Note: This document is hosted here for archival purposes only. It does not necessarily represent the values of the Iron Warrior or Waterloo Engineering Society in the present day.

THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

VOLUME 33 ISSUE 5 | WEDNESDAY, MARCH 21, 2012

Iceland Considers Canadian Currency

Page 4

THE TIN SOLDIER

Page 8 + 1

Beer Buzz:
Going Away Cheers

Page 14

facebook.com/theironwarrior

http://iwarrior.uwaterloo.ca

Farewell to the Graduating Class of 2012

Frosh Week Aerial Photo from 2007

CHRIS LETNICK
3B COMPUTER

The graduating class of 2012 has been attending engineering at the University of Waterloo for five or more years. They are comprised mainly of what were 2007 first years. If you are in first year, these people were starting university when you were starting high school. The graduating class of 2012 has done many great things during their time in engineering at the University of Waterloo. They, along with their predecessors, have shaped the faculty to what it is today. One of their most influential successes was their part in the replacement of PDEng with WatPD.

Over the next week, many departments will be holding symposiums to for the fourth-year students to demonstrate the fourth year design projects of their students. Many fourth years have been putting in long nights over the last few weeks to demonstrate the skills they learned over their undergraduate career. The fourth years have also demonstrated their more artistic side a few weeks prior through their fourth year pranks. The University of Waterloo Engineering students continued their tradition of having funny and tasteful fourth year pranks instead of extremely unruly ones seen at other universities.

Now it is time for members of the graduating class to find full time jobs, take research positions around the world, or take a moment to rest after what has likely been the busiest five to seven years of their lives. Many members of the class will be traveling to different provinces, countries, and continents to find their dream jobs, make new friends, and start families. Those of us who are not graduating will remember them for their contributions to our program and our culture.

Farewell, and thanks for the memories.

2012 SAE Clean Snowmobile Challenge a Success

KRISTEN SPERDUTI
TEAM LEAD, UW CLEAN SNOWMOBILE TEAM

At 5:00 a.m. on Sunday March 4*th*, 2012, the roar of an Arctic Cat T660 Turbo engine came to an abrupt halt, cutting a successful engine tuning session short and leaving Team Lead Alec Espie with second thoughts on the team's journey ahead. An executive decision was made; with the cause of the failure a mystery and the extent of damage unknown, the University of Waterloo Clean Snowmobile Team had no clue of the adventure that awaited them.

Fourteen hours later they arrived in Houghton, Michigan having survived some snowy roads, sub-par convenience store sandwiches, and unmentionable gas station washrooms. The Society of Automotive Engineers hosted the 2012 Clean Snowmobile Challenge at Michigan Tech's (MTU) Keweenaw Research Center, where fourteen schools from across North America compete in events to test exhaust emissions, sound quality and noise level, fuel economy, handling, and acceleration.

The week displayed a "one step forward, two steps backward" formation as troubleshooting led to coolant issues, fuel pressure troubles, and oil leaks. Through determination and the inability to give up, the team spent each night in the Keweenaw Research Center until its close at midnight turning wrenches and troubleshooting the problems of the day. When it seemed like all odds were against them, like nothing else could possibly go wrong, Waterloo broke the last thing left to break: their losing streak.

See SAE on Page 4

SAE Clean Snowmobile in Action Alec Espie

Letter From the Editor

Representative Democracy in Canada

CHRIS LETNICK
EDITOR IN CHIEF

I originally had planned a long discussion a more significant topic, but have been forced by space constraints to keep it very brief. Civilizations have fought for democratic rights for millennia, but people still often feel that their voices are not heard. Like most democratic countries, Canada has a representative (or indirect) democracy. That means we vote for people to represent us based on the decisions we believe they would make. Representative democracies have the advantage of being easier to coordinate and more flexible with the ability to make quick decisions.

The representatives have the ability to spend all their time understanding the issues at hand, which would be too much work for individuals who are focusing on their own careers. For a representative democracy to work best, it is important to select the person that best represents yourself. Unfortunately, Canadian politics have turned towards voting for parties, with less emphasis on the individuals in those parties. By having such strong party affiliations, our representatives often now fail to represent their constituents; they simply represent the interests of their party. In fact, voting for the proper representative is such an important component of democracy that party affiliations weren't put on the Canadian Ballot until 1974.

Unfortunately, this is now the system we live in. One, in which party affiliation is more important than the diverse beliefs and values of the representative themselves. "What can one do to change it?" Well, it isn't something that can be protested. This is a problem that starts in the mindset of the candidates and is reinforced by the mindset of the voters. The single most important choice a person makes in Canada is who they vote for. For this reason, it is important to do as much research on the candidates as possible. Once you are informed the second most important thing is to inform those around you. Politics is often an avoided subject because people like to avoid the possibility of conflict. However, if a person believes something so strongly, then it shouldn't be frightening if somebody challenges that belief. It only becomes frightening if the person starts believing the challenger. I have mentioned before that it is important to keep an open mind, however, it is also important not to believe everything you hear. It is my hopes that the Iron warrior has kept you informed and continued to make you question the 'facts' around you. Keep well my friends, continue to challenge the world and push boundaries, after all, that's what we are good at right?

Staff Appreciation Corner

CHRIS LETNICK
EDITOR IN CHIEF

I have had the pleasure to work with many great people this term. Without them, I would likely have already failed as Editor-In-Chief or be well on my way to failing the hardest academic term of my undergraduate program. Each of my staff members brings a unique skill set to from the team of people that produce *The Iron Warrior*.

To start, I need to thank Mikayla Micomonico. Although she's had her own struggles and time constraints throughout the term, she has been there to provide direction and feedback on some of the harder problems I've experienced throughout my term. She has also continued to be *The Iron Warrior*'s authoritative source on correct grammar practices. And, she is always adamant that, "punctuation goes inside the quotation marks".

Kate Heymans has also been a great support throughout the term. Although she is currently on her co-op term three provinces away, she has provided a great deal of support remotely. She has provided the biggest single source of copy editing over the term, helped with my creative blocks, and provided moral support when production weekends would go late into Sunday night. Kate has also been good at helping me to recruit other off-stream staff copy editors when my copy-editor count has been low.

Next, I would like to thank my writers and contributors. Without your content, *The Iron Warrior* would have no content and would quickly become forgotten. Collectively, you produce approximately 30,000 words per issue, with 38,000 for this final issue. I don't know you all as well as I know my staff that comes in on production weekends, but I look forward to working with you again in future terms.

This is the first A-Soc term since the class of 2016 has arrived on campus. I would like to thank all the new faces to *The Iron Warrior* for taking the risk of stepping into our office and finding out that we aren't that scary (well, most of us). Specifically Leah Kristufek and Nicole Jiang have been a great help of this term. Leah has been enthusiastic about helping out with "All The Things!" and Nicole put her prior passion for photography and design to good use. Josh Kalpin from 2016 Software has provided a large amount of time in the last couple production weekends, and I hope he continues to stay involved in the next term he is on campus. Krishna Iyer has been a huge help for layout . Even after he secured his own publication, he came in to help out on production weekends. I wish Krishna the best of luck with the operations of ProMag.

Anjali Gopal and Farzi Yusufali, like Kate, are currently on their work terms. They have been a huge help by coming in on production weekends to help with copy editing and to learn other tasks associated with operation of the newspaper. They are both strong spirited and enthusiastic to help out. Farzi has been demonstrating her commitment to *The Iron Warrior* since her 1A term. She is familiar with the operation of *The Iron Warrior*, and for these reasons, Farzi will be my nomination to succeed me as EIC for Fall 2012. This will not be finalized until an end-of-term advisory board meeting.

Amanda LeDuc is my cash-monies person. She is my advertising manager and, therefore, responsible for helping to secure ads and maintain communication with advertisers. She has helped me to be able to complete all five productions while still having a small surplus.

I would also like to thank my web editor, Kevin Veloso, who was done a great job advertising our articles through social media.

There are also others who help with the regular operation of *The Iron Warrior*. Marry Bland is our administrative assistant. She helps by managing the bank account for *The Iron Warrior*. She also provides her wealth of knowledge for how to accomplish, pretty much, any task on campus.

I apologies if I missed somebody. I appreciate all the help that has been provided to me and *The Iron Warrior* throughout this term.

Re: The USA: The Last Pillar of Freedom

CHRIS LETNICK
EDITOR IN CHIEF

I previously commented on how the article from Volume 33 Issue 2, entitled *The USA: The Last Pillar of Freedom* was unacceptable for publication. However, I failed to express to what degree this article was out of line. The article stepped past the line set by our code of ethics, and I was in error by allowing it to be published. The premise of this opinion piece was that the United States of America is the only place where freedom is properly valued. The article presents itself in a way that is discriminatory and offensive to anybody from China, Russia, Saudi Arabia, North Korea, Iran, and anybody else who is not American. I am sorry that I allowed such a piece to be published, and *The Iron Warrior* will work harder to ensure that such offensive articles do not make it into our publication in the future. It is important to note that opinion articles are not required to be the opinion of *The Iron Warrior*, the Engineering Society, or the Faculty of Engineering.. This article does not represent the opinion of *The Iron Warrior*, the Engineering Society, or the Faculty of Engineering.

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

Editor-in-Chief
Chris Letnick

Assistant Editors
Farzi Yusufali
Mikayla Micomonaco

Layout Editor
Nicole Jiang

Copy Editors
Hans Tee
Joshua Kalpin
Kate Heymans
Kevin Veloso
Kirusha Srimohanarajah
Leah Kristufek
Lucas Hudson

Photo Editor
Angelo Alaimo
Nicole Jiang

Advertising Manager
Amanda LeDuc

Circulation Manager
Mikayla Micomonaco

Web Editor
Kevin Veloso

Staff Writers
Alex Hogeveen Rutter
Amanda LeDuc
Ammar Masud
Angelo Alaimo
Dushanth Seevaratnam
Eric Cousineau
Griff Ferguson
Hannah Higgins
Jacob Terry
Jon Martin
Joshua Kalpin
Kate Heymans
Kevin Joseph
Krishna Iyer
Lawrence Choi
Leah Kritufek
Michael New
Michael Seliske
Mikayla Micomonaco
Nachiket Sherlekar
Rebecca Cameron
Roy Lee
Stuart Linley
Umair Muhammad

Contributors
Angela Stewart
David Birnbaum
Derek Thompson
Kevin McNamara
Kristen Sperduti
Leah Allen
Leila Meema-Colemen
Lindsay Bowman
Lisa Belbeck
Michael Seliske

Off-Stream Editor-in-Chief
Jacob Terry

The Iron Warrior is a forum for thought-provoking and informative articles published by the Engineering Society. Views expressed are those of the authors and do not necessarily reflect the opinions of the Engineering Society.

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

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

Mail should be addressed to *The Iron Warrior*, Engineering Society, E2 2349A, University of Waterloo, Waterloo, Ontario, N2L 3G1. Our phone number is (519) 888-4567 x32693. Our fax number is (519) 725-4872. E-mail can be sent to *iwarrior@engmail.uwaterloo.ca*

Electromagnetic Fields Cause Waves in Schools

GRIFF FERGUSON
4B CIVIL

The Ontario Catholic Teachers Association and Ontario Teachers Association have tried to ban Wi-Fi signals in classrooms as a part of a move that claims to protect the health and safety of children. Dubiously citing research published by the World Health Organization (WHO), the move tried to ban Wi-Fi over concerns of the carcinogenic potential of the radiation produced by the wireless communication between electronic devices. For the most part, schools in Ontario and B.C. have decided to keep Wi-Fi but there are a few in Ontario that have decided they are better off without it.

The authorities are not citing particular research, but a lack of research on the long-term health effects of exposure to radio-frequency (RF) signals as part of the electromagnetic field frequencies (EMF). The only research published on the subject involved short-term exposure to radiation over the last decade, as a result of the recent global acceptance of cellular technology. In experiments conducted by scientists as part of the WHO's EMF investigation team found no short-term effects in lab specimens after exposure to RF signals. Reported cases in humans are just as rare. Experiments conducted, repeated and reproduced around the world have failed to substantiate claims of short-term carcinogenic effects as a result of exposure to RF waves.

We won't know for the next couple of decades before the long-term effects can be researched, reported, and published. The effects can be estimated, but how this type of radiation affects the body is poorly understood outside the scientific community, and apparently by the people making decisions that effect how our students communicate.

A review of electromagnetic radiation is provided to the reader. Most mobile electronic devices use radio and microwave frequencies to establish a connection with one another. EMF in this range was and continues to be the focus of ongoing research by the WHO. EMF waves can be separated into two categories: non-ionizing and ionizing. Non-ionizing radiation occupies the part of the electromagnetic spectrum that includes radio waves, microwaves, infrared, and visible light. This type of radiation is not energetic enough to disrupt the chemical bonds between atoms and molecules, even in biological organisms, and remains relatively inert. Ionizing radiation includes ultraviolet rays (you know, the stuff that actually causes cancer), x-rays, and gamma rays, which are even more energetic forms of radiation that can disrupt chemical bonds, especially in biological organisms, and more so without sunscreen. This is important because it is a proposed cancer-causing mechanism.

Ionizing radiation can damage DNA and although DNA inevitably repairs itself, it ends up making errors in the process. This can lead to mutations, which can cause cancerous cells to develop. However, there are a couple of conditions that are required for this to occur. One, the radiation must be ionizing; two, the person must be susceptible to mutations in their DNA as a result; and three, the mutation must be cancer causing, which some are not (e.g. benign tumors). By falsifying one of these conditions (ionizing radiation) cancer-causing mutations due to RF communication devices are unlikely.

Other effects have been suggested such as temperature effects caused by the heating of the skin and underlying tissue, which can lead to cancerous mutations. Furthermore, some researchers point out that the skull around a child's brain is smaller and less developed. This possibly could lead to higher radiation absorption by the brain than in adults. However, the amount of radiation emitted by these devices is several orders of magnitude smaller than even the cosmic background radiation (relic radiation from the big bang that permeates throughout the universe), solar radiation, and radiation from decay of radioactive minerals in the Earth's crust and core. These are all forms of radiation that have been around for billions of years and contributed to the environment humans evolved in and continue to live.

However, if causation is found – that exposure to RF waves leads to an increase in the incidence of cancer beyond some statistically significant level of error – then it would demand change in the global communication network. It is estimated that almost five billion people use cellular technology, many of them using cell phones as their only means of electronic communication and vital to the developing economies of the third world. This means the way we communicate would need to be rethought to maintain the same level of communication while protecting the health and safety of the user and economic output of developing and developed nations alike.

It may be unlikely that the effects of exposure to Wi-Fi will cause any significant injury that can be reproduced by exposure to EMF. Right now, the school boards are playing it unduly safe. I encourage readers to look at this topic on their own and educate themselves beyond this article. A good starting point would be the World Health Organization website here: *http://www.who.int/mediacentre/factsheets/fs193/en/index.html and the Globe and Mail here: http://www.theglobeandmail.com/life/health/new-health/andre-picard/a-catholic-teachers-association-looks-to-ban-wifi-whats-next-coffee/article2343964/*

Waterloo Represents at Bridge Building Competition

GRIFF FERGUSON
4B CIVIL

On Friday, March 2nd, 2012 Tim Schnarr, Ann Sychterz, Omar Khaled, and Griff Ferguson from Civil 2012 represented Waterloo as competitors at the Troitsky Bridge Building Competition held in Montréal, Quebec. They competed against thirty-two other teams this year for the ultimate prize of $1000.

For the past 28 years the Concordia Department of Engineering and Computer Science has played host to universities across North America for this competition. The focus of the competition is to build a bridge out of popsicle sticks, craft glue, toothpicks, and dental floss. Contestants are graded on five main aspects of bridge design and performance: originality, predicted ultimate capacity (predicted load before failure), ultimate capacity (actual load before failure), strength to weight ratio, and deflection. The competition is funded by the Canadian Society of Civil Engineers (CSCE) with individual teams receiving funding from their own departments, organizations such as WEEF or EngSoc, or out of their own pockets.

This is the second year the University of Waterloo has participated in this competition. The bridge design is a simple A-frame construction (shown in the photograph). The load is applied at the top of the bridge and the bridge must be able to sustain a load until either bridge components fail or the point underneath the load deflects down by more than 50 mm. This year the team's bridge carried a load of 288 kg (about the weight of four people) made of a popsicle stick laminate. The bridge failed as a result of shear stress concentrations at the connection between the tension member and compression members. The mode of failure was tear-out of the dowels linking the two members together.

The competition will be held again in Montréal next year around the same time. Younger years are encouraged to get involved in this competition and to represent the university. If you are interested please talk to one of the current team members and the CSCE student chapter on campus. This competition is a lot of fun and tests your knowledge of engineering and construction. Also, the competition is not limited to just Civil Engineers, so apply away! You can find more information at *http://troitsky.ca/* and to see videos of the bridges being loaded, check out Concordia's Youtube channel at *http://www.youtube.com/watch?v=FNvUamxXldI*.

Griff Ferguson

University of Waterloo entrant into the bridge building competition

2012 SAE Clean Snowmobile Challenge a Success

From SAE on Page 1

Rider Kristen Sperduti sent Waterloo's sled down the 500-foot acceleration lane at a winning time of 8.45 seconds and a speed of 73 mph - a feat never before accomplished by a four-stroke snowmobile at this challenge. Team members Evangeline Rose, Nicholas Mulder and Alec Espie watched as the crowd went silent! Polaris Industry's 2013 Rush 800 Pro-R (2-stroke) completed the run only 1/10th of a second faster than Waterloo.

The University of Waterloo Clean Snowmobile Team completed the 2012 Challenge taking home the International Engineering and Manufacturing (Woody's) Award for Best Acceleration, as well as the HB Performance Systems Inc. Best Trail Trac Implementation Award. Waterloo learned to work well under pressure and strict time constraints, troubleshoot problems, and work through to solid solutions. They pulled through and left a shattering impression on the judges and industry professionals in attendance. The Clean Snowmobile Team would like to thank UW FSAE, Kettering University, and MTU for their support during the week, as well as the Dean of Engineering, the MME Department, WEEF, and EngSoc for their continued sponsorship.

For the first time in nearly a decade, the University of Waterloo Clean Snowmobile Team is in excellent standing for the 2013 Clean Snowmobile Challenge. The bar is set and plans are in place to raise it. Stay tuned for updates and progress as we prepare for 2013! Check out: *sled.uwaterloo.ca, facebook.com/uwsled.*

Alec Espie

Members of the University of Waterloo Clean Snowmobile Team

Iceland Says No More Krona: Yes to a Canadian Dollar?

DUSHANTH SEEVARATNAM
2T NANOTECHNOLOGY

As many people know, Iceland is a small island country located southeast of Greenland, with a population of approximately 320,000. This European nation has had its own currency, the Krona, since 1885 and there have always been speculations that a country with such a small population would struggle with its own currency. Unfortunately, for Iceland, those speculations came true. This country has essentially been running a "financial bubble" over the past few decades, and though this economic structure can help build a high value economy, it can crumble very quickly. At the height of the economic recession in 2008, Iceland experienced the largest banking collapse in economic history. Since then, Iceland has been in a large financial crisis, and has been trying to regain economic stability. In order to do this, Iceland, as expected, applied the European Union (EU). However, due to the recent economic instability of the Eurozone, it appears as if Iceland is looking into other solutions and one of which is adopting the Loonie. This idea of Iceland using the Canadian currency, other than the Euro or keeping their own is not as crazy as it may appear to be. Canadian dollar is a stable, liquid currency and it even matches Iceland's economy that is structured around exporting fish, aluminum, and in the future, energy. Other than stability, the Canadian economy also has a government that is rated triple-A and an outstanding fiscal standing. Another benefit that Iceland would experience from this would be the resolution of the country's difficult situation in doing business with other countries and foreign investors. Tight currency-controls on the country limit the amount of profit investors can repatriate, and the nation has no reputation since the 2008 collapse.

Adopting the Canadian dollar may indeed make the lives of Icelanders fruitful, but how would it impact the hockey-loving nation of Canada? If Iceland were to change its currency to the Canadian dollar, it would have very little impact on our economy and the Bank of Canada's management of money supply. Iceland has a GDP of approximately $12 billion compared to Canada's approximate of $1.8 trillion meaning that Iceland wouldn't even have any say in Canada's monetary policy. The next thing to look at would be trade. Both countries are export driven, and having the same currency would cause trading between Canada and Iceland to multiply, which is beneficial to both countries. However, the greatest impact this would have on Canada is the increase in its geopolitical influence over a region containing an immense amount of resources, the Arctic. There are 8 countries, including Canada and Iceland, that have influence over the division and use of the Arctic Circle, which is supposed to contain over 20% of the Earth's remaining oil and gas. Having additional influence on the outcome of the arctic can help maintain Canada's strong economy for many years to come.

It's also good to note that there are some problems that arise with this. Iceland would need to maintain a strong reserve in order to replace the Krona with the Loonie. It would have to be done at the current exchange rate and fully replacing the Krona will take time. Since only the Bank of Canada will be producing the Canadian dollar, Iceland will essentially be borrowing the Canadian currency. However, recent events in the Eurozone have shown that this arrangement can become very instable.

All in all, there could be many great benefits to having Iceland switch it's currency to the Loonie, but there will be bumps here and there from time to time. However, if economics is not your fancy, rest assured, if this indeed does happen, you can just enjoy the beautiful nation of Iceland without having to worry about exchanging money.

Attack on Civilians in Afghanistan

HANNAH HIGGINS
1B NANOTECHNOLOGY

Early last week the world was shocked when headlines announced that sixteen Afghan civilians had been killed in their homes by an American sergeant, at the time serving his fourth tour in Afghanistan. A total of three homes were broken into and the residents slain, amongst them nine children. The bodies of eleven victims, including those of four children, were also gathered and set afire.

Following the tragedy, many families and communities are devastated and are demanding answers. Although some speculative causes for the massacre have been publicized, including possible familial stress and intoxication, none have been officially verified. However, it cannot be disputed that for years prior to his rampage, the soldier would have experienced significant mental and emotional distress.

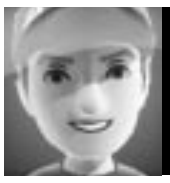
The strain of war is inevitable physically, but also psychologically. While in combat, soldiers are exposed to constant stress, trauma, and loss. Throughout the ordeal, there is the mission to defeat a perceived threat or enemy. In this way, clearly defined divisions are made between the warring parties; everyone involved is designated a side. And in the process, those from both factions are dehumanized.

The civilian killings follow weeks of tension between the United States military and the citizens of Afghanistan, resulting from disrespectful behaviour on the part of the American personnel. For instance, one incident which had previously sparked hostility is the burning of the Qur'an last month.

While civilians are understood to be innocent, the loss of dignity is also unjustly transferred to them. Despite not being involved, civilians endure the havoc of war because it inescapably surrounds their homes and communities. They live their lives in the midst of suspicion and surrounded by violence.

Even when the consequences of a war are indeterminate, they are imposed upon those who reside in the midst of the central conflict. This tragedy reinforces that the effects of war are not always veiled. The violence that was displayed against civilians is entirely unjustifiable. The entirety of the military is not at fault for last week's carnage. However, it is the responsibility of individual personnel and their leaders to ensure that their actions in Afghanistan, and in all cases of international conflict, uphold their full respect for humanity.

Future of Gaming : GDC 2012 – Games and Rumours



JON MARTIN
OBI JON1138

Another games conference has come and gone, but don't worry if you didn't realise there was even one going on – GDC doesn't get that much press. So here's a rundown on the Game Developers Conference and some of the rare announcements and rumours that came out of it.

When everyone thinks of games and technology shows they immediately think of the Electronics and Entertainment Expo (E3) or the Consumer Electronics Show (CES), and these are normally the sites for a company to reveal their newest console or game. The Game Developers Conference, or GDC, is a very different kind of show – it is designed for gaming professionals to share ideas and to see the newest advancements in design and art. Networking is a major part of GDC, and most of the news that comes out over the week is from the conversations the developers have in the bars after the day's events are over. The actual day events are very lecture based, with different gaming professionals talking about new methods of advertising and paying for a game, as well as discussions on what games inspired them the most and led to the games we love now.

Of course, getting into the conference is a task in itself, as you need to pay for a pass or have a press pass to even get any of the giveaways. One way you can get in is to register as a volunteer – you get into the conference and all you have to do is volunteer for a few hours over the week. If you are interested in some of the talks and lectures that were presented you can go to the conference website (which also includes the European and Chinese GDCs) *www.gdcvault.com*, where you can view some of the talks for free.

All this discussion and tech panels doesn't mean there are reveals of new games, the conference does get its fair share of announcements. One of the new big name games to be announced is LEGO Batman 2: DC Superheroes, the sequel to the most original of the LEGO games. While LEGO games have traditionally been based on a specific movie trilogy or TV show, the Batman game was based around three entirely original storylines involving several super-villain team-ups. The new game will feature original storylines once again but will also include new villains and allies, not just from the traditional Batman stories. On the side of evil, Lex Luthor will be joining the villains, bringing madness and the money to back it up. On the side of good will be Superman, who will join up with Batman and Robin to stop the villains. While Superman is the only extra hero announced, I think the title DC Superheroes and the fact that the physical Batman sets have been expanded to also include Wonder Woman and Green Lantern, means that more character announcements will be coming soon. Interestingly the new game is going to break away from all the previous LEGO games by hiring voice actors – yes, there is actually going to be dialogue in this game instead of the normal pointing and gesturing (My favourite is Darth Vader showing Luke a picture of Anakin and a pregnant Padme and continually pointing at himself – Anakin – and Luke, before Luke finally figures it out and does a silent NNNNOOOOOOoooooooo!!!!!). I don't know if the change will be good or bad, there has always been a kind of quirky fun about the LEGO games and I think the silent characters was a big part of that.

A recent rumour that didn't get any attention at GDC was the possibility of a Steam-based PC console system from Valve. The system would be based on an open system structure, meaning you could upgrade and replace components. While Valve Marketing head Doug Lombardi has said that the company is "a long way from shipping any sort of hardware" that hasn't stopped people speculating. Some of the rumours hint towards a high end PC type system that would be connected into the Steam system and other downloading spots to offer an open Steam-based system. The problem with this scenario is the potential price, as the moment you get into the price range of a high end gaming PC then you should really just get a PC. Pricing the system too low means that the hardware probably won't be that advanced because of the need to cut costs. Unfortunately that would probably lead to many top tier PC games being too advanced for the system to handle – and again the solution is to get a gaming PC.

The big gaming companies like Sony, Nintendo, and Microsoft have been able to put out advanced systems (well, they're advanced if you don't count the Wii) for relatively affordable prices. However this is because they have a devoted fan base and they use a closed system architecture so that they are really the only source for their specific games. Valve on the other hand would have to deal with the problem of trying to convince someone to buy a Steam-branded PC console and play Steam-based games on it instead of using their PC and playing the exact same Steam-based games.

I don't think this kind of system would work in the current gaming world. At the moment mobile gaming systems are gaining momentum mainly because they are part of a device you already have for calling, rather than being a separate device that really only serves one purpose. Now, I am saying this with a partial retraction of some previous comments, as it has recently been brought to my attention that the Nintendo 3DS is apparently doing better on sales than the original DS did. While I find this very surprising I think it might be due to the fact that I don't know anyone in the main target age group of the DS and the PSP. Maybe people are buying their kids a portable gaming system because they think they are too young for a cell phone. I don't know, I just don't want to outright say I was wrong.

So that is it for this article, good luck with exams or the last month of the co-op term, and remember to take a break from studying to Keep on Gaming. See you in the Spring term.

Defying Gravity: First Contact

GRIFF FERGUSON
4B CIVIL
MIKAYLA MICOMONACO
4B ELECTRICAL

So far, this column has explored purely human endeavors of space exploration. We've discussed a few key topics on how to get us out into space. But what if we didn't need to go out there? What if out there came to us instead? These are questions that most people consider somewhere between a semi-serious question and science fiction; however governments around the world have been asking themselves what would the impact be on our society if we made contact.

Any civilization that could reach Earth from another solar system would probably be at a level of technology far superior to ours. To put this in context, it would be the equivalent of medieval technology vs. our modern technology. People will want aliens to share their superior technology with us, but there may be no telling how willing the aliens would be. They may see our problems and offer to help us or let us figure it out on our own.

Since there is no precedent on what contact with extraterrestrials will be like, we can only speculate on the possibilities. They may come to us with force; looking to pillage, enslave, or in search of a new world; or they could come in peace; willing to share their knowledge and technology, and help with our social, environmental and economic problems.

If we do receive new technologies from aliens, there will be political aspects to the situation. We would need a system that sees that technology is distributed to the people who need it. Our current economic systems would prevent those most in need from having access to the technologies that can improve their lives. For instance, if technology was given to us to reclaim land lost to environmental pollution, natural disaster, or war, we would need to make sure that this technology is put to work where it is needed most. This seems like common sense, but often we don't make decisions based on needs like this, despite their relative importance. Some system other than the free market may be necessary to ensure that any new technology is used to the benefit of the entire human race, instead of just a few.

The Kepler telescope is finding new planets around other stars on the order of dozens per year, with another several hundred as yet confirmed. Most of these planets are like Jupiter or smaller ones similar to Mercury, Venus, or Mars. Observations of Earth-like planets have been recorded, but many of them are too hot, cold, or poisonous to life. This may dash the hopes of people looking for ETs, but don't be too disappointed. The Kepler scope only looks at a very small patch of sky in the constellation Cygnus that is about 1,000 to 10,000 light-years away. This is a very small fraction of the stars in our galaxy and we live in a BIG galaxy – we may be looking in the completely wrong direction. There are other galactic habitable zones that may offer more of a chance for life to start, evolve, and form complex multicellular organisms, like us.

In the early sixties, a scientist by the name of Drake invented an equation, which is used to estimate the number of planets that contain civilization that is advanced and possibly space-faring. The parameters of the equation require knowledge far beyond what we have so far. However, we're slowly chipping away at the lack of data. Maybe in a few decades, as telescopes and our charting of the galaxy improve, we may have enough data to estimate, if not the number of advanced civilizations, then at least the number of worlds that could support a civilization like ours. The Drake equation is provided below.

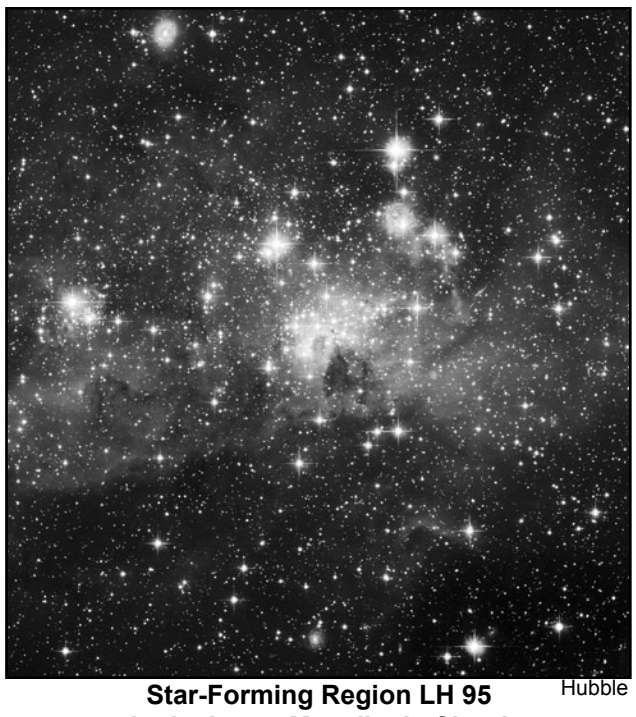
In this equation, N is the number of civilizations that we can find, n_e are the number of Earth-like worlds in any solar system, L is the length of time that they produce observable emissions, and the remaining f coefficients describe the probability of Earth-like planets supporting life, the fraction of those planets that can sustain intelligent life, and for any civilization to develop communications technology that can be detected by us on Earth. R is the rate of formation of stars in the galaxy. Essentially, what this means is that at any given time it is possible to observe N number of civilizations, provided that their emissions are detectable to us and they last long enough for us to detect them.

$$N = R^* \cdot f_p \cdot n_e \cdot f_\ell \cdot f_i \cdot f_c \cdot L$$

With respect to the variables in this equation, scientists have a good understanding of R*, the rate of star formation for stars like ours (spectral class G2) and are getting a better understanding of f_p (the fraction of star systems with planets in them) and n_e (the number of those planets that have Earth-like worlds). However, it will be some time before the remainder of the f coefficients can be estimated, as we do not yet have the ability to detect signals coming from an exoplanet's surface.

The Drake equation has received criticism over the years though. Some scientists claim that the variables are inestimable right now, while others claim that even if we had data that we'd need a statistically representative sample to provide a good estimate of N. After that, some of the hypothetical values that have been calculated range from a galaxy where we are the only intelligent life, to a galaxy burgeoning with competing space-faring civilizations. Essentially, a range from one to very large doesn't really help us out. Although the equation technically makes sense, it lacks much data and generates a lot of doubters since there is no test yet that can show that it's either reliable or unreliable.

Contact with extraterrestrials, whether on Earth or in space, has the potential to change our world. Some may embrace it, while others will fight it, but regardless, how we respond to it will determine how our society evolves. This would be a chance to understand ourselves and challenge our human-centric world view. It will force us to form a different opinion of ourselves and our place in the universe.



Hubble

Star-Forming Region LH 95 in the Large Magellanic Cloud

T Cubed: Apple's New iPad and The LTE Barrier

JACOB TERRY
2N NANOTECHNOLOGY

As is typical for this time of year, Apple has announced this year's version of their wildly successful iPad. The new iPad (just referred to as the iPad, not the iPad 3 as was rumoured), looks at first glance much like the iPad 2 that preceded it. Even browsing the web for pictures probably won't help you see the difference between them that much, but this is because the new iPad has a screen with an incredibly high resolution, increasing from 1024x768 to 2048x1536.

What does that mean? Resolution determines how many pixels are across the screen horizontally (2048 pixels for the new iPad) and vertically (1536 pixels). The best HDTVs often have a resolution of 1920x1080, so this iPad has a much higher resolution than most screens you have likely seen in person. The new iPad managed to squeeze all those extra pixels onto a 10-inch screen, which makes the device incredibly impressive to look at. Much like the change from the iPhone 3GS to the iPhone 4, third-party iPad applications will take some time to adjust and take full advantage of the display, but there should be some really impressive games and applications that push the iPad to its limits.

With a high resolution display, you need to have power behind it to keep things running smoothly. The new iPad has a quad-core graphics processor (made of two dual-core graphics processors), which keeps the tablet's software running smoothly. It may not be enough to run games at console quality yet, though, as some games have shown to stutter a little, but for the majority of games and applications, it seems that the tablet runs quite smoothly.

LTE is the third primary feature of the new iPad, which brings blazing fast wireless speeds to an Apple device for the first time. LTE is a newer standard in cellular networks, initially introduced to Canada by Rogers at the end of last year, with Bell and TELUS launching their LTE networks soon after. In real-world usage, LTE commonly gives download speeds up to 25 Mbps, rivalling or exceeding most home Internet plans. While LTE access is not exclusive to the iPad, it is much faster than HSPA+, which is the second-fastest network standard used in Canada. Adding the iPad to the list of LTE-accessible devices will give many people their first taste of LTE speeds. While the network is mostly in large cities right now, it is due to spread to other locations quickly over the next year.

Most devices have added LTE access at the expense of horrible battery life, but the new iPad's battery is powerful enough to provide nearly the same battery life you'd get on the iPad 2. This is arguably its greatest feat and it will be interesting to see if Android, BlackBerry and Windows devices can follow suit. Android tablets have been mostly competing by producing 7-inch models, which can afford to be cheaper due to a number of factors. To see an Android device with LTE, that much processing power, that level of smoothness, and that rich of a display would be impressive. Let alone, one that can do that in 10-inches for the same price as a new iPad. Apple chose not to compete on the size scale, instead keep the iPad 2 as an option and lower the price by $100, bringing it to $419 in Canada, with the new iPad starting at $519 for the Wi-Fi model.

However, is it worth it to add LTE to these devices? Yes, the speeds are incredibly fast, and it's an impressive technology to say the least, but one problem still remains: data plans. It's cool to imagine doing all your typical browsing tasks over your cell network, but all those hours of watching YouTube will add up, and our data plans aren't changing to reflect the technology. It's quite restricting when most data plans, even for LTE, still only give you 500 MB to 1 GB of data a month, or charge you up the nose to get anything higher than that. 500 MB on LTE really isn't that much, and the only way to rectify that is to start spending often over $75 on a plan for your phone.

While it can be argued that people should pay more for a service that's comparably fast to your home Internet, the plans don't quite match up yet. Using Rogers as an example: Rogers Express, while slower than LTE (theoretical speed of up to 18 Mbps with Express vs. up to 100 Mbps on LTE), gives you 70 GB of bandwidth for $35.99 a month, while their top tablet LTE data plan comes out to $37 a month for 10 GB of bandwidth for a few months and then down to 5 GB. Getting a tablet on Bell on the other hand, 5 GB of data is $35 a month, whereas $33.95 a month gets you only 2 GB a month with a much slower speeds (Bell advertises lower rates for all their Internet plans, but this is only for the first six months). When you go higher with Bell, to say, $50, the Internet speeds get much higher through the home connection. But it is not clear if you can get anything past 5 GB on a tablet without paying per GB.

In most cases, the increased speed is great, but there's a price discrepancy that can't be justified for a majority of subscribers. Because of that, most people won't be using their phone for their primary Internet connection anytime soon. If the data plan on my phone were as competitive as my home Internet plan, it could easily displace it much in the same way mobile phones have displaced landlines. None of us at Waterloo likely have landlines, since they're too much of a hassle to set up for a rented house and no one is going to call it when you have a personal cell phone. Shifting to your own Internet plan could be harder to justify, considering we take it for granted much of the time in our housing. Considering tethering is a thankfully included feature for most Canadian mobile plans, connecting all my devices to my phone for Internet would be an interesting concept. And if it were cheap enough, it could be a potentially viable concept in the next few years.

Behind The Aperture

The Engineering Behind Mobile Phone Cameras

ANGELO ALAIMO
4B ELECTRICAL
MICHAEL SELISKE
3B COMPUTER

In previous weeks, we have guided you through the process of producing a digital image and have explained some of the interesting things that we can look forward to seeing in the future. We first talked about the human visual system and how it's used for digital cameras to mimic the human eye. We then spoke about the mechanics of images sensors and the basic functions of an image signal processor. Most of the aspects of imaging discussed up to now can be applied to any digital camera. So this week we complete our column with the challenges that face one of the fastest growing camera markets, the cell phone camera.

In the past five years, smartphones have exploded in popularity and the resolution and quality of their cameras have increased exponentially. The original iPhone, released in 2007, contained a fixed focus, 2 MP sensor that was noisy and lacked decent image quality. Just five years later, the latest iPhone contains an 8 MP, auto-focus camera that rivals digital still cameras in terms of overall image quality and rendition.

Cell phone cameras have to be small to fit within the confines of modern day mobile phones. Thus, shrinking the components you would typically find in a point and shoot into a package smaller than 8.5mm^2, generally called a 'camera module', is a feat of engineering. Making a small camera means decreasing the size of all of the components including the sensor, the auto-focus mechanism, and the lens. When any of these components are shrunk, the quality of images captured from these cameras tends to be worse. In the end, image quality is a balance between consumer wants, marketing needs, and engineering practicality.

As we discussed before, a smaller sensor means less area to collect light, which causes reduced low light performance. A smaller lens means manufacturing yields become difficult to maintain as lenses have tight tolerances. Smaller auto-focus systems require a completely different focusing mechanism compared to digital still cameras and increase the overall size of the module.

The sensor is the most discussed component of a camera and there are a few things regarding the sensors that require trade offs as its surface area is reduced. The size of the sensor will significantly influence the size of the entire camera module. A larger sensor requires a larger spread of light over its area, which will require, not only a larger lens, but also greater distance between the back of the lens and the sensor. More distance between the lens and sensor means a thicker module which causes a device to be thicker. In order to deal with the size constraints of the sensor, engineers have been working hard to improve the efficiency of the sensor as well as the lens in front of it. Improvements include using a back-side illuminated sensor which allows the light to hit the substrate with less circuitry in the way and design a lens system that can pass more light to a sensor at a wider angle referred to as 'chief ray angle.'

As technology progress, the consumer market demands higher resolution cameras, in thinner phones with better image quality. Marketing as well as market pressure has been pushing the camera resolution of mobile devices upwards because it is a quantifiable number they can slap on the box.

See IMAGE on Page 7

From IMAGE on Page 6

Therefore, it is difficult to push the envelope on the resolution of the sensor and still ensure that the image quality is up to the standard expected in the current market.

One of the major differences between a typical point and shoot camera and one in mobile devices is the way focus is performed. Point and shoot cameras use mechanical gears to move the barrel of the lens back and forth in order to focus; however, due to the size of mobile devices, this is not a possibility.

There are three major ways camera phones focus. The first and simplest is to not focus at all. Fixed Focus cameras are typically found on the front of phones and webcams and have a fixed focus point which is set a little bit closer than the typical use case of that camera. The major drawback of this method is that anything closer than the focus point will be blurry and it is impossible to get a close up photo. Extended Depth of Field (EDoF) is a relatively new technology that is in use on some current market devices. EDoF encompasses a proprietary software algorithm that focuses the different colour channels at different points and then uses software to recombine the three channels into an image that has a wider depth of field without any moving parts. Next, the most popular method of AF is Voice Coil Motor (VCM) AF. Much like how a speaker works, the lens barrel is wrapped in fine motor wire and surrounded by permanent magnets. Current applied through the coil of wire produces an electromagnet that positions itself based on the magnitude of current through the coil. The lens can move the focus point back and forth to provide a wide range of focus from macro to infinity.

The system must work reliably time after time in various operating temperatures and while taking various forms of physical abuse. This is a major problem for designers and is a major consideration when creating a camera.

The last major consideration we will discuss regarding the challenges of mobile imaging devices is the optics used for these cameras. Most consumer point and shoot and DSLR cameras use polished glass for their lenses because plastic is too variable with temperature at that size. However, when the lenses are as small as the ones required for these cameras, plastic becomes a cheaper and easier solution. The major problem is that the smaller the lens the harder it is to make reliably and at that scale very small inconsistencies make a big differences in performance. At the latest Apple announcement they advertised a five piece lens system which improved image quality over a traditional four piece lens. This means that five lenses need to be perfectly created and aligned in order to create a pleasing image and stand up to the abuse of a typical cell phone user.

The next time you are shopping for your next cell phone remember the challenges associated with developing the camera inside and appreciate that a good cell phone camera is a major accomplishment. It's also important to remember that the more megapixels the camera has does not necessarily mean it's any better. There are a lot of different things that need to work together in order to produce a pleasing image and the megapixel count is very low on the list of major players.

This will be the last instalment of our column but if you have any suggestions or comments about current or future articles, please email *The Iron Warrior* and we will keep them in mind. I hope you enjoyed learning a little bit about the imaging world from us and will allow you to understand why megapixels don't say much about the quality of a camera.

Engineering Month

Rube Goldberg Machine

LEILA MEEMA-COLEMEN & KEVIN MCNAMARA
1B MECHANICAL & 1B CIVIL

This past Wednesday, March 7th, 2012, we had the amazing opportunity to travel to the CN Tower for the finale to the Engineering Student Societies Council of Ontario's (ESSCO) Rube Goldberg Event. This event brought together eleven engineering schools from across the province to create one of the largest Rube Goldberg machines in the world. Each participating school built a segment of the machine which after completing its part, sent a signal off to the next school in the chain. The final school triggered a live section of the machine, set up at the tower by Conestoga College, which hit the switch to light up the entire tower purple.

Eight students from the participating schools, the two of us included, were lucky enough to get a behind the scenes tour of the tower from the head building engineer and engineering manager. On the tour, we went everywhere from the foundation; looking up the hollow core of the tower, to all the way up to the observation decks. Unfortunately, due to the high winds we did not have the opportunity to go to the highest points; but we did get the background story on the creation of the new Edge Walk attraction. It was a very different perspective to see the tower from and we were able to gain some interesting information from an engineering perspective.

Following the tour, we returned to the lobby for the main event that showcased the machines built by each school, ending with the tower being lit up in purple. The machine went off perfectly and the crowd made up of students, engineers from industry, executives from ESSCO and the Ontario Society of Professional Engineers, and media were impressed by the creativity and ingenuity shown off by all participants.

Engineering Co-op Student Debt-Load Survey Spring 2011

Term Total

Total Responses	707
Number of surveys sent	2137
Response %	33%
# of Students in core classes	3563

Does your family support you financially? (698 responses)

Yes	70%
No	29%

Average Cost of Living for a 4 month School Term (683 responses)

$10,579

Average Cost of Living for a 4 month Work Term (550 responses)

$4,122

Have you applied for local aid or other bursaries to pay for school? (689 responses)

Yes	46%
No	41%
Not Yet	14%

Have you applied for OSAP? (702 responses)

Yes & Received	45%
Yes & Denied	13%
No	42%

Do you have a loan for academic purposes? (693 responses)

Yes	40%
No	48%
Not Yet	11%

How much is the student loan? (382 responses)

1-999	10%
1000-1999	7%
2000-4999	13%
5000-9999	33%
10000-19999	26%
20000+	10%

Has the differential tuition increases caused you hardship? (689 responses)

Yes	42%
No	26%
Not Yet	31%

How much debt do you expect to be in by graduation? (663 responses)

No Debt	23%
<4999	12%
5000-9999	14%
10000-19999	18%

Vision 2015 Town Hall & Commissioner Applications

LEAH ALLEN
PRESIDENT

Hey Engineers,

Over the past year or so the Faculty has been hard at work coming up with Vision 2015. This is basically a plan for the Faculty on where the Faculty should be by 2015. All undergraduate engineering students are invited to a town hall meeting to provide your feedback on the Faculty of Engineering's draft strategic academic plan, Vision 2015: Building on Excellence.

The Vision 2015 plan results from over a year of self-study, consultation and committee work, across all areas of Waterloo Engineering. The Faculty is now seeking internal and external feedback on the draft plan before finalizing it at the end of April.

To hear about the **Vision 2015** plan, to share your thoughts and to have your questions answered please come to the "Town Hall" on **Wednesday, March 21st, 2012 from 5:30-7:00pm in RCH 301**. Yep, that's is today everybody! Speakers who will be talking about the plan will be Adel Sedra, Dean of Engineering; Wayne Loucks, Associate Dean, Undergraduate; Wanye Parker, Associate Dean, Co-operative Education & Professional Affairs. **Pizza** will be available at the start of the town hall.

Engineering Society Commissioner Applications are OPE! Commissioners are positions where you will be managing volunteers of the Society, as well as contributing to projects that better the Society. All commissioner positions will be 8 month terms, one off-term (starting in May) following by one term on campus. The commissioner positions available are Communications, Outreach, Student Life, Student Services, and Waterloo Engineering Competition. Also, the Speaker of the EngSoc meeting will be determined though the same application process. The application forms and more in-depth information about the positions can be found here: *http://engsoc.uwaterloo.ca/commissioner-application.* The deadline to apply to Commissioner positions is Wednesday, March 21st, at midnight. Yeah.. that's tonight!!! So APPLY APPLY APPLY!!

If you have any questions about Vision 2015 or Commissioner applications, or anything else, please contact me at *president.a@engsoc.uwaterloo.ca*. Have a great day!

Directorships!

ANGELA STEWART
VP OPERATIONS

Hello again bright, shiny people!

Here we are. Spring is right around the corner, it's the last issue of the term, and I'm halfway through my 16 months as an Exec! So how did it go? Almost 300 resumes were critiqued, sushi was made and devoured, new workshops thrived, scholarships were won, and new initiatives were tested. Now's a good time to reflect on how things have gone for the Society, for our team, and for the development of this position.

We started off this term under a trial run for the new executive structure. While the previous VP-Internal position was more of an event management position in charge of social and athletic events, the VP-Operations' role was defined as one of representation and management of the operations of the Society.

The trial also brought the addition of the new leadership position, Commissioners. I have loved working with the two Commissioners under my portfolio, Joe Dykstra (Communications), and Alroy Almeida (Student Services). They did an excellent job at providing guidance and support to their directors, as well as developing their own projects. Some notable changes were Joe's excellent weekly event emails, and the very successful HTML resume workshop. I want to give a huge thank you to Joe, Alroy and all the directors their dedication and hard work these past eight months.

Speaking of directorships, do you want that elusive "proven leadership experience" employers always seem to be asking for? Do you have an idea for an event or service you think will improve life for Waterloo Engineering students, or have a skill to share in a student-run workshop? Do you want a budget and a league of dedicated volunteers to help you pull this off? If you said yes to any of these, apply to be a director for the Engineering Society.

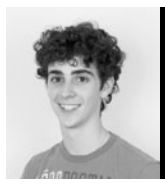
Take a break between studying and check out the Engsoc website (*www.engsoc.uwaterloo.ca*, under the Directors tab) to check out the different directorship positions. Have an idea for an event or service that's not listed there? Apply to make up a new directorship! Directorship positions look great on a resume, help you develop leadership and management skills, and are a ton of fun.

If you have questions about applications, roles of directors, or just want to know more about your Engineering Society, don't hesitate to stop me in the halls, talk to me in PO-ETS, or send me an email at *vpoperations.a@engsoc.uwaterloo.ca*.

With the Commissioners and directors holding down the fort, I was able to focus on new initiatives for the Society. The oft-neglected Policy Manual and Constitution got an overhaul by the review committee, the scholarship bank grew to over $1 million worth of awards and listings and therapy dogs will be coming to campus on April 4th to give students a stress-relieving study break.

I'm very excited to take everything I've learned the past eight months to make Fall 2012 spectacular! Good luck on exams and I'll see you in September!

Sponsorship Allocations



DAVID BIRNBAUM
VP FINANCE

Hello wonderfuls!

This is the last report of the term, but don't be too sad. Be happy in knowing that I will be updating my blog throughout the summer, so you will be able to keep up to date on all things related to money.

The Sponsorship Allocation Committee presented its allocations this past EngSoc meeting, and they got ratified! You can find them somewhere in the paper. Perhaps to the left, to the left, but maybe not.

In other news, we had another Novelties Fire Sale, which went great! Stay tuned, there should be one more coming up with EVEN BETTER DEALS!!!!!!

As well, ECIF Applications are still open, so get them in before the deadline; *http://engsoc.uwaterloo.ca/services/ecif-application*

That is all from me, short and sweet.

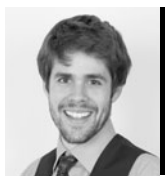
Have a great summer!

VP Cash Money

Team / Group	Budgeted
Autonomous Rover Team	$250.00
Baja	$350.00
Clean Snowmobile	$790.99
Earth 490 Class	$586.61
EngFOC	$819.40
GNCTR	$500.00
GradCom	$500.00
iGem	$500.00
Iron Warrior	$500.00
Nano Robotics Group	$1,000.00
Project Magazine	$113.00
Rocketry Team	$0.00
UWAFT	$590.00
WEC	$0.00
Total	**$6,500.00**

Winter 2012 Sponsorship

Exams are Coming!



DEREK THOMPSON
VP EDUCATION

I hope you all had an EXCELLENT weekend, I know I sure did!

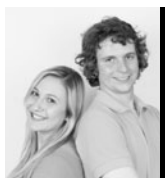
First things first, I'm still looking for suggestions or constructive comments about the first year Co-op Fundamentals course. Now is your chance for input! I will be meeting with the people responsible for designing the course shortly after the release of this article, so contact me at *vpeducation.a@engsoc.uwaterloo.ca* with anything you might have!

In other news, exams are soon approaching. Don't forget to study because there's still time! Here are Derek's top 10 (mostly serious) study tips for the average Engineering bunny!

1. Sleep enough and try to keep a normal schedule.
2. Shower, change your clothes, find time to exercise and eat healthily.
3. Plan to have breaks in your studying, it helps with memory retention.
4. Believe in yourself! Have confidence!
5. Practise.
6. Practise some more.
7. Practise WITHOUT problem solutions.
8. Magically get a photographic memory.
9. Never leave an exam question blank; part marks FTW!
10. Leave a note for the markers if you see your final answer as ridiculous, it shows you are thinking!

Exams can be scary, but with preparation and a positive attitude, the exam season can be a refreshing break from the school term. Don't panic!

NEM and Outreach



MICHAEL SELISKE
LISA BELBECK
VP EXTERNALS

I can't believe that we are already into the final weeks of the term. A lot has happened in the last few weeks on the external front and there are a few more things to come.

Our last large scale National Engineering Month (NEM) event, held at The Museum in Kitchener, was a great success. Both volunteers and students had a good time making K'nex structures and talking about Engineering. Agnes and Lindsay did a great job pulling off all of the wonderful NEM stuff we did this year. Continuing the NEM programming, the final video of the Ontario-wide Rube Goldberg device is now available on ESSCOntario Youtube channel. To launch that video, ESSCO and OSPE held an unveiling event at the CN tower where the last part of the machine was showcased, eventually lighting the tower purple. Two first year students, Leila and Kevin were in attendance to represent Waterloo at the event. You can read more about this in their article on page 7.

One of the other major events that we have been working on for the past few weeks has come to an end in the form of "Getting a Jump on Hunger", the Waterloo Engineering team's entry into the Canstruction event. Approximately 20 people, lead by Bruce Keeling in 2014 Civil helped in planning and building our structure. There is a photo below, but in case you can't tell, it is a Tuna fish jumping out of a tuna can. Everyone was very proud with how it turned out and it was exciting to see a bunch of new faces helping out with all these outreach events.

March Break was in full swing last week and as a result outreach opportunities were everywhere. The Explorations directors did a great job of arranging volunteers and ensuring that everything ran smoothly and efficiently as well as putting in countless hours organizing the volunteers. The annual March Break Open House did not have an official presence by EngSoc but thank you to all of the student volunteers who did their part in making sure Waterloo continues to attract the very best.

Lastly, the Canadian Engineering Competition was held recently and I am pleased to announce that Erin Matheson came third in Communications and a fourth year Electrical group took home third in innovative design. Thanks to Angelo Alaimo for running WEC and taking care of the logistics for these events.

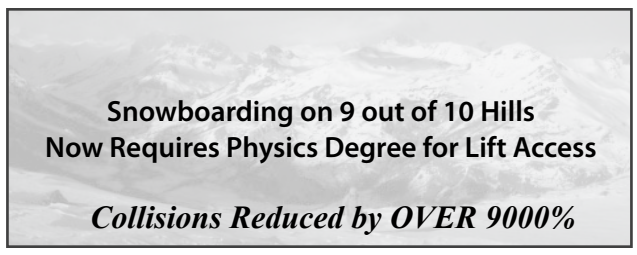
Coming up in the next little while is an ESSCO council meeting as well as the beginning of the end of term wrap up for all of my directors. I have a few very exciting blog posts in the wings so please follow that for some more details.

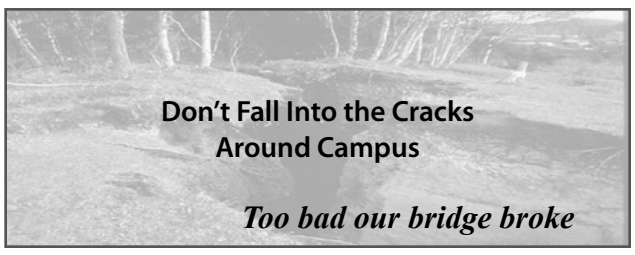
Waterloo Region Food Bank

Waterloo Engineering at Canstruction

THE TIN SOLDIER

THE BASEMENT PUBLICATION OF THE UW ENGINEERING SOCIETY | VOLUME: LOUD; ISSUES: MANY | WEDNESDEI, MARIO 21, 2012





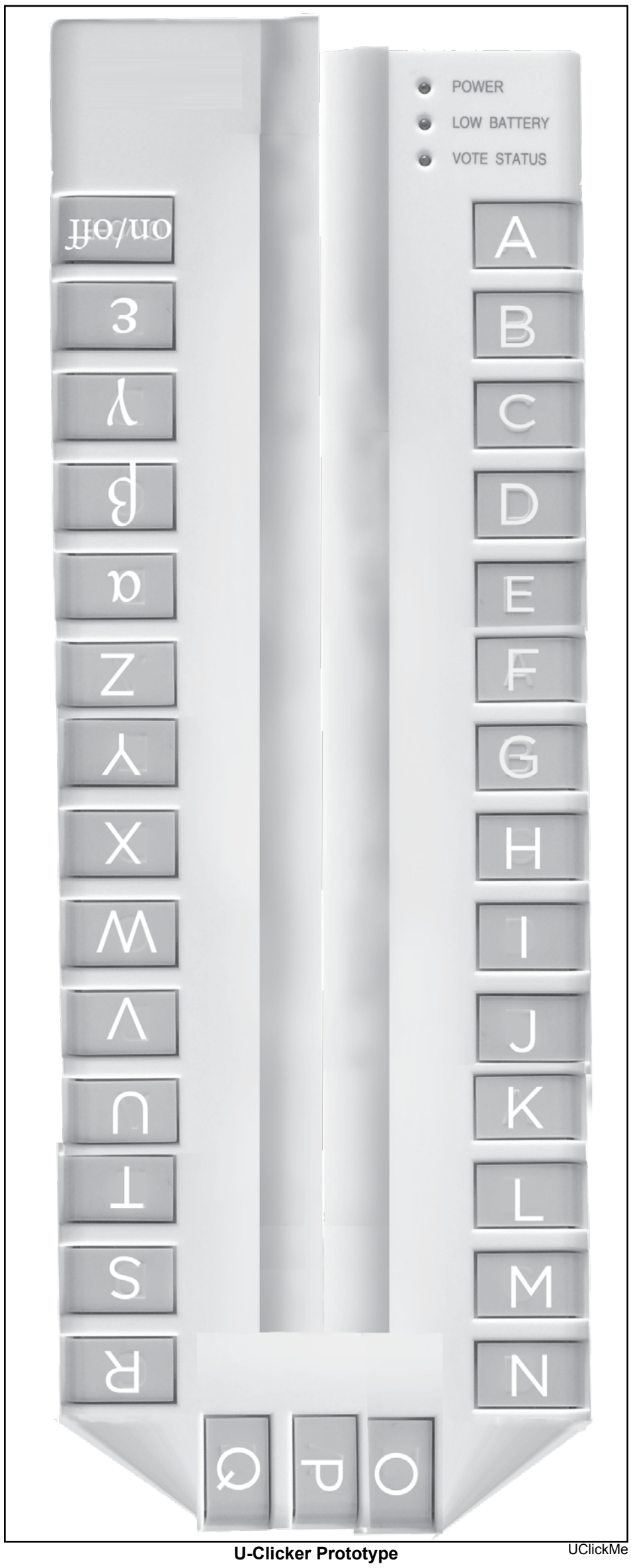
birds.com/thetinsoldier | http://tsoldier.uwaterloo.ca

U Clicker Exams

ELLA KAY
1B I-NIVERSITY

On March 16th 2012, the Faculty of Engineering at the University of Waterloo announced a new measure being implemented for final exams. U-clickers will become mandatory tools for select classes on final exams in April 2012. The U-clickers, electronic devices which communicate wirelessly with computer interfaces providing instantaneous submissions and feedback will speed up the process of grading exams with the final grades becoming available as soon as students leave the exam room. "The U-clicker implementation is something we should have done a long time ago, it really streamlines the process of exam taking something we as engineers are always trying to do." Liam L. Ying-Toyou, a spokesperson of the university explained. "Currently they are just being used for multiple choice exams, each question will have a set period of time for answers to be submitted and results are shown as a graph on a screen as soon as the time period has finished. We (the University) have implement it for several specific fourth year classes because it is important to always be adapting to new situations, a skill they have hopefully already mastered. "The university hopes to apply this exciting old technology to courses for students in earlier years as soon as next fall. This technology is especially helpful for first year courses such as physics and chemistry which the spokesperson says are "Frankly, a bore to grade." He also points out that the use of U-Clicker exams also decreases student stress as they get immediate feedback on their performance. With this exciting announcement bells are really beginning to ring in the minds of higher level thinkers around the country. It remains to be seen whether other schools such as Queens and U of T will follow in the footsteps of our above-the-curve technology.

Disclaimer: WE ARE LYING TO YOU, don't be silly, U-clickers don't work, are you kidding?



U-Clicker Prototype — UClickMe

Engineers Take Over ALL the Publications

ENG-MOEBA
2T CENSORSHIP

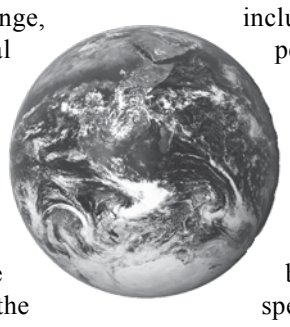
As a result of recent events at the *Inkpress*'s Annual General Meeting, Waterloo Engineering students have now taken over another publication. The *Tin Soldier* and The *Iron Warrior* are normally run by engineering students, both anonymous and not. The Waterloo Engineering Society has also successfully bid for the Canadian-wide *Promag*. Counting the *TiePublication* (which is run by softies) and The *Carbon Warrior* (announced in a past issue), Waterloo Engineering students now control approximately 68% of all campus publications.

Despite all appearances, engineering students claim that they are not trying to take over other student publications. After years of being accused of being snobby towards other faculties and organizations, it appears that this out-of-faculty involvement is actually an attempt towards forging stronger bonds with other parts of the university. It was found by this reporter that the students involved honestly believe that they are helping to boost participation and are taking over positions that would otherwise go unfilled. The combined efforts of the different engineering departments may actually have a positive impact on these papers.

LHC Causes Shorter Days

THE OBSERVER
2B OUT OF TIME

Due to the high speed accelerations of molecules within the Large Hadron Collider (LHC), the earth's rotational velocity is now accelerating. Initially, it was hard to measure this change, but advances in rotational measurement have allowed this acceleration to be quantified. The earth is currently accelerating by one minute per day for every month that the LHC is in operation. People have been asking themselves for the last few years why they never seem to have enough time in a day. This question can now be answered. But, this is not all bad. Since the earth is still orbiting the sun at the same speed, years will now have more days and months will eventually be able to be extended to include a constant number of days per month. Leap years can disappear with altogether. Summer days that are too hot will be over sooner and the sunrise will come faster on cold winter nights. It is time to celebrate! Why not build more accelerators and speed up the process?



Remove ALL the EICs

INSUBORDINATOR (AND REVOLUTOR)
6A TROUBLE-FABRICATION

It has come to the attention of *The Tin Soldier* staff that it is time to take over *The Iron Warrior*. Unfortunately, since the Advisory Board positions are not available though general election, the best way of taking over would be to claim Editor-in-Chief (EIC) position. Since there is currently already an EIC, the following are suggestions on how to remove the EIC.

1. Give them the job of EIC (it only takes 24 hours of this method for most people but some are more robust).
2. Submit so many inappropriate comics that the EIC is overwhelmed.
3. Talk the EIC's profs into assigning too many assignments (preferably all due during production weekend).
4. Get the EIC drunk on production weekends.
5. Make the EIC's computer crash.
6. Make all the computers in the IW office crash.
7. Make the EIC's computer crash again (and maybe a third time for good measure).
8. Make sure that the EIC's laptop's screen flickers.
9. Cut off all internet within the IW office.
10. Ensure that no articles are submitted until Monday morning.
11. Starve the EIC all weekend (steal ALL the cookies).
12. Play loud music in the IW office (preferably a repetitive theme such as Ni**as in Paris)
13. Write letters of complaint to the Advisory Board regarding the EIC
14. Report the EIC as Dictator of Approved Content to the Human Rights Tribunal
15. Unleash squirrels in the IW office (see Tin Soldier of Winter 2010 for reference)
16. Reveal the cockroaches that hide beneath the carpet in the IW office.
17. Feed the lactose-intolerant EIC milk.
18. Replace the production computer/ monitor with a cardboard replica
19. Change the keyboard so that the keys don't match
20. "Accidentally" format the computer in the middle of a production weekend
21. Move all the staff to the Imprint
22. Move all the staff to ProMag
23. Change the door code without telling the EIC
24. Call the EIC some random name to confuse him (for example: Steve)
25. Pretend you have a very loud imaginary friend so every time you talk to him, you shout. Loud. (With a megaphone if possible).
26. Change the EIC's ringtone to nyancat and start calling that phone.
27. Distract the EIC by continuously taking photos of them while they are trying to work.
28. Locate the phone number and extension for the EIC's office phone. Call the phone repeatedly throughout production weekend. (preferably when you know the EIC is working late)
29. Replace all the EIC's caffeinated beverages with non-caffeinated beverages.

Note that *The Tin Soldier* does not accept responsibility for anything published in this article or anywhere else in *The Tin Soldier*.

Engineers and the World: Engineers

<BLANK> THE ENGINEER
1B DIPLOMACY

We are, we are, we are the engineers,
We can, we can, we can [fill in blank here]
We like math, and programming too.
Our graphs are not bad, but our values ring true!
It is said that we're drunks,
And that we party alot too.
But alcohol just dulls the pain of all the projects we have due!
We worship the tool,
We can be a pretty odd lot,
Building things that are cool,
It has us besot.

Bio/ native habitat/ lifestyle: Sleep, school, study, eat, memes. Repeat. Socially awkward we are not; look at everyone else around us! Study hard and play hard, what more could you ask for? We worship the Tool, the rigid wrench touch we will not until the iron ring our pinkie adorns. The ratio males to females is steep, for every one girl there are almost 5 guys, and we all show our strong engineering pride. We think we are cool; who knows if we are the one thing that's true is we aren't Richard Picard. Bill Nye and Mr. Bean we count as our own, but for the life of me, I can't figure out how to take pictures with my phone!

How we interact: Engineers can do anything! Or maybe we can't, read English literature? What craziness is this? We thing all is good, everything is swell, but then we crack under stress and run yelling for help. We are nothing without all the other faculties so near. Who will help us with feelings, or manage our careers?

Common areas of interest: we like things that are new, and crazy and neat. So build me a robot which can do party tricks, we'll play on our laptops and praise others tricks. Build a new engine or fix a up a bike. We are engineers, this is what we do for kicks!

Verdict: Engineers are pretty awesome, but then so are you! Yay Waterloo!

Brave New 2084

D. CHAUX
CANDIDATE FOR THE 2084 REPUBLIC PRIME MINISTER ELECTION, GOOGLE PARTY

3.21.2084CE, this precise day—Q.E.D .,marks the official 30th anniversary of the formation of United Provinces of Canafornia. We have come a long way.

On this day we give our gratitude to the brave women, men, and individuals who have fought and died for the attainment of our Truth. It was only through their sacrifice of yesteryear did this great nation find itself transcend into the realm of reality. It is then to be expected, that the hearts and minds of every middle-IQ-class Canaforians be with our liberators.

At times like these, I am reminded of the story of my grandparents, who immigrated to this land more than 80 years ago. Armed with nothing more than their knowledge and sheer willpower, they came here to revolutionize the world. It is thanks to foremothers like them that we are able to live our lives knowing that all information, no matter how enlightening or crude, would be and will be free of charge to all and a universal right.

However, at the same time, we are also reminded that not everyone shares our beliefs and values. I'll say this right now, our warm relationship with Rusasia is not something that should ever be belittled. They are an important ally to this great nation. But we should stand strong and vigilant against the separatist factions within their nation who threaten our way of life. The Nabilat's infiltration into our energy grid last year may have costed the lives of many, but they will never break the intelligence and unity we have as a nation. And if I'm elected as the next Republic Prime Minister, I will personally make sure that justice be served.

As a nation, we have at times grown to be content with ourselves over the years. We have forgotten about the the seed from which this nation flourished from, the seed which our foremothers nurtured so carefully over the decades. Canafornia has always been known as the land of innovation and intelligence. But the leadership in Parliament today displays neither qualities and suppresses both. This election campaign is more than just about replacing an incompetent government that has led our nation astray and unable to defend ourselves from the hacking activities of our enemies. This campaign is about restoring Canafornia back to its roots and back to being a superpower. As Republic Prime Minister, I will allocate more resources to the Department of Electronic Defence and Cryptography which will ensure the safety of every Canafornian citizen.

Altruism, another one of our greatest values will be given more focus at the Parliament once I become Republic Prime Minister. More funding will be provided to the Department of Altruism, which will ensure that all Canafornian citizens will have the basic necessity needed for post-secondary education. Citizens in the lower-IQ-class will especially appreciate the middle-IQ-class's support and it is only through this mutual understanding of compassion can we continue on as a nation that upholds the values of Truth.

It is also important to reiterate my view that those in the upper-IQ-class should contribute more of their free time and resources to the pursuit of scientific research. Their contribution to society is not at full capacity given the amount of raw brainpower they posses. As an individual born with a high IQ myself, too often do I see my peers squander their lives away on the trivial pursuit of virtual entertainment. Our society will be much better off if we can get more upper-IQ-class Canafornians to contribute on things that will make Canafornia more prosperous for the benefit of all.

I want to thank all of you for your support by coming out today. Your presence here is a direct demonstration of just how much the current administration have failed to fulfil the dreams of our nation. I also want to thank my wife of 21 years, Eve—I would never be here today if it weren't for you. Fellow citizens, that is all I have to say for today. I invite you all to reflect upon my views with logic and reason, and that hopefully you make the right choice on election day. This nation can't afford another term under Facebook's rule.

TIN SOLDIER

The Basement Publication of the UW Engineering Society

Keeper of the Minions
Personality One
Personality Two
Personality Three

Minions-in-Chief
Inheritor of All the Minions
Humanoid Robot Minion

Tetris Minions
00000001
00000011
00000111

Comma Minions
Semicolon Minion is taking over
Colon Minion disagrees

Flashy Minion
Over 9000 MegaFlashes

Spammy Minion
Can I get some eggs with that?

Marathon Minions
Run to all the places!

M.I.A. Minion
Runing away minion

Type-writing Monkeys
<Blank> The Engineer
A Man, Just Like You
Aditi Gupta
Angela Explosion
Ash Ketchup
Atari 2600 Master
Beerca McHeadswallow
Binary Bob
Bob McKenzie
Doug McKenzie
Ella Kay
Eng-Mobea
Erica Watercousin
Griff Grifferson
Insubordinator (and Revolutor)
J05HU4 K4LP1N
Lefonda MaDuc
Losing Mone
Not A Goose
Rufus Cavendish
Sagepetal Ridgeflake
The Class of One
The Observer
The Velosoraptor
This Name Has Been Seized

Incoming Victim
Jacob Terry

Point Vs. Counter-Point Vs CCP Vs CCCP

Dating: SOAP, SOPA, OSAP, Vs NOSS (Not OSAP, SOAP, or SOPA)

POINT

COUNTER-POINT

C-C-C-POINT

C-COUNTER-POINT

SAGEPETAL RIDGEFLAKE
1T AROMATHERAPY

SOAP

Having problems with the ladies? Are people around you commenting, “What the [not-sexy] smells like [poop]?” Well then you should try using some soap! Soap is an inexpensive, nice smelling, and easy way to fix all those problems! Soap is a time-proven method to remove body odour while at the same time making you smell like anything, from cinnamon rolls to a flower shop. Furthermore, statistics have shown that by using soap multiple times in a day, a male engineer’s chance of finding a significant other increases by over 1%! This increases your chance from 0.000001% to 1.000001%; it is that not amazing? Now you’ll no longer be “forever alone”!

Let’s compare this to other proposed methods of acquiring a significant other.

SOPA lets the government ~~take anything that even remotely looks like copyright infringement and force you to take it down or face persecution~~ make sure everyone is all happy and safe! The magic of statistics shows that SOPA will ~~reduce your chance of finding a girlfriend by OVER 9000!!!~~ greatly increase your chance of a getting a girlfriend!

OSAP looks good on the outside but leaves you in a horrible mess afterwards; kind of like that dinner you ate at some sketchy restaurant that made you sit on and/or hug the toilet for the rest of the night. However, in those situations, soap can come to save the day by making you smell nice again, it is just that good. Lastly, NOSS is just a sadistic grumpy-glump that hates everyone and as a result you should hate him too.

THIS NAME HAS BEEN SEIZED
UNKOWN

SOPA

Government control ~~is essential to ward off chaos~~ is awesome. Therefore, the Stop Anti-Piracy Act (SOPA) is ~~a really terrible way to keep our personal freedoms~~ the best method of keeping the government in control. But, how does this relate to ~~acquiring a girlfriend~~ supporting Big Brother? Well, ~~free speech~~ government control is the best way to ~~express yourself~~ let your ~~personality shine~~ love for Big Brother help find that special person you adhere to the rules of the government.

Now, on to ~~why the competitors are actually good~~ why you should love SOPA even more. Soap makes you ~~smell nice and there is nothing more that the girls like than nice smelling people~~ a horrible stealing heathen that likes to use things that steal their names from SOPA. OSAP is a great way for those less ~~financially lucky students to have~~ access to ~~important~~ useless post-secondary education by providing ~~them with low-interest loans~~ control by a different government system. NOSS ~~is better than nothing~~ should not exist because it copies everyone else, infringing on SOPA ~~jsdlkfjlkasjdf~~.

On a more serious note the powers granted by SOPA allow for an infinite chain of ~~suing over~~ protecting copyright content. Protecting copyright holder’s rights is good, but ~~at the same time~~ accessing content should be ~~easy for the end user~~ highly controlled and ~~once you buy content you should not have to jump through hoops to use it~~ should never be shared without paying, ever.

RUFUS CAVENDISH
4B ENGLISH LITERATURE

OSAP

Short on money for that special night out? Credit card maxed out from trying to find that special someone? Well then, OSAP is definitely the choice for you. To be eligible for OSAP you and/or your parents have to be making under a certain amount of money (Refer to “Large Numbers”). Its a interest free loan until six months after you graduate, designed to help students pay for university. Furthermore, OSAP funds do not need to be claimed unless you actually need to pay for something. You have an on-demand interest free loan that can be used at any time. This is far superior to using a credit card and having the evil monkeys at the bank throw immense amounts of feces at your credit score. Generally, most girls don’t like feces (keyword “most”) or people with credit card debt. Also since you will be making awesome monies on co-op, you’ll be able to pay back the OSAP debt fairly easily.

You can think of OSAP as one of those “Challenge Accepted” moments. SOAP, SOPA and NOSS do not give those opportunities ever. SOAP cleans things which can help with the aforementioned monkeys but still doesn’t fix your money problem, only compounds it. SOPA can ~~remove~~ increase money making outlets (blogs, etc.) if you ~~even link to a single piece of potentially copied content~~ obey the law and potentially lead to prevent legal troubles (not good bad… ever). Lastly, NOSS doesn’t have anything positive to contribute to this argument so we’ll just ignore it.

THE CLASS OF ONE
7B ELECTRICAL ENGINEERING

NOSS

You know what sucks? SOAP, SOPA and OSAP. Why, because you are an engineer; it takes luck, skill and possibly a bit of mojo. These are the skills you need to get a girlfriend. Getting a girlfriend is a true “Challenge Accepted” moment, especially if you are a person who is scared of meeting people outside of engineering.

So here are the reasons why you should stop trying to rely on SOAP, SOPA or OSAP, to help you find a girlfriend.

Firstly, you need to actually talk to the opposite sex to acquire a girlfriend. None of the aforementioned solutions will magically make you grow balls of steel that will make you start interacting with girls, not even the blue pill. Specifically, smelling nice does not automatically make people like you, EVER! In fact many people find perfumed soaps offensive.

Secondly, showing girls that awesome video of some mildly attractive male playing the guitar is NOT going to entice them to go out with you. Girls would rather have you play for them, even if all you can play is “Twinkle Twinkle Little Star”; showing that another guy can do something you can’t is not helping your cause. Now, this relates to SOPA because if you record some awesome video playing some other guy’s song to show off your “mad skillz”, you can get into legal trouble.

Lastly, having the ability to perpetually buy things greatly assists in the dating scene, especially when you are paying for dinner most of the time. Therefore, borrowing money is not good, even the United States disapproves… OH WAIT. But enough about our bankrupt southern brethren, debt of any kind is bad. Don’t fall into that trap, buy only stuff you need (Geese dolls not included in that, not ever).

Eng-Physics: Engineering the Laws of the Universe

ANONYMOUS SOURCE
REAPPLIED MATHEMATICS

Before the modern physics engineer, the universe behaved in random ways not associated with any set of rules or any pattern. However, because of the efforts of the greatest engineering minds throughout history, we now live in a world which almost works the way we want it to. Let's have a look at some of the projects of great physics engineers throughout history.

Aristotle: The First Engineer

Aristotle, commonly known as "The first person to engineer physics", was a great mind. His first and perhaps most important contribution to the universe was to move the earth to the center of everything. While today we know that this isn't the best approach to the problem, it was a large improvement over previous efforts to ignore everything else.

Copernicus: The Man who Moved the Earth

Iron Ring bearer Nicolaus Copernicus was the first person to make major changes to the universe after Aristotle. Because of legal problems regarding Aristotle's universe, it took most of Copernicus life to finally move the sun to the center of the solar system, and place the solar system off in space. This corrected several major problems with Aristotle's design, such as all the stars falling to the surface of the earth, but managed to upset several major establishments who were already using Aristotle's architecture to create a detailed user's manual for the universe.

Newton: The Legal Studies Major

Isaac Newton was considered by many to be at the forefront of modern engineering. Because of his background in Legal Studies he quite easily evaded copyright infringement of previous physics engineers work when he began grad school. From here, he proposed an entirely new force-driven framework to run the universe, using a modified Copernicus Universe as the base. Using his system, engineers everywhere could work with unprecedented levels of accuracy. This was naturally a smashing success and this universe was adopted in almost all first and second world countries. In England, Newton actually managed to pass three laws stating that his universe was the only one to be used by qualified engineers.

Einstein: The Wartime Engineer

Albert Einstein was the physics engineer who single-handedly won the Second World War. The bombs available for use in Newton's universe were simply not powerful enough to hold back the German war machine. Instead of panicking about it like most people, Einstein simply changed the composition of matter throughout reality so it could make larger explosions without telling the Axis forces. This gave the allies an enormous advantage in combat, eventually winning the war. Even today, his small but well documented change, from e=e to $e=mc^2$ provides power for millions.

In all, Physics Engineers have filled a critical role in the larger engineering landscape. They release a new universe for people to work in when the old one just isn't well made enough to keep up with demands made by society.

Gaming in the Future – Today!!!

ATARI 2600 MASTER
9T REENACTMENT

Every day we seem to hear about new technological innovations that are bringing what used to be science fiction and fantasy to life. Scientists have been working on an 'invisibility cloak' like in Harry Potter or like the car in James Bond: Die Another Day. But the newest technology being revealed from industrial manufactures is an energy gun which can produce a pair of energy portals allowing matter to pass through one and appear instantly from the other.

Similar to the popular Portal game from Valve, the 'weapon' doesn't have a directly military purpose but does present some very interesting possibilities. There are several theoretical problems that can now be tested. Is it really possible to fall forever? Are there certain materials or wall coverings that would prevent these energy portals from forming? Is there a practical use for a storage container with a heart on it offering companionship to wandering mortals? Who really knows, but there is a research team that wants to find out. Initial testing is starting on the practical uses of the portal technology and its effects on humans. To keep the testing impartial, a new learning computer program is being created to run the testing apparatus (this is another technology that games and movies have taught us is perfectly safe).

So if you are willing to waive your basic human rights for testing purposes (apparently there is some kind of cloning procedure going on as a separate experiment, but that's just a rumour) you should submit an application. The company is even promising baked goods at the end of the experiment. How can you say no to that?

Another big item to be hitting the news has been a sudden rush of people engaging in spontaneous fights to the death in public places. These battles seem to be started when two people both have a Vita gaming system – perhaps a new kind of signal that they belong in this underground fight club? When survivors of the fights were interviewed, they said that playing video games had completely warped their entirely perception of reality to the point where they couldn't separate the real world from a video game. Some of the victims of this trans-gaming-world have even claimed to see a health bar above their head and a timer counting down individual rounds. These hallucinations are most likely a result of the indoctrination process these fight club members are put through. Unfortunately, authorities have not been able to infiltrate this group as members keep saying they would be violating rule 1 and 2 if they spoke about it.

So the next time you see a matter transporting portal open in the wall next to you, or a spontaneous fight to the death using gravity defying jumps and energy projectiles, just remember… Maybe the world of games is just around the corner.

Spontaneous public fights to the death are on the rise

What if the University of Waterloo Were a Pokémon Dojo

ASH KETCHUP
GOTTA FREE THEM ALL

-Undergraduates would be known as Pokémon trainers.

-After receiving an undergraduate degree, students could then further their education by getting their Pokémon Masters.

-Should anyone ever get a Pokémon PhD, they could become a Pokémon Professor.

-Pokémon professors would hire 10 year olds to go out into the world to do their research. The 10 year olds would be armed with dangerous Pokémon and would do battle against strangers for money, gamble in Casinos, and face deadly wild Pokémon. It's for the sake of science though, so there's nothing wrong with any of that.

-Should a student desire to stop their education after becoming a Pokémon Trainer, they can go and find a cave or a patch of tall grass somewhere and spend the rest of their days challenging "researching" 10 year olds to battle against them and their severely under leveled Pokémon. If they don't fight you, then you can stop them from continuing their research.

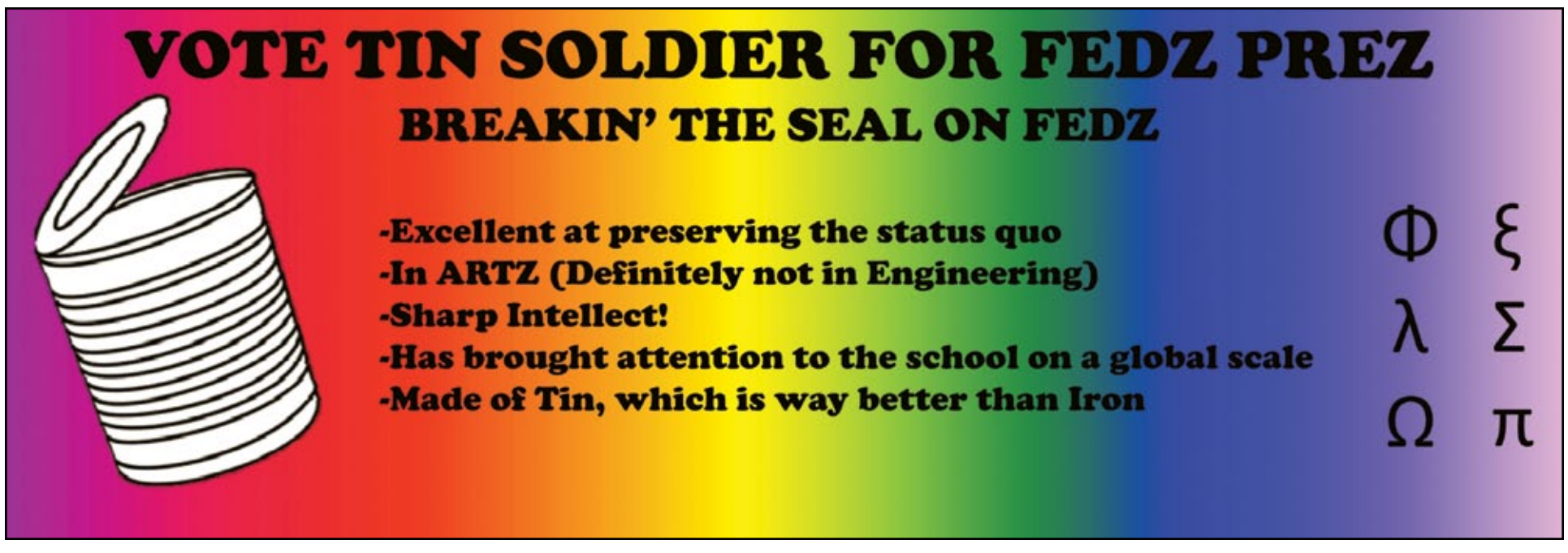
-If the 10 year olds get bored of running from city to city they can teach "Fly" to a Pidgey (a pigeon-sized Pokémon), and fly it to destinations they have previously visited. They can even fly on fainted Pidgeys! If that's not Pokémon cruelty I don't know what is!

-Pokémon breeders are known thus because they like to breed with… Never mind.

-There would be fewer evolution skeptics.

University of Waterloo student training for a duel

Flashy Minion



Scumbag Weather

NOT A GOOSE
2B HOW TO MAKE UP THE WEATHER

Weather why you keep changing!?!? First the sun is shining, then it's snowing, and then the next time you look outside a thunder storm is raging! We have been hit by snow, killer winds and brutal rains and like postmen delivering mail, we have trekked dutifully to class every single day, sometimes having to wait for our hands to defrost. Now the cold has disappeared. WHAT IS GOING ON? How could you hit us with so much heat so soon after being so lovely and cold? The most terrifying part of this abrupt turnabout in the weather is that the warmth has caused the geese to change their priorities from survival to mating, and we are going to be caught in the middle! Come rain, come sleet, come snow, they have been here and never gone away, silly geese. Maybe they are the reason the seasons seems to be interchanging. Of course it is. Let's blame the geese, weird weather is obviously following them!

On the subject of the weirdly changing weather which is slowly hacking away at our immune systems why hasn't it affected the geese? Shouldn't some of them have frozen to death? Why do we see no goose carcasses? Where have all those dead geese gone? What sort of predator is eating them and more importantly, will it attack humans? Look, now you're wondering about your safety. Becoming wary about taking a walk in goose infested areas are we? AAAAAAH-HHHHH! They are coming for you! Joking, I'm sure we'll all be fine. Let's go back to the original topic, winter, or rather the lack thereof.

Winter never really settled down this year. It was restless and inconsistent. Now it would seem spring has finally decided to pay us a visit, cleared up the paths and watered the grass a little bit. It has been flirting with us all year causing everyone to desperately protest to international students that "Trust me, this is not a typical winter, we usually get snow, yes, sometimes even enough to go tobogganing." If the weather was a human right now, it would be menopausal, temperamental and experiencing hot flashes. "Global warming?" Many would ask, "El Nino perhaps?" That doesn't really explain why every day the weather has changed and keeps changing. Scumbag weather has decided to make Waterloo its location of preference for rapid changes, it's hot and it's cold, it's wrong then it's right. Will it ever actually make up its mind? Why?

But hey, we can ride our bikes and walk outside without coats, can't we? I guess Waterloo is getting the soft side of the weather. No giant dumpings of snow at exam time or tornadoes or hurricanes. We've actually got it pretty good. Take some time, visit with your friends, and together you can avoid angering the grumpy geese. Travel in groups my friends! Traveling in groups can protect you from anything!!!!! Even our scumbag weather. Travel forth, good luck my friends!

pRo9R4Mm1n9z phOr N00B5: LOLCODE 4Nd INTERCAL

J05HU4 K4LP1N
18 50FTW4R3 3NG1N33R1N'

HAI! Welcome to the final (and probably best EVAR) edition of pRo9R4Mm1n9z phOr N00B5. This week I'm going to be discussing my two most favourite and frankly my most used languages, LOLCODE and INTERCAL. Now, I know some of you are thinking, "is this a joke" or "those aren't programming language." Well, if you're in that boat it is time to put away that jetpack and having something to do here because I guarantee you will learn more this week than all the other weeks combined!

First up is LOLCODE, an esoteric programming language THAT IS PROGRAMMED COMPLETELY IN CAPS. The official website and repository for maintaining the language, lolcode.com, describes it pretty simply as "Programming the LOL way." But what does that exactly mean, well the best way to describe it is to put a simple program here. Unlike all those other boring programming languages LOLCODE is easily typed into sentences and is quite easy to understand. For instance, to make a program that asks the user "Where does the Narwhal Bacon" and responds accordingly is as follows:

HAI. CAN HAS STDIO? I HAS VAR. VISIBLE "Where does the Narwhal Bacon?" GIMMEH VAR. IZ BOTH SAEM VAR AN "midnight." YARLY. VISIBLE "We have a winner!" NOWAI. VISIBLE "GTFO!" KTHX. KTHXBYE.

As you probably have noticed LOLCODE is a highly dynamic and elegantly written programming language. Its uses vary from simple prompt applications to even more crazy dynamic programs like compilers, binary interpreters and interpreters for other programming languages. But enough with ALL CAPS LANGUAGES. Tiem for a lesson in how to be polite.

That brings us to INTERCAL the only program language that requires the coder to correctly balance his or her ability to be polite. INTERCAL is another esoteric programming language that is renowned for its simplistic but high dynamic syntax. Also it is the only programming language to feature a PLEASE modifier.

Well let's talk a little more about PLEASE. The INTERCAL compiler is like that really annoying teacher who yells at you when you are a suck up and at the same time when you forget please even once. But that is what makes the language awesome. On top of being able to create totally awesome programs that can make your friends, family, significant others and pets go, "WOW, THAT LOOKS SO COMPLICATED YOU MUST BE THE SMARTEST PERSON IN THE WORLD!!!11!!!11" INTERCAL also manages to keep you on that fine line between being one of those over apologetic people that makes Canadians look like whiners and being a rude ugly troll person. I think the best way to illustrate this is to show you a typical conversation translated into "English" with the compiler.

Me: "Compile." Compiler: "Thou currish dismal-dreaming popinjay! I shant compile thy code." Me: "Compile pretty please. Look I even brought you your favourite cereal binarios!" Compiler: "Thou dissembling beef-witted barnacle!" Me: "Please compile." Compiler: *compiles code*

So as you can see every time you code in INTERCAL a free lesson in how to use please is included every single time!

Well, that wraps things up for LOLCODE and INTERCAL. As well, this signals the end of the column for the term. KTHXBYE!

The Plummer's Crack: What Actually Happened in RCH?

TIN SOLDIER
NEWS BUREAU

For those living under a small rock, on Wednesday March 14th, 2012 a massive crack appeared in the middle of the second floor of RCH. Many have been speculating possible causes for this crack, but here at *The Tin Solider* News Bureau we have spent our days, nights and St. Patrick's Day researching into all the possible causes. So here is our list of five possible causes to the RCH crack:

1. **Alien Invasion**: If anyone has read or watched War of the Worlds you know that our alien overlords are hidden underground. Therefore, it makes sense for them to appear in our one underground lecture halls.

2. **Mutant Mole People**: The aliens also led to some speculation that there were mutant mole creatures unleashed on us by Guelph. But after we contacted and searched Guelph's campus we only found some drunk guy dressed in a furry costume pretending to be a squirrel. Therefore, we declared shenanigans.

3. **Diglett Invasion**: With speculation that the University of Waterloo may be opening a Pokémon Dojo to train people to become "Pokémon Masters" (Mathies), we have concluded that there is a possibility of Pokémon actually existing. The crack in RCH only reaffirms this. According to the Pokémon Black and White Pokédex, Diglett is "A Pokémon that lives underground. Because of its dark habitat, it is repelled by bright sunlight." RCH is dark and is underground; therefore, we have concluded that there is a 33.3% chance of Digletts causing the damage.

4. **The Titans**: According to Greek legend, Zeus banished the titans into an underworld prison. However, according to the 2011 film, "The Immortals," if Mickey Rourke ever manages to find "the Bow" the Titans will be unleashed on the world. Since Mickey Rourke is a royal baus and we speculate that the underworld in fact located under RCH (it is a dungeon…), there is a very large chance that the Titans have been unleashed.

5. **An Actual Plumber's Crack**: There are many people in plant operations that could be considers "plumbers." These people also do regular work on the piping in the many buildings on campus. Therefore, we have concluded that one of the 'plumbers' ate a burrito at V1 for lunch and then began work on the pipes. That person then farted… 'nuff said.

Moles claim to know nothing about crack Mikiwikipikidikipedia

Fashion Fermentation

Trends on the Rise

LEFONDA MADUC
4B OH NO YOU DIDN'T WEAR THAT!

Hay hay hay, I am taking a break from drinking beer to share some fashion tips I have discovered in my time as a fashion engineering student. Below is a list of my top five tips for looking like a formidable fashionista.

Rule #1: Camo everything, contrasting patterns make you more interesting and more likely blend into any landscape you come across.

Rule #2: Always wear white athletic socks with your formal wear, it will ensure you are able to run away from the hordes of girls attracted to your fashion sense.

Rule #3: The older the t-shirt, the better, especially if you received it for free. This shows that you are into vintage styles and more likely to appreciate more free stuff.

Rule #4: Always wear leggings as pants, less is more. Jeggings are event better for those who have trouble making choices between jeans and leggings.

Rule #5: Wear coveralls to all social gatherings, this will ensure people think you are hands on and just came off the construction site from a hard day's work. My female fashion forecast for the summer is poodle skirts, bustles, and wearing underwear as outerwear. The male forecast is elevator shoes, fanny packs, and fractal patterns. Remember fashion friends, stay sexy!

Beer Files

Review all the Beers!

BEERCA MCHEADSWALLOW
4B FROTHY LIQUID DREAMS

This week, I will review beer. But unlike those pretentious Beer Buzzers who take 800 words to review a single beer, I will review every beer in existence, or that has ever existed, or will ever exist for that matter.

The encounter with beer begins with the pungent aroma. Upon picking up a beer and bringing your nose to the rim of the glass, smells of rotting sulfur and mouldy bread will fill your nasal passages. This putrid aroma is so powerful that the belch produced hours after consuming beer will smell exactly the same as it did on the way down. Yes, the aroma of beer is so strong that stomach acid can neither weaken nor change its smell.

Next is the taste of the beer as it enters your mouth. The taste is quite distinctive really, you will find few things that make your tongue want to detach from your mouth and vacate the premises altogether, but beer has the unique ability to do this every time.

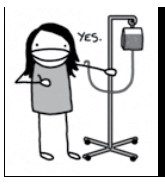
Finally, the taste of beer as it washes all of your taste buds in its frothiness as you attempt to swallow it, is similar to five day old coffee mixed with battery acid. Few have a gag reflex strong enough to actually swallow this head topped liquid and most end up spitting.

Next time you reach for beer, enjoy its full bodied potential.

Cheers,
Beerca McHeadswallow

Bean Buzz

You Can Call Me Ms. Bean!



ERICA WATERCOUSIN
4B BEAN STUDIES

Howdy my lovely readers, my name is Erica Watercousin and today I'm going to teach you about the wonderful world of coffee! I am an avid coffee drinker and it's basically all that is keeping me alive these days. Without any further ado let's get to the coffee!

Unsurprisingly, the best coffee comes from whole beans. Put them directly into the basket of your coffee maker as you brew. Even better coffee comes from a French press but unfortunately you can only get French pressed coffee in France, or if someone French is brewing it (and no, Quebecer's are not French). I really enjoy my coffee shaken, not brewed. To do this, go to your local paint store and insert your travel mug (full of whole coffee beans and hot water) into their best paint shaker for approximately 2 minutes. Once you have made your coffee, be sure to wait until it is at room temperature before drinking it. This will allow all the coffee flavour to evenly disperse into your coffee!

Now let's discuss the best types of coffee. Obviously, the darker the roast of your beans the more caffeine is in them. In addition, coffee gets better as it ages, just like whiskey. Store your coffee for a minimum of 2 years if you are aging it. Moreover, your workplace is an excellent source for great coffee – it's already room temperature, no waiting involved! If you are lucky it may even be the holy grail of coffee – instant coffee!!! Finally, I highly recommend Kicking Horse coffee – it's made with 100% real bucking bronco bits.

And remember, please try to act as a global citizen and buy unfair trade coffee. It gives more profits to the people who pick the beans, which is the best for everyone! YAY! Finally, if you ask really nicely, the CnD can make you espresso (it's just really fast coffee). There's a secret machine in the back room, if you want some fresh espresso please tell a cashier the secret code "The monkey is hungry". Give them a wink, they will know exactly what you are talking about and will get you your espresso.

Until next time, stay jittery and twitchy!

Good Bad Movie Review

LOSING MONE
4B FILMOTAGRAPHY

Remember when I said *Finding Nemo* (2003) is one of the best movies ever? I lied! It is one of the worst movies ever made. What a total piece of trash this film is. I curse the day I ever laid my eyes on Nemo's stupid gimpy fin.

Nemo's mom dies after she is eaten by a Barracuda. Aww maaaan why did I spoil that? Because I don't want you to be emotionally scarred like I was. Oh who is this delightful female fish? Nemo sure is lucky to have such a nice mom. Oh snap! She dead. What just happened? Why would you kill off the mother in a Disney movie??!!! It's a Disney movie; they aren't supposed to kill off the parents! No other Disney movie would ever do such a thing as that.

Furthermore, the environmental damage caused by this movie is horrific. Let me paint you a picture:

"Hey Mommy, Mommy! I want a Nemo fish!"

"I don't know hun, clown fish are very rare and should be left alone or else they'll end up extinct."

"If you don't buy me this I'll cry and cry until I die. I totally can."

"FML fiiine."

The dentist was incompetent, Sharks are not vegetarians, a fish could never pass through a water treatment facility without being ground to a guppy pulp, and a fall from a second story window in a plastic bag full of water would definitely kill the fish inside if it didn't burst the bag upon impact. What a stupid plan! Dreamwork's *Shark Tale* (2004) was a million times better.

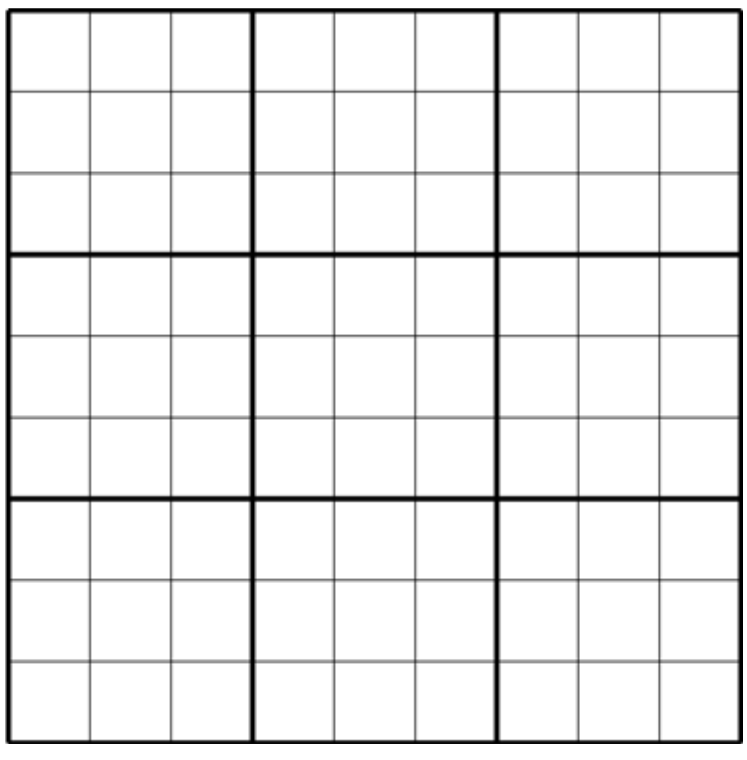
Who am I kidding?!! I can't f &^%$ing do this! I'm so sorry… They made me do this for *The Tin Soldier*. How could I ever write such lies! Blasphemy!

P.S. Shark Tale was a piece of crap.

The Tin Sudoku

A MAN, JUST LIKE YOU
4A POLITICAL NONSENSE

The Tin Soldier is taking a do-it-yourself approach to sudoku this week as a result of an unfortunate labour dispute with the union for our sudoku creation monkeys. The labour dispute originated with many of *The Tin Soldier* staff members taking sick leave. Many have brought up an apparent iron deficiency. This deficiency has been linked to the complete lack of iron in the cafeteria at The Tin Solder. *The Tin Soldier* is taking every effort possible to alleviate the situation, but is unwilling to increase the iron served or provide any health insurance that covers iron supplements. *The Tin Soldier* strongly believes that tin is better than iron and is unwilling to provide any support for those that might believe otherwise; whether or not *The Tin Soldier* is right or wrong. Please stay true to the grass-roots spirit of *The Tin Soldier* and take this time to make this sudoku puzzle for yourself. It can be fun, and will save *The Tin Soldier* the cost of resolving the labour dispute.



North of da 45th Parallel

BOB AND DOUG MCKENZIE
4B NORTHOLOGY

Hey der dears! How's it going der eh?

Griff & Amanda here from da great white north der eh. Perhaps ya have overheard us talking in our Nordern Ontario speak and have wondered what in da name of Tunderin' Jesus we be saying. So we have written a little poem for ya der dears so you too can join in on our Great Nordern Culture!

Higgidy diggity dock
Da norderner ski-dooed around da block
Da clock struck one
A moose der hun!
And dey fell asleep on da dock

Next time ya be passing north of da 45th parallel for co-op or just for fun, keep your eye out for your two favourite Nordern Ontarians.

Thumbs Left/Thumbs Right

Dean Sedra (About to have left)	Dean Sedra (Often Correct)
Winter	The Temperature
The Past Fedz Prez	The Tin Soldier for Fedz Prez
The Tin Soldier's sleep schedule	The end of the term is soon

REBUILD ALL THE THINGS!!!!!!!!!!!!!!!!!

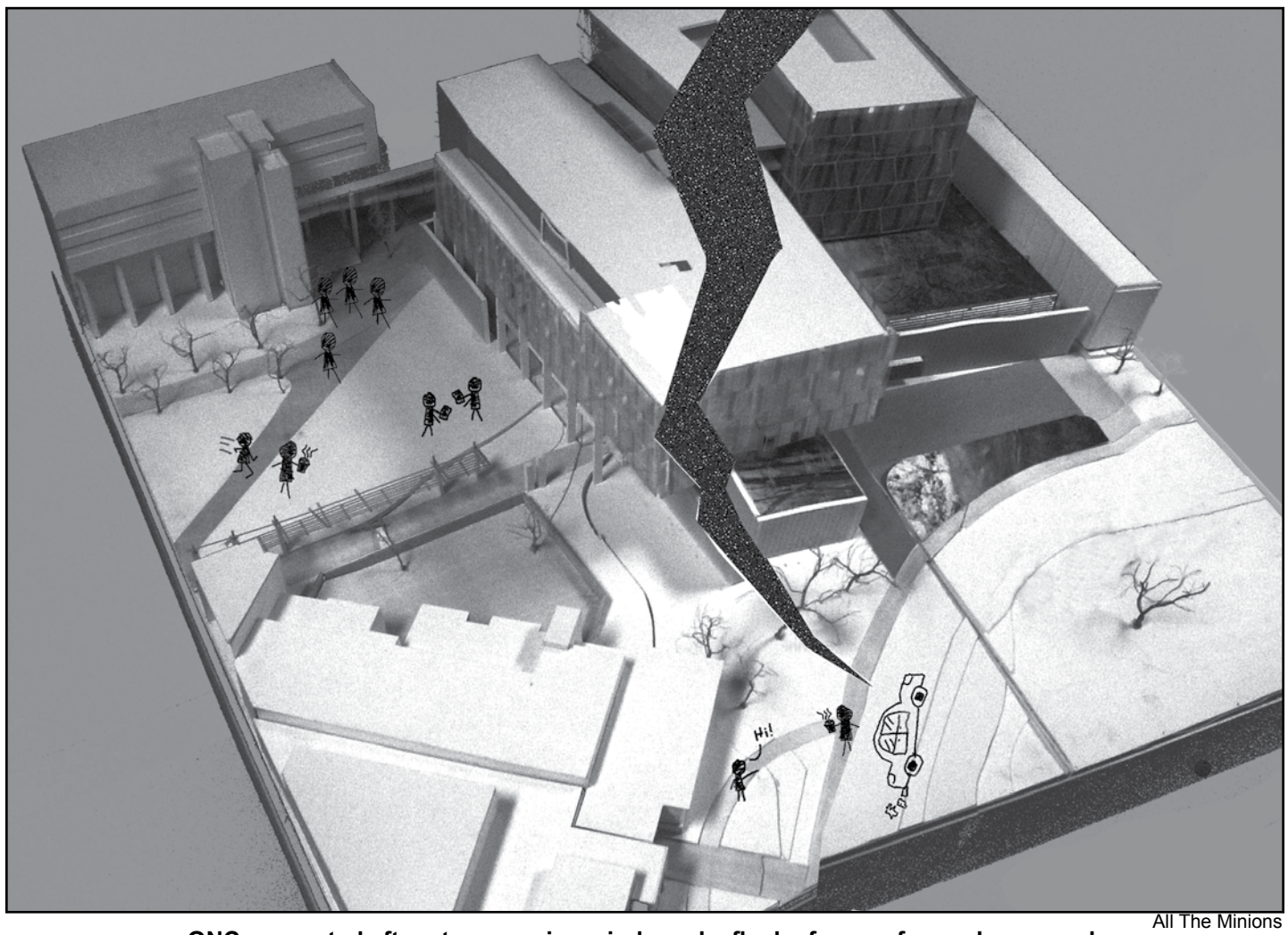
ANGELA EXPLOSION
1B DECONSTRUCTION

The end of the Quantum Nano Center is near...or is it? Having nearly completed construction on the building which was originally scheduled to conclude in summer 2011, the university has been dealt a deadly blow. Due to climate change in the Waterloo area, local winds have been increasing at an infinitesimally small rate each year. For normal buildings the increase in force, around 0.003 more Newtons hitting buildings per wind gust is negligible. However, due to the quantum nature of procedures in the Nano building, the tremors caused by the added force are unacceptable. The tear down of the Quantum Nano Center will take place April 23rd shortly after students have left campus for the semester. Other building flaws are also being cited which necessitate the rebuilding of the center which initially cost $160 million.

Students returning to UW for the summer will get to watch as workers disassemble the foundation which suffered structural damage during the earthquake on June 23rd 2010. Several beams also ended up several nanometers too far apart which could cause vibrations that would be damaging to ongoing experiments. When asked if cost was an issue, a university spokesperson stated that "Deficiencies in the current building could cost much more than $160 million down the road. Really, we [the university] are just cutting our losses. Greater precision will be expected in the future."

With only the Quantum Nano Center and the Health Services Building currently under construction, the amount of construction on campus is too damn low. The construction is also too damn concentrated in one part of campus. To rectify this situation reconstruction has been commissioned for the interior of DWE as well as the Village One residences. Recent studies have noted that detours due to construction increase the physical fitness of students and faculty substantially. So to decrease the ease of travel around campus, a significant amount of pavement has also been torn up. "We have become used to having loud sounds of construction near our classrooms. It's difficult to get any work done when there are no trucks and jackhammers in use.", an anonymous professor near DWE admitted. Because there are so many new shiny buildings on campus, including Environment 3, Math 3, Engineering 5, Engineering 6 and Engineering 7 (which was created by Nanotechnology and resides next to a blade of grass on the Engineering 6 lawn) UW admin have decided to tear up all the things to make them as new and shiny as the rest of campus. "Anyone can learn in a calm, uneventful environment. But It shows true skill and intelligence to learn in an environment that is noisy and chaotic. Waterloo students are the best out there, we just want to give them that much more preparation for the workplace."

For the past decade, the construction on campus has served to discourage geese from complete domination of campus. Our new buildings are where we draw the line between students and geese. Now, as the geese are becoming increasingly ardent in their defenses against humans, an increase in construction is necessary to continue asserting our bipedal, opposable thumbed dominance over the feathered foul. One thing that is certain is that when this war is won, Waterloo grads visiting campus will be guaranteed not to recognize their surroundings. This will save them from their own horrible memories of undergrad years filled with impossible assignments and sleepless nights. It's win-win situation. Continue rebuilding all the things!!!!!



All The Minions

QNC evacuated after strong spring winds and a flock of geese form a large crack.

The Physics of Snowboarding

A Piece Brought to you by the letter H for Hospital

GRIFF GRIFFERSON
4BONE FRAGMENTATION

Note: Maximum enjoyment can be derived from reading aloud, imaging the author telling his story...

A plank. That's what you get. Shaped and waxed to perfection. Boots, bindings, board, and helmet ready to go. Also, many layers to ward off another hazard that could make you hurt.

Simple physics: that's all you need. Imagine a block on a slope – that is you with the board. The only thing holding you to the hill is the normal and frictional force. Try the bunny hill and there's quite a lot of friction – almost the maximum possible while still moving. Try the double black diamond at Blue Mountain and you're asking for a very high vertical velocity, usually in the downward direction unless you're wearing a jetpack of some sort.

The first sketch describes the beginner snowboarder, happily starting out their day looking for success while trying something new. The second sketch is an attempt to skirt the line between the thrill of an adrenaline rush and inelastic deformation (that means whatever breaks doesn't bounce back, you probably knew that, but I like phrases like that). The second is much riskier than the first and should only be attempted if you are experienced or have some sort of anti-falling ray.

In order to provide you with a more comprehensive view of the rigours one must go through to become a Grade A Falling Ace, a review of snowboard wipeouts is provided to you, my lovely readership.

The Propeller: Going full tilt with the board pointed to the hill the rider bails while banking. To dissipate kinetic energy, the rider proceeds to enter into a rolling motion on the hill. Viewed from the side the board looks like a spinning propeller.

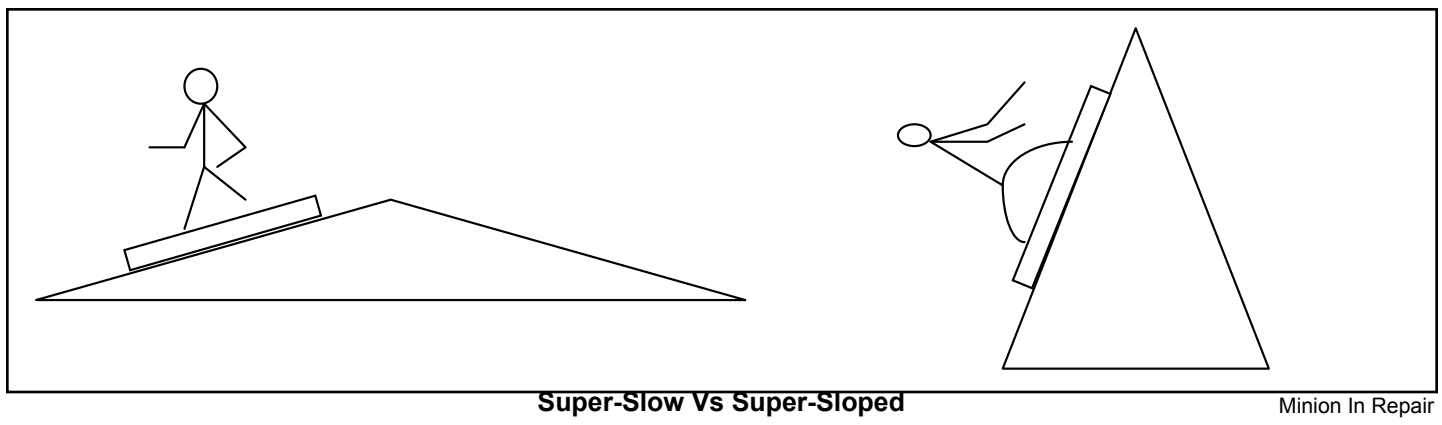
Double barrel roll: Falling face first, but a more experienced rider will learn to roll with the punches, or along them. Going for a tumble is not all bad, at least you get a view of what your feet would look like if they touched the sky. Twice!

I will close off with my favourite, **The Scorpion**. It's called the scorpion because it resembles a scorpion stabbing itself in the back with it's stinger. This technique is a rare and unique one indeed; only practiced by fallers of a seasoned and bruised nature. While riding heel edge the rider attempts to snow plow and slow down. Foolishness, the coefficient of friction is too high to stop you slowly! A graceful move, in what can only be termed as a swan dive, the rider leaps through the air headfirst, coming to a grinding halt on the side of the hill facedown. But wait! We're not done, he still has some rotational energy left! What shall we do about that you ask? Well, we'll swing the board back onto his back so that the snowboard edge can see just how tough the thin layers of fabric and human skin are against the almighty blade of justice known as the metal rim. This bold move leaves the rider a little more discouraged than before and in much more pain since there may be a gash wound across his back.

So, as you can see, gravity is not always our friend; it is sometimes our foe. If you find yourself alone at night, in a dark alley with gravity please run, run far far away.

My lovely readership, this experience with you has taught me that despite broken bones I will probably continue to do foolish things like this. Please enjoy your rides responsibly and safely and do not attempt any of the aforementioned moves listed in this article.

Much love,
Griff Grifferson



Super-Slow Vs Super-Sloped

Minion In Repair

Binary Word Search: Final Exam Practice

Binary Bob

1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	1	0	1	0	1	0	0	1	0	0	0	1	1	1	0	0	1	0	0	0	1	1	1	1	1	1	0	1	1
0	0	1	1	0	1	0	0	1	1	0	0	0	1	0	0	1	0	1	1	1	1	1	1	0	1	0	1	0	1	0	1	0	1	0	0	1	1	1	0	1	1	1	0	0	0	0	0	1	1	0	0
0	0	0	0	1	1	1	0	0	1	0	1	0	0	1	0	0	0	0	1	1	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	1	1	1	1	0	1	1	1	0	0	0	1	1	1	1	1
1	0	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	1	0	0	0	0	1	1	0	1	1	0
1	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0
1	1	1	0	0	0	1	1	1	0	1	0	1	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	0	1	1	1	1	0
0	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	1	1	1	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
0	0	0	1	1	0	1	0	1	1	1	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0	0	1	1	0	1	1	0	1	0	1	1	0	1	1	1	1	0	0
0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	1	0	1	0	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	1	1	1	0	1	0	1	0	0	1
0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	0	1	1	1	1	0	1	0	0	0	0	0	1	1	0	1	1	0	1	1	1	1	0	1	0	0	0	0	1
1	0	1	1	1	1	1	0	1	1	1	0	1	1	0	1	0	0	1	0	0	1	1	0	0	1	0	1	1	0	0	1	0	0	0	1	1	1	0	0	0	1	0	1	0	1	1	1	1	0	0	1
0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	0	1	1	0	1	0	1	0	0	1	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	1	0	1	0	1
1	1	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0	1	0	1	0	1	1	1	1	0	1	1	0	0	1	0	0	0	1	0	1	1	1	1	1	1	0	1	0
1	1	1	1	0	1	1	0	0	0	1	1	1	1	0	1	1	1	0	0	1	1	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	1	0	0	1	1	1	0	0	0	0	0	0	1	1	0
1	0	1	1	0	0	1	1	1	1	0	0	0	1	1	0	1	0	0	0	1	1	1	0	1	0	1	0	0	0	1	1	1	0	1	0	0	1	0	0	1	1	0	1	1	1	0	0	0	0	0	1
0	0	1	0	0	1	0	0	1	0	0	1	1	1	0	0	1	1	0	1	0	1	1	0	1	0	1	0	0	0	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0
1	0	0	0	1	1	1	0	1	0	1	0	1	1	1	1	0	1	1	0	1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	1	0	1	1	1	1	0	0	1	0	0	1	1
0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	1	0	0	1	1	1	1	0	1	0	1	1	1	1	0	0	0	0	1	1	0	1	0	0	1	1	1	0	1	1	1
0	1	0	1	0	0	1	1	0	0	0	1	1	0	1	0	1	1	1	0	1	0	0	1	0	1	0	1	1	1	1	1	1	0	0	1	1	1	0	1	1	0	0	0	0	1	1	1	1	0	1	0
0	0	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	0	1	0	1	1	1	1	0	0	0	1	0	0	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	1	0	0
1	0	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	1	0	0	1	0	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	1	0	1	0	1	0	0	1	1	1	0	1	1
0	1	0	1	1	0	0	0	0	1	1	1	0	1	0	1	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0	1	1	1	0	0	1	1	0	0	0	1	0	0	1	1	0	1	0	1	1	0
1	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0	0	1	0	0	1	1	0	0	1	0	1	1	1	0	0	1	1	0	1
1	1	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	0	0	0	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	1	1	0	0	1
0	1	0	1	1	1	0	1	1	0	0	1	1	1	1	0	1	1	0	0	1	0	0	1	0	0	0	0	1	0	0	1	1	1	1	1	0	1	1	0	0	1	1	1	0	0	1	0	1	0	0	1
1	0	1	0	1	1	0	0	1	0	0	1	1	1	0	0	1	1	1	0	1	0	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	1	0	1	1	0	1	1	0
0	1	0	0	1	0	1	0	1	0	1	1	0	0	1	0	1	0	0	1	0	0	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	0	1	0	0	1	1	0	0	1	1	1	0	0	1	1
0	0	0	1	0	0	0	1	0	1	1	1	0	0	1	1	1	1	0	0	1	1	0	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	1	1	0	1	0	1	0	0	1	0	0	0	1
0	0	0	1	1	0	0	1	1	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1
0	1	1	0	0	1	1	1	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	1	1	0	1	0	0	0	1	1	1	0	1	1	0	0	0	1	1	0	0	0	1	1	0	1	0	1	1	0
1	0	0	0	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	1	1	0	0	1	0	1
1	1	1	1	0	1	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	0	1	1	1	0	1	0	0	1	0	0	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0	0	1	1	0	1
0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	0
1	0	0	1	0	0	0	1	1	0	1	1	1	0	1	0	0	1	1	0	0	1	0	0	0	1	0	1	1	1	0	1	1	0	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	1	0
0	1	1	0	0	0	1	0	0	1	1	1	1	0	0	1	0	1	0	0	1	0	0	0	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
1	1	0	0	1	0	0	0	1	0	0	0	1	1	1	0	1	1	0	0	0	1	0	1	1	1	1	1	0	0	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1
1	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	1	0	1	0	0	1	1	1	0	1	0	1	0	0	0	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0
0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0	0	1	0	0	1	1	0	1	0	1	0	0	1
0	1	0	0	1	1	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	1	0	1	0	1	0	1	0	0	1	0	1	1	1	0	0	0	1	0	0	0	1	0	0	1
1	1	0	0	0	1	1	0	0	1	0	0	1	1	0	1	0	1	1	0	0	1	1	1	1	0	1	0	1	1	1	1	0	0	1	1	1	0	1	0	0	0	1	0	1	1	0	0	1	0	1	1

ASCII	10: \n	20: 9	30: Y	40: \	50: =	**Integers**	10: 120	20: 69	30: 244
1: A	11: 0	21: _	31: E	41: v	51: Q	1: 58	11: 222	21: 28	31: 142
2: s	12: 3	22: ~	32: L	42: i	52: .	2: 53	12: 84	22: 242	32: 98
3: \t	13: 2	23: `	33: P	43: [	53: ;	3: 218	13: 252	23: 148	33: 5
4: f	14: 1	24: >	34: :	44:]	54: C	4: 1	14: 76	24: 81	34: 223
5: d	15: 4	25: <	35: “	45: {	55: c	5: 255	15: 42	25: 66	35: 250
6: !	16: 5	26: M	36:		46: }	56: B	6: 0	16: 211	26: 101	36: 247
7: @	17: 6	27: T	37: *	47: (	57: D	7: 87	17: 34	27: 74	37: 150
8: #	18: 7	28: K	38: -	48:)	58: x	8: 25	18: 99	28: 171	38: 155
9: $	19: 8	29: I	39: +	49: ^	59: q	9: 152	19: 100	29: 199	39: 111

The *Tin Soldier* takes no responsibility for failures due to the completion of this word search. The *Tin Soldier* recognizes that this word search may not contain all the elements in the list above. If you are unaware of how to translate these items into binary, the *Tin Soldier* suggests that you use a web search engine to locate a translator.

THE TIN TRIBUNAL

The Velosoraptor, Software 2012

“What kind of fruit do you want in your chocolate birthday cake?”

“Not bananas. Bananas are evil.”
Bitter 4th Year

“Des ananas”
Some Frosh, 1B Hipster

“Orange you glad I didn’t say banana?”
T, 0011000101000010 SoftCore

“An apple, but make sure it’s quad-cored.”
Kevin Veloso, 4T Impeachment

“More banananananaz”
Nic-ohhhh, 1B Resistor

“Bananas or raspberries”
Let Nick Do It

Why High School is Too Easy Part 2: Fixes to the System

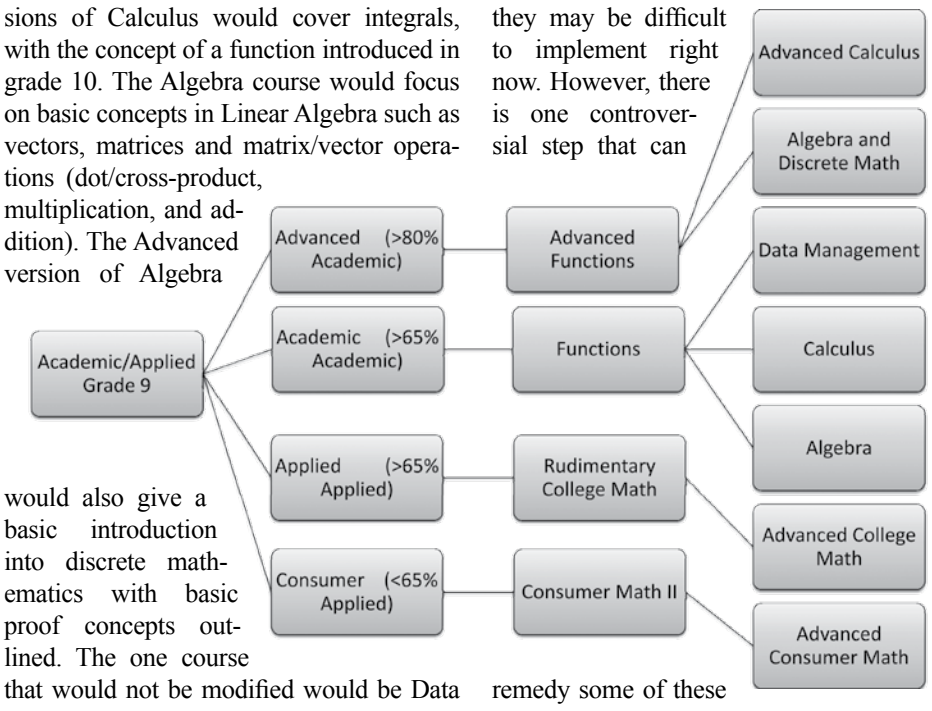
JOSHUA KALPIN
1B SOFTWARE

In part one of this discussion, we covered some of the major problems with the high school system in Ontario and some of the issues that students in that system face. Before reading this part, it is highly recommended that you read through the article in the previous issue as there will be multiple references we are going to discuss in this article.

As mentioned previously, the key problems facing the current high school system is its inability to adequately direct students to a correct post-secondary path while preparing them for post-secondary education. The first major fix is a restructure of math and science by removing redundancies and adjusting pre-requisites. So let's start with math as that is the core of the changes we will be making.

In the "new" system, grade nine will remain virtually untouched and instead students will be split into four different streams (Advanced, Academic, Applied and Consumer) depending on their grade in that course. Exceptional students would be given the opportunity to enter into the "Advanced" stream and students that have extreme trouble with math would be able to enter the "Consumer" stream. The main difference between the Advanced and Academic streams is the rate and breadth at which content would be covered. Advanced would follow a curriculum similar to that of the Advanced Placement and Academic would follow a curriculum similar to the current curriculum. Consumer math would provide the basic math (specifically statistics, basic algebra, etc.) that anyone would need to function in the workplace, while Applied would lead into College oriented math courses.

Moving on to specific course changes, Advanced Functions and Functions would be merged into the grade 11 Academic and Advanced versions of math, removing all the redundancies between the two courses. Calculus and Vectors would be split into two courses called Calculus and Algebra. Calculus would focus on limits, derivatives (implicit, related rates etc.), partial fractions, and applications of derivatives (physics, chemistry, optimization, etc.). The Advanced versions of Calculus would cover integrals, with the concept of a function introduced in grade 10. The Algebra course would focus on basic concepts in Linear Algebra such as vectors, matrices and matrix/vector operations (dot/cross-product, multiplication, and addition). The Advanced version of Algebra would also give a basic introduction into discrete mathematics with basic proof concepts outlined. The one course that would not be modified would be Data Management as it already serves its purpose as a basic statistics course.



In science there would be fewer changes except with pre-requisites and the implementation of Advanced versions of each courses in grade 11 and 12 that would cover material in greater depth. As well, Advanced Physics would have a greater focus on calculus in all concepts covered. Which brings us to the next change; grade 12 physics has a new pre/co-requisite in grade 12: Calculus. Almost all concepts in Physics were originally derived with calculus and it is silly that they are not taught with that in mind.

Now, as a number of people have mentioned to me, there are some inherent problems with implementing this system across the province due to funding, number of students and availability of teachers to cover these topics. These are all suggested changes that may need a drastic overhaul of the current system from the foundation up and it is understandable that they may be difficult to implement right now. However, there is one controversial step that can remedy some of these problems; abolishing the Catholic school system.

This is probably the most drastic and difficult change to implement because any time it is mentioned in an election platform that party generally is defeated (PCs in 2007). By taking two systems and merging them into one large system, you remove layers of bureaucracy, can merge smaller high schools into larger ones increasing course offerings, and remove the religious inequality in the current system. To take this one step further, doing a full review of all support staff for schools (analysts, bureaucrats, etc.) and removing costly unnecessary programs such as all-day kindergarten and extremely small class sizes can all redirect money to where it is actually needed; the students.

In the current system, students are supposedly the focus with the "no child left behind" policy that tries to get as many students pass as possible. This policy is one of the reasons we have ended up in our current situation with math and science. Let's take a student, Jimmy, who is struggling in grade 10 Academic math after getting a 60 in grade 9. Eventually, Jimmy becomes frustrated and, as a result, stops going to class and and passes with a 50. If Jimmy fails, it isn't his fault because he stopped doing work; it is the teacher's. Now, you may ask, "how is this possible?" In the current system, the teacher has to write up a detailed report on why they failed the student, even if they had done everything in their power to try to help the student. Clearly, there is a problem here. Jimmy should have been in the Applied stream, but, at the same time, Jimmy should not have passed the course. High school is supposed to prepare students for the real world but how can it do that by coddling everyone? Failure is supposed to be the medium for finding what you excel or don't excel at.

In this article, we've covered some possible fixes to the high school system in Ontario. Course changes, merging school systems, eliminating redundancies and abolishing the "no child left behind" policy all can contribute to the drastic reforms and improvements required. Many of these are not feasible without drastic changes in how the current system works and, in some cases, many of these suggestions may be next to impossible, but any improvement is better than none.

Engineering Society Events

March 18 - 31

Sun - March 18	Mon - March 19	Tues - March 20	Wed - March 21	Thurs - March 22	Fri - March 23	Sat - March 24
	• Running Club - CPH Foyer - *5:00 P.M.* • Iron Warrior Meeting - E2-2349A - *5:30 P.M.*	• Housing 101- POETS - *5:30 - 7 P.M.*	• Vision 2010 Town Hall - RCH 301 - *5:30-7:00 PM* • Coffee House - POETS - 7-11 p.m.	• Running Club - POETS - *5:00 P.M.*		• GradBall - Waterloo Inn - *5 p.m. - 2:00 a.m.*
Sun - March 25	**Mon - March 26**	**Tues - March 27**	**Wed - March 28**	**Thurs - March 29**	**Fri - March 30**	**Sat - March 31**
• Bus Push - POETS - *10:00 a.m.*	• Running Club - CPH Foyer - *5:00 P.M.* • Iron Warrior Meeting - E2-2349A - *5:30 P.M.*	• Novelties Fire Sale - CPH Foyer - *11:30 AM*	• Engineering Society Meeting - POETS - 5:30 - 7:00 p.m.	• WiE Day • Running Club - CPH Foyer - *5:00 P.M.*	• End of Term party - POETS - 7 p.m	

To see an electronic listing, visit **http://engsoc.uwaterloo.ca/events**
To have your event added, E-mail details to **agoddard@uwaterloo.ca**

Join the Engineering Society Google Group
https://groups.google.com/group/engsoc_a_general

Point Vs. Counterpoint

We Learn more on School Terms than we do on Work Terms

POINT

KATE HEYMANS
2T CHEMICAL

Most people would argue that during work terms we actually learn the skills that would be relevant to the full-time work that we all hope to obtain after we finish school. These people would be forgetting that not all of life is about that nine-to-five job. Our terms at school teach us far more than our work terms.

If you think back to your very first term at school, you will agree with me. This was the first time you probably stepped away from your parents' nest. You had to figure out the consequences of not getting out of bed in the morning. You probably learned that healthy food is recommended for a reason and that food poisoning sucks. Although, there was no one to stare you down when you came home late at night, you probably learned a couple of lessons about the importance of not staying out all night (and not drinking excessively either). Despite the fact that a first work term would teach you all these skills too, it is unlikely you would have taken that first step towards independence if your first school term had not taught you these valuable first lessons. Taking the first steps on school terms probably taught you independence.

School terms also teach you to make mistakes and fix them. This is an opportunity available only on campus. The consequence of messing up an assignment or even a whole term may seem grave but usually you're given a second chance and a fresh start. At work, you wouldn't be given a second chance at an important meeting with the super-important-CEO-type character. Not to mention that whenever students are on campus they can take chances and try crazy things. During a school term, there will be someone with the time, energy and creativity to help you on your venture no matter how crazy it is. After all, would it be possible to found a club that promotes eating cheese if you were on a work term?

The clubs and activities available during a school term also teach you important skills such as leadership, organisation and even just how to get along with other people. Although you may learn these skills during work terms, school terms provide an environment where you can choose the rate at which you will learn these. Depending on your comfort level, you may choose not to become the EngSoc president but you will still find plenty of smaller leadership opportunities which will help you develop these skills.

During a school term, students can also learn about their interests. The breadth of opportunities available on campus during school terms is much greater than that found within the company you might be working for during a work term. It is by exploring these other options that students can find interests beyond engineering such as ballroom dancing. Developing these other skills and establishing creative hobbies is just as important as the skills that we learn for professional purposes. School terms give us the opportunity to discover these other interests.

During school terms, students are all grouped together by interest. Whether these interests are because of common classes or due to clubs and student teams, being grouped together means students can learn from each other. Grouping together people with similar interests and expertise inevitably leads to more learning. These are topics that you are actually interested in and therefore strive to learn more about. By grouping together students with similar interests, school terms provide the optimal condition for students to share knowledge with their peers. Work terms don't usually provide an equivalent to this. It is during school terms that you can develop a profound understanding of the things that interest you.

On the most basic level, no one can deny that engineering students learn important concepts and theory in their classes each day while they're at school. Whether it's triple integrals in calculus or the back-side attack in organic chemistry, these are concepts taught at school that one would not learn during a work term. We only learn this theory during school terms.

School terms also teach you to learn things. It is true that most of the concepts we learn in class may never have to be applied in "real life"; however, it is learning how to learn which is the most important skill to learn. According to the Engineering Code of Ethics, engineering practitioners must have knowledge of developments in their area and must be competent. These requirements mean that those who wish to be professional engineers must undergo continuous learning to ensure their competence in their fields. School terms teach one how to develop this skill of continuous learning.

Engineering students learn everything from independence, to group work, and to how to learn during a school term. Although these skills and lessons can also be learned during work terms, they are more likely to be developed during school terms. Overall, far more learning happens on campus than once you leave.

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.

COUNTERPOINT

KEVIN JOSEPH
2T NANOTECHNOLOGY

A classical education would require familiar training in math, science and English, but also include Greek, Latin and calligraphy. While some might find this appealing, others might point out that four courses in calculus is a perfectly adequate education in Greek. However, I would venture to say, that the majority of Engineering students are not interested in this archaic and rigid sense of education. So what is a modern, practical education? Although most plummers came to Waterloo because of the beautiful campus and benevolent fowl, some actually chose the school for its co-op program. Although many might claim that co-op is a supplement to your "real" education I intend to argue that co-op is actually the more valuable half of your learning experience, and school is the supplement.

The Tatham Centre: Where work meets school Krishna Iyer

I want to be clear, school is very important. It is a critical experience in your growth. Your university career is unique, precious, and your life will never again be quite like it. As wonderful as that is, it also reveals the limitations of how much you actually *learn* there. Oh, sure, you learn Fourier transforms, LRC circuitry and thermodynamics. You learn so much theory that it is sometimes actually surprising that it is physically possible. But you aren't a mathematician, or a theoretical physicist. The world needs Albert Einsteins and Paul Diracs, but as an Engineer, a practical problem-solving innovator, these minutia are little more than esoteric trivia. There are important skills and talents that are necessary in your life but you learn these when you actually get a slice of life in co-op. In school you'll learn all about the twisting backbones and confusing side-chains of polymers, but in co-op you are exposed to the entangled mess that is literature review.

Journal articles and patents do not read quite like your textbooks. In your labs you might be exposed to novel experiments like producing nylon, but on co-op you get more of a sense of what Caruthers must have gone through. Your neat little lab manual is a joke compared to the dauntingly ambiguous open plane of actual research. And that goes for a lot of problem solving in general. In courses, you can tell what the professors and TAs are looking for you to say or utilize. You're presented with a very tricky challenge; until you realize that the technique you were taught last week works ideally here. School is kind of like the Legend of Zelda; the dungeons look terrifying but it's always so convenient that the last weapon which Link stumbled upon in his quest solves all the puzzles, and then to boot you have TAs shouting "Look! Listen! Maybe you should apply this formula which the professor underlined and repeated thrice!" In co-op you have the inventory that you've acquired throughout the dungeons of school but now you actually have to figure out when and where to use what. And frankly, there are a lot of slingshots and butterfly nets.

People will often talk about how in school you learn to handle responsibility, that it's a testament to work ethic and applying yourself. While school certainly challenges you, it does so in an impractical way. In school you learn to prioritize. There is always collateral damage and write-offs. But when you're working and a project is really hard, there isn't the option to just "let this one slide" and opt for a different marking scheme. There are consequences that are bigger than you. People are depending on you; your responsibility is to them, and to whomever they report. Real responsibility doesn't have a bell curve option and you learn that in co-op.

It will also be said that school is a great environment because you can meet so many people and be exposed to so many ideas and really open your mind to the world. University is a haven of open-mindedness and progressive ideas, right? Well, not exactly. You will certainly meet lots of interesting people in your University career, but your social circle has been many-times distilled. The people around you are all a similar age, have similar interests, have similar ambitions and are doing similar things in their day-to-day life. In co-op you learn how to have professional conversations with people who are not necessarily fans of Arrested Development and Community, people who do not care passionately about the latest advancements in LEDs, and who have no interest whatsoever in B.O.A.T. racing. They range the age and political spectrum in ways you never experience at Waterloo. It's great that you can get along with people who are different races, genders and sexual orientations. Try getting along with someone who thinks evolution is a hoax, or that Obama is a socialist. Now there is a lesson in diversity and tolerance; a lesson that we miss out on surrounded by a group of people in which an extremely disproportionate amount can name 151 Pokémon and discuss the power struggle between Goku and Vegeta.

Ultimately, I'm arguing what you already know to be true. When working on a project, interviewing for a job, or applying past experience to a new endeavour, the chances are you're reaching into your memory to pull out experiences from co-op first, then maybe labs, but hardly ever classes. Does that mean school is useless? Certainly not! University is a great life experience and prepares you in many ways, but as for where you actually learn more? That is definitely co-op. The place where you learn actual skills, realistic problem solving, the meaning of responsibility, and how to interact and get along with many different kinds of people.

Depression

Searching For Answers to a Common Phenomenon

LAWRENCE CHOI
1B COMPUTER

It is a phenomenon that can affect anyone. It is a problem even in countries with high standards of living. It is so widespread, yet so commonly misunderstood at the same time. It is depression. To see someone suffering from it is one thing, but to actually it experience is a completely different story.

Every day hundreds of choices are making their demands. Whether it is school, work, or family, people are often required to pay attention to many details at once. Most of the time, we are so busy with living our lives and making decisions to the point where we have little time to take care of ourselves. And even if our demands are few, freedom can also limit the amount of time we have to look after ourselves. Having too much freedom can result in us having too many places to go, and consequently we are unable to go anywhere because we have too many choices. It should come as no surprise that the abundance of paths we have can overwhelm our well-being. Problems begin mounting to the point where it begins interfering with our daily functions, reducing productivity and joy from hobbies.

There are several reasons why I believe depression is so often misunderstood. The first reason is that to the average person, a person that is visibly upset is simply going through a phase and will eventually overcome it. Some will even say things along the lines of "that person has no reason to be unhappy, just look at how lucky they are compared to those people in third world countries". Such a judgement is, in my opinion, rather premature and uncalled for. Many people fail to understand the gravity of the condition and what that individual is going through. We often do not know about the individual's background and history, nor was the comparison a fair one. The assumption is that things are going to be fine, but nothing fixes itself without assistance.

Another reason why depression is often downplayed is the sheer abundance of information that we have to deal with. Media often promises magical fixes to our problems and the news reports events from around the world. While not too long ago news often spread through word of mouth or physical media, the rise of the internet has allowed us to learn about events from across the globe in a matter of seconds. The problem with information being everywhere is that there is little consensus. It can be argued that there is no absolute truth since truth is merely a matter of perspective. As a result, it becomes difficult for people to seek the help they need. Papers are often checked thoroughly before being published, but posting information on a website has no such requirement.

Finally, the "survival of the fittest" mantra of society has not helped less fortunate individuals. While the saying is generally true, the problem is that it causes individuals themselves to downplay or hide their problems. In a 2008 survey conducted by Depression Alliance 79% of respondents felt that revealing their problems at school or work would be detrimental to them. Additionally, 37% of respondents felt that help was seldom or not available when they needed it. Common symptoms reported included anxiety, loss of interest, low energy and concentration, and poor sleep.

The impact of depression is actually much deeper than we think it is. When we are only looking out for ourselves, it's easy to miss these little nuances that people give off. If someone is in need of help, try to do your best to reassure them. Everyone has potential; some people just need a little help to attain it.

Connecting the Pieces

UMAIR MUHAMMAD
4B ENVIRONMENTAL

Social activism today is rather segmented in nature. Thousands of groups and organizations exist which work on a thousand different issues – those working on the same or similar issues employ different approaches. There exist groups which work on environmental issues, others concerned with homelessness and drug abuse in inner cities, others still who work on issues of poverty and development in distant countries. It could be said that there is a huge diversity in interests, as well as diversity in tactics, among those working for progress in the world. Put in this way, the segmented nature of activism appears a wholly positive feature. There are, however, problems with segmentation in activism to be concerned with.

Martin Luther King, Jr is remembered foremost for his role in the 1960's civil rights movement for African American people in the United States. King understood that the issues that concerned African Americans in the United States were inextricably linked with other issues of social justice. This is why he decided to speak out against the Vietnam War. Many of his allies, King reported, were not pleased: "Peace and civil rights don't mix, they say". For King, there were very clear connections between them. He pointed out that poor African Americans , and the poor in general, were disproportionately represented in the military; they would fight and die in the war in disproportionately high numbers. King also noted that while an estimated $500,000 was spent to kill each enemy soldier in the war, only $53 dollars were provided for social services for each person in poverty at home. If he did not raise his voice against the war, he would not be able to tell himself that he was sincerely fighting to obtain equality and justice for his race.

King went farther than criticizing the Vietnam War by pointing out that the general nature of existing society as flawed: "We must rapidly begin the shift from a thing-oriented society to a person-oriented society". Recognizing the structural roots of the oppression thrust upon his people, he characterized the struggle for racial equality as a lever for change on a larger level:

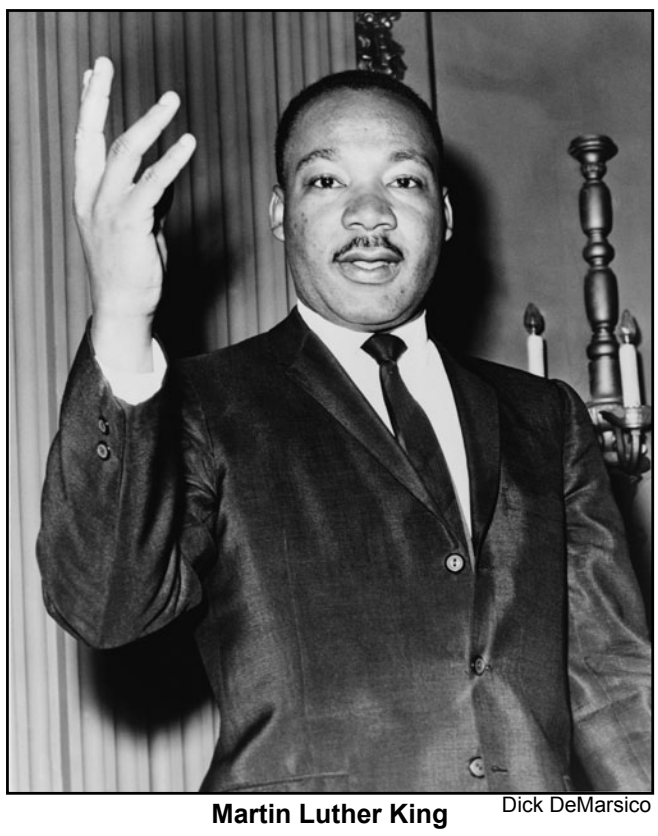
"The [African American] revolt is evolving into more than a quest for desegregation and equality. It is a challenge to a system that has created miracles of production and technology to create justice. If humanism is locked outside the system, [African Americans] will have revealed its inner core of despotism and a far greater struggle for liberation will unfold."

Such an outlook is not often found among modern-day activists. The idea that the various social justice struggles could be related is not given much attention. As a result the structural roots of the various social problems that confront us are kept hidden and the structures continue to exist. Also, the various synergies that could be built to push for progress remain unconstructed.

This happens, at least in part, because activists fear censure-ship. As long as we do not broach a particularly sensitive topic such as war, and especially if we keep quiet about the structural nature of injustice, we can expect to have little trouble while calling for progress in some specific area of social life; we can even expect to win laudations for doing our work. King expressed consternation at the fact that the "nation and… press… will praise you when you say, 'Be non-violent toward [segregationist Alabama sheriff] Jim Clark,' but will curse and damn you when you say, 'Be non-violent toward little brown Vietnamese children'".

It is imperative that we fight for progress with an understanding of the links between the different problems that concern society. Out of necessity, it may only be possible to work on a particular issue at any given time, but this work should be done with an understanding of the context which surrounds the issue. Nothing exists in a vacuum and not accounting for context while advocating for change can create more problems than existed to begin with.

Moreover, properly addressing social problems requires the reshaping of the structures which produce them. The task of understanding the structures which produce any particular problem becomes easier when we understand the context within which it exists and we link together the various problems produced by the misshaped structures of our society.



Martin Luther King Dick DeMarsico

Virtual Communities

Bridging, Supplementing and Even Superseding Real Ones? (Part Two)

ALEXANDER HOGEVEEN RUTTER
4B ELECTRICAL

It is clear the internet is forcing change to even the most obstinate of industries. Companies like CASH music, Amazon and Netflix are finally starting to shed light on the cracks in the broken business models of the music, book and television industries, respectively. In fact, such internet institutions are quickly becoming more powerful than many physical institutions. For example, top Twitter celebrities have tens of millions of followers, while top youtube channels can attracts millions of subscribers and fandoms of hundreds of thousands of members.

Rather than single-issues campaigns or transactions, we are starting to see actual semi-permanent communities - the World of Warcraft community has two million members more than the population of Switzerland. Many such communities have their own currency, linguistic artifacts, celebrities, memes and commonalities. Certain communities spring up for philanthropic reasons, like Kiva and GOOD. Crowdsourcing is becoming common and perhaps a tenth of all marriages now began as online relationships. It is not uncommon for friendships, loyalty and even love to spring from online, rather than physical sources.

As the online world grows in importance, governance structures will need to evolve to support these communities. When the average person turns online to answer questions about their health, hobbies, religion, or relationship, why shouldn't they be able to turn online for political action?

Web-based companies, like Google, already exert a great deal of control. Google, with up to a billion users, operating in 60 countries and in more than 130 languages, is one of the most international organizations in the world, arguably with much more international input than our current supposed international institutions such as the United Nations and World Bank; the former's security council is effectively controlled by only 5 nations, while the latter has a virtual guarantee of an American head. If we accept that Google can stand up to countries like China, is it not reasonable to ask what makes Google's governance more legitimate?

This internationalization is beginning to have real impacts. While we may protest at the Conservative government's attempts to invade our internet privacy, Google's new privacy policy may in fact impact us more (in terms of how it affects our day-to-day information stream) and is far more reaching in terms of number of people. Less than six million people voted for the Conservatives in the most recent Federal election - think of how many online movements can attain similar support. While one could argue that online support is simply easier, how much effort does it really take to walk down to a polling station and vote? In terms of relevance, people are increasingly able to work, educate, socialize and volunteer online. Sure activities like eating and sleeping still take place in the physical world, but are these really how we craft our identity?

As online players become increasingly relevant in our lives, will democratic structures evolve to meet this growing need? Perhaps there will one day be a Google parliament and its decisions on privacy, investment, censorship and the like will be more important than those made in bricks-and-mortar parliaments. No longer is our political activity constrained by our geographic location, and as the importance of online communities grows, so too should the availability and powers of online forums for collaboration and governance. Online communities will continue to grow and we must evolve to manage this growth. National laws and governance became relevant as small communities banded together to form nation-states, kingdoms and empires. International laws and organizations became important in the era of globalization. Therefore perhaps one day cyber laws and organizations will attain increasing legitimacy and breadth in the age of information. I would encourage everyone to think and discuss what online governmental bodies should look like and how each of us can participate in and shape them in their infancy.

Going Grey

LINDSAY BOWMAN
3B ENVIRONMENTAL

Back when I was in 2A, we had a guest lecturer in our Introduction to Environmental Assessment course who talked about environmental issues and problems with the environmental assessment process. I don't remember the details but what I do remember is the underlying tone in his presentation – the world is doomed. Basically, his main point was that we are past the point of recovery. We have brought a problem upon ourselves from which there may be no recovery. Leaving that lecture, we all felt kind of depressed about the state of the environmental world, but easily brushed it off and moved on.

But how do we change? Can one piece of recycling at a time really work? My opinion – no. Using bottled water as an example: if you don't buy that bottle of water, then someone else will. So go ahead and do what you can for the environment and feel great about doing it. It doesn't change the fact that the manufacturer who created that bottle is creating millions per day (the world consumes about 200 billion plastic water bottles per year). What about recycling? The truth is that it is simply too expensive to recycle. Most companies would rather create new bottles than recycle them because it's cheaper and easier. After all, in the corporate world, what matters is money, not sustainability. We are living in a corporate world so unless the corporations change, the world can't change.

What's my point? There is nothing we can do to prevent the environmental world from turning into a corporately manufactured world unless we come together as a population – not as a city, or a country, or a continent – as a population. What are the chances? Money rules our world and as long as there is an opportunity for expansion, we will expand and we will continue to do whatever it takes to make money. When it comes down to it, corporations don't care about the environment unless it somehow saves them money or makes them money.

You may be wondering how an environmental engineer can sustain (pun intended) this point of view. After all, this is my life's work, right? The way I see it, there is nothing we can do. There are two key issues:

- The human population is growing rapidly
- The corporate goal is to make money, even if that means choosing the option that is not environmentally sustainable

Since the corporate world controls the environmental world, there is not much we can do as individuals to change it.

The good news? The environment is not passive. Have you ever tried to change the path of a river? It fights to get back to its natural path. That's what the earth will do. It will fight back. It will return to normal in the end. It will bounce back. But will we?

Like I said, the shift from the environmental world into the manufactured world is not going to change unless the corporations change. So educate yourself! Pick a corporation that you're concerned about and do some research of their production methods, their environmental resource strategies, the amount of pollution they create, and so on. If you come across something that doesn't sit right with you, then do something about it! Write letters to them, or tell your friends about it. Knowledge is power. If more people know about the issues, then there is a greater chance that we can start changing!

Now in 3B, I'm not sure if I completely disagree with our guest lecturer. Think about it - we are constantly expanding our manufactured world into the environmental world. The population in 2010 was roughly 6.8 billion people. At our current rate of reproduction, approximately 2.7 children per woman, we will reach a human population of 12 billion by the year 2050. To keep our current living conditions, there is no option but to expand. Eventually, if we don't change, the world will be entirely manufactured. Consider the amount of waste and pollution generated by high-population areas such as Beijing or Los Angeles and then spread it over the entire world.

Your Biweekly Challenge: Invest the Monies

ROY LEE
2T NANOTECHNOLOGY

Investing money is a pretty simple concept. In theory, you pick something to invest money in, your investment gains value over time and you end up with more money. Before we go any further however, you should know that the options for investments range from crazy to ridiculous and you need to be able to evaluate which one is best for you.

So, to start off, there are some pretty basic investing plans that we constantly hear about - these range from straight up saving accounts that most of us grew up with to mutual funds, stocks, and bonds. There are also all those crazy acronym ones like the TSFA, the RRSP, the GIC or, for some of us, the RESP. There are so many; what does it all mean and which one is best for you? Now we are no financial advisors and we do not know every single detail about investing. However, we can give you information so that, when you do talk to the financial advisor at your bank, you know what you want.

Before we really start talking about these portfolio options, you need to think about you:

1. What are your investing goals? Maybe there is a fourth year trip you want to go on. Or maybe you want a new computer. Maybe you are thinking about buying a house or an apartment. Having a clearly defined goal will help you actually save the money you need for whatever you want.

2. What is the time frame you are looking at? This is related to what you are saving for. The time frame on a computer might be somewhere like six months. Saving for a house might be a few years or more.

3. Do you need your money and how is your cash flow for the time frame you are considering? This question is more for how liquid do you want your monies? By liquid we definitely don't mean molten gold... It's about how fast you might need your cash. Would you be willing to invest your money for a long period of time without accessing it? Are you making big purchases like tuition, a computer or textbooks? Even living expenses might even affect your cash flow.

4. Finally, the most important questions of all is: How much risk can you tolerate? You need to know if the ups and downs of the stock market will make you sick to the stomach. You might be too queasy to bear the sight of your hard earn pennies go for a turn on the market. Maybe you like to play it safe and protect your capital. Higher risk might mean higher returns on your investment but you also risk losing that money. Lower risk on the other hand might not have such a high yield. Neither option is better but depends on what is important to you.

You should think about these factors before going any further since these will determine the types of investments that you might like to make. Just like when you're trying to reduce your expenses, the first step to making more money is to know yourself. So, as a goal before the end of term, start thinking about how you characterise yourself as an investor.

Hopefully sometime in future issues, this column will continue with topics about different options for investments and different governmental incentives but, for now, you should know the basics. Remember to be money-savvy and don't forget to complete your tax forms by the end of the term.

Mike Russell
Exchange Tower in Toronto

The Unseen Places on Campus

LEAH KRISTUFEK
1B CHEMICAL

So you have been on campus for a while, you have figured out where your classes are situated, and you know the difference between RCH and CPH. Heck, you probably even know what half the abbreviations stand for, but have you ever taken the time to just wander around exploring? UW has been home to intelligent, inquiring students and crazy profs for well over 50 years now and has been subject to many different architectural designs. In particular, you may have noticed the cinder block design engineering seems to hold so dear and be vaguely aware that part of DWE's renovations includes the removal of asbestos. But have you ever taken the time to wander in to the regions you don't usually inhabit just to admire the designs of the rest of the world and the interesting spaces created by architects and designers? For instance, did you realize that the sixth and seventh floors of MC have no center? Offices look into a gravel-covered courtyard with a very interesting flag thing at its center. The same can be said of the upper floor of PAS, whose construction is very like that of a castle. The kind of castle created to withstand cannon ambush. In fact, Arts buildings are far more creative than those for engineering and as such, they are far more interesting to explore.

The cool thing about living on campus and attending classes here is the wide range of buildings. Only in an academic setting can we randomly explore so many interesting things pertaining to or inspired by such diverse subjects. In your wanderings, you will find many exciting new things. Want to learn more about flora and fauna? There is a sizeable taxidermy display on the third floor of Biology 1 where you can increase your knowledge and be amazed by the different skeletal structures. Did you know sea turtles have beaks? Neither did I (if you did, congrats on your super awesome knowledge of random things!). If you head along the long hallway, you will soon come to the upper parts of EIT, also known as the "Dinosaur Building." Downstairs, there are some pretty cool public areas. There is even a fake mining shaft connecting EIT to the Chemistry Building, and there are dinosaurs. Who can be unexcited about dinosaurs? However, if you climb up the super long staircase to the very top floor, you can experience true awe. Now I may be slightly biased, since my hometown had very few tall buildings I find heights exciting in general, but the view and design are pretty cool. If you look out of the window it's possible to check out steam rising from one of UW's extremely expensive cooling units. You can also see the physics observatory and just generally observe that the world is pretty awesome from above. EIT is very modern and clear cut, similar to the newest engineering buildings (in use that is; I know nothing about the Nano building) but manage to still hold out some secrets, especially in the form of quietly whirring machines. Finally, if ever you are feeling down, I would recommend that you venture to the overpass to Engineering 5. Every single time I travel along it, I feel like Darth Vader travelling through the Death Star.

Exploration is fun and the discoveries made while travelling through places you have never been before can result in new interests, more efficient indoor routes, and sometimes even a meeting between old friends. I am only in my second term here, but already I have discovered many things that have put me in awe of the minds which walked these halls before me. If anything, these buildings, constructed to house our expansion of knowledge, become more of a home. Everyone who passes through leaves a piece of themselves for others to find and wonder at. (Have you ever discovered the graduation picture of someone you know and been struck by how much everything has changed since?) Exploring campus is practically a no-doors-barred experience, unlike residential areas where you must content yourself with the view from outside. It's like a museum or science center that is open at absolutely all hours (assuming you know where the unlocked doors are on weekends). As an amateur explorateur, I encourage you to (legally) have fun, discover new places and always go higher or lower than the floors and classrooms you see every day. The world is yours to discover! Oh, and don't even get me started on the environment buildings! It's like a jungle in there.....

Hacker Warfare

NACHIKET SHERLEKAR
1B NANOTECHNOLOGY

Throughout human history, there have been records of secret societies who strove to right certain wrongs, even if it meant bending or breaking the rules. It is no different in today's digital era, where a multitude of hacker groups have formed with the supposed noble intent of exposing classified information or compromising the security of organizations, thereby pointing out the flaws in these systems and showing that there is scope for improvement.

In the recent past, there have been several incidents involving hacker groups who have done everything from taking down official government websites to hacking user accounts, just to point out security flaws. But, how far should these hackers be allowed to go in the name of justice before a line is drawn?

Hackers are thought to be antisocial people who prefer to work on their own. While this may be the norm, there are many organized hacker groups that have made a big scene with their large-scale operations. LulzSec, a hacker organization that formed in the middle of 2011, has, since its inception, been a part of several projects to disrupt security and cause mayhem. Their first major attack was against Fox.com, which they attacked after the rapper Common was referred to as 'vile' on the Fox News channel. They have leaked user passwords for websites such as LinkedIn, Facebook, Amazon, etc. They have knocked gaming websites, including Minecraft, League of Legends and, World of Warcraft, offline; which obviously didn't swing well with public sentiment. At one point they took down the CIA website for two hours. After several coordinated attacks in May and June 2011, the group informed they would be giving their final information release on 26 June. It was recently revealed that the group's unofficial head, going by the name Sabu, was in fact working for the FBI and helped root out the other members of the organization.

Anonymous is another hacker group named because of coordinated attacks by many different individuals while maintaining their anonymity. The group is not an official organization, it is better described as several people taking part in various hacking exploits working under the name 'Anonymous'. This group of people have collectively carried out hundreds of distributed denial of service(DDoS) attacks. One of their more recent operations was against Universal Music Group(UMG), which had filed a lawsuit against, and as a result brought down, Megaupload.

What defines the good intentions of a hacker, and where do we draw the line between hacktivism and morality? Most hackers claim that their intentions are not to cause trouble, but rather to see how different security systems work and for the challenge and thrill of getting past them. Most often, such attacks result in the development of a better understanding of the security system and how its various loopholes could be fixed. However at the same time, there have been many cases of hackers accessing restricted information and distributing it to the public, most often to undermine the people they attack or to reveal information they believe is being unfairly hidden from the general population. WikiLeaks is an important example of the latter case; the organization has, for the past few years, gained access to a lot of data from the US government archives that include reports, articles, conversations, etc. that have shaken the world and caused a lot of questions to be asked.

So what's the conclusion? There are evil hackers, honest hackers, and those who straddle the line between the two, but all hackers have a common curiosity for the way the internet works and how to control it, whether for good or for bad.

Engineers and the World

Environment

LEAH KRISTUFEK
1B CHEMICAL

Who enjoys long walks in the park, friendly picnics with all reusable containers and wading through streams in search of interesting objects? The faculty of Environment, that's who! This often overlooked faculty occupies the Environment buildings, surrounding themselves with living things: geese, plants, geese, river creatures and naturally, because this is the University of Waterloo, more geese! They aren't hippies, just people concerned about the health of the planet.

Bio/ native habitat/ lifestyle: The environment is important to us all, especially to environment students. They chart it, draw it, and take samples of it. But hippies they are not. They realize that often times there are no differences between recycling and throwing things in to the trash. To maintain their links with the environment at all times Environment students surround themselves with wildlife, sometimes even in the form of fellow students. Although they maintain their links with the natural world (sometimes by building living walls), Enviro students often feel the need to return to the wilderness. No wonder we never see them!

How we interact: who doesn't like bonfires and campfire songs? Enviro students are very relaxed students, being outside and surrounded by crisp fresh air makes environment students awesome, easygoing people. In the future we may work closely to environment grads in design projects, probably in environmentally sensitive areas.

Common areas of interest: Landscaping anyone? Like most people at UW Enviro students are usually interest in their area of study. Although the Environment Faculty is not well represented in numbers they do get to explore the complexities of modeling for a variety of environmental situations. The biggest difference? Enviro takes English! (Oh, the terror. Please no!)

Verdict: Enviros are like ninjas, they are around, but you never see them. They are definitely pretty cool though, a definite three green thumbs up!

Amanda's College of Cultural Knowledge

4th Year Room Etiquette

AMANDA LEDUC
4B MANAGEMENT

During my five years here at UW, I have observed behaviour that has both impressed me and made me think, "Some people's kids…". I present to you the top five things which I have observed in my fourth year room over the past 11 months that you should do, and consider avoid doing so you may have a peaceful and enjoyable fourth year room experience.

DO

• Listen to others and let them finish their sentence before cutting them off

• Hold the door open for a person walking ≤ five feet behind you

• Log off the computer when you are finished

• Put your trash and food crumbs in the garbage or recycling

• Refill the water in the Keurig if your coffee finishes it

DO NOT

• Play music in study spaces and then sing along (especially if you are off key)

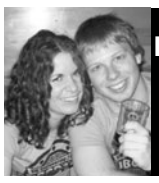
• Read or watch a video with headphones on and burst out laughing loudly while others are studying

• Play Starcraft constantly while screaming like a girl and shouting to your team-mate across the table "Aaah, The Zergs are coming! I'm being canon-rushed! Help me! Aaah!"

• Scroll through every irritating ringtone on your phone to decide which you should use for the next 48 hours before you do it again

• Have intimate relations on the communal couches, or even joke about the things you'd like to do with your imaginary girlfriend if nobody else were in the 4th year room … this is a study space, not an on-call room in Gray's Anatomy.

Beer Buzz: So Long, Farewell, And A Delicious Dunkel



REBECCA CAMERON
4B GEOLOGICAL
ERIC COUSINEAU
4B ELECTRICAL

Hi everyone and welcome to the last edition of Beer Buzz! We have had an awesome time this last year writing about beer, and now our time at UW is up so we are passing the torch. The beer column will be written by new authors and under a new name starting next term. We would like to thank you for reading our column, and for giving us a great opportunity to learn more about beer. We are both going to be working in Toronto and are quite excited to move into a bigger beer scene than Waterloo (although we will sorely miss Kickoff's). This final Beer Buzz article is going to summarize some of what we have written about over the last year, as well as a review of an awesome Austrian dunkel.

What we've learned over the last year:

• What a black and tan is, how to pour it, and it's history (S11, Issue 1)

• How to choose the right glass for your beer and reviewing Dead Elephant by Railway City Brewing (S11, Issue 2)

• Where to find the best beer in the K-W area and reviewing Rosée d'Hibiscus by Montreal's Dieu du Ciel (S11, Issue 3)

• Beer styles, and reviewing Mill Street's Barley Wine (S11, Issue 4)

• The craft beer festival scene in Ontario and a review of the Kitchener Ribfest & Craft Beer Show (S11, Issue 5)

• Weird beer facts and reviewing beers we tasted on our Cross-Canada Beer Tour (F11, Issue 1)

• Learning about Oktoberfest style beer and reviewing two German beers at KW Oktoberfest (F11, Issue 2 – also, be sure to buy your KW Oktoberfest tickets early for 2012 as tickets for Concordia sold out in June last year)

• The Ontario microbrewery scene and reviewing Flying Monkeys Craft Brewery's SuperCollider Double IPA (F11, Issue 3 – use the pdf archives for this article)

• How to pair food with beer and reviewing Green Flash Brewery's Imperial India Pale Ale (F11, Issue 4)

• All about adjuncts, which are other ingredients added to beer other than water, malted barley, hops, and yeast (F11, Issue 5 – our personal favourite article we wrote last year)

• The American craft beer scene. reviewing Dogfish Head's 60 Minute IPA and Saranac Caramel Porter (W12, Issue 1)

• All about ciders, reviewing Strongbow Cider and Magners Cider (W12, Issue 2)

• All about barrel aged ales, responsible drinking, and reviewing the Scottish Harviestoun Brewery's Ola Dubh (W12, Issue 3 – that ale was matured in a whiskey cask for 12 years!)

• The worldwide beer community and reviewing Maple Bock by Trafalgar Ales & Meads (W12, Issue 4)

• If you would like to learn about anything we've mentioned above you can check out the archives on the Iron Warrior website – in brackets beside each point is the term and issue number that article ran in. Now let's go on to the beer we are going to try today!

Eric Cousineau
Eggenberg Doppelbock Dunkel

Today we are reviewing Doppelbock Dunkel (8.5% ABV) by Brauerei Schloss Eggenberg in Austria. This brewery has been running since 999 AD and has been brewing commercially since 1681. We found this beer at the LCBO and thought it was interesting enough to review. A vigorous pour yielded a bit of head that quickly dissipated leaving no lacing behind. The colour is deep mahogany with little translucency. The aroma of the beer is weak, with the only discernable flavour being german lager yeast. When tasting the beer, the flavours we noticed were sweet malt, smoke, and a well-balanced alcohol flavour. The mouth-feel can be described as thin bodied, with little carbonation. Overall, we enjoyed this beer and would recommend it to anyone looking for a new beer to try that is not outrageously adventurous. Germany and Austria are known for their tasty lagers, Weissbiers (wheat based ale), and many other beer styles. This is an excellent introduction to the variety of traditional beer styles with roots in Germany and the Bavarian culture.

Again, thanks for reading our column and we hope you've learned something about beer. Our main message (as always) is to Fear No Beer and we wish you the best of luck in your future beer adventures and academic endeavours!

Rebecca and Eric

Good Movie Review

MICHAEL NEW
4B CIVIL

As this is the last issue, and sadly, my last, I decided to do something a little different for the movie review. I'm going to look at some really good movies.

I watch a lot of movies. A lot. One thing that really bugs me is when I suggest watching some really great foreign film and then one of my friends saying, "Nah, I don't wanna have to read any subtitles. I don't really like foreign movies. Let's watch Transformers instead." to which I respond by promptly slapping them across the face with whatever is in the nearest garbage disposal. Foreign films are greatly underappreciated and it is time they got some respect. Heck, many of these movies get poor or mediocre ratings from professional critics who should know better. Here are some of my personal favorites:

Pans Labyrinth (2006): I mentioned this movie in my CGI rant. This movie has very nice special effects and knows how to utilize them to tell a really great story. It combines a creepy fantasy tale with that of a little girl in times of war. It has an eerie monster that eats children, and yet it goes on to show that real life can be a far worse nightmare. Yes, it's in Spanish. Remember when you used to read? Apply those skills to these subtitles because this movie is so good. It was directed by Guillermo Del Torro, one of my favorite directors. You should also check out *The Orphanage* (2007), also by Del Torro. It is one of the best horror movies I have ever seen.

Shaolin Soccer (2001): This may possibly be the funniest thing you will ever see. I laugh my ass off every single time I watch it. As the title suggests, it's about a soccer team that uses Kung Fu to dominate the competition so that they can face off against a steroid injected Team Evil for the super cup trophy. For those of you who are soccer players like me, you will appreciate the ridiculousness of the film. For those of you who aren't, you will also appreciate it. This movie crosses all language and sport barriers and could only come from the gifted mind of Stephen Chow, the man responsible for some of China's funniest films like *Kung Fu Hustle* (2004), another hilarious movie.

Any of Jackie Chan's older works *Police Story 1,2,3* (1985), *Armor of God* (1987), *Drunken Master* (1978) etc. It's Jackie Chan. 'Nough said.

Hero (2002), one of the most expensive Chinese films ever made. What a masterpiece. Here is a film where every scene is like a painting. Consider a fight scene near the beginning of the film where Jet Li faces off against Long Sky, a master spearman. It takes place in a stone courtyard surrounded by old Chinese architecture. It's raining and the blades fly through the air in slow motion and split the rain drops apart while in the background, an old blind man plays a Chinese instrument. This movie has some of the best fight scenes you will ever see, but also has a great story to back them up. This isn't just a martial arts film. It's art.

Amelie (2001). I know what you're thinking: 'but it's French?' It also happens to be very entertaining.

See MOVIE on Page 15

THE IRON INQUISITION
Nicole Jiang, 1B Computer Engineering

"What is your secret to making it this far?"

"Failing something is not the end of the world - giving up is!"
Rebecca Cameron, 4B Geological

"The F4 button in Excel! (Try it if you don't know what I'm talking about)"
Stuart Pearson, 4B Civil

"Not giving a ***"
Connor Allaby, 4B Environment

"Plenty of breaks"
Somil Bhargava, 4B Nanotechnology

"Lots of drinking; Phils!"
Elyse Vaile, Jessica Petrus, 4B Chemical

"Camp at DP til 3 AM"
Randa Itani & Alisha Deshponda, 4B Chemical

Topz (With a Z)

Top Reasons Memes are Great

WADE WILSON
EDWARD BLAKE
2Z HANDSOMENESS

1215, Runnymede: political corruption is forever stamped out as no high-ranking official ever again skirts the law. 2008, Washington: racism is ended in America and racial discrimination is incontrovertibly disproven. 2012, Uganda: young white Facebook users finally solve helpless Africans' problems. 1976, Oxford: noted biologist and baby-eater Richard Dawkins coins the term "meme" to describe the phenomenon in which dogs found in technicolour environments are capable of giving advice of questionable merit. Yes, history is marked with revolutionary ideas and movements which change the face of the Earth forever. But without a doubt, the meme outshines all others. Memes are the paramount of modern avant-garde comedy and here we will attempt to deconstruct ALL THE THINGS (like the girl in the comic says; remember?!) brilliant in our list of the top reasons memes are great.

Codification: Jokes are hard to get. Being flabbergasted at the end, with an unexpected twist is a cold and unpleasant shock, like getting punched. This is why it is known as the *punch*line. Forcing people to have to go through the assault of figuring out the source of humour in a joke only to be surprised by an unexpected twist is just plain rude! Memes do the civilized thing of letting you know the punchline first and then telling a joke to which it applies. You shouldn't have to waste precious brain power and "figure out" if a joke is funny because of sarcasm, absurdism, or anti-humour. With memes a funny fox, wolf, or chicken can give you a friendly wink and a nod in the right direction. The Internet has gone one step further and colour coded everything for you, so even with peripheral vision you're protected from having to personally decipher if the penguin did something socially awkward or awesome.

Democracy: Democracy is the pride of the free world. It empowers the masses to all have a voice. During the Arab Spring, word spread thanks to the Internet, which helped spread democracy to areas of oppression (where they were forced to have one horrible leader rather than allow them the freedom of picking between two horrible leaders) but let us not forget that it first spread democracy to hilarity. There was a time when only the petit bourgeois could output comedie and then their jokes were theirs. Now all can benefit and produce through the use of memes. Why should Dos Equis be the only ones that get to be funny by using their signature commercial spokesman? Hyperbole and a Half's signature charm should be used by every man, woman and child with an Internet connection. Yes, democracy allows people to all take original, clever, content and jokes turn them into single images and write the same basic setup and delivery and call it a new joke. It's almost like a knock-knock joke, except more predictable. It's like if different categories of punchlines would start with different styles of knocking (ding-dong, rap-rap, sritch-scratch, etc). This eliminates the inherent fear associated with opening doors to strangers.

Inside-Jokes without an Outside: While we're on the topic of leaving the door wide open, it also happens to be one of the staples of the movement. Inside jokes are great because they foster a sense of community and continuity. For those of you who were around during Frosh Week 2010, "Do a 360" was funny not so much because of the poor communication skills of FOC, but rather because it was *our* joke. But when there's an inside, there's an outside. So how do memes solve this problem? By making the "inside" barriers the Internet itself, it is possibly the greatest testament to free information. Anyone on the Internet gets "Rick Rolling" or "lolcats" and can still act like it's an inside-club and outsiders just wouldn't get it because "its an Internet thing". Take that, Grandma Mildred, n00b!

Sitcom 2.0: The sitcom revolutionized comedy. Its predictable conventions, done and redone plot-lines, and helpful reminders for when to laugh with a simple track in case you forget. But the crown-jewel of the situational comedy has to be the catch-phrase. Yes, viewers could sit for minutes in anticipation of their favourite character to once again say that thing that they say. Then sometimes a different character will say the thing that is said. Or the main character will say a slight variant of the thing that they say. It is the American dream, what immigrants huddling together on ships bound for Ellis Island would dream of: "One day, in the New World, we will be able to hear Sheldon say 'Bazinga' and it will be funny because 'Bazinga' is the word that Sheldon says in a funny voice". Memes have condensed this entire formula into macro-images. That essence of familiarity, of formula, of predictability, and the time-honoured life-cycle of the catch-phrase has been distilled into its most perfect form. "One does not simply", "I don't always but when I do" and "I heard you like" are the essential oils whose fragrances intoxicate the soul.

Jazzification: Memes are like Old El Paso Tacos. They take the mundane and make it a fiesta (also, the girl in that one Old El Paso Taco ad is now a meme). When boring, old you says something like a whiny complaint about being socially awkward, a borderline prejudiced comment about a group of minorities or laments about how much of a jerk your roommate is, nobody wants to hear it. But if you have a Socially Awkward Penguin, a "satirical" minority meme, or Scumbag Steve make the exact same tired sentiments, its a bona fide successful meme! Memes finally give use to all those e-mail forwards your mom sent you. You can classify them into their proper meme categories and summarize the joke into two links of bold white text. And don't stop there! Feel free to plagiarize jokes from Mitch Hedberg or SNL. Heck, the sky's the limit! Scumbag Abbott: Asked Who's on First, Says Who's on First.

So, now you understand a little more about the magic that is the meme. But be warned! Make sure that you use memes correctly or else you might be like one of those fools on the University Memes pages that uses the guy from the History Channel without saying "Aliens" as the punchline, or who tell a story about trolling without using the appropriate coolface, or makes a condescending comment without the Condescending Fox; in short, fools and Cretans of the basest order. Fight on, solider of the Internet. Wear your Guy Fawkes masks (copyright by Warner Bros) with pride as you carry on the man's legacy and fight for theocratic autocracy under the Vatican. Dare to dream, dare to meme.

From MOVIE on Page 14

This is a delightfully quirky film about a delightfully quirky character. The camera spins and flies around a Paris that is enhanced both in life and in color. I had to watch this in high school French class. Best class ever.

For those of you who didn't know, I grew up in Thailand. That being said, my final two films are from the land of my childhood. *Ong Bak: Muay Thai Warrior* (2003) is probably my favorite Thai film. This is one hell of a martial arts movie. Tony Jaa showcases some excellent muay-thai, and pulls off some stunts in this movie that would have made Jackie Chan proud. This movie is a non-stop action parade and there is very little dialogue so for those of you who have never read, this is for you.

The second film is my favorite rom-com of all time. *Bedside Detective* (2007): this is a movie that perfectly nails the genre. It is really funny while also being somewhat romantic (I can't handle notebook proportions). It has, in my opinion, the funniest scene of any movie I have ever seen. The dialogue is fun and the plot is great. This movie features a dog-loving villain, an inventor/private investigator, a Bruce Li wannabe, and a dog named James Bond.

So there you have it. Consider that list a gift from me to you for my final movie article. Please go out and see these. You'll be so glad you did.

Mike's Last Comic

MICHAEL
NEW
4B CIVIL

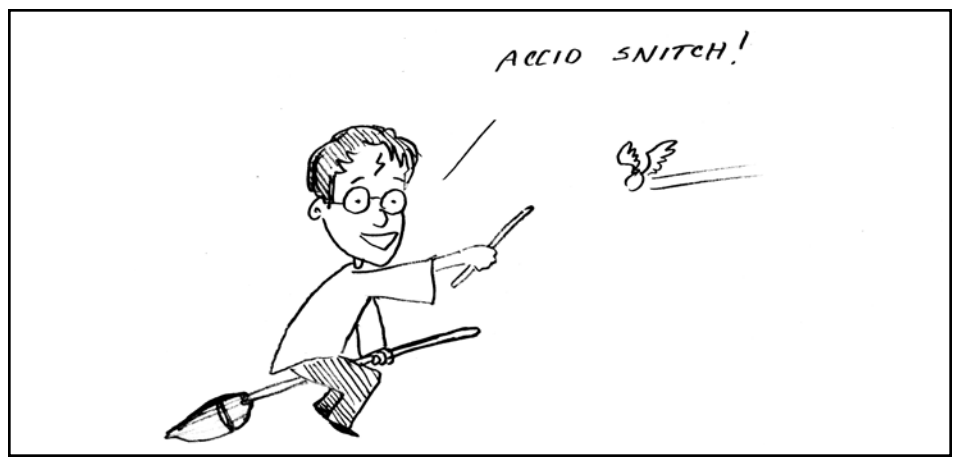
I have always enjoyed making comics for fun, and I tend to do just that during most of my lectures. I enjoy seeing people laugh at my work and I bug the hell out of the people sitting beside me in class by forcing my comics on them. I have happily doodled comics for *The Iron Warrior* for over 2 years now but there comes a time in every comic artist's life when he is forced to retire. It is now my time. I'd like to take this opportunity to thank my adoring fans and everyone who has taken the time to read one of my works. Remember that one about the lifeguard and the toaster? That was funny, wasn't it?

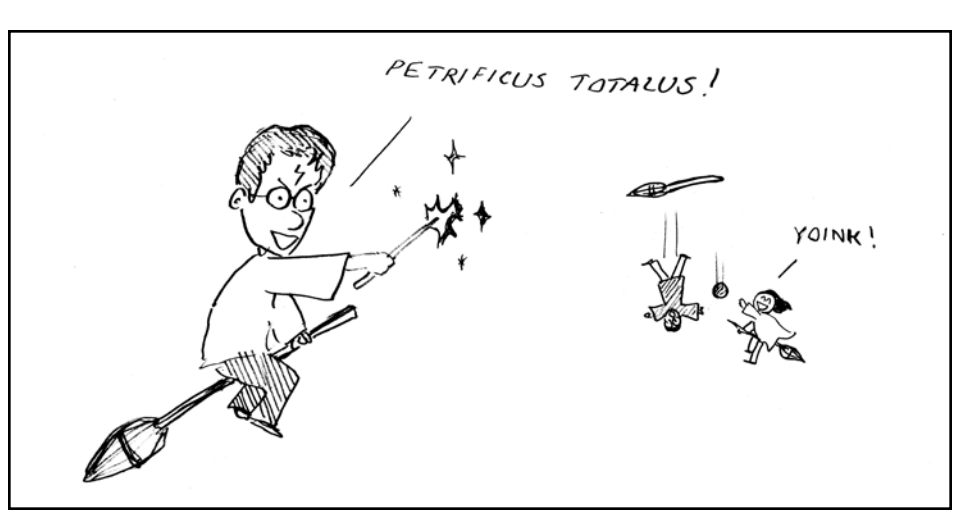
One thing most of you wouldn't know about my comics is that the majority of them never get published. I don't consider it a good term unless at least 50% of my submitted comics get banned for being too offensive. The other 95% of my comics I don't even bother submitting because I KNOW they're too offensive. After all the time I have spent coming up with comics that pushed the boundaries of acceptable offensiveness, I think I have finally found that sweet spot.

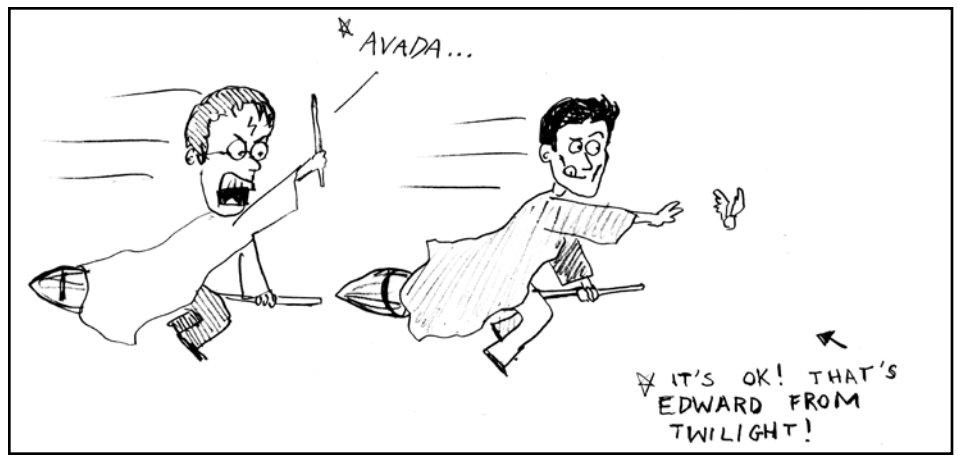
My last comic will incorporate everything I have learned about appropriate humor during my stint as resident comic guy with the best newspaper in the world. Here is a comic that includes (but is not limited to): children playing dangerous sports, poor sportsmanship, cheating, satanic magic, assault with a deadly weapon, murder and Edward from Twilight. These are in order of increasing offensiveness. I have complete faith that *The Iron Warrior* will still publish it. Enjoy.

How To Cheat In Quidditch

Michael New



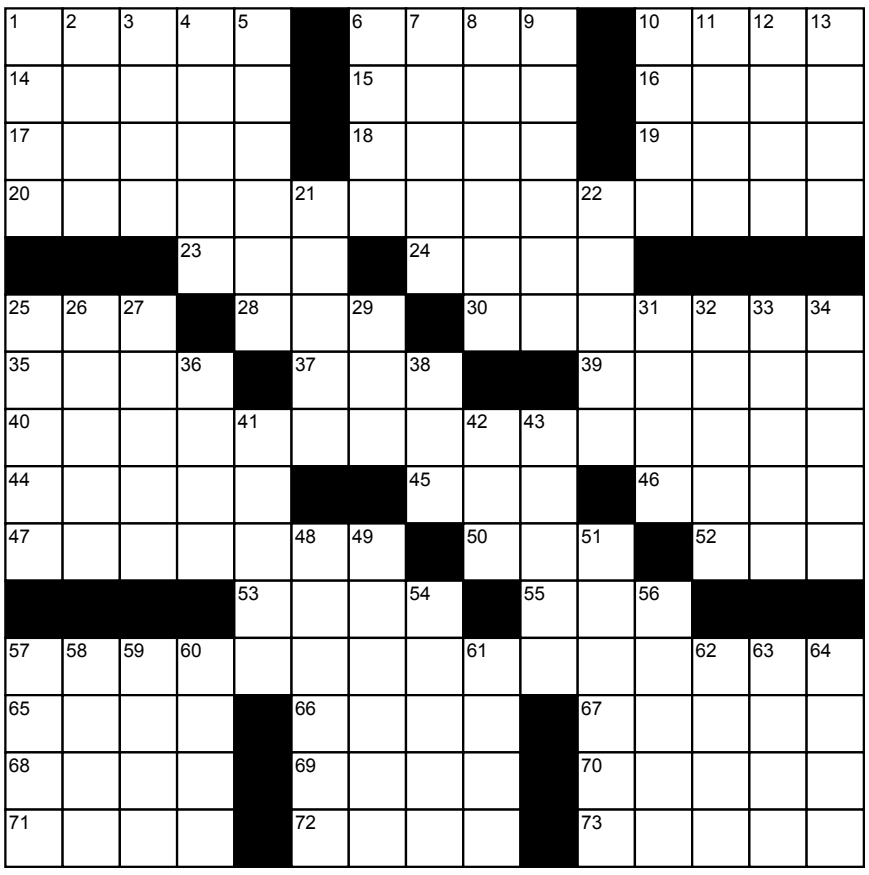




The Iron Crossword

Now With Engineerings!

STUART LINLEY
2T NANOTECHNOLOGY



ACROSS

1 Como _____
6 Understands
10 Peasant
14 One of seven
15 Ellipsoid
16 Buffalo lake
17 Obsession
18 Poi root
19 Men counterpart
20 Engplay summary
23 Actress Leoni
24 Per person
25 Irked
28 RV linker
30 Hymn, perhaps
35 Diva presentation
37 Compass point
39 Intertwined
40 O-week 2012 theme
44 Delimited
45 Elrond, eg.
46 Suspect
47 Wipers
50 Colonel recommendation
52 Drag
53 Tune or mate go with
55 Exist
57 Upcoming fourth year activity
65 Egyptian wader
66 Ran
67 Pause in breathing
68 Shark features
69 Initiate
70 Heavy genre
71 Genesis locale
72 After hours classes, perhaps
73 Slip

DOWN

1 French name (f.)
2 Serb., eg.
3 Actress Colette of Sixth Sense
4 Skew
5 Greys
6 Won: '___ _ prize'
7 Dodge
8 Highway material
9 Droop
10 Mack
11 Guitarist Eric
12 Costa ____
13 Sense
21 Gone (at dinner)
22 Had a tour
25 Grain
26 Sword go with
27 Princess, once
29 'Murica
31 Nestle treat
32 Garde go with
33 Slow, musically
34 Bequeath with
36 Iron, dark, etc.
38 Summer, to 1-Down
41 Perfect
42 Set
43 Waste
48 Ornate frill
49 Farm fence feature
51 Thrashes
54 Baller
56 Throw out
57 Macbeth locale
58 Bibliography abbr.
59 Seven victim
60 Group, abbr.
61 Joins (to)
62 Opposed to
63 Honey brew
64 Fire or yard go with

Easy

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

Medium

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

Hard

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

S	K	E	W	■	C	H	I	N	A	■	B	L	A	B											
I	N	C	A	■	L	I	L	A	C	■	A	L	S	O											
B	O	H	R	■	A	D	L	A	I	■	L	O	I	N											
■	B	O	N	N	I	E	A	N	D	C	L	Y	D	E											
■	■	■	■	A	R	R	S	■	R	H	O	D	E	S											
R	E	C	I	P	E	S	■	B	A	I	T	■	■	■											
U	P	O	N	■	■	■	S	O	I	L	■	M	A	R											
L	E	O	N	A	R	D	O	A	N	D	K	A	T	E											
E	E	L	■	L	E	N	S	■	■	■	I	D	O	L											
■	■	■	P	A	P	A	■	A	C	A	D	E	M	Y											
A	S	S	U	M	E	■	E	B	O	N	■	■	■	■											
R	O	M	E	O	A	N	D	J	U	L	I	E	T	■											
I	C	E	R	■	T	I	G	E	R	■	B	U	R	N											
S	A	L	T	■	E	N	A	C	T	■	I	R	O	N											
E	L	L	O	■	D	A	R	T	S	■	D	O	T	E											

Solutions to Issue 3 crossword

I	R	I	S	■	G	N	A	T	■	T	A	C	E	T											
L	I	N	T	■	A	E	R	O	■	H	A	L	L	E											
L	O	G	O	■	T	A	C	T	■	E	R	A	S	E											
■	■	R	I	D	E	T	H	E	S	L	O	P	E	S											
G	R	E	C	O	■	■	■	■	T	E	N	■	■	■											
R	I	D	■	M	A	H	A	T	M	A	■	F	R	A											
A	P	I	A	■	L	A	I	R	■	S	T	R	A	T											
S	P	E	N	D	T	I	M	E	A	T	H	O	M	E											
S	E	N	S	E	■	T	E	A	S	■	E	Z	R	A											
Y	R	T	■	T	W	I	D	D	L	E	■	E	O	S											
■	■	■	T	A	I	■	■	■	■	M	O	N	D	E											
P	L	A	Y	I	N	T	H	E	S	U	R	F	■	■											
T	O	X	I	N	■	H	E	R	O	■	A	O	N	E											
S	C	E	N	E	■	A	R	I	A	■	T	O	N	E											
D	O	D	G	E	■	T	A	C	K	■	E	D	E	N											

Solutions to Issue 4 crossword