I do well in, barely pass, or fail this term. The ability to say no helps to say no to a roommate who wants me to join him going out; to set a time limit for a parent who wants to spend a long time on the phone; to say no to a friend who wants me to join them at a party; and, to say no to myself when I think, "Just one more episode!" By knowing your schedule and knowing how much time you take to produce your deliverables, you will know when to say no. If you are capable of doing this, you will be much closer to success.

Now that this article is terminating, I hope that you better understand my role as EIC, are aware of the excitement that the new year has to offer, and have learned from my experience in time management.

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

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

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North Korea, Getting better or getting worse?



**LEAH
KRISTUFEK**
1B CHEMICAL

The death of Kim Jong-Il on December 17th, 2011 shook his nation and sent tremors around the rest of the world. While North Koreans cry wretchedly under the supervision of North Korean military and Kim Jong-un begins to take control, the rest of the world continues to wonder what will happen to the small nuclear-armed nation. More importantly, how will the new leadership affect the safety of the rest of the world?

Directly following the news of Kim Jong-Il's death, released to the world several days after his death, Japan and South Korea placed their military on alert. Although cut off from the rest of the world for the latter half of the century, North Korea released news of its loss in the form of videos, showing national grief in locations such as the capital city of Pyongyang. The small country has been on tricky footing with the international community since a civil war between South and North Korea broke out in 1950. Internationally isolated, most North Koreans live with few modern conveniences (such as television and reliable electricity), and under the totalitarian control of the Kim Jong Dynasty. North Korean citizens live in a world created by government propaganda and governed by ancient traditions which hold ancestors, and the purity of a family's blood, in high value. This may allow a peaceful transi-

tion from father to son, despite a regime which manipulates the public through reprisals, imprisonment and threatening of the families of troublemakers. In a world where each household has a radio attached to the wall which remains on at all times, containing a volume dial but no on and off switch, the question remains: will the propaganda still be enough to keep this little country unified?

However, a lot has been happening in the last three to four years which may not have been at the orders of Kim Jong-Il himself. Kim Jong-Il, who died at the age of 69, has been in poor health since suffering a stroke in August 2008. North Korea's first nuclear test was not conducted until 2006 and abuses of human rights have been rumoured to have been increasing in his last several years of life. People have been jailed and subjected to reprisals, particularly where communication with the outside world was suspected. Furthermore, trading with China has allowed the import of luxury items like the three Lincoln limousines which transported the dead ruler to his funeral. China serves as North Korea's military ally and its principal source of aid. This aid is beginning to include increasing amounts of expensive items such as cell phones, laptops and air conditioners for the elite. Goods also arrive unofficially over the borders with the Chinese imports. Luxury items are suspected to be used to pacify members of the elite in the face of international pressure, the testing of nuclear weapons, and sanctions. North Korea is not new to the pressures of foreign

governments: it has been pressured, first to end its conflict with South Korea and now to end nuclear testing. The loyalty of China, which claims to follow measures restricting luxury goods but fails to do so, undermines the effectiveness of those sanctions in addition to making it very difficult for European and American governments to provide humanitarian aid to the impoverished lower class.

Kim Jong-Il's grip on the realities of his country seem to have been waning. Photos often show him observing ceremonies, buildings and products surrounded by a large group of party members and advisers, all of whom agree to stand behind Kim Jong-Un as he takes power. But are these party members and advisers used to directing the country more than their positions dictate? What does that mean for the country under the power of a much younger man, one who is still in his late 20's, and who was educated abroad in Switzerland?

The changing over of control from father to son is expected to cause instability in an already poor and suffering country. Kim Jong-Il's ascension to power in 1994 was followed by a famine which caused the deaths of an estimate two million people. Unbearable conditions forced people over the borders into South Korea where a black market developed. Secret trade between the two countries continues to this day, fostering thoughts of independence in the repressed public. Over the last decade and a half, communications from the western world have shown North Koreans are worse off than people in their neighbour-

ing countries, unlike the government's official message. External forces are beginning to fight the brainwashing, but this will only strengthen the government's desire to unite the country with a common goal, and most likely against a perceived common threat (much like Hitler's decision to take his debt-burdened country to war).

In a world already so full of unrest and revolutions, there is a lot of uncertainty and many questions. Revolutions cause countries to cease functioning, which highly decreases the efficiency of processes such as food manufacturing, distribution of reliable electricity, and the cooling or heating of homes. Though popular headlines no longer feature countries like Egypt, Syria, Libya and Yemen, unrest in these countries continue as the citizens try to reach that perfect balance between full liberty and less chaos. Wars continue to be waged in Pakistan and Afghanistan while places like Haiti work slowly to pick themselves up after natural disasters. News on a global scale these days, and perhaps always, tends to be depressing. It remains to be seen whether this secretive country will open more to the world and become a more international country. Hopefully, under Kim Jong-Un, human rights will improve. Trade will allow citizens to improve themselves and improve their standards of living. The next few months and years will be the time to watch North Korea, when Kim Jong-Un is young and educated. He has learned about other countries. Time will tell whether Kim Jong-Un proves to be a worthy leader to help a nation on the cusp of change.

Economic Importance of Environmental Conservation



**KRISHNA
IYER**
2T NANOTECHNOLOGY

Recently, the Canadian Government withdrew from the provisions of the Kyoto protocol citing "savings of \$14 billion in penalties." This reflects the importance (or lack thereof) that the Canadian government places on important environmental concerns. Canada ratified the Kyoto protocol back in 1997, but recently it was observed that it could not meet its legally binding targets and hence chose to withdraw from the protocol. Hopefully, this does not set a precedent for further actions of the Canadian government. Trying to preserve present economic returns without changing industrial practices can be very detrimental to future generations. The present environmental practices need to change on an individual and systemic level for us to be able to preserve a comfortable lifestyle for future generations of humanity.

The underlying reason behind the perceived lack of concern for the natural resources is the economic invisibility of our environment. Due to the important role that currency plays in our society, little attention has been paid to the sustained preservation of natural resources. Often, people think that everything that comes from nature is free. What they fail to understand is that, once that resource stands depleted, there is a huge economic loss for us. This is becoming clearly visible in the case of fossil fuels. For decades, we have been relying on fossil fuels for our energy needs. Indiscriminate use of these resources in the past has now put great economic strain on our society. The vast majority of North American families live a life of debt due to the rapidly escalating cost of natural resources. This needs to change.

One example of the economic and gov-

ernmental importance of natural resources emerged in 2000 in the city of Cochabamba, Bolivia. Due to sanctions from the World Bank, the supply of water became privatised. This act drove up the price of water because of the selfish intentions of the large corporations in charge of water distribution. At the height of the problem, even the harvesting of the natural rainwater was deemed illegal. The People of Cochabamba took to the streets and intensely violent protests commenced including instances involving Molotov cocktails. A state of emergency was declared and the nation was immersed in a state of tension. Ultimately, the government had to concede defeat and complied with the demands of the people. This is a prime example of how natural resources play a very important role in economy.

Another similar example is the case of flooding in the Indian metropolitan city of Mumbai. After the economic reforms of the early nineties, Mumbai became the economic center of India. Efforts were on to make Mumbai world class. A lot of land was reclaimed from the sea and many "Special Economic Zones" were created. One of these important SEZ was created on

the bank of a creek in the center of the city. This happened at the expense of 10,000 hectares of the natural ecosystem of the region; mangroves. Mangroves form an important buffering barrier between the water and the land. The people of Mumbai learnt this the hard way in 2005. It received 24-hour rainfall, a full 994 mm which caused persistent flooding. Without the mangroves the water from the creeks in and around the city center flooded and submerged most of the city in a couple feet of water. Due to this disaster, about \$100 million of damage was caused. This was the real economic price of these mangroves.

It is thus very important to carefully perform a detailed risk analysis to understand the economic impact of all environment related decisions made. Despite the colossal

challenges posed by putting a price on the environment, it proves to be a very important factor to ensure continuity of the human race. It is important to take the issue into our own hands. China, despite being the largest producer of greenhouse gases, ranks 78 in the per capita emissions. Similarly India ranks fifth in overall CO2 emissions but 145 in the per capita emissions. Evident from the statistics, North American countries (and other developed countries) can learn a lot from the practices of these so called "third world" countries. More importantly, it is important for countries like India, China and Brazil to understand the importance of natural resources in the long run (and to understand that despite having little money, they are actually very rich in resources for a sustainable future).



Mangrove Trees on a Beach

Ron from Nieuwegein

Americans Elect ... a Third Party?



ANJALI GOPAL
2T NANOTECHNOLOGY

The time is finally here: America has an NDP equivalent for this year's presidential election.

Okay, I lied (slightly). "Americans Elect" is not exactly an NDP equivalent, but it is a third party—and a third party that's seriously gaining momentum. For a country that has had a two-party election system since the time of its founding fathers, Americans Elect might actually be one of the biggest surprises for this year's election.

However, Americans Elect doesn't func-

tion like a traditional party. "Pick a president," boasts the website, "not a party." Thus, Americans Elect doesn't have any of its own candidates. Instead, it is drawing from the pool of candidates running for nomination in both the Republican and Democrat primaries (and some independents as well). Its "primaries" are an act of asking Americans to sign up and "vote" for a nominee through an online poll. 15 states already have Americans Elect in their ballot, including Ohio and Florida, both of which were swing states in the 2008 election.

But here's where it gets *really* weird: once the Americans Elect nominee is chosen (remember, this could be either Democrat or Republican), the nominee has to choose a running mate from the *opposite*

party. Americans Elect believes that the main reason that American politics is so vulgar is because there is *too much division among the house*. Obviously, more diplomacy and teamwork is all that's really needed to tackle those pesky controversial issues like abortion, gay marriage, and the environment.

The results of Americans Elect on the presidential race are unforeseeable right now, until a candidate has actually been nominated. Is there a chance that this third nominee can actually be elected president? Probably not. After all, if the Americans Elect candidate was so popular to begin with, said candidate would be the nominee for his or her home party. However, the Americans Elect candidate *can* siphon off a significant number of votes from the

Democrat or Republican nominees, especially if the candidate is someone like Ron Paul (who already has a strong internet fanbase).

However, amidst all the fine details, it's easy to forget what Americans Elect represents: it is a direct outcry against the two-party system in the US. While it might be excessively optimistic to say that this might be the first step the US is taking to get rid of the FPTP system, at the very least, Americans Elect is once again directly empowering the American People. And for a country where the majority has spent over fifteen years almost blindly following what their governments dictate, Americans Elect might be another influential fist to help knock Americans out of their current apathy.

FedS Proposing New Fee Cap Structure

Feedback Sought to Make Fees Fair for You

TREVOR JENKINS
DIRECTOR, FEDS

The Federation of Student Executive has brought forth a new FedS Fee Cap Structure that will define the percentage by which a FedS Administered Fee can be raised over a two year period. Should a fee be proposed to increase faster than the set percentage shown in the table below, it will have to go to referendum to be approved by the undergraduate student body.

Before going too in-depth, it's important to understand that FedS has two types of fees. The first is the FedS fee itself, which the Federation uses to run its clubs, services and general office operations. To increase this fee, a motion must be approved at a Winter General Meeting of the Federation. Prior to October 2011, the increase could not exceed CPI.

The second type of FedS fees are program fees that have been passed by undergraduate referendum and are reoccurring. These fees include the U-PASS, and Health & Dental plans. Fee increases for these are negotiated between the Board of Directors and the company which provides the services. The board approves these increases on behalf of students. So basically, FedS Fees are

increased by students, while FedS program fees are increased by the Board of Directors.

This Fee Cap Structure is being driven by two major events. Firstly, prior to the October 2011 General Meeting, any motion to increase the FedS Fee was limited to no more than CPI. An amendment was passed at the meeting allowing for two increases to occur: one to increase the fee only by CPI (which is standard), and a second separate motion which can exceed CPI. Students were in favour of this, but wanted to ensure that increases did not get out of hand.

The second event occurred during the recent negotiations between GRT over the U-Pass Fee for the 2011/2012 year. Board had serious reservations over increasing the price of the pass by too much as the U-PASS fee has been one of the fastest growing fees since its introduction in 2007/2008. However, it has been a program that students have given positive feedback on during the FedS Annual winter survey.

As a result of the two above situations, and student feedback at the GM, Board mandated the VP- Finance & Admin to come up with a structure to regulate fee increases for FedS related fees. The goal was to define the percentage by which a fee can

increase over a two-year period without having to go to referendum. It's meant to recognize that students are ultimately paying these fees and should have a say in substantial increases, while ensuring we don't spend too much time and money holding a referendum for every reasonable fee increase that comes along, which would likely mean at least 3 referendums every year.

For instance, if the FedS fee is proposed to increase by a percentage less than the amount listed in the table below, then it can go to FedS General Meeting and get voted on there. However, if the proposed percentage increase is greater than the permitted cap, then it will have to go to referendum for approval.

Likewise, the fees that Board currently oversees will be subject to the same rules. So, if GRT wants a fee increase that is greater than what is in the structure, then the general student body will have to approve it. The two-year increase limitation was meant to be a mechanism to ensure that fees don't

just rise by the cap every year.

The structure is still in development and the Federation is currently looking for feedback. The preliminary percentage increases are still up for discussion, however they were chosen to reflect the fact that a modest increase on a lower fee would generate a higher "percentage" increase compared to the same dollar increase on a higher fee. For instance, the percentage impact of a \$0.25 on a \$1 fee is significantly more than the same increase on a \$100 fee, even though both would cost students the same amount.

Whatever evolves from this would need to get approved at the Spring General Meeting, to be held in mid-March, which every undergraduate student has a vote at (watch for details). If you have any feedback, comments, or questions about the structure, let me know at t.ek.jenkins@gmail.com. I'll be sure to pass them along and hopefully incorporate them into the final proposal.

Base Fee Amount	\$0.01 - \$9.99	\$10.00 - \$29.99	\$30.00- \$49.99	\$50.00- \$99.99	\$100 +
Percentage Increase Cap	20%	17%	15%	12%	10%

Iran: A Situation Nation



GRIFF FERGUSON
4B GEOLOGICAL

Late last week, the US Aircraft carrier John Stennis left the Persian Gulf through the Strait of Hormuz that lies between Iran and Oman. The Carrier, along with another ship, left the Gulf as part of withdrawal operations in the region. Shortly before their departure an Iranian military spokesman stated that the US is not to return to the Gulf and will not receive another warning. The warning came after Iran finished weeks of naval exercises in the Strait. The Iranian Navy attempted to demonstrate that its forces can block passage into and out of the Strait despite the US military presence in the region.

The Persian Gulf is a vital artery for the flow of oil from the Middle East. Approximately 35-40% of all crude shipped by sea in the world passes through the Strait of Hormuz. For years the Persian Gulf has operated as an oil supply centre for nations other than Iran – Saudi Arabia, Kuwait, and UAE use the Gulf and the Strait to ship to Western markets. Iran has threatened to block the supply of crude from the Persian

Gulf if the United States continues to put pressure on Iran for developing its Nuclear Programme. Political instability may cause crude prices to increase significantly given past trends in the sensitivity of oil prices to regional conflicts. Given the right conditions, supply and demand may take effect and a prolonged disruption caused by blocking exports out of the Gulf may drive oil prices higher than they are now if alternatives are not found.

Iran's Nuclear Programme has been under investigation by the International Atomic Energy Agency (IAEA) since the 2000's. Iran has continuously flip-flopped between letting inspectors see their nuclear facilities and kicking them out of the country. This has led some to believe that Iran is developing more enriched uranium stockpiles, not for use in nuclear power plants as they have claimed, but to build a nuclear bomb. This presents a problem since Iran is part of an international agreement to halt development and testing of nuclear weapons, which has been binding since 1968. As a member state, if they have been developing nuclear weapons they are liable to have further sanctions and actions imposed on them by other member states and the international community.

The situation between Western Nuclear

Powers and Iran has been tense. The US, supported by the UN, has ratcheted up sanctions on Iran if they do not disclose the extent of their nuclear development. Sanctions have been ongoing since 1995 and show no signs of easing. The US and Iran do not formally have diplomatic relations and Iran has threatened to retaliate if economic sanctions continue. Sanctions are generally directed at Iran's oil export program since about 80% of Iran's revenue comes from its oil industry.

Iran obtaining nukes would give them privileged status in the region and they would join a handful of countries worldwide that possess nuclear weapons. Iran obtaining nukes would likely destabilize the region. Several Middle-Eastern powers have urged the US to intervene on their behalf to stop Iran from allegedly developing nuclear weapons. The US has kept their stance on the Iranian nuclear programme and would like to see it stopped.

If Iran's nuclear programme is truly peaceful then they should have nothing to fear if the international community wants to assess Iran's nuclear capabilities. However, should Iran develop nuclear fission power it would be a boon to Iran's economy and provide them with a reliable source of power for the next several decades.

Free Money! For The Few Lucky Ones

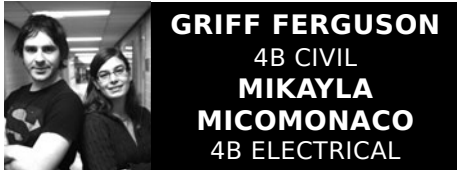


MIKAYLA MICOMONACO
4B ELECTRICAL

This term, the Ontario government has fulfilled their promise of a 30% tuition rebate program. The actual amount available is \$800 for the Winter term, and the \$1600 starting in the Fall. While \$800 is far short of 30% of our tuition costs (it's based on averages), it's still a nice windfall for those of you who qualify.

Any Ontario residents who are less than four years out of high school (sorry those of us in 4B, we don't qualify) and whose parent's gross income (income before taxes) is less than \$160 000, are eligible for this credit. In future terms, they're hoping that the credit will be applied directly to your fees on Quest, but for now you have to apply for it. If you're receiving OSAP loans this term, you'll automatically receive the reimbursement. Otherwise, you need to go to www.ontario.ca/30off to register before March 31st to receive your share of this program.

Defying Gravity: Plants in Space



Imagine you live hundreds of years in the future. You're on a ship, hurtling through space. There are no resupply stations; you have to depend only on what you brought with you. How would you keep yourself and your crew fed?

Even today there are a variety of methods to grow grains and vegetables outside of traditional agriculture. One popular method is hydroponics, where plants are grown using a nutrient rich water solution instead of soil. Experiments on Earth have shown that when certain plants are provided with right range of oxygen, nutrients, and light, their yields are larger than they would be if they were grown using conventional methods. Eliminating soil from the process reduces the weight needed to be launched into space, and also eliminates the problem of replenishing the soil's nutrients.

Another method of food production is aeroponics, where plants grow their root systems in open air. Nutrients are transmitted to the roots using micro-droplet sprays of water. Some advantages of this system include that it has been shown to reduce the risk of plant disease, because there is less contact between individual plants. Reducing the risk of sick plants will make food production more reliable, such that supply disruptions are less likely. Also, this system conserves water, allowing the available water supply to be used for other purposes.

It may be unlikely that future spacecraft designers will incorporate a livestock processing section into the ship to provide a meat supply to astronauts. To do so would require space, grain, and water supplies that could be used by humans in-

stead of animals. Also, it would take years to raise an animal to a point where it can be harvested. Due to these resource constraints, future astronauts may likely be vegetarians or vegans. However, there are possible solutions to these concerns. In an effort to introduce sustainable meat into an astronaut's diet, aquaponics provides another possible solution to food supply. Aquaponics creates a symbiotic ecosystem where hydroponic plants co-exist with fish in the nutrient solution. The fish provide fertilizer for the plants, while the plants provide food for the fish. Humans harvest the excess fish and plants, leaving the ecosystem intact, allowing for the continued supply of food in the next harvest cycle.

One of the main challenges with growing food in space is the effect of microgravity on plant growth. Currently, there is little readily available scientific data that sheds light on the subject. Scientists aboard the International Space Station are conducting experiments on plant growth in low gravity environments. The results of these experiments are pending, but if they are successful then it makes travelling the solar system or interstellar space easier. Growth in microgravity would eliminate the need to develop expensive, complex mechanisms to simulate Earth-like gravity.

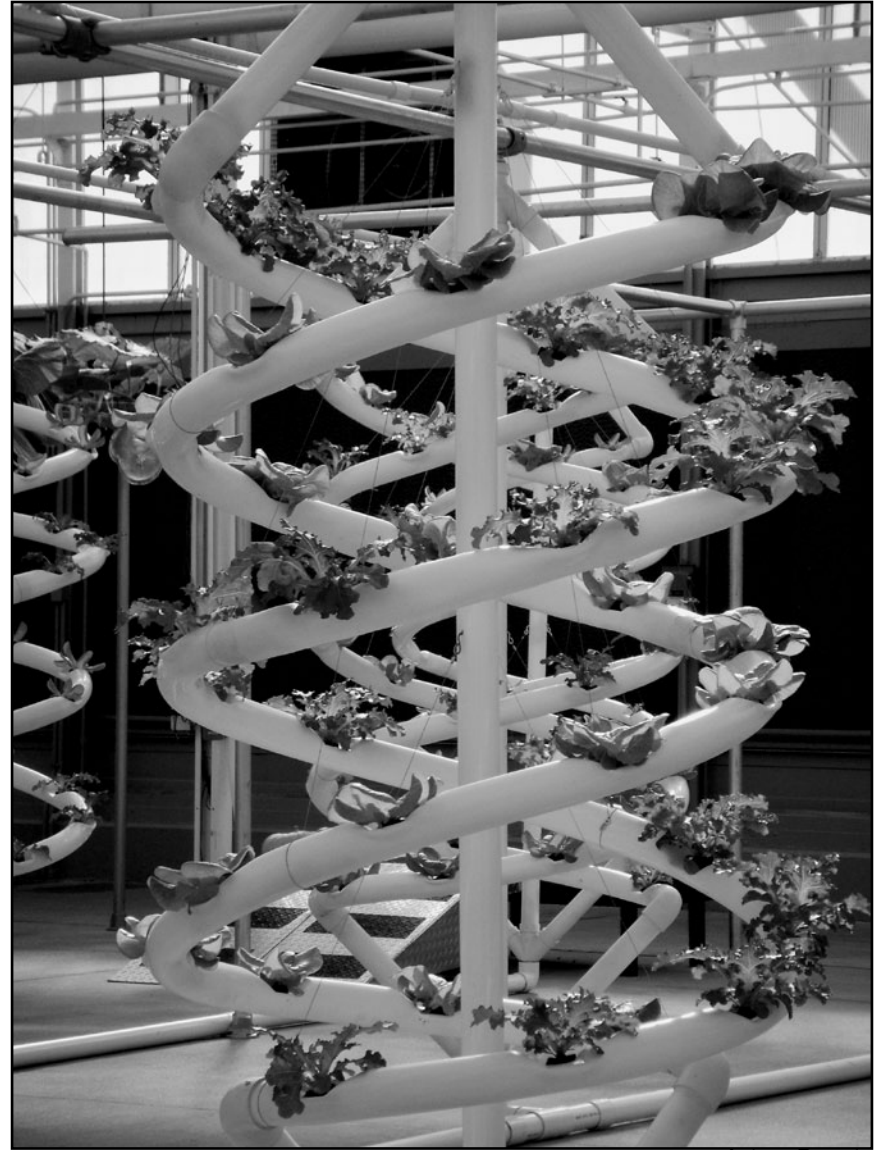
Growing different plants in space may also require different environmental conditions such as heat, light, humidity, oxygen, and nutrient content. This requires that any growth facility have environmental barriers to separate plants so that they may grow under optimal conditions. This would also contain the spread of disease in the case of an outbreak.

The advantages of growing food in space extend beyond food supply. Growing plants in space will help regulate the astronauts' habitat, remove carbon dioxide, and provide oxygen. This will reduce strain on the systems to store and provide oxygen

in space.

Aquaponics, hydroponics, and aeroponics are potential solutions to the problem of food supply in space. Each carry with them their own set of benefits and drawbacks that will be essential in future spacecraft design. In order to carry astronauts to the planets, and into the beyond, it will re-

quire that these problems be researched so that these challenges may be overcome. Being able to biologically regulate your environment instead of using a mechanical system will help put less strain on the ship's power consumption and space limitations, bringing humanity one step closer to living in deep space.



Antony Pranata

Hydroponics research at the Epcot theme park at Disneyworld

LAZORS? - Moar Pew Pew Pew Please



Lasers are everywhere. Whether it is in your latest console for your gaming pleasure, or in your doctor's clinic for routine surgery, *Light Amplification by Stimulated Emission of Radiation* (more commonly known as LASER) has been a key component of a large number of devices and a key tool for the development and fabrication of a huge majority of devices in our present times. Along with the transistor, lasers have been a key tool for the information age that we live in and for that, we thank you Albert Einstein. He predicted the occurrence of such a phenomenon five decades before lasers started being produced and used commercially. Since then, the rapidly growing field of lasers has garnered the attention of the smartest minds in academia. As we stand today, "lasing" has been accepted in the Oxford English dictionary as a verb for the action of a laser.

Lasers have become popular due to the characteristics of the light emitted by them. The light emitted by a laser is highly coherent (almost all the light waves are *in phase*). Additionally, due to the specific energy levels of atoms, molecules, ions and other such species; the light emanating from these sources are highly monochromatic (i.e. only one specific wavelength). This allows for a highly intense beam of rays with low divergence angle. As the fable goes, lasers can blind you and

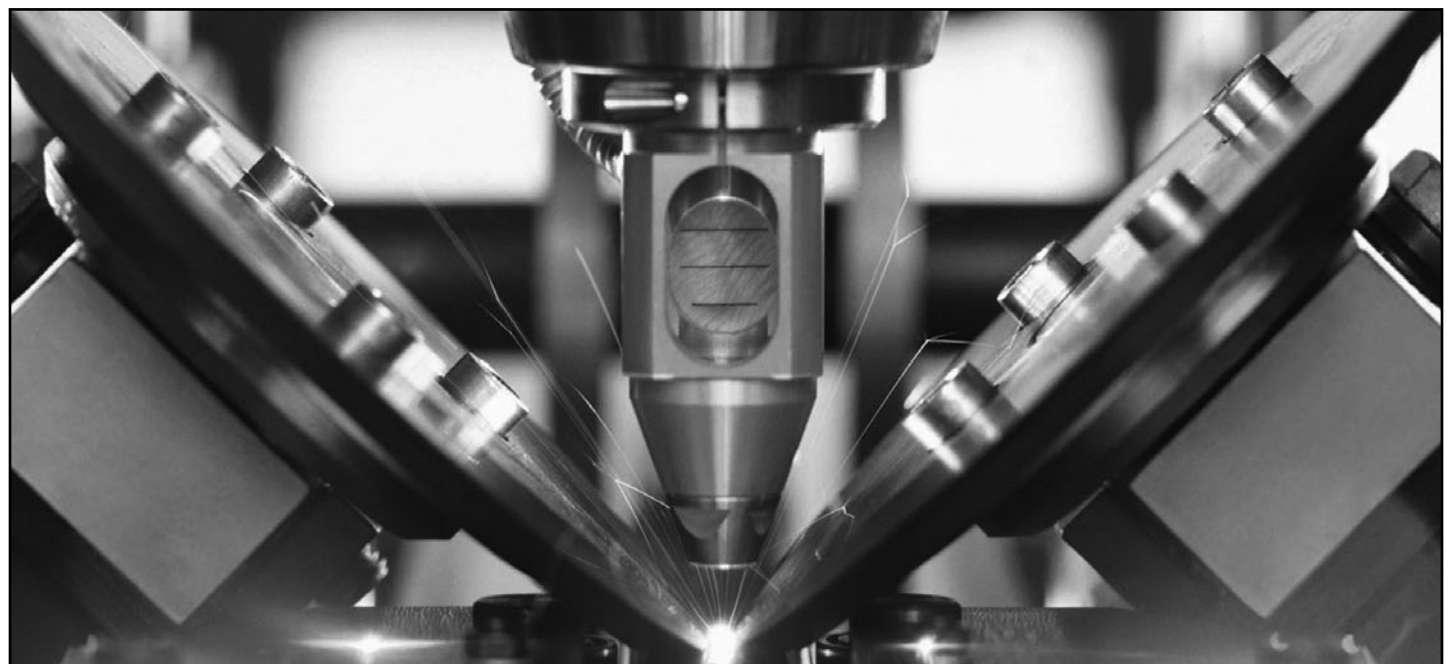
burn anything in their path. This is true to a very large extent and lasers are used extensively in microfabrication of high-tech products such as integrated circuits, processors and several other similar products. Lasers with a wavelength of 193nm are being used by the genius folk at Intel to produce features that are 32nm wide. This is akin to using an inch wide drill bit to produce a hole of a quarter inch in diameter. Under normal circumstances, this is near impossible. Thanks to the magic of coherence of lasers, this can be done for over a million transistors per processor for millions of processors.

The intense beam of lasers has allowed

faster mass production of certain items. Laser cutting allows one to cut through many materials with high precision. Furthermore, due to the lack of moving parts or blades, the repeatability of this setup is greater with little warp. In addition to all these advantages, laser cutting is (on an average) at least 30 times more precise than traditional mechanical methods to cut materials. In the making of this newspaper, several billions of characters were etched onto thin sheets of aluminium used as masks in the printing process. This etching property of lasers is widely used in the production of optical data storage disks (such as LaserDisc, CD, DVD, BluRay,

Hard Drives). The fact that you can hold upwards of 100GB on one of these disks is testimony to the importance of lasers.

Lasers will only further continue to improve in their efficiency and size. The growing field of optical communications and photonics means that lasers will become essential to future devices. Fiber optics have found their way into houses with TOSLINK cables, Thunderbolt and other such similar technology. As electrical data transfer rates are reaching their upper limit, more people are starting to adopt fiber optics for data transfer. There are plenty more uses for lasers so here's to lasers and what they have done for us.



Laser beam welding being used for high throughput manufacturing

SPIE

1000 Songs in Your Pocket

The Birth of the mp3 Player Market



**LAWRENCE
CHOI**
1B COMPUTER

You see them everywhere: on public transit, on the streets, at the gym, you name it. These devices allow you to carry hundreds of songs in your pocket at once, reducing the need to carry CD players around. If you said ‘mp3 player’, you would be correct. We might be using them often, but how often do we consider the past of these iconic devices and how they helped shape the market to the way it is today? Many early players have established some degree of success but few had been able to match the influence of Apple’s iPod, which helped launch a new market and stake a role for the mp3 player in our society.

The first mp3 player was the Eiger MPMan F10, released in May 1998 at a price of \$250. It contained 32MB of internal memory, but had no options for external storage. However, customers could upgrade the internal memory to 64MB by sending the player to the manufacturer along with \$69. Later in the same year, Diamond Multimedia entered the newly emerging market with the Rio PMP300. Like the MPMan, the device had 32MB of storage but also included a SmartMedia slot for external expansion. Shortly after its introduction, the Recording Industry Association of America filed an application to block the player’s sales, claiming that it encouraged users to share unauthorized copies of artists’ work. The application was later declined however, and the Rio became a massive success.

After the Rio’s success, many compa-

nies began to enter the market as well. Creative Technology debuted in June 1999 with the Nomad, which was actually a rebranded Samsung player. The company followed up with the Nomad Jukebox in 2001, sporting a 6GB hard drive and a \$500 price tag. Despite its cost and size, the device sold well. This year was also notable for the introduction of the first iPod by Apple Inc. on October 23rd, 2001. Carrying a 5GB capacity, it was marketed with the slogan “1000 songs in your pocket.” The device was only compatible with Mac at first but Windows compatibility was added in the second generation, released the following year. The iPod line eventually became the most successful product in the mp3 player market due to its ease of use and its attractive size/storage design, with over 300 million units sold as of October 2011. With enough proof that a potential source of revenue existed in these players, Samsung, Cowon, Sony, iriver, Mi-

crosoft, and other companies immersed themselves in the market as it matured further to what it has become today.

Trends and Developments

We’ve come a long way from the bulky, expensive players produced nearly fifteen years ago. Back then, 32MB was considered a large amount of storage; today we can obtain players with 32GB or more— a capacity over a thousand times larger. Over the years, there have been

some major developments that propelled the market forward. Here are a few:

Moving from hard drives to flash memory: In the market’s infancy, consumers had to choose between a compact but storage



The first ever mp3 player; the MPMan F10

limited flash-based device or a bulky but spacious hard drive-based device. With advancements in flash memory capacities and a drop in prices, there’s no longer a need to choose between the two. Flash memory is now capable of providing enough storage for the average user and consequently fewer devices with

hard drives are being produced. Most models also offer some sort of memory expansion, allowing virtually unlimited storage. In addition, the move to flash memory has resulted in smaller, thinner, and more durable devices, as hard drives were vulnerable to wear and tear.

Touch screens/interfaces: Some companies are offering players controlled by a touch screen instead of the traditional tactile buttons. These interfaces introduced a new way of interacting with devices, opening up some creative designs. Unlike the overwhelming move to flash memory however, touch interfaces have not replaced tactile buttons to the same extent; each approach has pros and cons. Touch interfaces allows for larger screen sizes since there is no need to reserve space on the player for physical buttons, but make blind operation (i.e. in a pocket) difficult. Conversely, tactile buttons allow easier blind operation due to the physical feedback and the ability to remember the button’s location, but require a lot of space on the player to implement.

Diversification of features: The first devices were focused solely on playing music and nothing more. As the years passed video playback, voice recording, FM radio, Wi-Fi and online connectivity were added, allowing mp3 players to become versatile gadgets.

Although audio playback is now a function on many other devices, the mp3 player still has an important role in our lifestyles. Companies are still introducing new models and new features are always being added. As we enter another year of players, it will be interesting to see what manufacturers can come up with.

UW LEEDing the Way?

CONNOR ALLABY
4B ENVIRONMENTAL

As most people are aware, the new environment building on campus is targeting LEED platinum certification - the highest possible in the rating system. This is a great demonstration of the University’s commitment to sustainable design but it is only one of several buildings to be constructed in the last few years. It would seem more genuine if we built all of our buildings to a high environmental standard.

Commercial buildings are designed to last upwards of 75 years, quite a long-term investment. If we build an inefficient building now, it will require larger quantities of electricity and fossil fuels to heat, cool, and light it, over the building’s entire lifetime. From an environmental perspective this is

disconcerting, considering that mitigating climate change requires that we reduce our greenhouse gas emissions. The Intergovernmental Panel on Climate Change (IPCC) estimates that the building sector is responsible for approximately one third of global

From an economic perspective 75 years is a long time to receive payback on good design decisions. For example, a building envelope with a high level of insulation may cost more upfront but you only have to pay that once. If you skip the insulation, you will be paying considerably more every year to heat and cool the building, as well as requiring larger heating and air conditioning equipment to begin with. The rising costs of fuel should also be taken into account as natural gas becomes harder and harder to find and extract. Although I haven’t crunched the actual numbers a simple payback period calculation should be enough to demonstrate the financial viability of a ‘green’ building technique. It is mostly an issue of ensuring that sustainability is factored into the design from the start of the design process.

Although energy efficiency usually receives the most attention from an environmental standpoint, there are other metrics. For example, Environment 3 treats its own wastewater

with a series of constructed wetlands and also collects rainwater. Water efficiency hits particularly close to home in a region that gets most of its water from the ground and is considering building a pipeline from lake

Erie to sustain predicted growth. Other sustainable design factors include indoor environmental quality, the materials used in building construction, and the siting of the building. At UW we are obviously limited in where we can locate buildings but we can choose building materials with a lower environmental footprint (e.g., natural materials or ones produced locally) and materials that don’t degrade indoor air quality (e.g., non-toxic paints and finishes).

UW does not have a policy on new construction as can be easily verified by looking at the list of policies (some might be familiar with Policy 71). McMaster, Lakehead, Western, and the Region of Waterloo have all instituted sustainable building policies that require new construction to achieve LEED silver certification or higher. While LEED certification is not perfect, it is the current standard in ‘green’ building design and is probably the best way to implement such a building policy. Here’s hoping that UW jumps on the bandwagon.



USGBC green-house gas emissions and that 30% of these emissions can be mitigated at a net benefit by 2020. New buildings can achieve the largest savings (up to 80% of the operational costs), often at little or no extra upfront cost.

SCUNT W12

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Be Awesome. Be Epic. Have FUN!

T Cubed: Africa: The Booming Mobile Market



JACOB TERRY
2N NANOTECHNOLOGY

Welcome to the new term, everyone! For those of you who weren't reading last term, T Cubed is a column which started in September where I spend time (sometimes far too long) ranting about or dissecting new gadgets or technologies that look interesting or that seem significant enough to relay to the student body. This week's article is being written while I'm attending the Engineers Without Borders National Conference 2012, so with all the sessions I've been attending and participating in, this week's topic has more of a personal, societal and global focus than my typical columns.

An interesting concept that I've heard many times, not just at the conference but from learning about African development in general, is the incredible rise in mobile phone penetration across the continent. By the end of 2011, Africa reached 649 million mobile subscribers, making it the second-largest continent by subscriptions next to Asia. The continent shows no signs of slowing down either, with the total number of subscribers in Africa expected to rise to 735 million by the end of 2012. A primary component which has led to this dramatic

rise in subscriptions is the increased competition between companies like MTN, Glo Mobile and Virgin Mobile in the market, who drive down their prices to stay competitive.

The primary difference between North American and African mobile phone plans is that while a majority of North Americans subscribe to post-paid plans (where you are billed at the end of the month an often flat, repeating fee), Africans overwhelmingly subscribe using prepaid plans, with 96% of the mobile subscribers opting for prepaid cards. This trend towards prepaid plans is popular in most regions except North America, where we are one of the only areas to have a majority of postpaid

subscriptions. The boom in prepaid plans that's occurring in other countries, due to their typically cheaper and more manageable payment structure, could foreshadow a shift in plans that North Americans

subscribe to, and we could see such a change within a decade or two.

The coolest thing that African mobile phone users do differently from their North American counterparts is their innovative

methods of mobile banking. A service called M-Pesa in Kenya lets users store money on their phones and transfer their money via text to friends or companies, who can pick it up as cash at the nearest M-Pesa office. Other established banks, who initially showed resistance to this form of banking, are now preparing to embrace it. Services in other African countries such as Uganda are popping up with similar aims that make it easier for citizens to make transactions without opening a formal bank account. While this is hardly unique to African nations, the situation in these countries has brought this form of money management into the forefront as a quick, simple and cheap

method.

Extended from the wide usage of phones in these nations, African presence online is much stronger than it has been ever before. One of the most significant projects launched from this region was a Kenyan project called Ushahidi, a platform that collects and plots reports on a map that can be sent in from texts, emails or social networking platforms. Initially designed to help Kenyans organize themselves after post-election violence in late 2007, the platform has become used to map all sorts of crises and disasters around the world, including the Japanese earthquake in Fukushima last year or the many protests and revolutionary events taking place in the Arabian countries over the last year. Ushahidi comes at a time when the Internet in Africa is also starting to transition from a luxury resource to a more common, yet still expensive, resource. Internet cost has gone from \$4,000 to \$200 per month for 1 Mbps speeds over the last four years, according to data-centre operator Teraco.

The lowering of Internet prices, combined with a rise in users with data plans (which are also fairly cheap by Canadian standards), has brought Africans into a more connected world than they probably could have imagined ten or twenty years ago. The impact phones and other Internet-connected devices could have to simplify and improve the lives of the poor and the middle class in African countries is immense and still, in my opinion, largely untapped. If more are given the ability to use these devices and companies come up with more innovative services to make lives simpler in the same vein as the mobile banking systems in place, then technology could prove to be a primary pillar in the solution to the development of African nations.



Nokia's new Asha line-up is aimed at the growing low-end budget phone market of Africa

Climate Change Affecting Bird Migration



LEAH KRISTUFEK
1B CHEMICAL

Geese! They're everywhere!!!!!! As someone from a slightly cooler and snowier part of Ontario, the presence of these flying feathered fowl is a bizarre occurrence in what should be the dead of winter. I can understand the occasional furry

What does this mean other than the fact that geese are now making students compete for the right to walk in public spaces even in mid-January? Climate change has always been happening. Evidence keeps piling up, from the various stages of the Ice Age and the discovery that at one point the African safari was a lush forest. The world has always been changing, but now experts are asking, how fast did it change before? The most harmful affect humans have on climate change may be the speed



Canadian Geese flying in formation

John Benson

mammal scampering across my path or the lone deer standing on the side of the road. But geese! Really, they've got to be kidding me! Remember the times when geese flying south in their long V's was a Canadian signal to batten down the hatches, because winter was about to arrive? It turns out that, thanks to climate change, the dead of winter is not so dead after all. With increasing temperatures comes increasing activity on the parts of wildlife. Wildlife that used to migrate to warmer climates at this time of the year are staying put with an alarming frequency, making do with only the slight hardships of a warmer winter.

at which we contribute to changing temperatures and, by extension, creating micro-climates where very specific ecosystems existed. All those burnt fossil fuels and aerosols seem to be increasing the global temperatures at an alarming rate. According to some sources, the global temperature has risen more rapidly in the last several decades than any time in the last 1000 years. You might be wondering what the problem is with this temperature rise. Unfortunately, this temperature rise is causing sea levels to rise as well, and many species simply can't adapt fast enough. Maybe not even us.

WATERLOO ENGINEERING



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Ask questions and get **advice**: adjusting to University life, planning your **career**, the working world, ethics, **job search** tips and more!

Charity not Really Helping?

UMAIR MUHAMMAD
4B ENVIRONMENTAL

The recently passed holiday season, along with being a time spent with family and friends, was also a time of giving. Although the petty materialist character of our society is most apparent around Christmas, it is also when altruistic and humble features reach their peak. While compassion for the less well-to-do is an admirable quality to possess, charity giving is perhaps not the best way to put it into action.

In 1891 Pope Leo XIII published a letter on "The Condition of the Working Classes," in which he wrote: "The whole process of production as well as trade in every kind of goods has been brought almost entirely under the power of a few, so that a very few rich and exceedingly rich men have laid a yoke almost of slavery on the unnumbered masses of non-owning workers."

He identified the structure of the eco-

nomie system as the fundamental problem. It allowed the few, who were rich, to exploit the many, who were poor. As a solution to the problem, he did not suggest that the economic system should be restructured, but instead offered that the problem could be left for "Christian charity" to deal with.

We understand today that it was not charity that overturned the awful "condition of the working classes" of Europe and North America. Union rights, labour laws, the minimum wage, the eight-hour workday, social security programs, etc. are responsible for the general improvement of living standards among the common people of the developed world.

Also commenting on the poverty of the masses in industrial societies, a short while after the Pope wrote his letter, Oscar Wilde observed that "Charity creates a multitude of sins." The foremost sin, in his mind, was that it distracts us from solving the problems it seeks to address. Wilde's observation applies to the prob-

lem of poverty as it exists today, in the developed as well as the developing worlds, just as much as they did in his day.

Christmas-time giving, or for that matter charity at any other time, is not an adequate means of addressing poverty. It is, rather, a way to feel good about ourselves and ignoring the actual nature of the problems.

For all of money that goes to Sub-Saharan Africa as aid, for example, a whole lot more comes out in the form of debt servicing and capital flight. In the end Africa functions as a net creditor to the world, not a burden in the way that it is often portrayed. Putting effort into understanding why this circumstance exists, what our contribution to its perpetuation is, and what can be done to change the structures which produce it, is the right approach to try to create change.

"True compassion is more than flinging a coin to a beggar." Dr. King declared, "It comes to see that an edifice which produces beggars needs restructuring."

The Overprotection of Children



MICHAEL LAANVERE
2A MECHANICAL

Is it possible that, in this day and age, we have gone too far in regards to the health and safety of our children? Gone are the days when your parents would go grocery shopping and leave you in the car with the window cracked. Also gone are the days where children walked to and from school/the bus stop alone or even played outside by themselves or with their friends unsupervised. Last spring, there was a story about a child who was walking home from camp and got picked up by police and brought home because they thought he was too young to be walking alone. The thing is he was 12, which means he would be going to high school in a year, but apparently he was too young to walk home. Obviously, these broad general statements don't always hold true, especially since the term 'child' covers a broad age range, which includes ages where those statements simply are not applicable. However, I like to think they at least have a ring of truth to them. One place to examine this child coddling and overprotectiveness would be the place where these children spend most of their childhood: at school.

Elementary school is meant to be a place for kids to learn and develop their skills and personalities, but it is also a place for kids to have fun. However, it seems that today schools are becoming stricter about safety, and consequently are implementing rules

and bans that take a lot out of the fun and development. Some of these bans are as little as banning a bracelet to as much as banning balls and even hugs. Various different schools around the world have banned some ridiculous things which include: balls, tag, Father's Day cards (Mother's Day cards were not banned), lunch brought from home, lunch made at school, physical contact (including hugs, high fives and

which would complement the classroom environment quite nicely. All of these recess bans have been a result of an injured child but that's what growing up is all about. Kids scrape their knees and break their arms all the time, but they bounce back just fine, and learn from it too. What's the big deal if Wendy gets hit in the face with a soccer ball and gets a nose bleed? It's all a part of growing up. Kids are going to get hurt, and there's nothing any teacher or parent can do to stop that short of putting them in a bubble, so why not let them have some fun while they are at it?

Schools are trying to combat the rising rate of childhood obesity with physical activity, yet when they do something like banning balls and other schoolyard games they give kids very few options for what to do at recess and probably results in them just standing around and talking.

Parents and schools have to realize that there has to be some balance between fun and safety. Everything fun has some danger involved, the trick is to mitigate as much danger as possible while maintaining the fun instead of just outright banning it. Something like not allowing head shots in dodge ball would be a good compromise. It seems that

some schools and parents are taking child safety too far, and it is most likely doing more harm than good for the child's health and development. Let the kids make the most of their childhood and be free to play with balls in the schoolyard. For the kids who are banned from saying the word "meep," I would refer the episode of Recess: "The Story of Whomps" to find out how to change that ridiculous ban.



Abandoned tyre swing; a haven for

Hannah Sofia

handshakes), dancing, the dictionary, and even the word "meep" (made famous by Beaker from the Muppets).

Putting aside the fact that recess would suck if you can't play soccer or tag, there are other repercussions to be had here for the children. One thing children gain from playing sports is the development of their skills. They develop better coordination as well as teamwork skills by playing sports,

Fashion Tip of the Every-Other-Week: Upcoming Trend Alert: Coloured Pants!

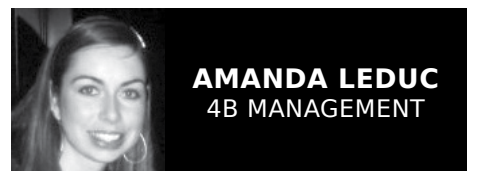


AMANDA LEDUC
4B MANAGEMENT

Remember back in high school (well depending on what year you're in) when coloured pants were cool? I know I owned some bright red or yellow (and maybe even pink) pants, and it's okay to admit you did too. I am pleased (and a bit nervous) to announce that coloured pants are the hottest thing for Spring 2012 according to Sporting Life Branding Specialist, Shawna Labine. Want to get yours before they're sold out this spring? Check out H&M for ladies skinny purple denim for \$24.95.

Stay Classy,
Amanda
Chief-Fashion-Officer (CFO)

Drink of the Every-Other-Week: Magical Coffee



AMANDA LEDUC
4B MANAGEMENT

The weather outside may be frightful, but you'll feel warm and delightful with this delicious hot winter treat!

In an Extra-Large Mug Mix:

- 1.5 cups of coffee
- 1 oz vanilla vodka
- 2 oz Irish Cream
- 2 oz Mud Slide

Top with whipped cream for an extra special treat!

Alcohol-free / Healthy Alternative:

- 1.5 cups of coffee
- 2 oz of skim milk
- 1 oz iron enriched & sugar-reduced Nesquik
- 1 oz of your favourite sugar-free flavoured syrup (try DaVinci peppermint or white chocolate)



The Other Side of the Table:

UW engineering alumni entrepreneurs share insight from the employer side of the table

ADITYA BALI
MECHATRONICS 2011

I graduated less than year ago so the memories of co-op are still fresh. Spending the last few minutes before midnight applying on Jobmine and then anxiously pressing F5 every two minutes to check if I got any interviews were fun times. But now, having a start-up, co-op and Jobmine are a little different (literally and figuratively).

Having been a co-op student, and more recently the employer and manager of a co-op student for the first time, I learned a tonne. Some of this stuff may seem like common sense, but you truly don't appreciate the gravity of it till you experience it. So here are some of my thoughts and learning's on how you can be successful at your job, bring real val-

ue to the company and grow as a person:

Don't CSS the hell out of your resume (my newest pet peeve) – it gets applied to everyone else's resume when reviewing them through Jobmine - it's very annoying to read. Showcase your skills through a website or project portfolio instead. Trust me, seeing someone with real projects and out of the classroom learning is an easy interview pick.

Ask how what you're doing impacts the business. This helps you stay motivated and helps the employer know you are interested in the work. Generally, the more engaged you are the more valuable you are to the team and the more you feel valued.

Talk to people – they don't bite. I'll admit, I was always the shy guy, and to some extent I still am. But one thing I've found is this: a great engineer with few

connections will find it hard to grow. A mediocre engineer with many connections will find success easier. Be great and be connected (for hard to get people, take them out for breakfast/lunch/coffee – everyone's gotta eat!)

It is extremely important to find what motivates you and what you are passionate about because motivation then becomes a non-issue. Plus, when you live and breathe something, your enthusiasm goes through the roof and people like to be around genuinely enthusiastic people. This is going to take some experimentation but you are sooo lucky to have co-op and experience things in a low-risk, high-reward environment.

You are not done with anything until you are proud to put your name on it. Do whatever it takes to get the job done right the first time. You will always

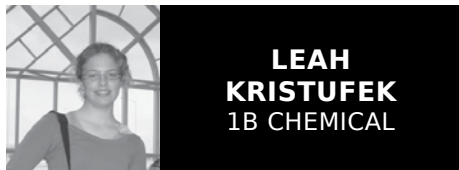
have to revisit tasks which were less than 100% complete - it's inefficient, frustrating and deteriorates trust and confidence in your work.

Over-communicate your ideas / thought processes. Since co-op is such a short term commitment, employers generally appreciate over-communication. It helps you clarify your thinking and helps employers understand your brilliance.

Push yourself out of your comfort zone – you will only grow and find new opportunities by forcing yourself to do new things and confront your fears. It really isn't that bad.

Good luck with the job search this term! If you have any questions about what's written here or my start-up experiences at BufferBox feel free to give me a shout at aditya@bufferbox.ca.

Engineering and the World: Mathies



LEAH KRISTUFEK
1B CHEMICAL

Hello plumbers, engineers and others who just so happen to be reading The Iron Warrior. I am here to educate you lovely people in the Engineering Faculty about the world not so far beyond our classrooms, the world occupied by mathematicians, future doctors and current drama queens. That's right, the interesting and infinitely confusing world of the other faculties! Now we may know them vaguely as those people we pass on campus or share classes with during our electives, but what are they really all about, and more importantly how do they see us? There are a total of six faculties at Waterloo: Engineering, Science, Applied Health Science, Math, Arts, and Environment. Over the course of the next five articles of *The Iron Warrior*, we will explore the other five faculties.

Arguably engineering's closest faculty is that of mathematics. The home base of our calculus profs, the mathematics faculty includes such programs as computer science and half of software engineering, in addition to pure mathematics. They enjoy a similar ratio of males to females as engineering and they are similarly ambivalent of this fact because 'technology is cooler anyways.'

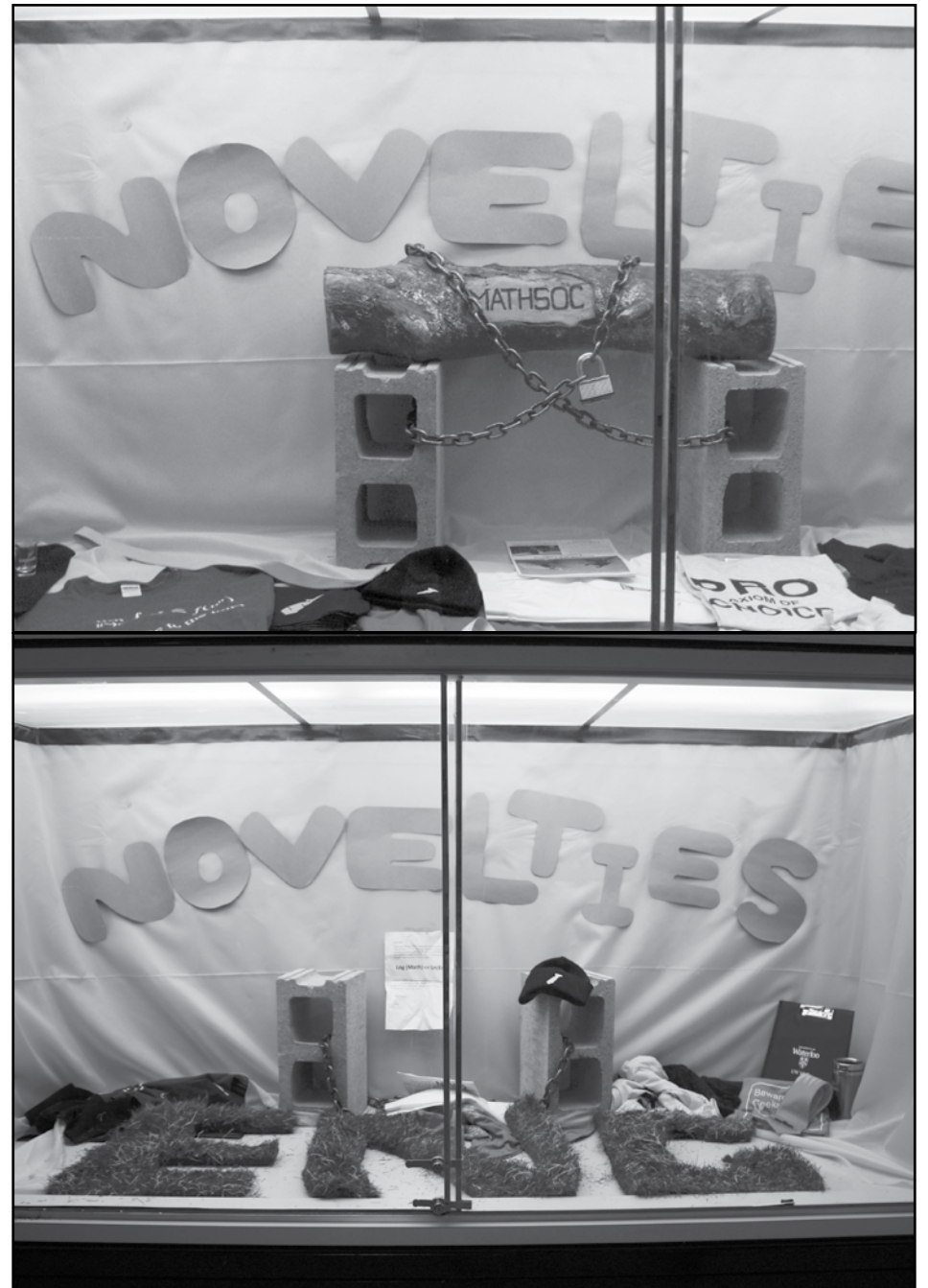
Bio/ native habitat/ lifestyle: The Faculty of Mathematics is filled with students called mathies who often get just as little sleep as engineers. Mathies enjoy the liberty of creating their own schedules and taking diverse electives. Though not particularly hands on, mathies throw wicked parties in the 'comfy lounge', the focal point of the mathematics native environment on the third floor of MC. These parties occur for 12 to 24 hours

at a time and include programming, techno music and what is probably considered an unhealthy consumption of energy drinks. Mathies are most likely to be found in some part of the labyrinth that is MC. Hard core math students leave the building only occasionally for the less important things in life: food and showers.

How we interact: Math and engineering have a love-hate relationship to put it lightly, yet math is probably one of the faculties with the closest tie to engineering. On the hate side, mathies are always checking their backs to make sure we aren't sneaking up to steal their Pink Tie or pull some other crazy prank. (Where is the original natural log? Not with math, that's for sure!) Not that they're innocent, but their 'purer than thou' attitude (see <http://xkcd.com/435/>) infuriates us engineers. After all, at least our math has a purpose! However mathies and engineers are joined together in the common joy of taking more than twice as much math as all the other faculties. We even share software engineers who are intermittently tossed between and embraced by both faculties. However a common craziness can be observed between both groups: we colour ourselves randomly to show our love for our programs. Both faculties also have awesome publications, so if you are looking for some good comic relief, check out MathNews.

Common areas of interest: Math, computers, and programming, are all things we seem to have in common. Social gatherings frequently occur with attendees conversing and surfing the net.

Verdict: Math is a pretty cool faculty. They are always visible if you know where to look, the math lounge being the place to start. Note however that many math students live in a nocturnal world, take t-3 to convert between normal time and math time.



The shenanigans of NEAC showing our love for the mathies; Before and After the great heist of the math log

Do you have what it takes to represent UW Engineering at on and off campus events?

Engineering Ambassador Program

The Faculty of Engineering in association with the Engineering Society is looking to form a team of undergrads to be the face of UW Engineering for our future students!

**Info Sessions in
POETS:**

Wed Jan 18 @ 5:30 – 7:00pm
Thurs Jan 19 @ 5:30 – 7:00pm

**Want more information?
Contact us!**

Russ Wong, Undergrad Marketing & Recruitment Coordinator: rpwong@uwaterloo.ca
Amanda LeDuc, EngSoc Outreach Commissioner: outreach.a@engsoc.uwaterloo.ca

Getting Thrown in a Dumpster?! Yukon?



LEAH ALLEN
PRESIDENT

Hey Engineers. Welcome back to campus and if you are a 4-stream fourth year or an 8-stream first year welcome to the A-Society!

Colour Me Educated Campaign is back and better than ever! This is an initiative hosted by FedS to raise awareness and

money to provide access to education. On January 25th, 2012 student leaders from all over campus will be picked up and thrown in a dumpster which will be located in the Student Life Centre. I will be representing Engineering in this campaign and for me to be released from the dumpster Engineering will need to raise \$1100!! To get the fundraising started before the day of the event, I have presented engineering with an additional challenge... muhuhau. As you all know, purple is our engineering colour. So for me to be completely purple for the

event, engineers will need to raise \$200 before January 24th at midnight. If you would like to donate to this campaign before the 24th, the donation bin will be in the Engineering Society Office (CPH 1327). I hope to see all your beautiful faces in the SLC on January 25th to see the spectacle.

A little more than a week ago, some of your Engineering society executives were in Whitehorse, Yukon for the Canadian Federation of Engineering Students Annual Congress. All I am going to say is that at this conference I learned a lot of things

that as a new President that will help me in this position.

Our next Engineering Society meeting will be held on January 25th at 5:30 PM in CPH 3607. I encourage everyone to attend because during the meeting we will have an update from the Dean of Engineering, Adel Sedra. We will also be reviewing the Winter 2012 budget for the Engineering Society.

If you have any questions/comments for me, please contact me at president.a@engsoc.uwaterloo.ca.

New PD Courses



DEREK THOMPSON
VP EDUCATION

Hey look at me, I'm exec! That means I need to write an exec report. I have some new things to mention to you, the students. So here goes nothing.

Are you an academic representative for your class? Does your class even have academic representatives? If not, make it so! There are important department meetings that you will need to attend that help to improve your learning. Also, this term will see the return of academic rep meetings with myself and your Education Commissioner, Anupriya Sadhukhan. The structure of these meetings is going to change from those in the past. I will not be passing on any reports to you at these meetings; that information will be available in *The Iron Warrior*. Instead, I would like to run these meetings as mini workshops. We will focus on dealing with how to handle difficult situations, leadership skills, and possibly how to impart academic news to your class.

At the time of writing this, I have attended a meeting with the Senate Undergraduate Committee. Engineering didn't bring anything up at this meeting. However, it should be of note that there is a new PD course on the horizon, PD 8. PD 8 will be called "Intercultural Skills" and will deal with the effects that one's culture plays on their everyday actions. Although this course is not engineering specific, it will provide another option for those choosing PD electives. Due to the changes to the Professional Development course structure for engineering students, this course will be labelled with slightly different pre requisites, though this won't affect engineering students.

An engineering-centric PD course is being developed. No new news on this engineering PD course at this time. However, I hear that it will be awesome.

I will have attended a Cooperative Education Council meeting by the time you read this. I will make sure to post regularly updated information about this in my blog on the EngSoc website. You can find it at <http://engsoc.uwaterloo.ca/blog>. Fancy, right?

As information arises, I will be sure to impart it upon you, the students in some form or another. Possible receptacles for this info are here, Engineering Society meetings (every second Wednesday at 5:30pm) or my blog. If you have any questions or concerns, you will be able to find my schedule for office hours in the Engineering Society Office This office is located right underneath the LED display in CPH.

Until next time, peace out!



MICHAEL SELISKE
VP EXTERNAL

I cannot believe it is already time to actually start my term as VP-EX!! Lisa and I have kept busy over the fall term, working on various initiatives as well as attending conferences. We just returned from Whitehorse, Yukon which played host to the Canadian Federation of Engineering Students Annual Congress. It was an interesting experience and we were able to bring lots of great ideas back to Waterloo to be implemented over the next few

External Conferences and a Call for VOLUNTEERS

months. Reports are available on the EngSoc website (<http://engsoc.uwaterloo.ca/>) and contain an overview of what was accomplished at each conference and what we learned from them.

Beyond attending conferences and writing conference reports, Lisa and I have been working hard with our directors to create some of the best events we possibly can this year. The National Engineering Month (NEM) directors are already doing a fantastic job planning some awesome outreach events for NEM, such as a Rube Goldberg Machine and an amazing outreach event at The Museum. These events rely on volunteers, like you, to run smoothly, so I would encourage you to

keep an eye on the mailing list for a call for volunteers.

Hopefully you are still reading this report because I am really hoping to recruit a solid group of volunteers to work on the Waterloo Engineering Society's Construction project, which has kicked off with a call for volunteers and a team lead. Last year, we built a sweet yellow submarine and this year we are looking to do even better! If you are interested, send me an email, drop by the Engineering Society office, or talk to me if you see me around. If you want to know exactly what I have been up to, check out my blog on the Engineering Society Website (<http://engsoc.uwaterloo.ca/blog/vpexa>).

Improve your Resume and More!



ANGELA STEWART
VP OPERATIONS

Hello A-Soc! I hope you're all happily settled back into the school routine. Here's what you have to look forward to in the next two weeks.

Resume Critiques: Jan 19th, 5-8pm in RCH 301.

Are you nervous for your first time applying to jobs? Want to polish your resume? Be sure to come out for the last resume critique session on Thursday January 19th. Previous sessions were held Jan. 10th and Jan 12th,

which helped over 300 students, improve their job-hunting prowess.

Have you had at least one co-op job, like helping others, and want free food and points for P**5? Volunteers are badly needed for this event. Email one of the directors, Kyle Pohl, at kpohl@uwaterloo.ca if you're interested or feel free to drop by the day of.

Microsoft workshop: Jan. 23th and Jan. 24th, 5:30-7pm in Biology 1, Room 307

Tired of struggling with work report formatting? Terrified of Excel? Want to show employers you take initiative to improve your skills? There will be two workshops on Microsoft Office. Microsoft Word is on the 23rd, and will cover formatting tricks necessary for work reports. Microsoft Excel

is on the 24th, and will cover skills useful for engineering coop students, like user interface and functionality.

Sushi workshop: Feb. 1st, 5:30-7pm in POETS.

Mark your calendars for the always popular sushi workshop. All supplies are provided. Whether you're a sushi master or a rolling novice we'd love to see you come out! Come with old friends, meet new ones, learn a new skill, and eat everything you make! This always fills up quick, so look out for registration on the EngSoc Orifice door. Miso excited!

If you want more updates on the VP Operations portfolio check out my Exec blog at engsoc.uwaterloo.ca/blog/vpopa.

Life, Novelties and Budget



DAVID BIRNBAUM
VP FINANCE

Hey all you A-Socers,

I'm super excited to be here with all of you this winter term. The term has gotten off to a great start with awesome events like Frost Week – Snowlympics Edition, Enguinity, BOT, and our EngSoc ski and snowboard trip.

My main focuses this past term was on Novelties, and developing the new relationship between the VP Finance and the Student Life Commissioner. On the Novelties front, I have brought in a few new items, as well as a ton of new patches. If you did not make it out yesterday to Novelties' first FIRE SALE of the term, do not worry. There will be many more throughout the term, starting with COVERALL DAY on Wednesday, January 25th from 11:30 am – 1:30 pm. Come out to buy coveralls for super cheap, as well as the seven new patches that are in. As well, wear your covies to get free cookies, and to enter yourself in

the various patch draws we will be having. Stay tuned for the rest of the FIRE SALES!

The budget meeting is fast approaching, so I am still looking for the following to be submitted by any directors that have not done so: budget, location of event, time of event, and event description. Please submit all of those to me as soon as possible. The budgets need to be in no later than this Friday, January 20th.

So far this term, I have been working on the budget and the calendar mostly. As well, I attended the Canadian Federation of Engineering Students Congress 2012, which I am sure Mike Seliske will be talking more about, but I want to highlight that our Novelties shop won the President's award for Engineering Society Innovation!

That is pretty much it for me at the moment; right now

it is just budget, budget, budget. Be sure to follow my blog! I will hopefully be updating it more regularly as of now: <http://engsoc.uwaterloo.ca/blog/vpfina>.

I am currently looking for volunteers who are interested in helping out with graphic design, as well as someone that would be interested in working in Novelties. If you can help me out with either, that would be great. For that, and for any other questions, email me at vpfinance.a@engsoc.uwaterloo.ca.

Have a great term!

Allocation	Purpose
USB remote control	To operate the POETS media center PC from a distance.
Lighting equipment	To illuminate EngPlays, Semi-Formals, and OTs.
Printing and Framing	Add more pictures to POETS
LCD screens	Event and service advertising in engineering buildings.
Screen for POETS door	Improve lighting control in POETS for movie viewing.
E7 Atrium	EngSoc components of E7 Atrium

Fall 2011 ECIF Allocations

WEEF WEEF WEEF WEEF WEEF WEEF WEEF



**BROCK
KOPP**
WEEF DIRECTOR

To those who don't know me (but hopefully at least recognize me from last term), I'm **Brock Kopp** and I'll be your WEWF Director for the next 16 months. I'm about to start my 3B term of Mechatronics Engineering. On top of school and WEWF, I am also acting as one of your six EngFOC (think cowboy hats during frosh week). It sounds like a heavy term, and it will be, but I "work well under pressure" (as many employers have heard) and I trust that everyone will let me know if it ever seems like I am letting anything (including WEWF) slip.

So, what does this mean for WEWF? I have lots planned.

First is a new website - weef.uwaterloo.ca, same URL but much has changed. I think many of you will agree that while the old website was easy to navigate and find specific information about funding, it didn't exactly get anyone excited about WEWF. We wanted to change that. The hope

is that our new website will remain easy to navigate and find information about how to receive funding, while also being a good resource for anyone trying to learn what WEWF is all about. The new website will feature an ever changing stream of articles written by both WEWF staff, as well as recipients of funding. So if you've received WEWF funding in the past, and have time to write small article (any size!) about how WEWF helped your project then PLEASE contact us.

Next, **alumni**. For those of you who haven't read WEWF's constitution (...long shot, I know), we are restricted by the faculty by how we ask for money from alumni. It sucks, but it also makes sense (imagine being an alumni with every student team/group/fund sending you letters asking for money). So... solution? Right now I am working with the Dean's office to try and streamline the faculty's donations webpage for WEWF donors as well as getting some real-estate in some of the booklets that are sent out to alumni. This being said... nothing works better than word of mouth so if any of you know someone who would like to donate to WEWF, have them email us or go to our (NEW!!!!) website and click on

the donations tab. I'm looking at you 4th years!

It's that time again boys and girls... the moment you've been waiting for all year... **WEEF's AGM** is back! That's right, it's the one night of the year that you can gather with all your friends and family for a night full fun, including info on WEWF and discussions about issues facing WEWF right now! How can I attend you ask? 1) Run to your calendars and mark of March 7th 2) Think of problems or issues you might want to discuss 3) Stay tuned for more details.

Finally, WEWF REPRESENTA-

TIVES!!!! WEWF needs someone from each and every class to sit on the WEWF Funding Council. What does this mean? It means it is the only time in your life that you will get to decide where 60,000.00 Canadian dollars go and get paid (with food) to do it! How do you become one? A) Get democratically elected by your class. B) Tell me!

See, that wasn't so bad, but that's enough from me. Comments? Concerns? Contemplations? Cogitations? Let us know!

Cheers,
Brock
weef@uwaterloo.ca

A Look at Engineers in the Year of the Protestor

ROB REID
EWB CONTRIBUTOR

As we look back on 2011, the year stands out as one of historic significance. One may recall the deaths of figures such as Kim Jong Il and Bin Laden, the overturning of governments in Libya, Egypt, Tunisia, and Yemen and birth of a new country in South Sudan, the continuing famine in East Africa and the costliest year for natural disasters to date. The year was marked by mass protests against political and economic oligarchies through the Arab Spring protests, Occupy, and Russian election protests. Time magazine named

to address are not simply American bank bailouts and the Wall Street crash but the wider lack of control of a country's political and economic future by its own people; this is entirely relevant to Canada especially in the context of a government so cooperative with American-style policies.

Secondly, as young people, we have the greatest stake in the future. We're set up to walk into a world with unprecedented challenges of food, water, energy security, extreme weather and political instability; things are bad all over. These are the consequences of unsustainable and unjust policies of previous generations which will continue if not forced to change.

FedS Councillor Report

ADRIANA CAMERON
FEDS COUNCILLOR

Hi, and welcome back everyone! Here are a few new updates from the January Federation of Student (FedS) Council Meeting that we want to pass along. In addition to this Councillor Report, be sure to check out the article written by Trevor Jenkins about the proposed FedS Fee Cap, found on page 4 in *The Iron Warrior*.

Student Study Space Survey

In an effort to assess the current use of undergraduate study space on campus, an ad-hoc FedS committee is being assembled to develop and administer a survey, and make recommendations on study space on campus. The survey would be used to determine usage rates of on-campus study rooms, and to create a map that would show students where the most and least utilized study areas are located. Furthermore, the survey could offer insight on whether or not additional study space is needed if a new student services building were to be proposed, following the defeat of the proposed Student Services Complex in the 2010 referendum. Students from each faculty are needed to sit on the committee, and committee members are expected to attend three meetings this term. If you would like more information, or if you are interested in sitting on the committee, contact Andrew Noble ASAP (adnoble@uwaterloo.ca).

Fee Collection Bylaw

Check out the article written by Trevor Jenkins found in page 4 of *The Iron Warrior*.

U-Pass Fee Update

Beginning in the Fall 2011 term, the U-Pass fee increased by \$7.70, from \$52.94 to \$60.64. This is due, in part, to the fact that U-PASS users represent 23% of passengers, but only 18% of revenues. The FedS Board of Directors is currently negotiating a contract for the 2012-2013 school year. However, the GRT wants U-Pass price increases to be tied to increases in adult fares. This would mean that U-PASS price increases would be voted on by Regional Council, rather than negotiated between GRT and FedS. FedS is currently working with both the Region and GRT, in an attempt to find terms that can be mutually agreed upon, and avoid FedS losing control of negotiating price

increases. Ensuring that service is not only maintained, but enhanced, is critical, in addition to ensuring that the U-PASS is reasonably priced.

Fed Hall Update

As many of you may recall, Federation Hall was originally built using student money, but, like all buildings on-campus, it is owned by the university, and leased back out to FedS. In April 2012, the lease agreement between FedS and the University of Waterloo will expire, and the University of Waterloo made it clear that it has no intentions of renewing the lease. The University believes that the space is underutilized by students, and could be better used to house catering operations. The FedS Exec and Board of Directors have been working with the University in order to negotiate reasonable terms, such that students have priority access to the space with subsidized fees. Expect an announcement with more details shortly.

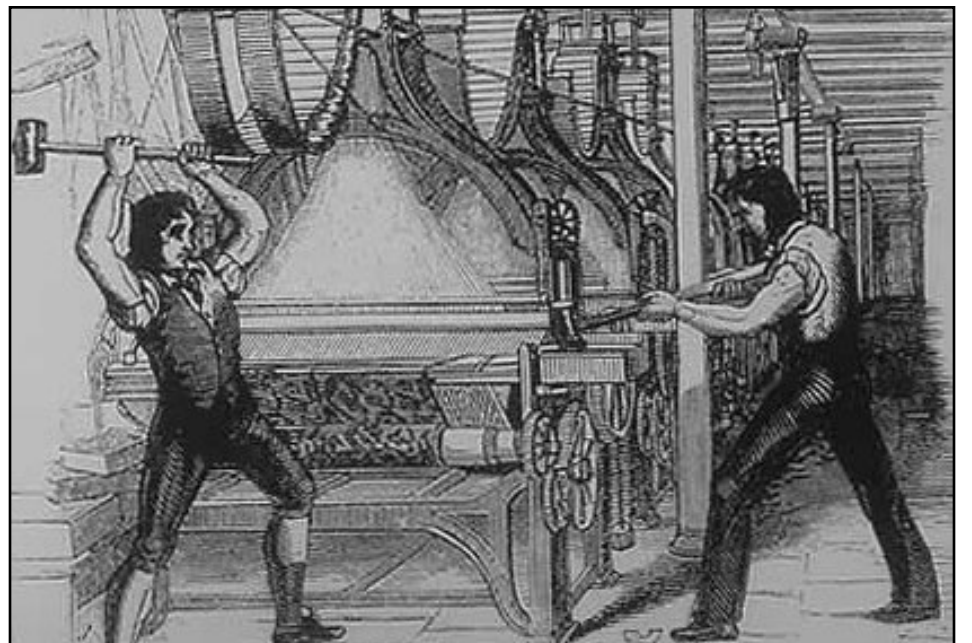
Canadian Alliance of Student Associations (CASA) Membership Review

The Education Advisory Committee (EAC) recently completed a report that reviewed the student advocacy organization CASA, in order to help determine if membership costs are justified by the value of membership. For the 2012-2013 fiscal year, FedS will remain full members of CASA. However, during this time, the EAC will evaluate progress made to the issues and recommendations outlined in the report. If sufficient progress is not made, FedS will drop to an associate member the following year, which would halve the membership fee at the cost of losing the ability to vote.

FedS Nomination Now Open

The nomination period is now open! If you're interested in being either an Engineering Councillor, or FedS Executive, you need to fill out a nomination package at feds.ca/vote. Packages are due January 23rd at 4pm. If you have questions about being a Councillor, contact any of your friendly neighbourhood Engineering Councillors. If you're considering running for Exec, it is STRONGLY recommended to talk with the current executive member.

If you would like further information on any of the issues above, or anything about FedS in general, feel free to contact myself (adcamero@uwaterloo.ca), or any other FedS Councillor.



1812 print of Luddites breaking textile machinery

Wikipedia

"the Protestor" as the person of the year.

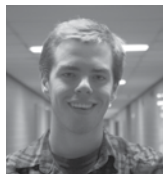
Unfortunately, the engineering community at Waterloo seems to be largely unfazed by the wave of social change going on; two out of three *The Iron Warrior* articles about Occupy mocked the movement as hypocritical and pointless; the BOT theme this year was Occupy POETS. Unlike UW, schools like Harvard are staging walkouts of first year economics classes for their dysfunctional ideologies and peaceful demonstrators at UC Davis are being gratuitously pepper-sprayed. It is certainly within the rights of any individual to reject how Occupy has been carried out and the themes it represents however, the current atmosphere around our engineering student community seems to be one of laughing the movement off without really thinking about it. Many other areas of society have been turned off by the movement due to the mainstream media's portrayal and coordinated efforts to shut down and belittle the movement; therefore, as Canadian engineering students, we really need to be listening.

Firstly, as Canadians, Occupy was initiated by the Canadian anti-consumerist organization, Adbusters. The issues it seeks

Thirdly, if we are not part of the 1% with our being engineers, we are still a part of a socioeconomic and intellectual elite with the power and responsibility to have a positive role in society. The profession strives to preserve the life, health, property and welfare of the public by developing technologies that enable us to be more effective and efficient at the things we do. However, in our economic context, technologies largely serve to enable the 1% to exploit the 99% by concentrating efficiency gains on the owners of industrial machinery and not the workers. In industrial Europe, people (Luddites) realized this dynamic and, paralyzed to change the social structure, instead attacked technology itself by sabotaging machines. Obviously, this sort of action is incredibly wasteful and fails to leverage the amazing things technology can do.

The interaction between technology and society is more complicated than can be covered in a List A CSE. If Waterloo engineers wish to remain relevant in orchestrating solutions to today's complex problems, a sincere examination of global milestones such as Occupy should be taken.

How to Survive the Work Term from Hell



**SPENCER
GOOD**
2A MECHANICAL

A lot of us had the feeling before, and a lot of us have had it multiple times, and a lot of us may not have had it, but probably will in the course of six co-op terms. It can be only described with one word: dread. That is the only way to describe how I felt on the third day of my job, when I was spending the entire day making a map on paint directing Mexican diplomats how to get to their respective hotels and restaurants for their stay in our nation's capital (I know, I guess they don't know how to use google maps). It was the confirmation of something that I had already suspected: my job SUCKED and it wasn't going to get better.

I'll try to stay light on the specifics because I want to help people survive their own terrible workplace experiences for which the number one rule I am going to come back to over and over is: don't dwell on the situation! Let's just say I did work about 20% of the time, which consisted of checking emails, googling company phone numbers and, at the best of times, low level excel work (but damn it, can I ever make a good pie graph). So, to be sure, it was a bad job, but I survived and, as those around me knew, I didn't enjoy it and I sure made that clear. Overall however, I learnt some valuable lessons that I want to pass on to those stuck in the same situation.

As I've

said before, do not dwell on the negatives of the situation! Leave work (or as I called it, chair sitting) behind when you leave the office, and focus on developing other skill sets. Whether it be getting in shape (I have never ran as consistently and as much as I did in Ottawa), taking a new course (beginner car care and Aqua Fit for the win!) or doing some sightseeing around your new digs, get the most of outside work as you can, because sometimes that's all you got.

Secondly, make friends if you can. Working a crummy job is a serious confidence downer at times and one of the best ways to relieve the associated stress is to hang out with friends. There's only so much fun you can have by yourself, and having friends around is a good way to escape the mentality associated with your crappy job. Unfortunately, friends

do not come quite as easy during co-op as they do at school some-times, but

WatPubs, courses and friends of friends are great ways to make friends. Even grocery shopping with a friend can be therapeutic after a frustrating day at the workplace. If you can't.....try harder. And if you still can't, make damned sure you have Skype.

When you've exhausted all other options at work, you can get creative. I taught myself a fair amount of HTML, JavaScript and CSS (W3 schools is a great website), as well as some VBA. If you can, downloading compilers to teach yourself other programming languages is a good idea. Beyond this, when things get desperate, I learnt that feeling guilty about doing nothing gets you nowhere. Do the work you need to do when you are given, ask for more and look for opportunities but when you've done that, it's not your fault anymore. Try to be productive, but do not feel guilt ridden about

facebooking, listening to sports radio, reading *cracked.com*, or office communicating (just try to keep the conversation appropriate as I had some close calls) during the unbearable moments during the day. Most readers are probably thinking, 'But what if my boss catches me?' My answer to that is, if your boss hired you to do nothing and you have exhausted your options, he has no case in getting angry with you.

My second

most important rule for co-op, is don't count the days! I started counting down at about Day 65.....and up until about day 25 my life was unbearable. It took a long time for me to accept that I had to do it, but once I did, and I stopped counting down and obsessing about the negatives, the term went by a lot faster.

One of the biggest downfalls of my attitude towards my job was what I have come to call the 'comparison complex.' I spent so much time comparing my own crummy job to the amazing experiences of my friends, and it only resulted in bringing down my confidence and making my job even worse. Your future employer will not know how much or how little you did at your previous work terms, embellishment goes a long way in both resumes and interviews. When your next employer looks at your resume, and then at your friend's resume who had the most amazing coop job in the world (as you have heard over and over), he or she will know little about how little you did and how much your friend did. So don't waste your time worrying about it, it's just another way of dwelling on the negatives.

Last fall was a long four months for myself. My job was garbage and I was far away from home without much company. However, the first two months were horrendous compared to the last two. By the beginning of November, I had accepted the situation and made a genuine effort not to waste the final two months of the year. The results were really positive. I made some great friends, got in shape, acquired some skills and just felt better in general. After all, work isn't who you are, it's what you do. Once I learnt that, my work term from hell became a lot more bearable.



GK Health

Racist or Realist: Viewing the World In Living Colour

**ELLIOT CASS &
JOSEPHINE RATZINGER**
2T FRUTTI ENGINEERING

Brown people smell like curry, Asian people are good at math, and white people can't dance. At its worst, stereotypes are derogatory, offensive, and just plain wrong (Heather Morris, anyone)? Perhaps we should be glad, then, that stereotyping – particularly racial stereotyping – has been hailed as the mother of modern racial slurs. However, is ignoring racial differences really the best solution? Or is it possible that pretending that we're all the same is actually detrimental to equality and fair-treatment? Maybe we all need to be a little more frank and open in talking about race and race-related issues; maybe doing so doesn't make you a racist, but rather just a realist.

Most racist stereotypes occur when people use skin colour to make judgements about an individual's personality, actions, or values. While the knee-jerk reaction would be to condemn such judgments, it would be equally ignorant to assume that races don't have cultural implications. In fact, we would argue that the only thing worse than having racist stereotypes is assuming color-blind uniformity. Sure, it's nice to pretend that all white people are like black people are like yellow people are like brown peo-

ple – living in the exact same country, with the exact same set of laws, cultural norms, belief systems, and family situations, with not a whit of difference but the amount of melanin in your skin. But that ain't realistic.

Take the stereotype, "Asian people are good at math." The stereotype is not necessarily implying that being born with so-called 'yellow' skin predisposes you to mathematical abilities. However, oriental countries place a greater emphasis on academic successes (especially in the maths and sciences) than western countries, and when parents who grow up in oriental countries bring their children to western countries, the values transfer over. Another example is alcohol and drinking. Drinking has a large cultural significance in western society (especially in university). Many cultures, such as Middle-Eastern "brown" cultures, have rules and regulations that expressly forbid drinking. Without being aware of these cultural implications, one could assume that the shy, non-drinker in your class is actually a stuck-up snob who hates alcohol and doesn't know how to have a good time, rather than the product of a very teeter-tottery culture clash.

So when is stereotyping a good thing? Stereotyping is a good thing when it helps us be aware of group differences. We commit the sin of non-racial 'stereotyping' all the time, but just under a different guise.

We assume that young children are too dumb to understand Adult Talk; we assume that people in different professions (doctors, lawyers, teachers) are at least somewhat passionate about their respective fields of study; we assume most mentally handicapped people can't take care of themselves. Whether or not the aforementioned stereotypes are true is up for debate, but the point is that stereotyping helps us understand that not everybody is like "me." And although one could argue that racial stereotyping is more "bad" because it uses skin color as a basis for differentiation (as opposed to age, career choice, and disabilities, which are somehow perceived as being more suitable), the end truth is that we live in a society where race and culture still have a very strong correlation. Perhaps, in time, humanity will blend and become "tan," and the link between race and culture will erode. But that time isn't right now, and it would be ignorant to believe it is.

However, racial stereotyping is detrimental when we use it as an unquestionable law. If you realize that the sixth grader you met is actually a politics whiz, you might take a moment to be impressed, but you probably wouldn't blink twice – and that's how it should be. It's okay to believe in a stereotype and then accept that it doesn't hold. However, if we adamantly refuse to believe that said teenagers don't have the intellec-

tual forte to understand anything beyond how-to-text-in-class-and-get-away-with-it, then stereotyping becomes a problem. If we don't let ourselves be challenged of our assumptions, then we will never fully grasp how individually different each of us are.

Racial stereotyping should also not be used as an excuse to discriminate. Discrimination, which is the use of stereotyping to give or take away advantages or opportunities from people, is not something we promote or believe in. Consideration of people's races should open your mind, not close it.

At the risk of sounding like Jim Crow, we will emphasize that races are different, but equal. Race is a major force in the world, for better and for worse. When we choose to embrace our racial and cultural differences, we can celebrate multiculturalism in cuisine, music and art. But when we forget that race is only one part of who we each are, we can encounter the ugliness of eugenics, segregation, and bigotry. The danger of racism is when it leads to ignorance; to try and fight this with more ignorance, by assuming that all people are equal irrespective of cultural and racial differences, is nothing more than a farce. Stereotyping in and of itself is neither helpful nor harmful; it is just a tool, and one that we should use to embrace racial differences, rather than using it as a weapon to enforce false sameness.

Point Vs. Counterpoint

SOPA Threaten Personal Freedoms on the Internet

POINT

JOSHUA KALPIN
1B SOFTWARE

Since the inception of the internet, people have exchanged and posted various files on the web. These have evolved from text files to music, movies, video games and more. With the arrival of Youtube, Flickr, Deviantart and other websites that thrive on user-generated content, the question of what we can use, share, or even view on the internet has been rapidly growing.

The hotly contested issue of today is to define what is a violation of copyright law and how copyright law can be enforced in such a way without penalizing those that acquire their content “legally.” One possible solution to this problem has arisen in the form of the Stop Online Piracy Act (SOPA). This act authorizes the United States Department of Justice (DOJ) to obtain court orders against foreign websites that have been accused of infringing on copyrights and/or being a medium to facilitate copyright infringement. Afterwards, the United States Attorney General could force Internet service providers, search engines, and many other companies to cease doing business with the offending parties.

On paper, this may seem like an easy solution: remove the offending links and punish those that continue to infringe on copyrights by potentially cutting off their income. However, when we look deeper into what this actually means, frankly, it is frightening. Picture this scenario: a person who we will call Bob uploads his favourite clip from last night’s episode of the Big Bang Theory to Youtube and then links to it and writes a post on his blog about it. Bob’s blog post is then linked to on Reddit and subsequently spread to many other websites via RSS feeds and word of mouth. Enter SOPA. If CBS, the copyright holder of the TV show, complained to the DOJ about Bob’s clip and others like it, a chain reaction would occur. Youtube, Bob’s blog, Reddit, and any other website that is deemed as perpetuating the spread of infringing content could be blacklisted and be forced to shut down permanently. All of this occurs from Bob simply wanting to show more people this awesome clip from one of his favourite TV shows.

Another major problem with SOPA is that it violates one of the most important freedoms that we have in our society: freedom of speech. Currently, anyone can freely exchange information, whether it is one’s opinion or content. If SOPA were to be enacted, it would set a precedent for the censorship of the internet. Recently on *TIME Magazine’s* Techland blog, Jerry Bit wrote, “Imagine if the U.K. created a blacklist of American newspapers that its courts found violated celebrities’ privacy? Or what if France blocked American sites it believed contained hate speech?” If any of these were enacted, they would be similar to what SOPA is trying to do for copyright violations. If the United States can enact legislation that targets foreign websites, why can’t a hostile country like North Korea or Iran enact similar legislation and cause chaos on the Internet?

Another factor we can analyse with SOPA is whether it will actually work.

Previous legislation in the United States and many other companies has attempted to take down, and bankrupt, many websites that link to copyright infringing files. The most prominent of these attempts, the case *Sweden vs. The Pirate Bay*, is currently wracked in a multitude of legal challenges and appeals. As of today *thepiratebay.org* is still working. So what does this mean for SOPA? If Sweden can’t take down a single website, how does the United States expect to blacklist thousands, if not millions of websites?

Another area that SOPA cannot regulate is local peer-to-peer networks such as our own DC++. These services are only accessible by those directly connected to the network and as a result are virtually undetectable. If SOPA were to be enacted more of these networks would arise and sharing would still occur in a more incognito fashion.

We’ve talked about why SOPA is bad and how it would be flawed legislation but the question that remains is what would work to protect copyright owners?

The first solution proposed by many is to decrease the presence of Digital Rights Management (DRM) software that currently restricts how users can access and share software, movies, music, etc. that they have purchased. At first this solution seems counter-intuitive; by making it easier to share this content, how can you actually reduce the amount of copyright infringing that occurs? However, in practice this works. For example, when the game Spore was released, there was a great outcry about the DRM included with the game. Once the game was released, it became the most pirated game for the subsequent weeks after its release. Once the DRM was removed from the game, these statistics dramatically dropped.

Another proposed solution is to make it easier and worthwhile to obtain content without violating copyrights. For example, instead of withholding clips of television shows, content providers could post them to Youtube or other content-sharing websites (FOX already does this for clips from Family Guy).

To conclude, the Stop Online Piracy Act (SOPA) has good intentions, but it is poorly thought out and has drastic consequences for content sharing websites like Youtube, Flickr, and Facebook. Furthermore, it violates our basic right of freedom of speech and moreover, SOPA’s ability to prevent piracy is still unknown. Instead of blacklisting and bankrupting, we should focus on motivation people to not infringe on copyrights.

ANISH BHUTANI
4B CHEMICAL

In October of last year, the United States House of Commons introduced bill H.R. 3261 – better known as the Stop Online Piracy Act, or SOPA. Because this bill has been talked about so much, I am not going into all the little details about it. Rather, I want to focus on what it is trying to address.

A lot of the discussions that people come across about SOPA tend to be very negative, focusing on the issues of people abusing the system, costing lots of money, the threat of silencing free speech – essentially killing the internet. But while these arguments may have some merit, they all fail to address the issues that SOPA – in its original form – was trying to address. SOPA is trying to help create and improve upon the incentives there are for entrepreneurs, writers, artists, and others, as well as to protect those in the US and make sure that people are not profiting from someone else’s work.

The biggest thing that SOPA is trying to address, and that many people who are against SOPA are failing to offer a solution to, is the right of developers and entrepreneurs to get credit, and subsequently get paid, for the products that they create. Under SOPA, copyright owners will have the ability to flag companies that use material without permission (and subsequently profit from it).

One immediate benefit of SOPA would be the profit incentive, by trying to develop your own products, rather than base a website on the business plan of sharing everyone else’s products. Some examples of this are companies who stream online TV shows and movies, sites where you can download and upload those shows, as well as a large array of computer software.

Innovation and entrepreneurship are two of the best ways to move society forward and to create jobs and better standards of living for people. However, there is no motivation or incentive for either innovation or entrepreneurship if there is no profit in it. This is why certain pharmaceutical drugs will never make it to human trials – the cost is not worth it when there is such a high risk of failure and low payout. SOPA is trying to find a way to address this problem. By having

copyrighted material on the internet regulated, it gives people the incentive to be entrepreneurial, by letting them control the rights of their material, and removing, or at the very least reducing, the

risk of that material being stolen and making profit for someone else as soon as it is created.

As well as the claims of copyrighted videos, SOPA will also help those in the music and book publishing industry, or those trying to get into those industries. There is already so much risk to go into them, because there is such a likelihood that you will not be very successful. However, if potential book and music writers know that they can get paid well for producing original content, they will try to get their work out there more often, which will build the book and music community.

There will be much less risk of having your music downloaded or taken off your website and put on YouTube or any other website for someone else to make money (or at the very least, make less money for you). As well, it is very easy for pdf or ebooks to get out onto the internet, and with pdf and ebook readers, it is easy for anyone to get a hold of a copy and read it at their own convenience. SOPA’s goals are to remove this loss, improving the incentive to write books and to try to make a profit when the public can access it.

Another reason that this is beneficial is that every website will have regulations that they will be responsible for. One of the goals of these regulations is that they will reduce the amount of fraud or spam sites that exist, either trying to sell you drugs or any other product that may not have gone through accepted paths to get approved, and as such may cause more harm to the general public than good. One of the aims of the United States Government is to protect its citizens. This can best be done by having a better way of blocking sites that can harm users.

One last goal that the Stop Online Piracy Act is trying to accomplish is to stop making it a business option for people to steal material from innovators and make a profit from them. This can be done by charging people to view this material, or by offering advertising for companies that want to target users viewing this material. SOPA is hoping to make it so that if a company is flagged for using another company’s materials, then not only will the first company’s site be shut down, but the company advertising on that site will be aware and will be able to stop funding those kinds of projects.

One counter argument to SOPA is that a company could easily flag another company, which would be common if they are in competition. However, with SOPA, there would also be a lot more protection to those companies, and false claims made can lead to a company being sued. With a high enough penalty on companies who make false claims, there is a much less likelihood of it happening.

The goals of SOPA have been to improve on the incentives of entrepreneurship, protect United States citizens, and make sure those who did not create materials are not making money from it. While there may be some flaws in the current writing of SOPA, it is still trying to accomplish the goals for the above, which can help a lot of people.

COUNTERPOINT

A major problem with SOPA is that it violates one of the most important freedoms that we have in our society: freedom of speech



Eric Dooker

Editor’s Note:

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

The Fortnightly Review

2011: Bad Year for Dictators



CHAD XU
3A MANAGEMENT

Editors Note: This article contains content that may be offensive to some. If you feel that the subject of dictators cannot be taken humorously, please avoid reading this article.

It was inevitable.

No, I am not speaking of the inevitable actions that a proletariat will take after fermenting under an oppressive regime for one too many years. I am, however, referring to the inevitability of the ultimately futile outcome that persists after the dust blows over.

2011, on the surface, presents itself as a year where much joy should be derived from the displacement of a number of ruthless dictators, whose policies have killed thousands, starved millions, and stolen billions.

But instead of writing an article that explores the inherent flaws of human nature and why power corrupts even the purest rendition of man, I present to you a consolation to the topic at hand; a series of incoherent blurbs that celebrates the turbulent, and sometimes eccentric, lives of the dictators who we will all miss so dearly."

Tunisia — Ben Ali

The Burning Man isn't just an obscure annual festival hosted in the middle of the Nevadan desert where hippies, hipsters, and hedonists indulge themselves in mindless debauchery. Pardon the pun. Its (or his) existence also served as the catalyst of what we would come to know today as the Arab Spring and the Occupy Movement.

Ironically, Ali's own rise to presidency came in the form of a coup d'état in 1987, where he had impeached his predecessor, Habib Bourguiba under medical grounds.

In his defence, Ben Ali made various attempts to liberalise Tunisia, despite limited

success. In his effort to defeat his opponent in the 1989 election, Ali banned all Islamic political parties from running. Though he had his sights on different things, the separation between religion and state itself is often viewed as a move in the right direction for fostering democratic and fair government, even if it is tongue-in-cheek.

Egypt — Hosni Mubarak

By most standards, 29 years is a long time for someone to be the ruler of anything (unless that thing happens to be the United Kingdom), but you can't blame the man for being ambitious.

His role in facilitating the Sinai Interim Agreement between Egypt and Israel and his attempt to "turn off" the internet from within Egypt speaks volumes of the ambitious mindset that he has. He failed on both accounts, of course. However, as we've all been taught in pre-school, it's the principle that counts.

Mubarak is currently awaiting trial and suffering from stomach cancer. Let's all wish him a speedy recovery, so that he is able to stand trial.

Libya — Muammar Gaddafi

Known for his over-the-top gold-embellished dress, Muammar Gaddafi is no stranger to the phrase "dressing for the job you want".

As if that wasn't enough, Gaddafi has a small army of hand-picked elite bodyguards made entirely of female virgins. However, their chastity is of questionable nature since no independent parties were ever able to physically confirm such claim.

But dear readers, let us reserve our judgement of this man based on his taste alone, for taste is a personal and touchy issue with no place in determining a man's merit. Let us instead envy the fully-subsidized electrical grid, 0% interest rate, and \$0.14/L gasoline price; all of which are luxuries that Libya under Gaddafi's rule was able to provide to its citizens.

As far as dictators go, Gaddafi showed spectacular sportsmanship when playing realpolitik with the West. He actively en-

couraged disarming Libya's weapon storage in an attempt to avoid confrontation between Uncle Sam and friends. He nonetheless lost the game in the end, and has since become a professional daisy pusher.

Apple — Steve Jobs

You can't have a complete list of dictators without at least one mention of Steve Jobs.

Some of Steve's favourite past-times at Apple include: summary execution of employees, experimenting and mastering reality-distortion fields, destroying prototypes for minor aesthetic imperfections, and tripping on acid.

According to an undocumented and unscientific report generated by me, the amount of money that he is likely to have stolen from you ranges somewhere between five-hundred dollars to over nine-thousand dollars. Apple, under Steve Jobs, was at one point trading on Wall Street as the company with the highest market capitalization, briefly surpassing another evil corporate entity, ExxonMobil.

On October 4th, 2011, Steve Jobs made a wager with Satan, where he was promised to be cured of cancer if consumers will react favourably to the announcement of the iPhone 4S at Apple. Steve died on the subsequent day. His spirit is said to have been trapped somewhere in Microsoft as a result of losing the wager to Satan.

North Korea — Kim Jong-il

A stout man by communist standards, the Dear Leader was not fond of sharing food with the rest of his countrymen. Despite this, he was able to prevent at least 85% of the North Korean population from dying of starvation in the 90's.

The Dear Leader was perhaps best known for inventing the hamburger, being the best golf player on earth (11 holes-in-one, sorry Tiger Woods), being the largest buyer of Hennessy, playing a leading-role in a Hollywood movie, and for looking intently at various inanimate objects.

The Dear Leader lived to a ripe old age. May he find immortality in the form of bad memes on reddit.



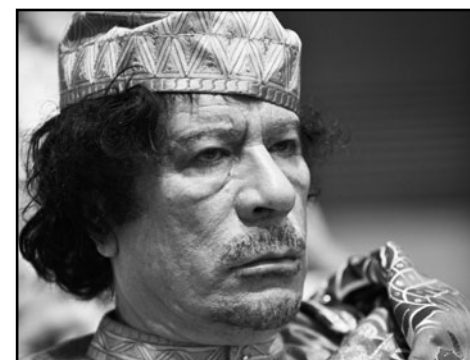
Ben Ali

Reuters



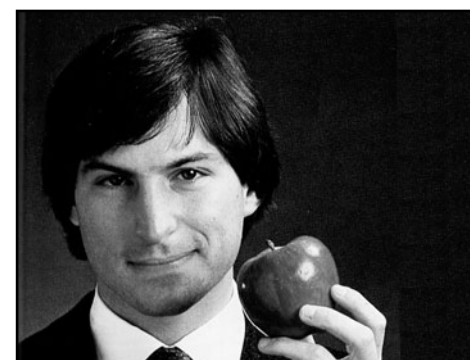
Hosni Mubarak

AFP Photos



Muammar Gaddafi

US Navy



Steve Jobs

Apple



Kim Jong-il

Government of DPRK

TOPZ (with a Z)

Top Ways to Beat the Heat this Winter



**WADE WILSON
EDWARD BLAKE**
2Z HANDSOMENESS

With the most wonderful time of the year coming to a close, we're faced with the harsh sobriety of Old Man Winter. But how, you ask, can we overcome this cantankerous curmudgeon? For one, you can stop using those five-dollar words. Next, you can follow this handy-dandy guide to the top ways to beat the heat this Winter!

Stay Indoors

Let's be honest: it is not worth getting up for class, putting on all those layers, and weathering the bitter cold just to try and decipher a thick accent telling you that you should already know something. Why not take a day off? You're ahead in your classes that day anyway, and the tutorials for the course are useless. Take the next day off too; you can get the notes off a friend and find the slides online. In fact, the textbook has such good examples that you could learn enough from that in conjunction with tutorials-for-beer from a friend to make up for a week in warmth. You know what? Take the month off! You can learn everything right before midterms and exams; in fact, you work better under stress! (N.B.: In the event that you

end up writing off the entire term you can either try your luck seducing your prof or just updating your Seliske-edition velcro engineering jacket.)

Change your Diet

Let us take a page from the majestic walrus. This year, hit up the fitness club, pick up a ton of weight-gain powder and start curling those doughnuts and inhaling those wieners. Get creative in your fat acquisition: snort sugar with a Twizzler, wrap everything in bacon (those of you who follow halal and kosher can substitute bacon with peameal bacon), eat Ferrero Rocher with melted butter instead of cereal with milk, and even go to Campus Pizza. Walking? That's for chumps! Pick up a motorized scooter to save your precious, precious carbs. Keep up with this high calorie diet by never missing the most important meals of the day: breakfast, second breakfast, brunch, lunch, afternoon meal, dinner, before bed snack, midnight snack, and any other ones we may have missed.

Breathe Fire

When fantasizing in the cold it's not rare to desperately fantasize about dragons burning you to a crisp to feel warm — or maybe you've just been playing too much Skyrim. Well, why not try the next best thing; breathing in fire the way a dragon would and what easier way

is there than with a cigarette. Conveniently found at most convenience stores, you will get the job done with ease and without being wary of nearby popo, fuzz, or spidermen (amazing, ultimate, spectacular, or otherwise) because it is legal, which also means it must be good for you. The government wouldn't allow corporations to make money off something that would hurt us, that's just ridiculous.

Drink Warm Beverages

Who doesn't like to warm up on a cold day with a nice warm pint of salty lager? Problem is you don't always have a barman to serve you a tall one. Secret is there's a little barman or barmaid who you've known rather intimately for a very long time! Yes, your hoo-hoo or ha-ha can conjure up a nice hot treat that is sure to satisfy and leave you warm and fuzzy on the inside. If you really can't squeeze out a drop of honey, you can always resort (if absolutely desperate for a hot beverage) to buying some Tim Horton's coffee.

Take up New Hobbies

Drugs are a staple of civilization, with every culture ever capable of becoming intoxicated, merrily doing so. Whether it's some whiskey in your morning coffee or a little blue meth in your corn-cob pipe, drugs are a delicious, nutritious, and illicit way to keep warm in the winter.

Do you ever wonder why junkies are always shivering and wearing long sleeves? It's because they're super-sensitive to cold (kind of like the opposite of Victor Fries) and have found the secret that drugs are a great way to fight the frost! *Editor's Note: The Iron Warrior does not advocate the purchase, sale or use of illegal drugs.*

Visit the "Gym"

Every year the students of UW embark on a march towards the ancient grounds known as "PAC." They do so in early January to be amongst their kind, where they huddle together for heat. After not-long the female Waterloosers embark on a second journey to the Columbia Ice Fields, while the males hold the fort and move about half-heartedly. As January wanes and the weather gets colder, the students leave these grounds, not to return again until next January. It's one of the beautiful natural occurrences on campus and taking part in the majestic ritual will warm both your body and soul.

Jokes aside, the best way to warm your heart is by impaling yourself in the chest with a scalding iron. Happy Winter!

Imaging Column: The Human Vision System

ANGELO ALAIMO & MICHAEL SELISKE
4B ELECTRICAL & 3B COMPUTER

Angelo Alaimo and Michael Seliske are two ECE students who have had several co-op placements within the consumer imaging industry. Over our terms, we both learned the fine details and behind the scenes aspects of digital photography, and would like to share some of that insight and passion with you. Over this term's Iron Warrior issues, we plan to bring you information related to imaging technology and what you learn might surprise you.

A photograph is defined within Webster's dictionary as "the art or process of producing images by the action of radiant energy and especially light on a sensitive surface." It's a pretty generic definition, but imaging and, as an extension, digital imaging is a complex field that requires many components to work together in order to produce a final image that can be stored and viewed later. At the forefront of this system is the understanding and mimicry of the human visual system.

To begin, stop and think on how one could describe what the colour red is to an alien species. One might start by quantitatively explaining that it's a small portion of the light spectrum with a wavelength between 635-700 nanometres, but that doesn't really mean anything to the alien. One's next thought might be more along the lines of "red is just red" but red is actually the col-

our that humans perceive when light of those wavelengths enter our eyes, and so it could look very different to someone with a different visual system than ours.

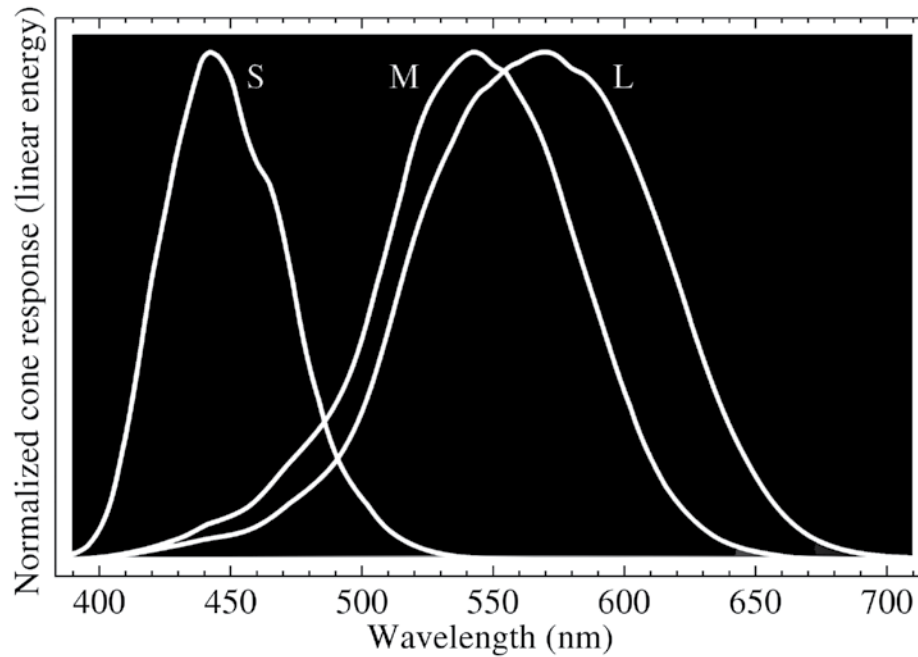
The human visual system is based on two different types of receptors within our

into a dark area and notice that it's difficult to see colour. You're essentially seeing just a black and white image. Second are cones, and there are three different types which are sensitive to a different spectral range of visible light. The 'L' cone is sensitive to "long"

Once light is collected by the rods and cones, the brain decodes the data and allows us to see a colour image. The distribution of the rods and cones is not even across the retina, with a large concentration of cones contained in the fovea, which is about 4 to 8 degrees from the optical centre of the retina.

The basic set up of the human eye and how it perceives the world is a large component of imaging. However, it's impossible to mimic the eye completely - for example reproducing colours so that they are properly viewed by humans can be difficult. There are two ways of delivering colour to the eyes. One is active colour which produces the light and delivers the specific wavelengths to the eye (computer monitors, LCD screens) and the other is passive colour which filters out wavelengths and only allows the desirable wavelengths to be reflected to the observer (any printed media). Although these modes of colour reproduction are totally different, there has been a lot of research regarding the ability to reproduce a colour using any type of device, and that is the basis for many colour scientists' research.

There is so much information regarding how the human visual system affects the imaging world, but it is too much to include in a short article. If you enjoyed this short introduction, please take a look online for more information on the human visual system and how it works. In the next issue, we'll be discussing the basics of how an image sensor is used to create a digital image.



Graph illustrating spectral overlap

eyes. These receptors are called rods and cones, and they function differently from each other. First are rods, which have higher sensitivity to light than cones but are monochromatic, which means that they cannot distinguish colour. Try it out yourself - go

wavelengths (red), The 'M' cone is sensitive to "medium" wavelengths (green), and the 'S' cone which is sensitive to "short" wavelengths (blue). Each of the cone's spectral sensitivities overlaps one another in order to allow us to perceive more colours.

Your Bi-Weekly Challenge: Tally the Money



My first two terms of university cost me a little over \$20,000. I only know that because I tallied up every bill rather carefully into my budget. Since the term has only just started, I'd suggest that you make it your new year's resolution (or new term resolution) to start tracking your expenses.

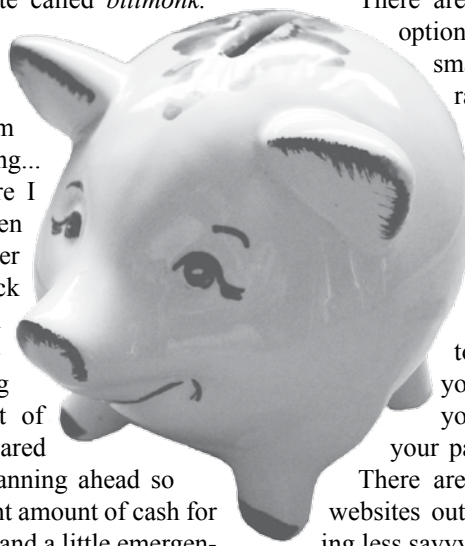
Why? As a university student, you probably already know that it's important to budget for things. You also know that you need to find money to pay for all your expenses each term, but do you actually know how much money you need each term? Do you ever find yourself thinking that all your money just disappears into thin air? A budget can help with that.

When you start a diet, nutritionists often recommend keeping a diary of everything you eat. It helps you realise where your calories are coming from and how to cut down on the unnecessary ones. Tracking your expenses allows you to do the same thing. Think of your budget like a diet, and your expenses like those pesky calories. **I challenge you to record everything you spend money on over the next two weeks. Two weeks isn't hard right?** If you think you're up for something more challenging, try to remember everything you've spent money on so far this term (check bank records and all those online shopping bills laying forgotten in your email account). Tuition, airplane tickets to Waterloo, books, food, rent, that "back in Waterloo" party you had last week, you name it! Keep the approximate date and a short description (e.g. "groceries") with each item. The goal of this exercise is to get an accurate picture of how much money you're spending and how you're spending it.

Different people use different methods for tracking their expenses. I personally just keep all the receipts in my wallet and then dump them all into a spreadsheet every few weeks. I also double check this with

my bank statements. All the expenses that I share with my room-mate are tracked on a handy-dandy website called *billmonk.com*, so I know how much I need to pay for my share of groceries, for example. If I'm shopping (or drinking... sigh) in a place where I won't get a receipt then I'll just write whatever I've spent on the back of another random receipt or I'll just recalculate my spending based on the amount of cash that has disappeared from wallet. I like planning ahead so that I have just the right amount of cash for that evening with me (and a little emergen-

cy money) and then I know exactly how much I spend.



There are also plenty of other options. If you've got a smart phone (my phone rather stupid) then I'm sure that you'll find there's an app for that! *Mint.com* has a free budget calculator app to help you. You can also sign up on their website to have them track all your bank accounts if you feel safe sharing your password(s) with them. There are also plenty of other websites out there. If you're feeling less savvy, simply recording ex-

penses as reminders or notes on your phone also works. Others carry tattered notebooks and pencils around with them. You can also choose to keep a spreadsheet in a google doc active and just record your spending whenever you're near a computer. **Whatever your favourite option is, just make sure it is accurate and that it includes every penny you spend over the next two weeks.**

Tracking your expenses is a good habit to get into, so if you already do it, kudos to you! Once you have an accurate picture of where your money is disappearing to, it will be time get it all under control. Look for tips in the next issue for how to actually analyse your expenses, decide where you can trim them down and how you can start saving money for those important (and grown up) things in life.

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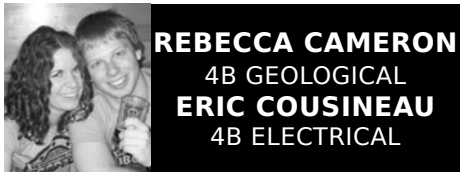
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4B ELECTRICAL

Hello readers and welcome back to those who were away for co-op! In case you missed it, last term was an odd one for Beer Buzz, since Eric was out in BC and Rebecca was in Waterloo. But now things are back to awesome – tasting and writing sessions are far easier in the same room than over Skype. This also marks our last term as *the Iron Warrior* beer columnists, and we are upset that we will no longer be able to call drinking beer research. In this article we will be exploring the American microbrewery scene and reviewing two very different American craft beers.

Eric recently had the chance to drive through the United States on his way home from BC, and as a result was able to pick up some American beers we can't usually get here in Canada. For those of you that don't know, the American craft beer scene is huge. According to the Brewers Association, 1,927 breweries were operating for some or all of 2011. This is in contrast to an estimated 275 craft brewers in Canada, though oddly enough we do have more breweries per capita than the USA. The Americans have a reputation for having watered down tasteless beers, but nothing could be farther from the truth. In reality, the largest American owned brewer is the Boston Beer Company, makers of Samuel Adams Boston Lager. The Boston Beer Company also happens to be the largest craft brewer in the USA, producing 1.5 million barrels of beer per year. The Brewers Association keeps raising the production limit to be called a craft brewer due to the success of the Boston Beer Company, with

the limit currently set at 6 million US barrels per year. As you can see, the craft beer movement in the United States is remarkable, with craft beer being sold in almost every licensed establishment. Over the last few years we have had our opinions on American beer changed. While it is impossible to do justice to the large variety of beers being brewed in the USA, we will attempt to give you a taste by reviewing two vastly different craft brewers.

I, Eric, will be reviewing Dogfish Head's

Touch is a beer from their Ancient Beers series that aims to recreate ancient beers based on recipes obtained from the chemical analysis of residues in clay pots obtained in archaeological digs. Midas Touch is based on a recipe obtained in the tomb of King Midas, it dates from the 8th century BC, and contains yellow muscat grapes, barley malt, thyme, honey and saffron. A final example is UrKontinent, a beer brewed in partnership with Google. The ingredients were chosen based on suggestions of Google employees

in the USA. The carbonation is aggressive, making the tongue tingle a bit. Overall, this is a great example of the IPA style that could serve as a session beer for any beer enthusiast.

Today I (Rebecca) will review the Saranac Caramel Porter. The Saranac family of beers is brewed by the Matt Brewing Company, which was established in 1888 in Utica, NY. The brewery has been owned by the same family since its creation, and boasts a large selection of unusual beers. They also

work with the Lake Placid Craft Brewing Company, brewers of the Lake Placid brand of beers, which you can enjoy at the Whiteface ski resort in New York State. Eric and I are both avid skiers, so whenever we ski in the States we always bring back as much American microbrewed beers as we can! I'm especially happy to be trying the caramel porter today, since stouts and porters are my favourite (especially in the winter). As soon as I opened the bottle a very heavy smell of sugary caramel wafted out, and after pouring my glass was filled with fluffy, light brown head that dissipated quite quickly. The beer



Saranac Caramel Porter and Dogfish Head 60 Minute IPA

Eric Cousineau

60 Minute IPA. Dogfish Head Craft Brewery is one of the most popular craft brewers in the United States. They are widely known for their unique experimental beers as well as their line of popular India Pale Ales (IPAs) aimed for hop-heads like me (60 Minute IPA is one of those). Since 1995, Dogfish Head, based in Milton, Delaware, has brewed some of the most diverse and exciting beers in the USA, so I'm going to take a moment to describe a few. Pangea was a spiced beer brewed in 2003 with ingredients from every continent including: Australian crystallized ginger, water from Antarctica, Asian basmati rice, African muscavado sugar, South American quinoa, European yeast, and North American maize. Midas

around the world and include: wattleseed from Australia, toasted amaranth from South America, green rooibos from Africa, myrica gale from Europe, and hiveplex honey from Google's headquarters in California. I hope these three examples have given you an idea of how diverse and wildly experimental Dogfish Head is as a brewery. The 60 Minute IPA is one of my favourite IPAs since its strong bitter hops taste is balanced with the rest of the flavours. The beer pours a clear deep gold with a good amount of head, and lacing that lingers until the beer is gone. The smell is that of pine with a hint of citrus. The characteristic hop bitterness of an IPA is smoothed by the citrus fruit taste, but the taste is very similar to other IPAs brewed

itself is dark amber brown, and frankly it is quite a nice looking beer. The taste is very strong caramel – it nearly overwhelms the taste of all the other ingredients. However, you get a tiny bit of hops and some bitterness in the finish. I enjoyed it, but I generally like sweet, dark beers – for all those out there who aren't fans of sugary beers, this one may not be for you. This is definitely what I would call a dessert or nightcap beer.

We hope you've enjoyed reading about the beer our southern neighbours have to offer and that we've inspired you to pick up some American craft beer next time you visit the US. As always, Fear No Beer and be sure to take some time out your busy schedules to savour some hoppy goodness!

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Future of Gaming: CES 2012



**JON
MARTIN**
OBI JON1138

Hey everyone, welcome to the winter term! And the last year that we will all see – at least according to the Mayan calendar. (Anyone ever consider that they might have just stopped at this point because they realized the error in their calculations might start to affect things so they would revisit it in a couple thousand years or so, then they got wiped out by invaders?)

Anyway, as of reading this article, the 2012 Consumer Electronics Show (CES) will have ended and we will hopefully be able to get our hands on some amazing new products – if you can afford them anyway. Often, CES is used by manufacturers to show off technology or products that will be coming out, or may be, or might just be concepts that would never be commercially viable. This kind of vaporware is annoying, but it can still have positive effects in driving innovation forward.

CES has never been as big for gaming as it has for other devices, so the news on the gaming front is rather small. From the Microsoft camp, the biggest news was really just about new software and sales figures.

The Xbox 360 has apparently been the bestselling console this year, which is not surprising considering it has been ahead of the PS3 and Wii almost every month. Microsoft is also proud to announce that 18 million Kinect systems have been sold, while the Xbox 360 system itself is the first of the current generation systems to reach an

install base of 66 million. Microsoft also announced a few partnerships with news companies to bring news feeds and shows to the Xbox 360. The only real new gaming related product is the commercial software development kit (SDK) for the Kinect on PC. The non-commercial version has already been released, allowing personal and educational users to connect the Kinect directly to a PC and access all of the motion, depth, and audio info that the Kinect brings in for games and research. The commercial version will allow for even more advanced programming and will definitely expand what we see the Kinect being used for.

Sony is still trying to gain interest in its new PSP Vita portable system, announcing new specs and showing off some new games. The company is also trying to widen the adoption of 3D by making it more accessible and user friendly. Sony also revealed several new laptops and other technologies across its many fields of manufacturing.

On a quick side note, I wanted to comment on the new PS3 branded 3D monitor/TV that Sony has released. This \$400 24" unit (it was on sale for \$200 off on Boxing Day) comes with 3D shutter glasses and is designed to work with the PS3, as well as functioning as a regular TV or computer monitor. I ordered one of these units for my new gaming PC, but ended up cancelling the order after personally viewing the monitor and reading lots of product reviews. The biggest complaint that people had about the monitor was its brightness

(especially when used as a monitor), with secondary concerns being significant light bleed around the edges of the screen, and the high cost compared with other 3D computer monitors. I personally noticed the darkness of the screen when I saw a demo unit in a Future Shop; I think this is partially due to the type of 3D technology used. The monitor uses Active Shutter technology – those are the type with the big, heavy (and expensive) glasses that everyone likes to make fun of – which uses a super-fast shutter to cover one of

your eyes at a time to correspond to the image displayed on the screen. Your left eye sees the left image only and your right eye sees the right image only, and your brain combines them into 3D just like it does with normal vision. The inherent problem with this technology, which will always make the screen look darker, is the fact that at every moment in time one of your eyes is seeing an opaque surface. I personally think this might also be a cause of dizziness or headaches in some users, as your eyes are suddenly switch-

ing between seeing a screen several feet away from you to a solid barrier just an inch away. Even if the change is too fast for you to see, it definitely has an impact on the viewing experience over a substantial amount of time.

The other main type of 3D technology uses a prism lens in much cheaper glasses, this is the technology you see when you go to a movie theatre (hence the name Real D 3D or Cinema3D). This method uses a simple pair of plastic glasses to focus the correct image into your right and left eyes, there are no moving parts, nothing blocking your view, no batteries, and the glasses are normally around \$5 (rather than the \$100 for the active shutter glasses). As there is no opaque surface blocking your view, these screens are perceived as being much brighter, have better contrast, and richer colour. Big screen TVs are available using this technology, as are computer monitors. I ended up picking up an LG 23" 3D monitor for less than the cost of the Sony monitor, and I look forward to watching 3D movies and videos – YouTube has hundreds of 3D videos, and more are added as people purchase 3D video cameras.

If you are interested in 3D technology in computers there are plenty of different methods, some using the RealD 3D and some using active shutter technology. At FanExpo 2011, I saw a very interesting laptop which had the same kind of 3D capable screen (without glasses) that the Nintendo 3DS uses. While the 3DS requires you to manually focus the settings to get the 3D effect and moving outside of the calibrated range can give people headaches, this laptop monitor instead uses the built in webcam and facial recognition to follow the eyes of the person viewing and dynamically recalibrate in real-time. This kind of technology, and other visual based technology, is often tested on laptops and monitor screens before being expanded for larger screens. This is good news for

gamers and anyone using a smaller screen – we get the tech first, and we get the cheaper units as they are developed.

they won't look flat. Possible real-time uses described by the developer include providing additional info about a restaurant you are looking at, displaying the name you forgot of the person you are talking to, or how about overlaying a wallpaper design or image onto a billboard you walk by every day. The glasses are still very expensive and very bulky in some cases, as the more advanced ones are actually able to track your hand movement and allow you to interact with 3D images



Augmented reality glasses

Vuzix

Wow, that ended up being a very long side note. Back to CES, where Nintendo was rather quiet, focusing on gaining attention towards its Wii U console. I have mentioned in previous articles and I will say it again, I am worried about the success of this console. I don't think there are enough new features in terms of control or novelty gameplay over the existing Wii console, and the advances in graphics over the Wii only succeed in bringing the console up to the level of the Xbox 360 and PS3, not enough to win over core gamers or convince casual gamers that they need to replace the Wii. I think the seniors are content with Wii bowling, I don't think they will be out fighting for a spot in line in front of Best Buy to get the Wii U on launch day.

So, back to CES, where there were a number of other gaming-esque announcements, or just generally cool. The biggest one in my opinion was LG's announcement of a 4mm thick OLED TV, and this isn't just a little monitor or concept tech showpiece, this is a fully functional 55" TV on sale soon. OLED stands for Organic Light Emitting Diode, and as the name suggests, they are made from naturally occurring organic material that emits light. This technology does not use a back light and colour filters like other TVs, as a result it gives a true black and more vibrant colours. The TV is supposedly very sturdy and light, meaning that it shouldn't warp or risk breaking when moved, but don't lose your grip on your Wii remote and throw it at the TV – this thing isn't that strong.

Another interesting product are new virtual reality glasses, which can overlay images into your field of view – and since a different image can be shown on each lens, you can view these images in 3D so

displayed on the screen. That is where the gaming possibilities really catch my interest, as these glasses could be used to project the game environment directly in front of you and move to directly follow your head movement. Aiming would follow your actual hand motions, and if you get too close to something in the room around you, an alarm would pop up (hopefully preventing some trips and falls).

Memory cards also seem to be really popular, with SanDisk announcing a reasonably high speed 128GB SD card. Personally I think that is insane and pointless when cards are so small. This isn't like you are carrying around an extra storage device the size of a VHS tape or something, instead you are carrying an extra SD card. Does it really take up that much extra space, and is it really that much more convenient to have such a big card? I can understand if it is for an HD video camera where you are limited in recording time by the size of the card, but for still images or something – just bring two 64GB cards.

On the same thread, Sony is attempting to launch a new type of memory card which is being designed as a successor of sorts to the CompactFlash card type. The tradeoff for its increased size apparently is transfer speeds several times faster than existing cards. This could again be a big benefit to HD video recording, but for regular consumers I don't think it will have much impact.

So that is my partial review of CES, check out your preferred tech news site for products announced after the submission deadline of this article, and anything that I glossed over that might catch your interest – some of the concept cars were really cool. Enjoy the term, study hard – between gaming of course, and see you next issue. Keep on Gaming!



So much storage! SanDisk



LG's new OLED TV

LG

Leafs Mid-Season Run Down



**ANDREW
MCMAHON**
2A ENVIRONMENTAL

I know that I am not alone when I say it has been difficult to bleed blue and white the past few seasons. It appears that this year, it may be time for hockey playoffs to return to Toronto. At the midway point of the season, the Leafs sit seventh in the East, and third in the North-Eastern Division (behind the mighty Bruins and the surprising Ottawa Senators). This may appear to be a mediocre accomplishment, but it is a major improvement over the recent years of struggling to play .500 hockey. Let's also not forget that the team has overcome injuries to key players such as Number 1 goaltender James

Reimer and veteran presence Colby Armstrong. Armstrong and Liles are expected to return from concussions in the coming weeks, and their top line of Kessel, Lupul and Connolly is still producing. Kessel and Lupul remain among the league's leaders in points. When centred by faceoff specialist Tim Connolly they form one of the most dangerous lines in the league. If Ron Wilson, the league's winningest active coach, winning 640 of his 1378 games behind the bench, can keep the team playing a high paced game, and maybe improve their penalty kill, I feel a playoff berth in the making. Let's also not discount the Brian Burke factor.

The NHL's trade deadline this season falls on Monday, February 27th. Blockbuster trade rumours involving the Leafs have not yet taken shape but it would be unwise to believe that Brian Burke

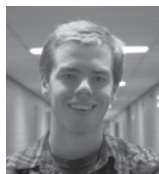
will not be actively engaging in talks. It should be noted that there remain only three players from the roster that Burke inherited on November 29th, 2008: Kulemin, Grabovski, Schenn. Burke has been quoted telling ESPN.com "I do try to get my lineup set well in advance of the deadline. I've never been a deadline guy. So January is when I try to make a splash." Anything could happen in the upcoming weeks. The Leafs have a wealth of young talent between their NHL roster and the Marlies. The only criticism I have for the organization is in regards to their tickets.

The Leafs can proudly say that they are one of the six Canadian teams that accounted for 33 percent of the money generated from ticket sales in the 30 team league last season. Ticket revenues among Canadian teams have seemed to

plateau after periods of steady increases since the lockout. This has led to ticket price increases (The average price of a ticket at the ACC is twice as much as one to see Boston Bruins play at home). Paying more than 100 dollars to sit in the upper bowl is just not acceptable to me so for all the fans out there who don't want to risk their work term savings to see their favourite team play, I would recommend taking a trip to either Buffalo or Detroit when the Leafs are in town. Both cities are less than 3.5 hours away from Waterloo, and you will find much better seats for much cheaper prices.

The Leafs will be in action Thursday the 19th at 7pm on TSN hosting the Minnesota Wild, and don't miss one of the best rivalries in sports as they clash with the Montreal Canadiens Saturday on Hockey Night in Canada.

The Habs Must Learn from the Failings of Their Home Province



**SPENCER
GOOD**
2A MECHANICAL

In a province where healthcare costs are spiralling, infrastructure is crumbling, the economy is struggling and the population is ageing dangerously quickly, you would think these would be the main topic of interest among both politicians and media types. Not in *La Belle Province*, a place where language overrides the public good and sovereigntists and nationalists alike scour the landscape for any issue that can promote their 'interest in preserving Quebec culture.' Now that the Quebecois have managed to remove themselves from the province of influence, both economically and politically, their interest in enforcing their own culture now puts their hockey team at risk.

Most politics is about populism. One of the many flaws of the system is that politicians are often more motivated to take on issues that are less important but garner more media attention, while avoiding the more important issues that are less glamorous. Rarely is this attitude more prevalent than in the province of Quebec. The hard stance taken on promoting French culture since the Renee Levesque passed the language law in 1974 has coincided with a sharp decline in their economy, and a gradual exodus of influence towards Western Canada. When passed in 1974, the Official Language Act passed in the province enforced French signage, presence of language in the workplace and in school-

ing (despite its scarcity across the rest of North America), and the language of legislation and justice. These laws played a role in preserving the dominance of the Quebecois culture in Quebec. However, the law refused to acknowledge the role that many anglophones played in building the Quebec economy. The end result was that many businesses left Quebec, and the province went from a contributor in the Canadian economy to a leech. In the interest of protecting their culture, Francophone Quebecois destroyed the viability of their province. The same thing is beginning to happen to their hockey team.

The National Hockey League is now a more global league than it has ever been. An influx of Europeans (28% of the game is now made up of Europeans), as well as a larger American presence in the game,

has made the NHL a much more diverse game then it was back in the days of the Flying Frenchmen. The makeup of all NHL teams reflects this. It used to be that the majority of teams were composed of 100% Canadian talent.

To avoid confusion, the language of all dressing rooms in the NHL is English, as it always has been, even in Montreal. So, the need for a coach to speak French plays no role in communication amongst players in the Habs dressing room. It serves only to appease those who desire to preserve the French identity of the team. However, the days of French dominated hockey in Montreal have been over for a long time, and despite what a lot of people may think, the presence of French hockey in Montreal has never been definitive.

Many of the greatest players to ever wear a Habs uniform have been anglophones. This list includes Toe Blake, Howie Morenz, Larry Robinson, Ken Dryden, Pete and Frank Mahovlich

and Bob Gainey, among others, were all Anglophones. Beyond this, there have been numerous anglophone coaches in Montreal history, Scotty Bowman and Dick Irvin being the most prominent (the latter of whom never learnt French at all). However, Irvin's coaching career was not defined by this controversy because he WON. The success of the Montreal Canadiens has not been the result of enforcing French culture, it has been the result of selecting the best talent available, whether that be on the ice or behind the bench.

The expectation that the Quebec media, and even more ludicrously, the Quebec

government, places on the organization to hire a French coach regardless of the circumstances highlights misled values within the province and puts the team in danger of giving into mediocrity. Culture is important, but enforcing it at the expense of success, whether it be within the province or the hockey team, is not right. Habs management has to do the right thing and hire the best coach to replace Cunneyworth, whether he is French, English or Swahili. They need only look at the province the team calls home to see what price they will pay if management decides differently.

World Junior Championship Uniting a Nation



**CHRISTY
ROUAULT**
2A GEOLOGICAL

Over the winter break there was no shortage of great hockey to be watched. The World Junior Championship was all over every sports network, concluding with Canada taking bronze, Russia with Silver, and Sweden cinching the gold; their first since 1981, totalling two in the history of the tournament. The IIHF World Junior U20 championship is a tournament comprised of the very best junior hockey players from Canada and around the globe. This year, the World Junior Championship was held in Alberta, Canada; it was played in both Edmonton and Calgary arenas.

This year produced some big new names to look out for in the future, and many memorable games. The goaltender for the Czech Republic, Petr Mrazek, was one of the biggest stories in the tournament. Mrazek had a 52 save game against the USA and ignited crowds with his over the top celebrations. The Czech team went on to play Russia in the quarter finals where Mrazek made a whopping 43 saves in the 2-1 loss. Max Friberg was another huge force in the tournament. Friberg was part of the gold winning Sweden team; he scored many important goals including an overtime winner against Russia and the goal that won the shootout against Finland in the semi-finals. The semi-final game

and the final game that Sweden took part in were major games in the tournament as the team came in to Championship ranked third in the world. The big game for the Canadians came with their match up against Russia in the semi-finals. Canada looked like they were bound to lose at the start of the third period, but after coming back from a huge deficit they fell just short with a final score of 6-5 for Russia. Though the Canadian team dominated the round robin play of the tournament they were forced to the bronze medal match, where they won the game 4-0.

This year's tournament sold 571,000 tickets and had a record breaking attendance of 440,000, beating the previous record of 359,000, during the 2009 tournament, in Ottawa. Although historically the tournament has many more fans and is much more profitable in North America, it will not be back until 2015 where it is set to be played in Ottawa. It will be in Canada for 2015, 2017, 2019, and 2021. In the meantime it will be in across the Atlantic, close to home for many. Russia will host the 2013 world junior hockey championship and Sweden the year following. Unfortunately, Latvia and Denmark were relegated, dropping out of the tournament for 2013. Next year holds high hopes for Canada, however. For the past decade Canada had played in the tournament final, with five gold medals. With 14 medals in a row, the world juniors are always exciting for the many Canadian fans. Another year brings another chance to make it to the finals and bring home the gold.

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Bad Movie Review

The Room (2003)



**MICHEAL
NEW
4B CIVIL**

There are movies that are bad (*Chipwrecked*, 2011), movies that are really bad (*Battlefield Earth*, 2000), and finally, movies that are so god awful they're actually good.

And that brings us into this issue's spotlight: Tommy Wiseau's *The Room* (2003).

The Room is about a banker named Johnny (Wiseau) who is dating a woman named Lisa, who is sleeping with Johnny's best friend Mark. Johnny and Lisa live next to a boy named Denny who buys drugs occasionally and is supposed to be retarded (although you'd never guess). Lisa's mom comes over very often to talk to her about stuff. If you think this film sounds boring and generic, it also contains such gems as: random scenes of the actors playing football, casual discussion about breast cancer, and poor imitations of a chicken. The catch: this is supposed to be a serious film.

Here is a movie that amazes me. Like Ed Wood's *Plan 9 from Outer Space* (1956), *The Room* is absolutely, incredibly, yet also hilariously bad all the way through. But whereas Ed Wood's movie had a budget of \$60,000, *The Room* cost a

whopping 6 million. I'm here to tell you that this is worth every penny. I was first introduced to this film by The Nostalgia Critic, my favorite online reviewer. While watching the movie for the first time, I literally laughed so hard my sides ached for days afterwards. The plot is idiotic, the dialogue more so, and Tommy Wiseau's acting, which is slightly dubbed over at times, is by far the worst ever put on screen (and if you don't believe me check this out the "The Room - Hi Mark" clip on YouTube).

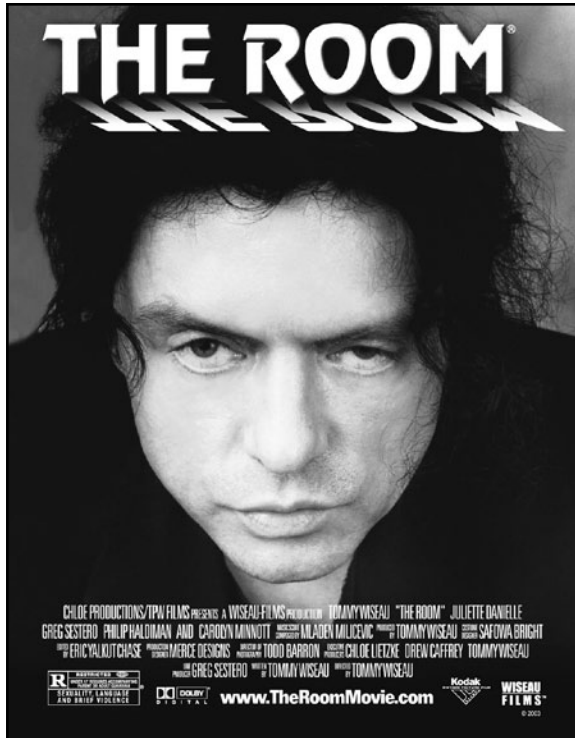
Tommy Wiseau gives us an unforgettable film with some of the best scenes in movie history:

Johnny: Oh hi Claudette!

Claudette: Oh!

Johnny: Bye!

Ed Wood's movies crashed and burned and he ended up directing porno films. Tommy Wiseau, fortunately, has had far better luck. He travels around the world attending sold-out midnight showings of his movie, doing Q & A sessions, quoting Shakespeare, and giving acting advice. I recently attended one of these midnight showings in Toronto, and met Tommy Wiseau in person. I used to wonder what kind of a person could possibly come up with a movie like *The Room*. The answer is: the kind of person who wears six belts. It was a glorious experience. Do yourself a favour and go watch this movie.

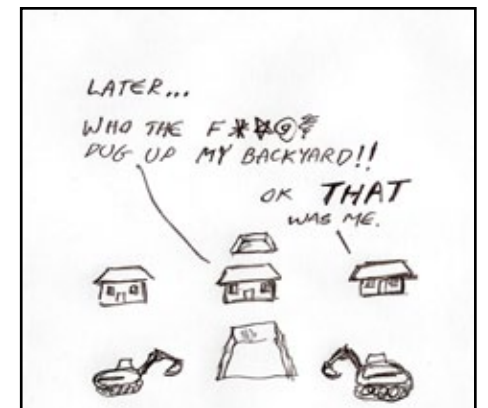
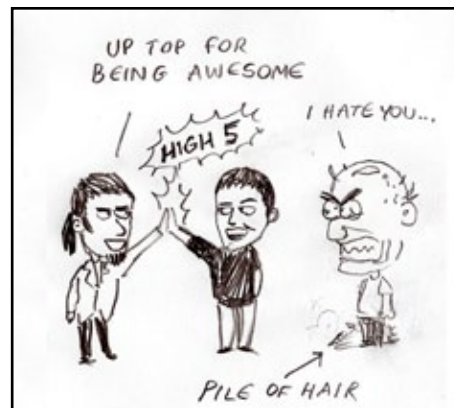
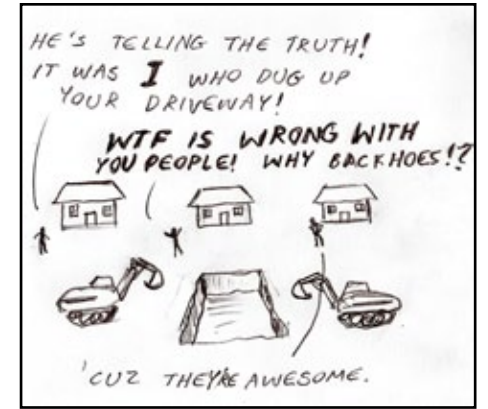
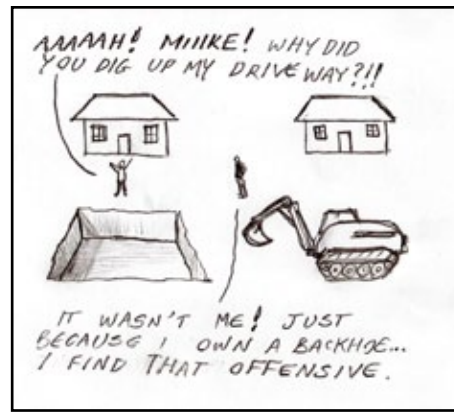


IMDB

Mike the Engineer

Backhoe

Micheal New



Thumbs Up/Thumbs Down



Skiing trips

Snow-boarding injuries



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Cold weather



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Caffeine induced attention spans

Caffeine induced delirium



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No Way!

STUART LINLEY
2T NANOTECHNOLOGY

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ACROSS

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- 5 Winter products: de-_____
- 10 8 bits
- 14 African country
- 15 Rock genre
- 16 Fill, as a truck
- 17 Not now
- 18 Seating option
- 19 Fantasy brute
- 20 Watched by the police*
- 23 Start of an alphabet section, perhaps
- 24 Hallow go with
- 25 Pearl Jam album
- 28 Acknowledges
- 31 Spine constituents
- 36 Long time
- 38 Adjective suffix, sometimes

- 39 Small bell sound
- 40 Freudian pschoanalysis technique*
- 43 Spindly
- 44 Engine value
- 45 Betting numbers
- 46 Simple type of question
- 47 Fingerprints, eg.
- 49 Compass point
- 50 Hoops org.
- 52 Elect
- 54 Correlation components*
- 62 Picked hairstyle
- 63 Golfer Sam
- 64 Defrost
- 66 Sauce brand
- 67 Puccini opera
- 68 Costa go with
- 69 Ready, abbr.
- 70 Rough, as a drawing in stone?
- 71 Counsel, abbr.

DOWN

- 1 Between +1 and -1
- 2 Hawaiian island
- 3 Valley
- 4 Indian language
- 5 Do it on the fly
- 6 PEO and CCPE
- 7 Last words for Caesar
- 8 Adds to the pot
- 9 Linear coefficient
- 10 Political group
- 11 Jellystone comic
- 12 Poi root
- 13 Paradise
- 21 YYZ abbr.
- 22 Raja country
- 25 Chewy treat
- 26 Frightening
- 27 Yules
- 29 VLC or Gimp, eg.
- 30 Spiral pattern
- 32 Avid about
- 33 Runners
- 34 Morons
- 35 'Common' feeling
- 37 Bright
- 39 What you give someone you respect
- 41 Together
- 42 PC innard
- 47 "..._____ tell a lie."
- 48 Sunscreen num.
- 51 Moisten
- 53 Four
- 54 Koi or goldfish
- 55 At a distance
- 56 Desire
- 57 Tricky situation
- 58 Go dn.
- 59 Per person
- 60 IOU
- 61 Care
- 65 Word that can be added to the first words of each starred clue

Easy

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

Medium

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

Hard

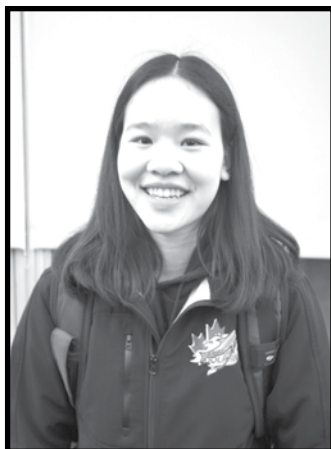
8	6					5		
			9		6	2		
			2			6	3	
6			4			7		5
	5		6		7		8	
1		8			9			2
	2	3			4			
			6	7		2		
			1				2	6

THE IRON INQUISITION
Nicole Jjang, 1B Electrical

"What is your new year's resolution?"



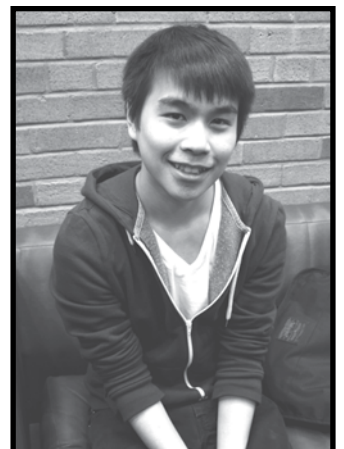
"Purchase an aircraft!"
James Allen 3A Math & Business



"To not have an resolution"
Catherine Chong, 1B Chemical



"Practice my Indian accent"
Nikhil Kamath, 1B Mechanical



"Stop failing!"
Harry Le 1B Management



"Get more sleep!"
Yumna Zaghlool & Leah Kristufek, 1B Chemical



"Bike to Newfoundland!"
John Oh, 1B Electrical