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# THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

VOLUME 34 ISSUE 3 | WEDNESDAY, FEBRUARY 16, 2011



Transportation in All its Forms

*Pages 6 and 7*



facebook

Social Media's Role in Our Lives

*Pages 8 and 9*



Concrete Toboggan Team Competes in Alberta

*Page 12*



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# UW's Presence Felt at Ontario Engineering Competition


**ANGELO ALAIMO**
3B ELECTRICAL


Angelo Alaimo

**Waterloo's representation holding their awards at the Ontario Engineering Competition. Waterloo placed in the Junior Design, Consulting, Communications, and Parliamentary debate categories.**

Once again, Waterloo engineering had a strong showing at the Ontario Engineering Competition (OEC) this year, held at Western on February 4th-7th. In 4 out of the 5 categories competitors were entered in, Waterloo had a team place in the top 3. Out of the 4 categories, 2 of the finishes were in the top 2 and those competitors will advance on to the Canadian Engineering Competition (CEC) this March in Montreal.

The theme for the competition, 'Engineering a Better World', promoted the principle of Engineers Without Borders, with many of the competition being based on fictitious scenarios in countries from around the world.

In the Junior design category, competitors were tasked to design and build a waterproof and wind-proof shelter which could be raised in "one touch" operation. Waterloo's 'A' junior design team, represented by Adam Thagard, Kornel Niedziela, Marc-Andre Simard, and Shari King, designed a structure which popped up two sides to resemble a house like structure. Their solid design methodology and superb presentation propelled them to a 2nd place finish.

Erin Matheson's presentation on "Categorizing Natural Organic Matter Using Fluorescence Spectroscopy" earned her a 2nd place win in the engineering communications category despite being a few minutes under the minimum time, causing a time penalty to be leveled against her. In addition to the 2nd place win, she picked up the "Technical Excellence" award which comes as no surprise after one judge commented on her presentation as "too technical for this competition".


**See OEC on Page 3**


# Vision 2015 Leaves Something to be Desired


**ERIN MATHESON**
**JON MARTIN**
3A CHEMICAL, 3A CIVIL


On February 2nd, the Faculty of Engineering had a town hall meeting open to students to unveil the Vision 2015 plan, which would outline the planned growth for the Faculty for the next 5 years. The plan overviewed what the Faculty plans on doing to improve teaching quality, co-op, student space and many other frequently discussed topics. Students had the chance to submit questions before hand, as well as ask them during the meeting. Dean Adel Sedra, Dr. Wayne Parker and Dr. Wayne Loucks were there present to both deliver the presentation as well as answer questions. A handful of faculty and administration members were also there and occasionally chipped in their two cents. While a significant portion of The Iron Warrior staff was present at this meeting, Jon Martin and Erin Matheson have decided to collaborate on reporting on this meeting so as to deliver a further developed insight on the meeting. The following headings cover the main topics that were discussed during the meeting.

**Student involvement**

One of the big issues addressed by staff representatives was student involvement in the development and review of the 2015 plan. Student participation will be most prevalent on existing and new committees. Each department will be organizing their own undergraduate planning committees, with significant student participation. Check within your own faculty to see who the staff representatives are and how you can get involved. Faculty planning committees will also be a venue for representation. Many of the existing committees that are already in existence, such as the Co-op Working Group, will be consulted and incorporated into the Vision 2015 plan, many of them already have student members representing our views and opinions.

**Jon Martin:** Another tactic for eliciting student opinions that was mentioned were student surveys and focus groups. The issue of trying to avoid spamming undergrads with surveys and other email was raised as a concern by faculty representatives. In my opinion, I would rather get the increased number of emails, and actually have the opportunity to respond when I have the time to fill out a survey instead of having to schedule around a general meeting.


**See TOWN HALL on Page 4**


# FedS, EngSoc, Senate Election Results


**IRON WARRIOR**
NEWS BUREAU


After three weeks of campaigning for three different elections, engineering students can breathe a sigh of relief; election season is over! Engineering students on campus voted in the Engineering Society Election from February 4th to 7th, all engineering students voted in the Federation of Student (FedS) & Senate elections from February 8th to 10th and the on-stream 2012s voted for their Graduating Committee (GradComm) chairs for B-Soc from January 29th to February 3rd.

**FEDS ELECTIONS & SENATE**

In the FedS election, the remaining three Team REAL candidates easily swept the ballot with Matt Colphon as President, Prashant Patel as VP-Administration & Finance, and Natalie Cockburn as VP-Education. Following the resignation of Team REAL candidate Rob Fry, Unaffiliated candidate Luke Burke easily won the role of VP-Internal as the only remaining legitimate candidate. All the vice-presidential winners had between 44-50% of the vote, with Colphon receiving over 60% of all votes cast.

Trevor Jenkins, Juzer Sharali, and Syed Albiz (Team Rhino) will be half of the Engineering Councillors on the 2011-2012 FedS Students' Council. The three remaining engineering seats will be filled in a spring by-election. In an unfortunate turn of events, the three engineering candidates who had received the most votes were Jenkins, Yousif Al-Khder and Erica Janitz (Team Rhino), however, both Al-Khder and Janitz failed to submit their budget forms by the end of polling period, thereby disqualifying them from the race.

Kevin Ling was initially in the Engineering Councillor race, but withdrew on January 24. Despite this, his name appeared on the ballot for a few hours during the beginning of the voting period before being removed, but still managed to receive three votes.

Ben Selby will replace Jay Shah as Engineering Senator, while Jeffrey Bunn will fill the Senator At-Large spot. In an outcome that is becoming more common, more individuals declined any three of the candidates in the Senator At-Large race than the total votes any candidate received. This result of apathy from students may show a lack of understanding of the role, or a want to remove the overtly general role that doesn't fit into Waterloo's faculty-centric social system.


**See ELECTIONS on Page 3**

# Letter From the Editor

## Balance, Craziness and Finding Happiness in Between

**CAILIN HILLIER**
EDITOR-IN-CHIEF

Hello everyone! I hope your midterms have been going well. By the time of publication I will have written two midterms already and hopefully had time to have studied for them too. I want to thank everyone who accommodated the earlier submission deadline in order for The Iron Warrior staff to be able to edit articles and get the paper completed with time left in the weekend to study. Not having enough time to study can be very scary business. Just remember that sleep and healthy eating are important components to the studying process too.

On that note, allow me to transition smoothly into my editorial topic for the issue: finding balance. Many of the people I know in engineering are definitely in the same boat. We are busy with school and also have many other interests and commitments and it is often difficult to find balance and calmness in our everyday lives. Personally, I find it challenging to achieve balance. How many times have you thought that you needed more hours in the week? Or felt guilty for relaxing after a hectic day because there is still so much for you to do? Attempting to find the compromise between being involved with clubs, working, staying healthy, having enough time for yourself, and spending time with your friends and family, all the while trying to pass school and find a co-op job. It can be a lot to handle.

I have been spending a considerable amount of time trying to think of some rules on how to balance things in my life. I have started to think about my life as simply as I can. Although the meaning of life is an elusive and frequently debated topic, most can agree that life seems to be about doing what makes you and those around you happy, while contributing to the greater good. Though what good and happy mean can be discussed at length, I feel that it is really a unique meaning to every person. For me, feeling productive and completing something to the best of my ability is very satisfying. Spending time alone and with friends is also important for me to be able to think straight. All happy things.

However, when we get too busy and we no longer have the time to do the things we like, it is likely that our priorities need reassessing. By simplifying things and compartmentalizing the tasks at hand, I find it easier to see where I can make better use of my time. I, like many, feel that watching television and browsing the Internet are not the best uses of time: however, it happens. Procrastination at its finest! But those are not really the things that bring me joy in life, sitting around staring at a computer aimlessly. I would much rather be outside or spending time with friends or listening to music. So I have started to be very cautious about where I can cut back my Internet time, frequent Facebook checking, and incessant texting. For more in depth opinions on Facebook and other forms of social media, check out Spencer McEwan's article on page 9 and the Point vs. Counterpoint on page 8. I actually spent an entire day without my cell phone being charged and it was amazing! So really, it is the little things that add up to cause distractions in your life, limiting your productivity and taking you away from what you want to be doing.

Being organized, which is more natural for some than others, is a very good skill to have. And if you find your organization lacking, it is a very easy skill to develop. Some write lists, others have calendars and just a plethora of post-it notes; however you want to do it, it's a good way to keep track of everything and get things done quickly when you have the chance. It is all about seizing the moment. The annoying hour-long breaks between classes are particularly bad time drains for me. However, with a list of the little tasks you have to do on hand, you can effortlessly remember to do your online banking, e-mail your parents and buy gum. No problem. And then cross it off the list (that is my favourite bit).

***Most can agree that life seems to be about doing what makes you and those around you happy, while contributing to the greater good.***

But enough about being practical and back to finding a balance and meeting your happiness quota. After all, it is the fun stuff that matters and its the fun stuff we remember. So in your free time, why not strive to find new and exciting interests? I find that having a variety of interests is a great way to stay excited about what is going on and to meet new people. Since coming to university, I have been trying to overcome my fears. I used to be rather afraid of speaking in public and was forced to get over that hurdle quickly through presentations for school and making announcements to my class about academic and EngSoc-related activities. Next, I stepped it up a notch and tried to overcome my fears of heights. Originally, my fear of heights was really quite crippling. I wouldn't even stand on a chair without freaking out completely. And then my friend Amanda convinced me to go skydiving, a bit of a leap up from just standing on a chair. But I did it and it was amazing. After that, nothing really seemed like such a big deal. I just went for it. I started running after a few years of a rather sedentary lifestyle and decided I wanted to run a half marathon. I have a lot of very active friends and knew that I wouldn't be able to keep up with them when running and that I wasn't likely to place well after only a few months of training. But I decided not to care. This wasn't about being as good as everyone else. It was just for me and I had a great time, regardless of the fact that it took me forever. It is all about doing something that makes you happy, right? And this certainly did that.

Once you have made that little bit of extra time for yourself, you are totally free to be spontaneous when the time comes. Nothing like a random adventure! Impromptu road trip? There are great places to visit all around the Waterloo area. Plan a vacation for the distant future when we are no longer poor students? Also awesome. Learning how to cook a fancy dinner to share with your friends? Never ceases to amaze me that I can cook(ish) now. It is truly these little things that make everyday life memorable. It is never too late to learn something new either: start to draw, pick up a new language, try out swing dancing or a musical instrument. It is a lot easier to pick up new interests than you might think. Often times, surprise finds at second-hand shops or discovering a school club can be just the trick for starting up something new. Even taking an extra course at school can open your eyes to an entire realm of information that you never knew existed. Introduction to Philosophy, you still blow my mind. For an entire list of awesome suggestions of ways to spend your time, check out Chad Sexington's article on page 14.

The best advice I have yet to be given is to think about what makes me happy and to try to find time each day to do that, even just for several minutes. So go tobogganing, volunteer, bake cookies, read a book, or do some yoga. If it makes you laugh, feel productive, and go to sleep at the end of the day with a smile, you win. Now go forth, study and have a seriously amazing Reading Week filled with happiness. We all deserve it.

If you are feeling overwhelmed by school or work, do talk to someone. Counseling Services is available to all students, with campus-wide counselors in Needles Hall and Engineering specific counselors in the Engineering Undergraduate Office, CPH 1320. For appointment booking, call 519 888 4567, extension 84761.

**Issue #4 Deadline: Friday, March 4th at 6:00pm for publication on Wednesday, March 9, 2010**

Send your submissions to iwarrior@engmail.uwaterloo.ca



THE IRON WARRIOR

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**Editor-in-Chief**
Cailin Hillier

**Assistant Editors**
Angelo Alaimo
Jon Martin

**Layout Editor**
Angelo Alaimo

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Sydney Bateman

**Photo Editor**
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**Contributors**
Adel Sedra
Brendan Smith
Garry E. Levek
Giles Malet
Graham Stonebridge
Ilya Panchenko
Jon Warren
Kevin Ling
Kirusha Sri
Kristen Roberts
Peter Kelly
Rob Reid
Ryan Moxam
Savannah Copland
Scott Rankin
Stuart Linley

**Off-Stream Editor-in-Chief**
Mikayla Micomonaco

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

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

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*

# Conestoga College Places First in Senior Design at the OEC

OEC from Page 1

In the consulting category, teams had to develop a sanitation solution for residents of Addis Ababa, the capital of Ethiopia in order to help advance the United Nation's Millennium Development Goal to halve the number of people without access to basic sanitation by 2015. The third place winning team from Waterloo, consisting of Adriana Cameron, Ian Davies, Trevor Jenkins, and Will Zochodne, proposed a community-based solution which included the implementation of composting toilets.

The senior design category had an interesting design challenge which included delivering supplies up a rocky incline, rectifying AC voltage to DC and titrating acid-tainted water for a simulated earthquake-stricken town in Peru. Competition was fierce and the challenge difficult to complete with non-ideal materials. Unfortunately, both Waterloo's senior design teams were not able to place in the top 3. Although Waterloo did not place, Conestoga College, competing at their first OEC after recent accreditation, placed 1st and is off to CEC this March.

In parliamentary debate, our sole Waterloo team, consisting of Alex Hogeveen Rutter and Chanakya Gupta, qualified for the semi finals and eventually tied for third place after being defeated by the University of Toronto team.

Once again, congratulations to all placing OEC and CEC qualifying teams. If you wish to compete in the future, look out for the next Waterloo Engineering Competition (WEC) qualifier happening this spring.

# The Results Are In

ELECTIONS from Page 1

Team Rhino, the satirical team consisting of math and engineering students, managed to make some ground in the race. Marc Burns, a VP-AF candidate from the Rhinos, managed to capture 29% of the vote against Patel, the best showing of any of the team's executive candidates, while other executive candidates received between 12-25% of the vote. This is despite their performance in previous debates where the team promised nepotism in the selection of committee appointments and convention delegates, the abolishment of all student societies and their consolidation into a single society to be housed in The Used Bookstore, and a desire to use witchcraft to solve the problems the society is facing.

Some surprising successes did come to the Rhinos with two candidates successfully elected to council. Qifan Xi, a Math Councillor candidate for the Rhinos, managed to capture the third seat in that constituency. Erica Janitz would have been an Engineering Councillor had the aforementioned budget submission not occurred, which opened the door to Albiz to take the remaining seat. It is unclear whether these candidates will actually fill these positions or resign as their executive counterparts indicated they would do if they had won.

For a full break-down of votes and results from other faculties, check out vote.feds.ca. A big thanks to Chief-Returning-Officer Marco Yim and all members of the Election and Election Appeals committees for their hard work and for volunteering their time.

**ENGINEERING SOCIETY ELECTION**

Following an intense four-day campaign period on the week of January 31st, the results of the toughly fought Engineering Society 'B' elections were announced on February 8th at TalEng. Three positions saw more than one candidate submit nomination papers, requiring an election to occur.

Alessia Danelon will be the incoming President of B-Soc, while Yasser Al-Khder will be the new VP-External. Alexandra Collins will take over the financial reigns from Jon Warren and Mina Labib as VP-Finance.

As only one candidate submitted nomination papers for the VP-Education role and VP-Internal roles, Owen Coutts and Andrew Fisher have been tentatively acclaimed for their respective positions pending successful ratification by EngSoc Council on Wednesday February 16th. Both candidates will require 2/3 of vote by council before they can take office, in accordance with the Engineering Society Constitution.

Laurin Benson is tentatively acclaimed WEEF Director, pending ratification by the WEEF Board of Directors.

Congratulations to all candidates and CRO Doug Fournier for an excellent election.

**GRADCOMM**

Congratulations to Cailin Hillier and Drew Lemcke who were elected as GradComm 2012 co-chairs for B-Soc. These two will join Michael Soares and Kristen Roberts, who were elected by A-Soc this past fall, to plan and oversee the fundraising, operations and planning of all the activities related to the Class of 2012's graduation.

Angelo Alaimo

**FedS VP-Ed-Elect Natalie Cockburn congratulates FedS President-Elect Matt Colphon as current FedS President Bradley Moggarch Looks on.**

# Ask the Dean: Rumours Regarding Edcom

**ADEL SEDRA**
DEAN OF ENGINEERING

**Question:** *I have heard rumours that the university wants to shut Edcom down. Is this true?*

No, this rumour is not true. I do not think the university is trying to "shut down" Edcom. However, members of the senior administration have expressed concern about the dress and behaviour of Edcom, which they feel could intimidate first-year students.

Edcom is a valued tradition within our faculty. During orientation week, these carefully selected and trained student volunteers are some of the hardest workers on campus. They are responsible for the complete setup and dismantling of engineering events, providing security for events across campus and ensuring first year students stay safe.

The Engineering FOC leaders have been working with the faculty's Student Relations Officer and orientation advisor, Meg Bauman, to create guidelines for Edcom to ensure orientation runs smoothly. The document outlines the purpose of Edcom, which will help all involved in planning orientation week understand the value of this role.

I have assured the senior administration of the university that we will continue to work with our Engineering FOC leaders to ensure all first year students have a fun orientation week, safe and free from intimidation.

If you have a question you'd like Dean Sedra to answer please submit your questions to Meg Bauman, SRO mebauman@uwaterloo.ca.If you have a question you'd like Dean Sedra to answer please submit your questions to Meg Bauman, SRO *mebauman@uwaterloo.ca.*

# Input on Computing Solutions Needed!

**SAVANNAH COPLAND**
2N NANOTECHNOLOGY

I am a new voice here in the Iron Warrior, so let me introduce myself. I am the Engineering Computing Co-op student for the winter term. I work with the staff that keep our undergraduate labs, printers, wireless internet, remote desktop, email service, and Nexus up and running for the entire Engineering faculty. This is my second co-op term here, and I am getting the opportunity to focus more on improving the student experience. I'm hoping to get feedback on changes to the computing system that can be made to benefit the student body.

Over the last two weeks, the Engineering Computing Department has been meeting with students and engineering society members to discuss prominent issues with the services provided and the undergraduate laboratories. There has been a lot of useful feedback and ideas, and the staff and I have really appreciated receiving some different perspectives.

The issue that caught my eye that several students reported is that broken computers and printers often go unnoticed by staff and are not fixed promptly. The problem lies in the error reporting system, as most broken hardware goes unreported, and as such, is not inspected. There are two ways to currently report hardware issues. One is through the Nexus login screen - there is a link titled "Hardware Problems", and the other is by reporting the problem directly to the Engineering Computing Help Desk, located at E2-1308C

I have put together a 5-minute web survey for engineering students to complete, that could help Engineering Computing and myself develop an improved error reporting system, and to get further feedback on other issues regarding computing in the faculty. The survey can be found at: www.eng.uwaterloo.ca/ComputingSurvey.

Thanks in advance to all that complete the survey. I am hoping to write back with new developments and updates, so make sure to keep your eyes peeled!

This project received ethics clearance through the Office of Research ethics.

# UW Engineering's Future

TOWN HALL from Page 1

Sending the survey out to everyone provides the greatest opportunity for us to give our opinions, and for the faculty to get a much higher number of responses. And if you don't care, then just delete the email.

**Erin Matheson:** Although the Faculty is making great strides by holding these meetings that are open to students and they are willing to answer questions, there is a significant difference between answering questions and welcoming input. As the meeting progressed it seemed like Dr. Sedra, Dr. Loucks and Dr. Parker became increasingly defensive of current faculty operations or aspects of the plan, all the while the questions coming from the students did not necessarily become vicious in nature. Most of the questions that were being asked also provided some really strong feedback and potential suggestions, but none of the faculty members present really acknowledged any of them. To really make the plan effective, an equal amount of planning regarding the most optimal way to receive student feedback is required, even if that is in the form of survey spam sent to everyone's inbox.

**Teaching Quality**

Questions about teaching quality sparked many questions during the conference, with many people wondering how professors are actually 'graded' on their teaching abilities, whether anyone actually reads the course critiques we write, and why the same bad profs teach the same course over and over. The faculty has acknowledged that this is an important issue for all students because, after all, we are paying for these profs to teach us. Questions remain about teaching quality stemming from issues with how professors are assigned to courses, as well as circumstances that are preventing them from teaching to the best of their ability. Both of these issues have been identified by the faculty and will be investigated as the planning process goes forward.

Currently the incentive for profs to improve their teaching methods is incorporated into their pay increase each year as well as whether they get promoted. This increase is composed of three components: their teaching, research and service. The teaching component is significantly based on the course critiques that we fill out each term, with Dean Sedra writing congratulatory emails to some, and advisory emails to others. The Centre for Teaching Excellence is a spot where all professors can work to improve their teaching methods and interactions with their students, if they participate. One question that sparked a very forceful answer from Dean Sedra was the ability of professors to buy out of teaching hours using research money. This misnomer was quickly shot down, with the assurance that no professors have this ability. Some professors may teach less courses during a specific term and more in another, but they are not able to buy their way out of teaching courses.

**JM:** The problem that I see with the three component pay scale system is in the weighting of the different components, and the ability to cancel out a negative score. How high of a weighting do our course critiques have, as this will have a big impact on how much effect our voices actually have. As for cancelling out a negative, my issue with this system is the potential for a professor who is absolutely horrible at teaching to still get a pay raise because they are brilliant at research. If a professor can practically ignore the students they are teaching and instead focus all their time on their research then they could theoretically still get their standard pay increase, with only a quick advisory email saying they should improve their teaching. If they still get the pay increase then where is the motivation?

**EM:** The main point of the evaluation system is to currently establish the pay rate and degree of seniority a professor has within their respective department, not to optimally match professors with the courses they would be the best fit to teach. It's clear that the professors at UW are exceptionally intelligent in their respective fields, but when directed to teach a course that is outside their area of expertise it becomes a struggle for both the professor as well as the students in the class. There is also the ongoing issue of insufficient teaching skills, language barriers, as well as some professors who do not posses a great desire to teach. Personally, I would rather our course critiques be considered when assigning professors to a certain class, or perhaps act as a recommendation for a professor to participate in a workshop so as to further improve their teaching ability. Currently, money is the only motivating factor, and our course critiques do not play a highly significant role in determining it either. Seeing the level of talent that lies within our faculty, I think it's more a problem of managing it properly, for the benefit of both the students as well as the professors.

**Co-op**

Most co-op questions were answered by Wayne Parker, the associate Dean of Co-op, focusing on job rates as well as co-op fees. In response to the troubling number of jobs, Parker promoted the actual increase in co-op jobs this term, as well as the increase in the employment rate. In the fall of 2010 the overall undergrad employment rate stood at 94%, while the fall term was 99%. While this is a great number it does not take into account the differences between faculties. Every term the employment numbers show the low percentage of students who are actually employed in programs like Chemical. The difference in number of available jobs between faculties and their respective employment rates also connected with another question: why the high co-op rates are justified across all programs when their is such a difference in job postings, as well as the continual increase in the cost overall. As explained, the co-op fees that we pay every term are annualized across our entire engineering careers, hence why you pay the fee even if you aren't on a co-op term. CECS operates with the sole purpose of breaking even financially at the end of the year, with most of the costs going to payroll.

**JM:** For all of my co-op terms so far I have been able to organize my own co-op positions at multiple large consulting firms, and as a result I haven't actually used Jobmine. I know a number of people who have also organized their own jobs, allowing them to focus on midterms and assignments as well. This has spared me a lot of the headaches of balancing both classes and searching for co-op positons, but it has also left me in an interesting situation when it comes to paying for co-op. I have organized all my own jobs, but I have still paid the same co-op fee every single term – paying for services I have never used, beyond the regular visit from CECS to ask about my pay and rate my job from 1 to ten. So will that ever change? I have no idea, but in the meantime I guess I have to keep paying.

**EM:** One of the fundamental issues with the reported CECS employment rate is the fine print that very few people read over. A significant number of unemployed students, or students who search for co-op placements on their own terms are exempt from this figure. The employment rate also reflects all co-op students at UW, not just engineering majors. I can remember at the end of my 1B term at least a good third of my class was still without a job at the start of the following work term, not the 6% as would be implied by the CECS stat for that same year. One subject that was mentioned but not really addressed was the current structure of the co-op system and the value students receive from it. It is frequently mentioned that field co-ordinator visits during work placements serve no great value, yet certainly account for a considerable portion of CECS' yearly costs considering the very distant locations some students are employed in. In addition, although there are currently efforts to upgrade the current JobMine system to Waterloo Works, as well as improve the current ranking and matching system so as to maximize the number of jobs awarded to students, there wasn't much opportunity to offer suggestions or feedback. The bulk of the meeting was spent on a question and answer period regarding co-op, so it's already quite clear that students are most concerned about the co-op aspect of the 2015 plan.

**Tuition**

The main comments related to tuition increases and costs were about the possibility of price reductions, as well as greater transparency in where our money actually goes. Dean Sedra mentioned previous instances where government changes in funding laws resulted in major increases in tuition costs, though these occurrences are not expected in the near future.

Unfortunately there is always a trade-off between tuition costs and the quality of the university. If you want to pay half as much for tuition than you also have to accept a loss of half of the services we expect and use. While we both totally agree when it comes to the pains of tuition increases we somewhat have to accept it, after all would you rather save the money but be stuck in Arts?

On a related note, a question was raised by a person at the town hall meeting, relating to the differential cost for taking elective courses. While on a school term we are able to take as many electives as we want for no additional cost. Whether it is a good idea or not to overload yourself with extra courses when you are actually responsible for passing your assigned ones, that is another question. Unfortunately taking those same courses when you are on a work term and actually have the time to devote to actually doing well in them, can also be extremely costly. While students in other faculties might pay $400 to take a course, we in engineering have to pay about double that for the exact same course. The justification for this discrepancy was that we pay a set fee for our education - of course it always seems to be going up each term - but it is essentially a standard fee for our entire engineering program. Students in many other faculties on the other hand pay for each course individually, this difference is the cause for the differential pay structure.

**EM:** Another point that was mentioned during the meeting was the fact that comparitively, UW is a relatively young school with 'not a lot of money'. UW does not yet have a great and vast history and a large community of alumni's who are willing to throw money at the school, nor does the average undergrad at UW come from a family who also has a building named after them due to their financial generosity. As nice as it is that for the most part UW students receive their degrees based on their own intelligence and hard work, not because of a generous donation, it comes back to bite us all in the form of our massively high tuition. Although cutting costs won't benefit the university nor it's students, I think the faculty should instead focus on value creation from the high tuition. Showing its students that they're really getting their money's worth from all of the services provided and quality education and effort put in by the faculty makes the high dollar amount slightly easier for the student population to swallow. As the undergrad enrollment rate increases, further emphasis on scholarships and bursaries should also be considered - especially with shaky co-op employment rates as the economy continues to recover.

**JM:** Personally I think the differential elective costs makes no sense. If we are already paying for our program then any additional courses that we take should just be added on top, they should have absolutely nothing to do with the fact that we are in engineering. If the price that other students pay is representative of the cost for running the course then that is what we should be paying - we should be treated exactly the same as anyone else taking the course. The administration needs to support engineering students who want to become more well rounded people, beyond the limited choices set out by complementary studies electives. University is an opportunity to learn so many different things, but our programs are so structured we rarely get a chance to take advantage of that. Any student who wants to broaden their horizons should be supported by the university administration, through equal treatment for all faculties, on all terms.

**Campus Development**

We've already seen some of the effects that Vision 2010 had on our campus layout - Engineering 5 is already open and Engineering 6 phase I will be open this coming summer. Between these two buildings there is already space dedicated to undergrad student use in the forms of computer labs, seminar rooms as well as the new student teams bay. With the increasing student population study and work space is hard to come by, particularly for group or project work. Although there are of course more plans for additional buildings, there is still limited feedback being provided for how to develop the space in these buildings. More importantly however is the lack of mention of developing student space in existing buildings for those of us who won't be around to see these new buildings being used.

**EM:** To be perfectly honest, if it weren't for the Iron Warrior office I wouldn't have anywhere on campus to peacefully do work. Most of the computer labs are either always full, too loud, too warm, or filled with broken computers. Even still, most assignments for ChE classes don't require a computer, so setting up shop in a computer lab is relatively pointless. Smaller rooms within the engineering buildings can be allocated for silent study space or perhaps group work to alleviate some of the strain on the computer work spaces. I feel this is also a place where the departments can step up to work to provide their students with work space that is appropriate for the type of work their students typically do as its very difficult to build one type of study space that satisfies all engineering students. This again is another segment of the plan that needs much more student influence and diversification.

**JM:** Last year I had the opportunity to tour E5 before it had finished construction, including the now opened computer lab, all of the design bays and the classrooms. This building really showed me how much the engineering department is actually recognizing the innovative spirit of the students. We represent the University around the country and the world, showing the quality of the education provided here, and finally the University is actually devoting space to developing this branch of student development. I am very optimistic for the future development of the engineering department, including the plans for E6 part 2 and E7, which should offer new and innovative space for all engineering departments.

Vision 2015 is a great opportunity for us to impact the future of the Engineering faculty so voice your opinions, go to the Vision 2015 website and make the changes you want to see. For every complaint we make there is a potential solution – and this is the venue we need to see those solutions put into action.

# The World's Edge: A Guide to the Growing Anti-Government Protests

BHAVYA KASHYAP
STAFF WRITER

It's the end of another day. We decide go to the bar and get a basket of fries while we watch the hockey game. Perhaps we order a couple of beers, maybe a few cocktails.

Halfway across the world, the only cocktails students are being served are of the explosive sort: Molotovs.

While Canadians take pride in their empathy and sensitivity to world issues, many of them, prior to recent events, would not be able to tell you the difference between Tunisia and a tuna sandwich. The Tunisian revolution has certainly drawn attention to the region, and the momentum of their undertaking has been almost as terrifying as it has been inspirational. Its fervour has spread virulently across North Africa and into the bowels of the Middle East- though from afar, it seems like these demonstrations have been a long time coming.

But these protests are also suggestive of a new type of global thinking. It is clear that the youth of these nations, many of them students like us, are no longer willing to tolerate what their fathers and forefathers did. This new mentality has been most evident in Egypt, as a large part of their traction has been gained via organized communication. Their protests have been leaderless, and these revolutions have been of the Internet age: decentralized and social.

The most important thing to note, however, is that these countries, while similar in their discontent, are not the same; what worked for Tunisia and Egypt may not work for the rest of them because the regimes and demographics still vary. Studying them on a case-by-case basis is the best an average Canadian can do to grasp what is really going on.

**Tunisia (North Africa)**

Tunisians began protesting last December. They began to gain real momentum in early January, and with their progress came more reports of horrific police brutality. The entire revolution was sparked by a fruit seller, who publicly set himself on fire to protest the widespread and persisting government corruption. His act was merely indicative of a very pervasive mistrust, augmented over time by high unemployment, rising food prices, and strong discouragement for freedom of speech.

While the events in Tunisia have been motivational, the current government is still very fragile; many Tunisians are not satisfied and, having revolted before, seem willing to do so again. Regardless of what they choose to do, their lives are currently better off without their former President Zine El Abidine Ben Ali, who was closing in on his 24th consecutive year in office before he fled the country on January 14th.

**Egypt (North Africa)**

The demonstrations in Egypt have been some of the more intense thus far, with a death toll far surpassing any of the other protesting nations. Inspired by Tunisia, the citizens of Egypt took to the streets in peaceful protest that inevitably turned violent. Egypt, being a larger country with a greater racial and socio-economic divide, has always had a far more crumbly infrastructure. Its disdain for its apathetic president Hosni Mubarak has also been significantly more acute, given their disapproval of Egypt-U.S. relations and support of Israel.

Egypt finally got what it desired on February 11th, with President Hosni Mubarak leaving the country unceremoniously in the early hours of the day; his powers have temporarily been assigned to Vice President Omar Suleiman. Egypt's revolution, by virtue of it being a larger player in world affairs, is, unfortunately, a double-edged sword. The state of the Suez Canal, which has been instrumental in intercontinental trade, as well as Egypt-Israel relations has potential to be jeopardized by a new regime; it may seem selfish given the heights the Egyptian people have climbed to, but it is a concern not to be taken lightly. Hopefully things will pan out for the better with a more secular government- the one that the Egyptian people had envisioned all along.

**Yemen (The Middle East)**

The consensus is that Yemen will be next. Thousands of Yemeni citizens have been protesting in Sana'a, the country's capital, demanding the resignation of President Ali Abdullah Saleh. The protesters are mostly students and youth. Saleh has been in power since he was elected in 1999, and has constantly been "re-elected" since, much to the chagrin of the people; the visibility of this sort of corruption, combined with the extremely high rates of poverty and presence of separatist groups have fueled tensions within the country. Yemen is bursting at the seams, and it's only a matter of time for the country to see a revolution.

**Algeria (North Africa)**

Like with Tunisia, demonstrations started in response to the global rise in food prices. The public's mistrust for the government has also been growing for years, especially given the repeated acts of corruption by President Abdelaziz Bouteflika, a dictator who has held power since 1999, and his office. The recent revolutions in both Tunisia and Egypt have shaken the country up a bit- the people have been more vocal in their dissent, and the government has shuffled its cabinet in a weak attempt to appease them. Only time will tell if the Algerian people will follow in the footsteps of their neighbours.

**Lebanon (The Middle East)**

Lebanon has been relatively quiet, but there have been growing reports of public unrest. Unlike in Tunisia and in Egypt, these demonstrations seem to be driven by political parties as much as by the general public. Most of the protestation has been carried out by Sunni Muslims who are opposed to the current government's large Shiite (Hezbollah) makeup. The intensity of the protests has not really been clear and have largely been overshadowed by the demonstrations in Egypt, but it is clear that the Lebanese people are not happy with the way their government is operating.

**Syria (The Middle East)**

There has been mild activity in the country of Syria, though protests here have been dwarfed by those in the nearby countries. Most of the demonstrations have been related to similar issues- high rates of unemployment and atrocious poverty, low wages, and rising food prices. The protests here have largely been non-violent, and much of this is due to the fact that their president, Bashar Al-Assad, is not as despised as Ben Ali was in Tunisia and Mubarak was in Egypt; Al-Assad has always stood up to occidental pressure, earning the people's favour.

**Albania (Eastern Europe)**

The fervor has also spread to Eastern Europe. The protests here, however, are in response to the growing tension between the country's leaders and the opposition socialist movement, who are greatly supported by the public. The emerging instances of corruption have not helped the situation either, as it recently became known that Prime Minister Sali Berisha came to office by rigging the elections in 2009. Immediately following this was the resignation of a well-known minister, after the revelation of another corruption scandal. The subsequent fatal shootings of four anti-government protesters by Albanian guardsmen have stirred the Albanian people into a state of shock and anger, and they have taken to the streets to show their rage. Their only protection from the effects of their own government's vitriol right now is the fact that the European Union has pressured Berisha to hold back.

**Côte d'Ivoire (West Africa)**

Protests here are for reasons that bear resemblance to those in Albania. President Alassane Ouattara was elected in November of 2010, but previous President Laurent Gbagbo will not step down. The problem here is that Gbagbo has the military's backing; they have been instrumental in stalling demonstrations, which have been on and off for a couple of months now. With the recent call to arms, however, it will not be long before Ivorians are clashing with the military again.

**Gabon (Central Africa)**

As in Côte d'Ivoire, current President Ali Bongo, elected in 2009, is being challenged by opposition leader Andre Mba Obame for office. Thousands are taking to the streets on his behalf, stating that Bongo's power was achieved through nepotism, despite the voting process. The conflicts have been getting increasingly violent and have involved the police on numerous occasions. In a speech to the public, Obame stated that he drew his inspiration from the protests in Côte d'Ivoire and in Tunisia.

It is easy to see how the people of these nations can look to their neighbours and begin to question the states of their own lives. These instances of rebellion show only a fraction of the power that can be harnessed when people come together, and to be able to witness it in this day is nothing short of awe-inspiring. Unfortunately, all we can do from afar is watch.

# RE: Changes coming to Engineering Email at Waterloo

## A Response to a Previous Engineering Computing Article

GILES MALET
UW INFORMATION SYSTEMS AND TECHNOLOGY

Since I help maintain IST's mailservices system, to which Erick Engelke refers in his article, I would like to respond.

As Erick observers, we deal with a lot of e-mail. The mailservices system, a mailbox server as well as a gateway for many on-campus systems (including engmail and Connect), processes roughly 1.5 million incoming connections per day. One third of those connections results in mail to deliver; the other two thirds are systems probing ours, blacklisted systems that we refuse to talk to, systems trying to pass a virus that we refuse, connections dropped because of greylisting, and so on. Thus, we end up with some hundreds of thousands of messages to deliver, over half of which are spam -- and perhaps half of these messages are promptly forwarded off campus.

From this point on, mailservices just marks the headers of suspected spam messages, and passes them on. Engineering allowed spamassassin to discard some messages before delivery to the user, but IST puts them in a SPAM folder; a choice that the recipient can override. Although spam rates (as a percentage of total) have climbed steadily in the last few years, we're in a lull at the moment, and, the total amount of mail UW is seeing has dipped recently -- so the amount of spam received is no worse than before.

Erick mentioned that `Under testing Engineering [...] found [greylisting-induced] delays rendered Email effectively useless.' IST still finds greylisting surprisingly effective. Of the approximately 50,000 e-mail addresses that mailservices delivers for, about 50 (one per thousand) are exempted from greylisting. Significant delays are rare -- especially since we exempt mail from Gmail, Facebook, various universities, and others. However, as Erick himself observes, e-mail is not a key method of communication amongst students, so this is all somewhat moot.

Within the last year IST investigated whether UW should move students' e-mail to Gmail, Live@Edu, or similar. The answer was essentially that there is currently no point: our system works reasonably well, and those who want to use something else can. So, we'll wait another year and then look again. However, UW will never be able to offer the collaborative tools those systems offer, and for those tools, we may move. This is a different issue to e-mail: we have e-mail; we'd move for something new, which happens to include e-mail.

Erick mentions the `20 server class computers' that make up mailservices. These form a Linux cluster, the principle of which is to have more, cheaper, computers, for greater redundancy. So, we can weather failures and upgrades without impacting service. In fact, we're currently replacing some five year old hardware with newer equipment, with no downtime. This is a low maintenance and fairly cheap cluster that has practically run itself for years. The low cost means there's not much to save by outsourcing e-mail.

A comment on privacy: the idea that data that remains on servers in Canada is in some way safer from prying American eyes than data in the US is misleading. The Canadian and US governments have reciprocal agreements allowing easy access to the other's systems, so if 'the authorities' want something in either of those places, they will get it. If you're worried about industrial espionage or similar, having your data in Canada is no guarantee that it's safer.

The majority of students are now on mailservices, and by the end of this term possibly all students will be. Alumni may be next. We have had few complaints from everyone involved so far, and trust it will be the same for Engineering.

# Electric Vehicles: Sustainable or Environmental Battery

**BRENDAN SMITH**
EWB CORRESPONDENT

It is becoming steadily easier to make a good case against the continued mass production and use of gasoline-powered Internal Combustion Engine Vehicles (ICEVs) in today's world. According to the Department of Energy, ICEVs are the source of approximately half of the air pollution produced in the United States. Most would agree that the pollutants released by these vehicles, such as oxides of sulphur, carbon, and nitrogen, hydrocarbons, and particulate matter, are detrimental to the future of our environment and our current standard of living.

The discussion enters a gray area however, when talk of solutions come into play. Among the possible alternatives to gasoline-powered ICEVs, which include ethanol, biodiesel, and hydrogen, Battery-powered Electric Vehicles (BEVs) seem to be at the forefront of the race to curb a century-old thirst for gasoline. At a glance, the BEV seems to be the perfect challenger: clean, quiet, with even the ability to provide greater torque from a stopped position, which should appeal to environmentally conscious street racer types. The issue is not so cut and dried though; because the feel-good commercials for BEVs such as the Chevy Volt and Toyota Prius don't necessarily tell the whole story. Critics of BEV development point to flaws such as lack of long range capabilities, frequent recharging requirements, overstressing of the electric grid, and high prices. Likely the greatest weapon in the naysayer's arsenal is the heart of the concept itself, the battery on which the BEV ultimately depends. These batteries are, by necessity, manufactured using metals such as copper, aluminum, gold and tin, some of which are quite rare, and can also be very toxic when released into the environment following disposal of the battery. Although battery lifetime is improving with the development of new technologies, it could still be considered as inadequate, with the need for relatively frequent replacement exposing the lack of efficient recycling and disposal techniques available. Furthermore, a large fraction of both the production and disposal of these batteries takes place in foreign countries. This means that the energy and environmental cost of shipping these heavy units back and forth across the ocean could possibly counteract their benefits.

In order to answer some of these questions, the Technology and Society Laboratory at the Swiss Federal Laboratories for Materials Science and Technology recently performed a comprehensive life cycle analysis (LCA) of the contribution of lithium-ion batteries to the environmental impact of BEVs. LCA is a method designed to assess potential environmental impact caused by products and processes which aims to quantify energy and material flow over all stages of a product's lifetime. The study focused on lithium-ion batteries because they are the most prevalent in the latest electric vehicles, due to their low maintenance requirements and the light weight and superior electrochemical potential of lithium. The findings of the study were conclusive: the impact of the lithium-ion battery used in a BEV is relatively small. Lithium itself, although technically considered a scarce metal, can be extracted from seawater with a minimal amount of process energy; it is also only used in very small amounts in the battery and can be almost completely recycled. More environmentally taxing are the metals used in the anode and cathode of the battery, as well as the process energy required for fabrication. So, can we conclude that BEVs are environmentally sustainable or not? Ultimately, the answer depends on the source of electricity. If the power for a BEV originates from sources of which 50% or greater are fossil fuel based, then the environmental impact is estimated to be roughly equal to that of a small, efficient diesel fuelled ICEV. Taking this into account, and considering that both BEV and ICEV technologies are improving rapidly, one might argue that electric vehicles offer no advantage. However, the fact that the renewable energy industry is slowly gaining momentum, while peak oil is less than a decade away by the most optimistic predictions, means that the ICEV will soon be forced into oblivion by fuel scarcity, like it or not. In conclusion, don't be shocked if you begin to see a rapid increase in electric vehicles on the road over the next few years-they could just be the spark that will start a transportation revolution!

More articles on our blog http://uwaterloo.ewb.ca/

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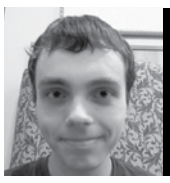
# Safer Bus Rides Suggested by Researchers



**JACOB TERRY**
1B NANOTECHNOLOGY

I am sure most of you readers have boarded the iXpress, or any Grand River Transit bus, and since the bus was packed, had to stand up, hold onto the rail for dear life and try to avoid falling over people. With some help from researchers at Simon Fraser University's Injury Prevention and Mobility Laboratory, this may become an issue of the past.

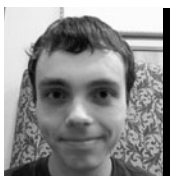
Their research suggests that standing on a subway or bus positioned parallel to the bus's movement, with a shoulder-wide stance and holding a rail at shoulder height is optimal for stable bus riding. This is supported by several global studies, which state more than half of non-collision injuries occur to standing passengers. A trend that could have acted as a motivator for this study was from Vancouver, whose regional transit authority, TransLink, had an increase in passenger injuries last year. This could be a large concern as public transit is becoming more popular in Canadian cities.

The biomedical engineers began their study by measuring start and stop accelerations of buses and Vancouver's SkyTrain vehicles. They also measured the movements of various body parts at these points to see which parts were more susceptible to movement. They then built a machine, which simulated the movements of the vehicles, and had participants in their study test their stance and handrail grasp location.

Unfortunately, while many buses in our system have shoulder-height handrails, many buses across Canada are only equipped with overhead railings. Most GRT buses seem to encourage holding these overhead railings as well, as they have installed the handles on the railings instead of lower spots on poles. The team suggests a change in the interior design of the buses to promote holding on at shoulder-height. This would be particularly advantageous to seniors, because their injuries cost the country about $3-billion every year. If an appropriate bus riding stance were promoted in buses via signs and with the addition of rubber grips to help secure patrons, perhaps these injuries could be avoided, or at the very least minimized.

So, the next time you are riding the bus to the Conestoga Mall, Uptown, or wherever else you may be headed, ignore the plastic grips overhead and hold onto the poles next to the seats if you can reach them. Do not forget to take a sideways stance either. If you are really imaginative you can pretend you are riding the bus as you would a skateboard: It may help you remember the best way to ride without falling over.

# Renewable Energy Economically Viable By 2050



JACOB TERRY
1B NANOTECHNOLOGY

Cleaner sources of energy available today could be cheap enough to power most of the world by 2050, according to a model by American engineers. While most people believe clean energy is too inefficient and small for widespread use, this study from Stanford University suggests the opposite. The study claims that in forty years the world could switch entirely to WWS (wind, water or sunlight), which includes wind turbines, solar, geothermal, tidal and hydroelectric power. Hydrogen fuel-cells and Battery Electric Vehicles (BEVs) were included as options for transportation.

The direct cost of each system was not the only factor in their report. Environmental impact, land usage, leftover waste, renewability and potential opportunity for misuse were also factors believed to indirectly increase or decrease the overall cost of each energy source. In each category, WWS was found to be a substantially better source than the others tested.

Coal with carbon-capture reduces direct carbon dioxide emissions from burning by over 85% compared to normal coal, but the process of mining and transporting the coal greatly outweighs this, as 25% more energy must be made using carbon-capture and sequestration. This takes a huge toll on land use, water use and air pollution. The most environmentally friendly sources of ethanol, such as grasses restored to their natural habitat, were shown to have air pollution mortality on the same scale as gasoline.

Conventional nuclear fission, breeder reactors and nuclear fusion were not considered in the report as a long-term global energy source for many reasons. While some nations may be more responsible with the use of nuclear facilities, many were shown in earlier studies to have increased their ability to use uranium for nuclear weapons. Countries shown to demonstrate this in particular were Pakistan, India, early Iraq, Iran and North Korea, all of which successfully or unsuccessfully attempted to secretly develop nuclear weapons.

Compared to wind energy, nuclear energy resulted in up to 25 times more carbon emissions, due to the refining and transport of uranium and the lengthy process of building reactors, which averages 9 years from the beginning of obtaining a permit to completion. The number of reactors required would have caused a higher loss in vegetation compared to the small footprint of wind turbines.Conventional fission also relies on uranium stores that would deplete in roughly a century. Radioactive waste also raises questions about long-term storage, as it must be kept for thousands of years.

To meet the world's demands for energy in 2030, it is estimated that stations would have to produce 17 trillion watts of power, 3 million of which would be in the US. According to the model proposed, ninety percent could come from wind and solar energy, four percent from geothermal and hydroelectric, and 2 percent from wave and tidal. These sources could be scaled up to be part of a global energy system with a cost similar to the current systems.

Wind and solar energy are inconsistent though, as some times and places are windier than others, and at night there is no sun to provide energy. Wind energy peaks at night and solar energy during the day, so bringing both sources into one system could lessen or eliminate that problem. The other sources would help provide a buffer for these power sources. The plan has been read by other energy experts, who see it as carefully thought out and detailed. As long as there are no unanticipated population booms, the authors of the study believe only political and social boundaries are obstacles in bringing green energy to the masses. Perhaps a cleaner future is closer than we imagined.

# Rhino Poster Controversy

ADRIANA CAMERON
3T MECHANICAL

You've probably noticed quite a few posters around campus promoting Waterloo's Rhino Party in the FedS election. You may have also noticed that there were fewer of these posters up toward the end of the campaign period after a Waterloo student was caught removing campaign materials to express "disdain for the elections process so far, including the debates and campaign material seen around campus", according to the Chief Electoral Officer, Marco Yim.

The Rhino Party has inspired a fair bit of controversy on campus since the campaign period began. Most students consider the party to be a joke as their Presidential Candidate promises that "if elected, we promise to keep none of our promises". However, it is probably for the better that they don't plan to keep their promises as the party's Presidential Candidate, Ian Charlesworth promises "to have FedS finance and produce a Jersey Shore spinoff called Columbia Lake Shore" and to "hire contractors to, using the theories pioneered by M. C. Escher, Esquire, modify the road such that it is constantly a gentle downward slope in the anti-clockwise direction".

Elections Committee released a statement, reminding students that it is inappropriate to remove election material, regardless of how you may feel about a candidate or their platform. The official statement released by the Election Committee stated "that all candidates are allowed to campaign as they see fit, within Federation of Students Election Procedures". The release further read that "We strongly believe in the Charter of Rights and Freedoms and the protection it gives to free speech and freedom of expression. However, we can not condone interfering in a candidate's campaigns and campaign materials".

Members of the student body have expressed frustrations with the Rhino Party using student fees to finance a joke campaign, and wasting time during the debate by providing irrelevant answers that were intended to be humorous. In contrast, some students praised the Rhino Party, for making commentary on the shortcomings of FedS and student leaders in general. Additionally, some credit the Rhino party with creating election publicity, and getting a lot more people to talk about the election and the role of FedS, relative to past years.

Waterloo's Rhino Party is based on the Rhinoceros Party of Canada, a federal party that was launched in 1963, only to be dissolved in 1993 following the introduction of a new rule requiring parties to have candidates running in a minimum of 50 ridings, with a price tag of $100 per riding. The Rhinoceros Party of Canada made novel campaign promises such as "Repealing the law of gravity", "Instituting English, French and illiteracy as Canada's three official languages" and "Counting the Thousand Islands to see if the Americans have stolen any".

# Transportation Ideals in a Changing World

JON MARTIN
3A CIVIL

Whenever you turn on the TV, you are always bombarded with commercials for conflicting products – this soap is better than the other, this shampoo smells like Ireland while that one smells like Scotland. What worries me the most is the continued promotion of huge trucks, or the newest sports car, especially in the current environmentally conscious times we live in. While there are commercials that promote the green aspects of products, they aren't focused on the biggest contributors to the greenhouse gas problems – cars. One of the biggest hindrances to implementing sustainable transportation is the attachment people have to the status quo and the negative viewpoint many people have towards new methods. Two examples of this problem are public transit and electric vehicles.

First, public transit is hindered significantly by lingering public opinion. Many previous generations viewed using public transit as a symbol of being poor; if you couldn't afford a car then you weren't successful. Even when the environment is such a popular topic and people say they are committed to changing, they still do not want to be seen on the bus. Younger generations do not seem to hold this same stigma, instead we utilize public transportation as a means to get where we need to go, as a convenient service that enables our mobility across the city for significantly less than the price of purchasing and insuring a car. This negative stigma held by older generations must be changed if public transit is to receive the funding and support that it requires to be a viable method of sustainable transportation. As long as people get angry about the delay of getting stuck behind a bus, instead of recognizing the benefits of the service they will not fully support the technology.

Second, electric cars are limited by the hold-over ideals from traditional fossil fuel vehicles, particularly speed and horsepower. Cars have always been ranked on their top speeds and acceleration. Commercials traditionally talk about how a car can go from zero to sixty in so many seconds and how a car can reach an outrageous top speed. My question is; when are these stats of practical use? How often do you need to accelerate away from a stop sign in the middle of the city fast enough to melt the tires on your car? How many roads apart from the Autobahnen allow such incredible speeds?

People need to change their attitudes when it comes to travel if electric cars are to succeed, they need to realise that cars don't need to go 200km/hr if they are being used in the city for commuting. Greater research and investment will allow the maximum speed and range of electric vehicles to increase, and the battery life to improve. However, all of these advancements require high capital investments and the support of the general population in order to convince the huge automakers to abandon traditional designs and focus on electric vehicles instead.

In both of these cases the key to change, to embrace new technologies, and accept the future, is education. Maybe education is the wrong term, considering that the problem does not seem to be as apparent in younger generations. We have grown up hearing about issues like water quality, pesticides like DDT, holes in the ozone layer, and other horrible disasters that are really not the consequences of our own actions, but the actions of the generations before us. So I think re-education is a better term, because that is what is required, a true paradigm shift in the ideals and motivations of the general population. Until people can let go of the dreams bred by generations of consuming fossil fuels and pursuing the next better, faster, sleeker, car, we really don't have a chance.

Changing people's opinions and preconceptions is one of the most difficult tasks for implementing sustainable transportation, but it is necessary for future change. Of course there will be huge obstacles to implementing this worldwide paradigm shift, and the biggest contributors with be oil and gas companies. How do you tell a multinational, multi-billion dollar corporation to stop producing oil, lay off all its employees and shut its doors forever? Then there is the influence these corporations have on the governments of the world – try introducing a law to mandate a change and just watch how fast that bill is shut down.

Car manufacturers have the greatest opportunity to change and drive a market shift, as they really are only reliant on their own designs, not the gasoline companies. If the production of oil was to suddenly cease completely, car manufacturers would initially be thrown into a state of chaos – but then they would adjust. The manufacturing would shift from gasoline powered engines to electric – employing the same number of employees, and probably more for research and development.

Around the world we still have choices when it comes to the future of transportation. Putting the necessary money into public transit would cause one of the biggest and quickest impacts, by immediately decreasing the number of vehicles on the roads, and showing that people are committed to change. The shift in driver ideals will be the hardest challenge for the future. How do you change the minds of the people who are in control of the media, industry, government and every other traditional means of educating people? It is horrible to think that these necessary changes will have to wait a very long time before the people in charge are actually willing to do something, and hopefully haven't been corrupted in the mean time.

So in the end it all comes down to our own choices and how we present ourselves to the world. Don't make a decision based on what others will think, base it on what you believe in and what you want the future to be. Don't forget the fact that we will have to bear the burden of previous generations' mistakes, let's try to find the necessary solutions – and avoid at all costs adding our own problems onto the pile. To the future of the world!

# Point Vs. Counterpoint

## You should embrace social Media.

**POINT**

**ANISH BHUTANI**
3T CHEMICAL

Facebook, Twitter, LinkedIn: all of these sites have had a big impact on our generation. Being from New Brunswick, I am no longer distanced from my high school friends, and going home is like I never left. Why? Because the majority of my friends from high school use some sort of social network so that I know what is happening in their lives, and they can know what is happening in mine. Without embracing these and other forms of social media, distance could end friendships and you could be disconnected from the rest of the world.

I know a lot of people who have said that they choose not to join websites like Facebook and Twitter because "everyone uses it." This may have been true when these sites first came out. They could merely have been fads, like MySpace, where people would use it, get bored, and move to something new. Before joining Facebook in 2006, I felt the same way. I thought it would be too much of a commitment to join that website, I would waste a bit of time on it, and then by the next year I would have moved on to the newest fad.

But now that we are in 2011, Facebook has become so much more a part of our lives. With over 500 million people using it, it is a great way to keep in touch with high school friends, friends made from conferences or other events, and relatives. The events application on Facebook has also become a big part of how we know something is going on. On many Friday nights, I have decided what I was going to do weeks in advance because someone created an event on Facebook. Because of this function, where you can easily invite massive amounts of people in a short amount of time, if someone was not a part of the Facebook website, they could miss out on some great events and would need to rely on in-person communication, which thanks to applications like 'Events' on Facebook, is dying down. The same concept goes for Birthdays and what is currently going on in someone's life. Thanks to Facebook, you can know the situation people are in based on a recent Facebook post.

The same thing can be said for Twitter. While Twitter was originally meant for people to share quick bits of information about what is happening in their lives, many companies have begun taking advantage. For example, news groups such as CBC, CNN, Globe and Mail, etc., have made Twitter accounts so that those 'following' them can get news articles as they are released on their website.

While I don't care what the Internet is up to every minute of the day, I do like knowing when something happens in the world at the time it happens, and taking advantage of social network can help with that. Last summer, when Waterloo had an earthquake, I was working on campus in DWE. As one of the people who did not feel the ground shake, the only reason I knew about it was because it began to fill up my newsfeed on Facebook. I then received continual updates through Facebook and Twitter of the size/impact of the earthquake, where it originated, and whether or not they were expecting it to happen again anytime soon. I also heard from Twitter that Parliament had shut down. Had I not had either of these Social Networking sites, I would not have known about the earthquake nor its effect on the world

LinkedIn is another Networking site out there. Though not exactly a Social Media, it connects people in a similar way as Facebook. Connections through LinkedIn are meant to be more professional: connecting co-workers, old employers, etc., to maintain professional relations. As brought up in many CECS workshops and seminars, being a part of LinkedIn gives you a step up over those who aren't involved because it keeps you connected to those who know of hiring positions available and those who can help connect you to other employers/companies.

By maintaining Social Media, you can connect with friends and family through sites such as Facebook and Twitter, know what is going on in the world through those similar sites, stay connected and one step ahead with LinkedIn, manage your social life through other similar sties, each with their own advantages. I saw this morning that the Facebook Page for Nspire, a student run group across Canada that holds workshops, seminars, and competitions about entrepreneurship and business, posting a link from wired.com, which talked about how the Superbowl last weekend broke the record for number of tweets per second going through Twitter, at over 4,000 when the game ended. As an entrepreneurial group, they noted that "Social Media is fast becoming integral in everything we do. Get onboard!"

**COUNTERPOINT**

**HOBYUNG LEE**
3A MANAGEMENT

Social media has no doubt grown to become something that nobody expected only a few years ago. It has become an invaluable tool for things such as journalism and free speech, allowing people to express whatever it is that they want to express, from what they had for breakfast to the dissent that people have towards their government.

Particularly, social media has created a better, more positive dynamic during times of crisis

But aside from times of need, disaster or political upheaval, maybe we are being over connected to social media.

Do not get me wrong: social media has been an extraordinarily crucial medium in not only getting out and spreading the word, but in allowing people a voice and in certain cases allowing outsiders a view as to what is really happening, for example what happened in Egypt or Iran last year. It should be said that while ther is no doubt that social media such as twitter and facebook have helped in ways that were never thought possible, I think it should be important for people to embrace social media, but to make sure to avoid being constantly connected all the time.

More and more, we are all becoming ever connected. The rate at which people purchase smartphones as opposed to regular phones is increasingly helping people be connected to each other through various apps and programs around the clock. At an ever increasing rate, people are demanding greater connection at faster speeds that better allow us to be constantly 'on'. Because of this, people expect lighting fast replies to texts and emails. BBM even has the feature that allows the sender to see if the recipient has received and even read their messages, which creates an overtone that the recipient is expected to answer right away. We want everything right away.

And it doesn't look like it's changing.

If we were to describe our current generation through pictures, the one that represents this need towards constant and ever expanding desire to be connected to social media, would be an image I see everyday: people walking on the sidewalk with their necks cranked down to read their iPhone or Blackberry. Take a look around you, anywhere and everywhere you go people are focused on what's in their hands, being completely oblivious to the world around them.

It is also interesting to note that as we have become a more and more connected generation, we have also become less and less personal. For example, when was the last time you actually called a friend? Or left a voicemail message? More and more we are becoming less personal, yet at the same time expecting responses right away as if we were in a verbal conversation.

There have also been studies done that show that our brains are becoming exhausted with the constant information overload, never being able to take a rest. This bombardment of information, which includes the latest going-ons on your facebook news feed, does not allow our brains to take a break. Constantly being connected means that there is a constant onslaught of information.

Part of the reason why people are always wanting to be connected to one another is because of our aversion to boredom. Which isn't necessarily a bad thing. It is said that it is from boredom that creativity is spawned, and this is hindered when we are constantly updating, checking, tweeting and facebooking. It is important for people to value and cherish the boredom that can be fitted into the day, how little of it we have anyway.

This is not to mention how absurd it is for people to tweet events that people are going through as it is happening. How can you fully embrace yourself in the moment if you have to take time to tell people about how much you are enjoying being in that said moment.

Again, there is no doubt that social media has become an increasingly important tool for a variety of reasons, especially during times of need and emergency, with the ousting of Mubarak in Egypt being a prime example. But as we move forward, during our everyday lives, it is crucial and healthy to unwind, take a step back and disconnect because what else are you going to have to talk to your friends about if you know exactly everything that they've been doing?

Ultimately, social media adds unwanted stress to an already hectic world. The constant need to consult with what is going on everywhere you aren't is leading to unecessary levels of stress.

**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.

# Not a New Phenomenon:

## The Impact of Technology on Society

**ALEX HOGEVEEN RUTTER**
3B ELECTRICAL

The recent uprisings in Tunisia and Egypt were largely facilitated through relatively newfound technologies-Twitter and Facebook pages both helped spark the protests and continue to add fuel to the unrest, especially given government control over traditional media.

Many have remarked on the importance that technology is playing in the revolution. It is difficult to think that the engineers behind such technology considered the social impacts of their innovations-it may even come as a surprise to the progenitors of such technologies. However, technological progress driving social changes is by no means novel: new inventions have been shaping history for millennia.

It is easy to see how early humans benefited from innovations: learning to hunt and cook meat allowed for greater consumption of protein, providing the support needed for an expanding brain and upright physiology. Later, the advent of agriculture gave rise to sedentary communities, fostering a sense of permanent community for the first time. Surplus food production allowed for specialized professions such as metallurgists, merchants, clerics and soldiers. These newfound societal niches allowed for larger and more complex social structures, eventually giving rise to cities and even states.

The domestication of the horse and development of large, seaworthy vessels meant humans were no longer confined to the place they were born: ideas, languages and war could spread from one tribe or culture to another, fostering interactions for the better, though leading to conflict and even the demise of certain groups. Rome is often remembered for its legions, yet the civil engineering required to build and maintain roads across the empire was crucial to the success of its armies. Similarly, it was aqueducts and other infrastructure improvements that made way for the large cities necessary to unit so many under a single flag, government and tax system.

This millennium saw further leaps in technology. Gutenberg introducing the printing press to Europe indirectly led to the reformation-the masses could now have direct access to the doctrines of their religion, rather than solely through the intermediary of their clergy.

It was not until further inventions, such as the telescope proving the existence of moons of other planets, that science finally started to gain dominion over religion in Europe. In parallel, agricultural advances such as heavier steel ploughs promoted greater food production and therefore larger cities and greater wealth to focus on art, politics and science. While this promoted the renaissance, existing societal norms were finally overturned with the inventions spawning the Industrial Revolution.

Harnessing steam power and other non-physical means of production finally started to release mankind from the burden of physical toil. Physical prowess was no longer the overriding factor in a person's success and ability to contribute economically. The advent of mechanized and intellectual labour allowed women and other marginalized groups to contribute equally to the workforce. This equality was a major force behind the women's rights movements of the early 20th century: technology enabling equal participation in the work force meant women could be treated as independent humans, rather than subordinate to the men in their lives.

As is often the case with innovation, conflict, in the form of the world wars, pushed the limits of technology. Though previously considered a novelty, the commercialization and improvement of airplanes in the wars promoted globalization and fostered trade and travel links in times of peace. Similarly, innovations such as the Haber process, driven by a wartime shortage of ammonia in Germany later led to increased agricultural production and the ensuing societal benefits. Plastics, automation and computers have further allowed humans to spend less of their time on menial labour and more on intellectual pursuits. Telecommunications links such as the telephone, fax machine and eventually the internet facilitated global communication, further integrating the global community-bankrupting certain economies and allowing others to flourish.

This exponential growth in technology of the 20th century has fundamentally altered our societies-allowing for decentralization and interdependence on a scale never before thought possible. However, not all innovations necessarily improve society. Increased telecommunications increase the power of the people to communicate with one another, but increased surveillance techniques may allow government to have even greater controls over its people. Automated warfare through the use of drones may eventually reduce the human casualties in war, but are currently acting more as automated death machines, causing further unrest and instability. Internet controls allow governments and corporations to shape, censor and limit our access to information. Smartphones allow us to be more efficient, but can encourage us to lose human interactions and debilitate personal connections. Advances in chemical and nanotechnology can be used for an entire new realm of lethal biowarfare. Clearly the influences of technology on society can be both positive and negative.

It is also clear the influence is not one way. Societal and technological changes influence one another, in intricately intertwined feedback loops. As engineers, and as humans, we have a responsibility to society to ensure our technical innovations are in fact improving the lives of our fellow citizens and generating positive social changes, not further dividing people or limiting the rights of others. Throughout history, technology has an impact on societal change, and as the drivers of technological innovation we must remember that we have great capacity to engineer not only products but society.

# Facebook has Corrupted Advocacy

**SPENCER MCEWAN**
4B ELECTRICAL

I would like to discuss briefly the merits of Facebook. The social website, that everyone has come to know, love, and hate, was originally designed to let friends interact with each other on the Internet. Writing messages to one another and looking at each others pictures was a big part of what Facebook was originally envisioned to be. After six years, Facebook has morphed into a behemoth of companies, governments, fan pages, groups, applications, games, and the list goes on and on. Now it is easy to show your support for your favorite artist, or to speak out against the plans to scrap the Transit City project in Toronto. However, I assert that this ease of advocacy available on the Internet is actually undermining real advocacy.

I know that I have on some days received invitations to more then a dozen events or groups. In some cases, a group has been formed to support or oppose a current issue. Most of the times, I don't even bother opening up the group to see what it is about. As with emails, I skim through the subject line and determine whether it is worth reading. At least with a petition an actual person would interact with you, explain the background of the petition and give justification on why the issue should receive your signature. With the rise to prominence of Facebook, the discussion becomes one-sided. A short description is attached to the title of a group, and all you need to do is click 'Join Group' and you have silently consented to the aims of that group. In some cases, you need to be a member of the group to join the discussion at all regardless of if you support it or not, so the size of the true group is not easily known. As well, you may get invitations to multiple groups regarding the same topic, so if you choose to join one and ignore the rest, or join all of the groups, you are skewing the numbers.

However, the biggest potential blow to advocacy is that this form of online petitioning is quickly overshadowing more traditional forms of solicitation and consultation. More and more, readers are reviewing posts and discussions and their only action they take is to click the 'Like' button, or to leave a comment. That's it. They have stated to the world that they agree with what they have just read, and nothing more will be done on their part. Unless their comments or show of contentment are read and acted upon by outside parties, their participation in the matter is finished.

How did advocacy happen before we had Facebook and the Internet? If we look at the social turmoil that occurred during the 1960s, students took to the streets to advocate for and against the issues that defined the decade. The use of posters, pamphlets, sit-ins, letters, rallies, advertisement on radio and television, and other forms of advocacy were the norm. Although it could still be easy to ignore, we knew there were actual people behind the campaigns. The Internet has led to a wave of anonymous advocacy, and along with it has arisen the irrelevant posts and childish flame wars that rage on in the comments section. The Internet has enabled us to reach so many people at once, but the constant barrage of status updates and information has desensitized us.

In short, don't assume that a status update condemning the loss of green space on campus is actually going to result in any action in the real world. You have made your opinion known, but you are now relying on others to notice your opinion and carry it along. Nobody is forced to read your comments, or to act on them. Facebook is a network used to share information, but it is still up to its user to back up their opinions and take action.

# What You Should Know About Our Dean, Dr. Adel Sedra

**SCOTT RANKIN**
PRESIDENT

The content of this article are my opinions only and do not represent the opinions of the Engineering Society or the opinions of the entire Engineering Student body.

I wanted to take a break on reporting about the Engineering Society for this issue, mostly because nothing of huge importance (other than the Vision 2015 forum) has happened since last week, but also because I wanted to take a second to write about our Dean, Dr. Adel Sedra.

I have had many formal and informal opportunities to talk and discuss issues with Dean Sedra in my position as Engineering Society President. I wouldn't say that the average uninformed engineering student is displeased with the performance of our Dean; I would say this is far from the truth. I think that all the students here can agree that our Dean does a fantastic job of keeping the reputation of Waterloo Engineering at the top, and ensuring that we graduate only the best engineers in Canada. No, I don't think anyone would ever say that our Dean does a bad job. However, I hear murmurs once in awhile that our Faculty does not care about our opinions as students, and that they don't care about student life here on campus. I have to say that this is not true at all.

From my experiences with Dean Sedra, I can tell you that he is a very open-minded individual, but more importantly, he cares a tremendous amount about not only our opinions but also about our well-being as students. After you get past the big scary fact that he is our Dean, he is actually a very approachable person with a great sense of humour.

Now you may be thinking I am trying to earn brownie points with our faculty. Well that is also not true. I really have no ulterior motive to this article, since I am about to graduate. I just feel as though I have had the privilege to see a side of our Dean that many have not, and I felt as though I should share this with the student body.

I have come across certain events as a student leader in the 5 years I have been here at Waterloo, and these events have left a bitter taste in my mouth about the school as a whole. This has pushed me to want to graduate with thoughts of "Good riddance". However, it is because of the attitude our Dean and our faculty has had towards me as a student that I feel appreciated as a leader and that I plan on graduating from this school with the thoughts "I'm proud to have graduated from Waterloo".

So when you see our Dean in the hall give him a wave, or maybe a "Hi": I'm sure he'll give one right back.

On a related note:

The Dean is coming to the next Engsoc Meeting (Feb 16th @ 5:30pm CPH 3607). Please email me any questions you have for him prez_bsoc@engmail.uwaterloo.ca.

And congratulations to Alessia Danelon our new President who will be replacing me come April.

# WatPD, Co-op and New First Year Policy

**ALEX HOGEVEEN RUTTER**
VP EDUCATION

**Student Services**

EngSoc is developing a scholarship bank for students! Keep an eye on the EngSoc website for its impending release. If you know of scholarships which should be added to the system, let Scholarship director, Henry Chan (h2chan@engmail.uwaterloo.ca) know and he will be happy to hear from you.

Midterms are coming up! Make sure you submit your midterms for P*5 points or exam bank administrator, Owen Coutts, will hunt you down and glare at you, making you feel absurdly tiny.

**WatPD**

Enrollment in Quest for WatPD electives will be occurring soon. There will be an information session Monday February 28th, from 11:30-12:30 in TC2218 for those interested in learning more about the electives. Remember that you will be automatically enrolled in PDEng if you fail to select a PD elective.

**Co-op**

Good news: I can confirm co-op fees will be frozen this year, due to the freeze on salary increases. In general, when co-op and tuition fees continue to increase exponentially, it tends to be a function of the public sector mentality that salaries should rise faster than inflation, so it probably makes more sense to complain about fee increases as a taxpayer than to the faculty.

Lots of good discussion at Co-op Education Council. Natural Resources Canada is encouraging students to participate in their Progressive Internship Initiative, where students are expected to return for multiple terms, but are given additional mentorship and training. Keep an eye out for such postings in Jobmine- I strongly encourage fostering longer-term relationships through Co-op, and this program is one way to formalize that process.

If you are interested in research, a good co-op job to consider might be an undergraduate research internship. Available funding continues to increase, and now is a great time to consider taking a research position on campus. Summer terms have by far the most unemployed students, so be prepared to think outside the box when finding a co-op job. Remember you only need 5/6 co-op terms, so those short of funds might even consider taking an unofficial job for the experience and money, rather than remaining unemployed.

**Waterloo Works**

Waterloo Works will not be released to the university at-large until, at earliest, Fall 2011. Complete functionality, such as multi-stage matching, may not be released but this and other features are still on the table for its final form. My co-op rep Owen Coutts and I have been working with CECS to ensure student needs are addressed and they will continue to seek feedback as they go through the pilots. The new system will provide much more data for CECS to improve their operations and will ideally be easier and more intuitive for employers and students.

**Policies**

Not too much exciting business at most of my policy meetings. Systems Design approved adding a second tutorial hour to its first-year, half-weighted (ie. quarter-credit) courses, to bring the total hours to 4 (2 lecture, 2 tutorial). On one hand, it's somewhat exciting to see a department take seriously students' challenges with math, but it may set a dangerous precedent for increasing the number of hours per credit. It raised the interesting question of whether students are willing to do more work without credit if it will help improve their long-term success.

**Vision 2015**

The Town Hall forum occurred on February 2nd and students were given the opportunity to question the dean and associate deans about the challenges facing the faculty of engineering. I would encourage students to continue to be engaged, ask questions, offer suggestions and get involved with their departments as they move forward with their individual plans. http://www.engineering.uwaterloo.ca/Vision2015/

# Tickets for Charity Ball

**PETER KELLY**
VP INTERNAL

First of all, I would like to congratulate all the new exec on winning their respective positions. I am sure that all of you will do a fantastic job in your terms!

I want to remind you all to buy your tickets for the upcoming Charity Ball on March 13th at FED Hall. Tickets are $15 for an amazing evening of dancing. All proceeds go towards the charity Free the Children. If you would like any more information about this event, or anything else EngSoc related, please contact me at bsoc.vpint@gmail.com

# Time to Allocate the Funds

**GRAHAM STONEBRIDGE**
WEEF DIRECTOR

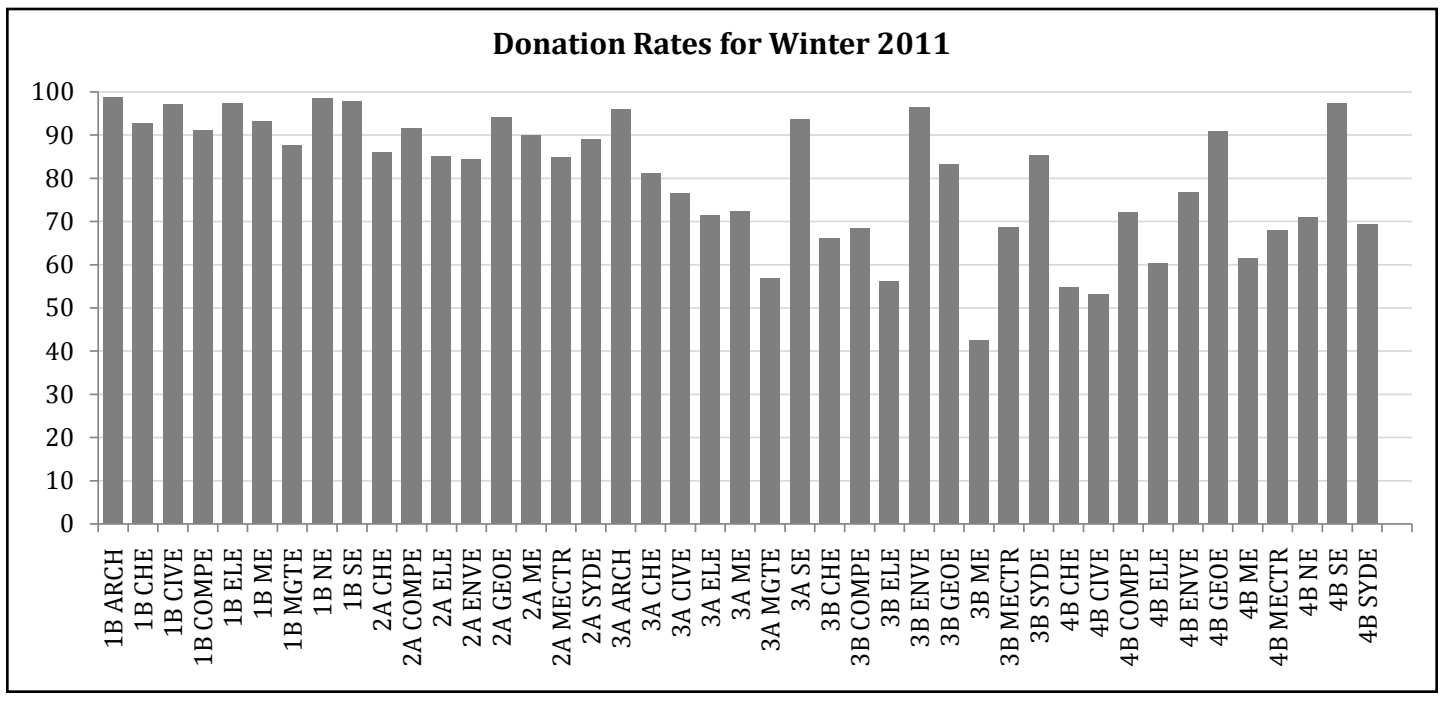
The winter 2011 WEEF proposal period closed on February 15th and WEEF is currently preparing for the Funding Council meetings that will occur after reading week. If you have submitted a proposal, don't forget that you need to make a presentation to the council - presentations will occur on March 1st in DWE 3522 and March 3rd in RCH 301 at 5:30 pm. Dinner will be provided to each WEEF class rep who attends these meetings.

To ensure your class/department gets a say in the distribution of this term's $60,000.00, please make sure that a representative from your class attends these meetings. If you don't know if your class has a representative, email WEEF and we will add you to the roster. It is incredibly important that each department is well represented at the funding council meeting.

In other news, WEEF has statistics for you! This term only 21 percent of all students opted to get their voluntary student contribution refund. Refund rates have been similarly low for the last year, which is good news for WEEF and for you. See the accompanying chart to see how your class compares to the rest of the faculty.

Last issue, I mentioned that WEEF will be holding an Annual General Meeting this term. What will this involve? Among other things, we want to add a new member to our Board of Directors. We also plan on answering questions and clearing up any misconceptions about WEEF that have been expressed in the last year. I seem to remember free t-shirts and cake being popular at last year's 20th birthday celebrations - expect some sort of similar excitement at this year's event. Do you have questions you want answered by WEEF at the AGM? Email us at weef@uwaterloo.ca

As a final note, I want to congratulate Laurin Benson who will (pending the board of directors' approval) take over as the B-Soc WEEF director in the Fall term. Thanks everyone for your continued interest in WEEF and the fantastic faculty it supports.



# March Volunteer Opportunities

**KEVIN LING**
VP EXTERNAL

Over the next few weeks, there will be several volunteer opportunities for those looking to get more involved, or for those who just want to come out and participate in a really cool activity. Registration for a lot of these events has already started. Registration deadlines are quickly approaching, since we need to make sure in advance that we have the people required to run the events. So please take a look at the following and volunteer if you can!

Canstruction is a challenge hosted by the Food Bank of Waterloo Region, in which teams compete with the objective of building the most impressive structure out of non-perishable food items. Take a look at www.canstruction.org to get a gist of it. If you think this looks awesome and would like to be part of a UW Engineering team for this event, please read more at http://engsoc.uwaterloo.ca/node/5501.

Explorations is a high-school outreach event where hundreds and hundreds of Grade 6-8 students and their parents will descend upon Waterloo Engineering to see what we're all about. We are looking for volunteers to be tour guides for the night, who will be responsible for showing the young students around the engineering buildings. Find more info at http://engsoc.uwaterloo.ca/node/5500

Shadow Day is looking for volunteers to take students to class with them on March 9th. This is a high-school outreach event, geared at students in grades 10 to 12 who are about to decide which university they want to attend. The younger students will follow engineering students around to see what a typical day in the life is like. A number of people find taking on a shadow rewarding, since they sometimes see the high-schoolers that shadowed them walking the halls as first years when fall rolls around. More can be found at http://engsoc.uwaterloo.ca/node/5504.

And I'm not going to lie, but all those conference reports I mentioned here and there are still vapourware. They'll be out eventually, but they are low on the priority list at the moment, since so many other things are cropping up.

Over the next few weeks, I'll be getting ready to start transitioning your new VP External elect, Yasser Al-Khder. I'm hoping to bring him up to speed on everything that I do before the end of this term so that he can be the best exec that he can be, or something.

# National Engineering Month is Coming!

**ERIN MATHESON**
3A CHEMICAL

Regardless of whether or not you got to go somewhere warm during reading week, the first week of classes afterwards is always on the dreary side to say the least. This year, we're in luck, as February 26th – March 6th marks the kick off week for National Engineering Month (NEM), a country-wide volunteer initiative to celebrate Engineering and its wonderful traditions. Started in 1992, the purpose of NEM is to raise awareness of the importance of engineering and to encourage kids to choose engineering or similar technical fields of study.

During this week, events are being held across the country for engineers, engineering students and the community as a whole. This year, your NEM directors have some neat tricks up their sleeves to get the celebrations started at Waterloo. We will be building a Rube Goldberg machine as a part of the Engineering Student Societies Council of Ontario's (ESSCO) National Engineering Month celebration. Each member school will build an intricate machine that will send a message to another school, subsequently starting their machine. The final machine will be at the CN tower, and light up a scale CN tower model in purple lights with a sign that reads E4TW, meaning 'Engineers for The World'.

Leading up to the day where these machines will be run, there will be a seminar for high school students on the 2nd of March where they will be able to build a component of Waterloo's machine, as well as learn about choosing engineering as a career and what to expect from an engineering undergrad program. Your neighborhood NEM directors will be looking for volunteers the week after reading week to help out with this evening event – food will be provided! It will be a great chance to talk to some future Waterloo Engineering students!

On the evening of the 4th of March the machine will be unveiled in the E5 student team bay. The signal to start the machine will be received from another school via e-mail and the machine will then move throughout the student bay space. Local media has already been recruited to cover the event – it's going to be a big engineering spirit party! We will also be using this event as the kick off event for other NEM-spirited events that are planned for the remainder of March. I highly encourage everyone to stop by – further details will be released as the date gets closer… and hell week goes away.

The bottom line of NEM is to increase engineering spirit and awareness, and I think Waterloo is the best place to make this happen. There's always a flourish of it during frosh week, but a bit of a lull always tends to happen during the winter term. So break out your favorite purple shirt, or skin tone, hum a little bit of everyone's favorite Lady Godiva hymn, and most importantly – keep an eye out for spirited NEM initiatives from your local NEM directors!

# i3 Design Challenge – Phase 2 Begins

**JON MARTIN**
3A CIVIL

The i3 Design Challenge has now entered its second phase. If you have seen the posters around campus, or the multicoloured scarves worn by challenge participants, you might be wondering what the i3 Design Challenge actually is. So here's some explanation, i3 – standing for Innovate, Integrate, Implement, is a design competition organized across campus, putting students from all faculties in control of the future of the campus. The project has been spearheaded by Professor Jeff Casello, associate Dean of the Faculty of Environment and faculty member in the Faculty of Engineering.

The purpose of the i3 challenge is to put students in control of the redesign of the southern entrance to campus. The project is focused on two main areas, with distinct implementation time. The Vision Gateway Area covers the University Avenue and Seagram Drive intersection, extending north to the plaza and south to approximately Westmount Road. The Gateway Core area is focused on the actual front access of campus, from the Seagram/University intersection up to South Campus Hall.

The Gateway Core area is specifically focused on making the front of campus a spot that people actually want to go. The big issue addressed is the way the university actually welcomes people to campus. When we have employers coming here for interviews, or prospective students deciding on what university to attend, how do we greet them? With cardboard signs duct-taped to wire and a front sign that is blocked by the traffic lights- I think you get the problem.

The Core area is the location for the 'immediately implementable' aspect of the design, which will start construction this fall. The Provost's office has officially set aside $100,000 for this aspect of the project, which is great for the challenge. This commitment actually gives force to the challenge: this isn't just some imaginary project that gets put on the shelf – this is actually going to be built.

The Gateway area can include changes to the existing road structure, including realigning roads and intersections, or removing them entirely – of course you have to demonstrate that this is a valid plan. The Gateway area is planned for implementation in the 5-10 year window, allowing grander ideas that will take much more time than the September start date would allow.

Initial registration for individuals to sign up and create a team was extended to match with the first submission date, February 1st. This first submission was meant to show each team's overall plan for both the Gateway and Core areas, with particular emphasis on the implementable part of the project. Now the next stage is set to start, with ten of the twenty-two teams continuing to the second round, announced on Feb 15. The second round submission will be due March 29th, with the four continuing teams announced on April 5th. Final submissions will be due May 5th, with final selection time yet to be determined. With each stage the submissions will become more focused and technical, shifting from broad descriptions and general photos, to actual schematics and full scale models.

Keep an eye out for more info, watch for the i3 Challenge scarves around campus, and see how the face of the University of Waterloo will be changed for the better in the next few months.

## Upcoming Events Calendar

| | | | | | | |
|---|---|---|---|---|---|---|
| Wednesday<br>February 16<br>EngSoc Meeting<br>5:30PM CPH 3607 | Thursday<br>February 17<br>Running Club<br>5PM POETS Patio | Friday<br>February 18 | Saturday<br>February 19<br>Reading Week Beings | Sunday<br>February 20 | Monday<br>February 28<br>Iron Warrior Meeting<br>5PM E2 2349 | Tuesday<br>March 1<br>Running Club<br>5PM POETS Patio |
| Wednesday<br>March 2<br>EngSoc Meeting<br>5:30PM CPH 3607 | Thursday<br>March 3<br>Running Club<br>5PM POETS Patio<br>Eng Orientation Week<br>Directorship Apps<br>Close | Friday<br>March 4<br>MOT Party<br>8PM Chainsaw<br>IW Submission<br>Deadline 6PM | Saturday<br>March 5<br>Engineering Curling | Sunday<br>March 6<br>Engineering Rock<br>Climbing | Monday<br>March 7<br>Iron Warrior Meeting<br>5PM E2 2349 | Tuesday<br>March 8<br>Running Club<br>5PM POETS Patio |

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

ENGINEERING
UNIVERSITY OF WATERLOO

# Meeting the Real World

## A Letter from an Alumnus

**GARRY E. LEVECK**
1973 CIVIL

It is almost 38 years since I proudly graduated from one of the most respected engineering schools in the world. It seems so long ago and yet, at times, it just seems like yesterday.

It's funny how you think you know so much when you finally graduate. Life was good, real good in fact. If the truth be known, however, my classmates and I were only beginning a new and profound phase of learning and growing….meeting the real world. Wow, were we in for a surprise!

For myself, at the time of graduation, I was blessed to have the support of my new wife, Mary. She provided both financial (she was a kindergarten teacher) and moral support, as I moved forward from a life that had been, up until university graduation, fully consumed by education. My first life lesson: Pick a good partner who you can trust and love forever.

Was I ready for the new challenges and responsibilities that faced me? Was there a way that I could better prepare for what lay ahead? What kind of job opportunities should I investigate and consider as a career? Or, should I stay on at university and extend the institutional learning process? These questions only scratched the surface of what was going through my mind, and, to be honest, there were no definitive answers, at the time.

So what have I learned in 38 years of hard work and dedication to my career, family and myself that may be of some help to Engineering students who will soon face the same life changing event? I am certainly no prophet, and I am also not suggesting that my life story is a "model for all". However, perhaps I may offer some words of advice that may help, in some small way, those who will soon graduate and move on to a life of full time employment.

1. Decide what you want to do: Engineering offers a wide variety of job opportunities in both the public and private sectors. If possible, decide whether you wish to work in government or for a private company. They each have their pros and cons, and, if there is any doubt as to which is better for you, set aside time to meet with successful people in each area so that you can make a proper decision. The worst thing that you can do is to accept a job simply for the sake of "getting on a payroll". If it's not right, then it will be much harder to turn the corner at a later date than to simply wait at the beginning for the right job to come along. I can speak from experience, as I turned down 4 solid job offers that did not fit my goals until the right offer came along in 1973.

2. Develop love and passion for what you do: I can't stress enough the need for you to be passionate about your job and be excited every day about going to work. If this feeling isn't there, then it's time to move on and find something else in your career path. If you struggle to discover "love for your work" after several years, then you need to seriously question your career goals and move forward in another direction. I have been very fortunate, as I have been passionate about my career as a consulting engineer virtually since the day I was hired. I can also state that, after 38 years, the "fire still burns in my belly" for the chance to work on new multidisciplinary and challenging projects.

3. Find a mentor and never let go: Early in my first job, I realized that the manager who hired me, as an engineer-in-training, was precisely the person I wanted to emulate in my career. My total respect for this man drove me to work harder and to learn as much from him as I possibly could. In time, my respect for him became mutual, as he came to recognize the value of my hard work and how I was learning the business. Today, my mentor is happily retired and remains a close friend who I still rely on, from time to time, for some valuable life lessons.

4. Make time for Family, Friends and Recreation: I have been fortunate to have 4 very successful children. Although I offer a lion's share of credit to my wife for how our children have developed into quality citizens, I believe that my commitment to ensuring that work didn't overshadow my family was crucial. I vowed, at the beginning of my career, that I would be home for dinner each and every night (unless I was out of town) to share the day's stories with my wife and kids. True, after they went to bed, I typically opened my briefcase and worked for an hour or two to ensure that I was "on top of my game" in terms of office work. The bottom line, however, is that I set aside the appropriate time for my family when many others I know didn't. The same rule applied to friends and recreation, and I am confident that my decisions in this regard have paid immense dividends over the years. Make sure you make the same commitment!

5. Take on as many assignments as possible with bold enthusiasm: The last tidbit of advice that I can offer is for you to accept any and all job assignments with gratitude and enthusiasm. Each assignment is a golden opportunity to learn something new, even if there may be potential failure lurking in the wings (It's been said that those who never fail are typically never doing anything). The more projects that you can take on the better equipped you will be to move forward towards a rewarding and successful career. Those who turn down opportunities, regardless of the situation, are generally overlooked the next time around. A sidebar to this thought is that it also never hurts to request new assignments to work on. This kind of initiative is the sign of a rising star.

When I was asked if I would write a brief Alumni Letter for the Iron Warrior Newspaper, I wasn't quite sure what to say. Obviously, the appeal of stories on someone's personal life can be somewhat diluted by the fact that no one typically knows the author, which would be true in this case. Therefore, I decided to take the approach of "selling some advice", based on the collective experiences in my personal and business lives. Both sides of the story are distinctly separate but it's amazing how interconnected they are in the end.

In conclusion, make the most of your life….be happy and smile, strive for goodness, pay attention to details, show enthusiasm, love your job, find your niche, learn at all times, respect those around you, and, most of all, make time for family, friends and relaxation!

All the best.

# Concrete + Toboggan + Hill = BRILLIANT IDEA

**KRISTEN ROBERTS**
3T CIVIL

On January 26th, 11 members of the Waterloo 'B' toboggan team, joined by 2 members of the Waterloo 'A' team, traveled to Edmonton for the 37th annual Great Northern Concrete Toboggan Race (GNCTR) hosted by the University of Alberta. Over four days, their 300lb toboggan with a concrete running surface was judged against 19 other submissions on innovative design, sustainability, safety, performance and its braking system.

Unlike many other design competitions, GNCTR is as focused on the technical aspects as it is on spirit and team enthusiasm. To put it simply, the competition is much like a mini version of frosh week. Teams chose a theme, make costumes, create cheers and dances. The day focuses on practical applications of engineering principles and are followed with parties that continue into the early morning. You would be lucky to find students with more than 4 hours of sleep a night.

This year, UW's team chose "Slednecks" as their theme. Other notable engineering entries were University of Calgary's "Sledimentary My Dear Watson", Alberta's "Sheep" and Toronto's "Dr. Suess" complete with Thing cos(0) and Thing √4.

On the first night, opening ceremonies were held to welcome the 400 engineering students, teams were given a few minutes to present their themes in skit, before partying the night away.

The next day students were bussed to U of A's campus where East faced West in mini challenges, including newspaper bridge design, "Are you smarter than a Frosh", tug of war and a dodgeball tournament. As with most things, the fun shared with new friends was what really mattered, not the results (Read as: the West won).

The second morning brought forth a wonderful surprise of bacon for all the competitors, courtesy of the McMaster team and their skillets. It was a wonderful start to the Technical Exhibit, which displayed each team's toboggan for the first time of the competition. The UW team recreated a redneck's yard in their booth, complete with empty cans and a welcome mat. Throughout the day, judges evaluated the sleds at each booth and inquired about the mix design, braking system, frame and construction process. In the meantime, the hundreds of engineering students managed to entertain each other with mini games, dance instruction, jump rope, trolley races, baseball games, tag, chanting, washer ring toss and even a murder mystery game.

At last, the most exciting day of the competition arrived… RACE DAY. Held on a ski hill divided into two lanes, the teams finally were able to test the toboggans they had spent the past months designing. Fitted in black coveralls, Waterloo's team journeyed down the hill, most of it upright and in the toboggan. Unfortunately, Waterloo suffered the same steering and flipping complications as other schools and did not complete their first run. After the first round of races and only having 3 of the 19 teams with a successful run, it was determined that the man made ramp leading onto the hill was not large enough to accommodate the sizes of the sled. For round 2, teams were given the option of starting below the ramp. This worked wonders for Waterloo and they completed the run, reaching a maximum speed of over 40km/hr.


Ryan Moxam

**The Concrete Toboggan Team in their pre-race costumes.**

With the speed competition finished, the fun King of the Hill races began. Two teams raced simultaneously down the hill, with the winner going on to the next round. In the first round, Waterloo seemed to be far in the lead, but then the pins used to steer failed to recoil, and instantly the sled flipped. Thankfully, no one from our team was injured. The University of Saskatchewan ended up winning the event.

It was an additional bonus that Rick Mercer attended and filmed both the Tech Exhibit and Race. U of A invited him to steer their toboggan in one run and ride in it in another. Without spoiling what happened, UofA team 1, Hill 1. For highlights of the race day go to http://www.youtube.com/watch?v=CMaUrb9Y4kA . Smiles and laughs guaranteed.

Like all good things, the competition came to an end with a banquet and award ceremony. Overall, while the Waterloo 'B' team was one of the smaller teams, they came in 8th. They also received honorable mention for their technical report, being commended on their excellent research and design.

One final reminder, this student team is open to ALL years and disciplines. Whether you are interested in the design, construction, report, sponsorship or social/spirit aspects please consider the UW GNCTR team. The stigma that this team is only a 4th year civil team has negatively affected our performance and we want to change it. For more information on how to get involved (Waterloo A or B) go to the website www.eng.uwaterloo.ca/gnctr .

Again, congrats to the Waterloo 'B' team! You guys did an amazing job! We hope for the same successes next year in 2012 (Location still to be determined).

# UBB May Stand for Unbelievably Big Bill for You

LISA LIU
3B ENVIRONMENTAL

On January 29, 2011, many households in Ontario and Quebec received a letter from their Internet Service Provider (ISP) about recent changes to their internet plan. These changes stem from a recent announcement from the Canadian Radio-television Telecommunications Commission (CRTC). This decision is called Usage Based Billing (UBB).

So what exactly is UBB? UBB is essentially a pay metre on your internet usage. The CRTC ruling would impose a 25 gigabyte cap on information that can be transferred to your computer per month. If you want more, then you better be prepared to pay approximately $2/gigabyte of extra information. If you're like me and you use Steam to feed all of your gaming needs, simply downloading Call of Duty: Black Ops would cost you half of your 25 gigabyte internet cap. As an engineering student at Waterloo, I'm sure I don't need to remind you of your personal internet usage habits. Chances are, most of you are like me and permanently live on your browser. Your hands will automatically click into Facebook without consciously realizing. With UBB, even subconscious actions like that will cost you.

The CRTC calls UBB "an economic internet traffic management practice whose purpose is to manage internet traffic on an incumbent carrier's faculties." In plain English, it means that the CRTC is putting in place UBB to allow infrastructure owners such as Bell and Rogers to earn more in order to upgrade their infrastructure network.

Currently, most of the network infrastructure within Ontario is owned by Bell, and all other ISPs, especially the smaller ones such as Tekksavvy pay to use the existing infrastructure to deliver internet access to their customers. By enforcing UBB, not only do customers have to pay for usage based billing, so do small ISP's. In addition, the new ruling says ISPs are charged the same as customers for monthly caps and usage rates. The CRTC says this is to provide extra capital for Bell and other infrastructure owners to upgrade the current out-dated lines to newer faster ones that guarantee transfer speed. However, as UBB was planned to be implemented, transfer speeds are not guaranteed. Most major ISP's only promise speeds of "up to 30mbps".

So what does this all mean? For one, the proposed UBB plan will effectively put smaller ISP's out of business if they have to pay the same rates as their customers for renting the lines from Bell. This will undoubtedly result in a monopoly of internet provision for the large companies who already own network infrastructure, resulting in further artificially inflated prices for the internet. Canada already has one of the world's most expensive internet prices, in addition having one of the world's slowest transfer speeds. High-speed internet costs between $50 to $60 per month in Canada, where as unlimited packages of similar speeds in the US average $30.

You might ask why an independent commission such as the CRTC would pass a ruling so obviously in favour of big telecoms. Looking at a list of the commissioners working for the CRTC would provide that answer. Most of the CRTC's employees have worked for telecommunication companies in the past or have ties to them. Of course, in order to make policy decisions about telecommunication, the commission needs to look within the industry for expertise. However, it's obvious a conflict of interest exists, especially when there is no transparency in CRTC's policy decision process.

This isn't the first time large telecommunication companies in Canada tried to monopolize and artificially boost the price of the services they offer. It took years for companies like WIND to break through the legislative traps (lobbied in place by, you guessed it, Bell and Rogers) that prevent them to get into the mobile service provider business. Now the Canadian telecom giants are trying to achieve the same monopoly in the internet market. Similar to cell phone bills, UBB means internet bills will become a guessing game at the end of every month. Whether you're over your allotted minutes or your bandwidth cap, in the end the consumers pay and the telecom companies profit.

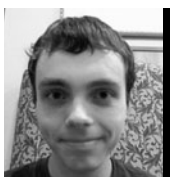
The root cause of all the CRTC changes is that Bell and Rogers don't just provide internet services. They are also in the phone, mobile phone, and cable businesses, to name a few. With the entry of Netflix in Canada, the Bell and Rogers' on-demand movie services can no longer compete. Who would pay $5 for a movie serviced by their cable box when they can pay less than $10 and get unlimited movie viewing for a month on Netflix? We're talking high quality movies streaming to your computer, which can easily be hooked up to a television for the same viewing effect. By curtailing the public's ability to use the internet in large quantities, Bell is essentially shutting down the viewership of movies and TV shows through internet streaming. Even the president of Netflix stated that with UBB in place, Netflix cannot survive in Canada. Now the public have to turn back to their good-old cable box to order movies at $5 a piece, giving the money back to those responsible for the CRTC decision in the first place.

The news of UBB caused public outrage. An Angus Reid Public opinion poll showed that 76% of respondents were against the CRTC's ruling in favour of UBB. An online petition run by OpenMedia.ca received more than about 420,000 signatures in just over a week. Many major newspapers ran articles and editorials with regards to the issue. A volunteer website to "Download for Canada" even sprung up in the US to download large files and ship to Canada. As a result of the public dissatisfaction, all political parties in the Federal Government condemned the CRTC's decision. Conservative Industry Minister Tony Clement told the CRTC to go "back to the drawing board", and threatened to overturn an unsatisfactory decision.

Since UBB came into effect, Bell has admitted to problems tracking internet usage for some customers. Bell customers complained their internet usage shown by Bell's website tracker exceeded their actual usage, some by 50 to 200 percent. Although Bell says only a small minority of customers was affected by tracking errors, the company removed the third-party internet-monitoring tool and will reverse some usage-based charges. Meanwhile, as of February 10, 2011, Bell Canada Enterprises Inc. reported a profit up 25% from the same period in 2009.

In response to the public outcry against UBB, the CRTC announced that they are reexamining metred billing practices, and they are seeking public input. I urge you to contact the CRTC or your local Member of Parliament, even if it's just a quick email, to tell them what you think of UBB. After all, our future is closely tied with the future of the internet.

# Biofilms Potentially the Most Liquid-Repellent Materials in Nature



JACOB TERRY
1B NANOTECHNOLOGY

Researchers at the Harvard Medical School Department of Systems Biology have discovered that due to bacterial slime, bacterial biofilms could be the most liquid-repellent surfaces on Earth, even more than Teflon, which is one of the most widely used chemicals for keeping surfaces waterproof.

Biofilms are bacterial cells that stick together through bacterial slime, scientifically referred to as the extracellular matrix, which is a mixture of sugar and protein. Most bacteria have been studied since the seventeenth century as individual cells, but in the last couple decades biofilms have started being recognized as an important part of the bacterial ecosystem. The liquid resistance of biofilms was discovered as a byproduct of the research being done with them.

To measure how liquid-resistant a material is, a drop of liquid is placed on a surface. The angle between the surface and the opposing edge of the liquid drop determines how resistant a material is to liquid. If the contact angle is larger, the material is more resistant.

Teflon, or polytetrafluoroethylene, has a contact angle of 110 degrees. This is predominately because Teflon is so hydrophobic: when an equal ethanol/water mixture is used instead of water, the contact angle nearly halves. In other words, as more ethanol was added to the mixture, the liquid spread from its drop shape to the dome shape that most liquids have when in contact with materials.

Biofilms have a contact angle near 135 degrees when drops of water are added, and stay in that shape even when the liquid is up to 80-90% ethanol. Past 90% ethanol, the biofilms start becoming significantly wetter. Lysol, drain opener, acetone, methanol and isopropanol also create high contact angles with the biofilms; bleach is the only major exception.

The surface assists in keeping the material liquid-repellent. The matrix has a highly crinkled appearance on a 10 micrometre or 100 micrometre scale. This multi-layered crinkling has been demonstrated as a strong component in oil-resistant surfaces.

The researchers think that once they completely understand their molecular structure, biofilms could have significant uses not as a Teflon replacement but in other applications for materials. They believe the material matches the concept that protein and sugar is needed for the repelling property, and while they still don't completely understand why the sugar is so dominant as a repellent, they have started doing follow-up research.

# Bill Nye, the Engineering Guy

## They're an Engineer too!

**ERIN MATHESON**
3A CHEMICAL

If you're like me, you'll resort to drastic measures come midterm time to learn all of the material you missed out on while building snow forts as quickly as possible. This way, even if you don't learn all that much, it makes for some pretty interesting ways to procrastinate. An all-time favourite procrastination favorite of mine is still watching old Bill Nye the Science Guy clips on youtube by far – humour and educational? How can you lose?! We all remember the days back in elementary school when the teacher didn't really feel like doing much of anything, never mind teaching, so out came the massive TV and VCR combo and everyone knew it was Bill Nye time. His infamous show ran from 1993-1997 but is still being played in elementary classrooms and watched online today by the young and old. The classic combination of dorky humour and basic educational science was as accurate a test for a future engineering student as any IQ test on the market. Quite frankly, I'm surprised there's not a "Rate Bill Nye on a scale of 1 to 10" question on the Waterloo admissions form, with 11 being the correct answer. The most mind-blowing part of everyone's favorite childhood science superhero – Bill Nye is an engineer too!

Born William Sanford Nye in Washington D.C. in 1955, his mother was a codebreaker during World War Two and his father was a sundial manufacturer. After highschool, he studied mechanical engineering at Cornell University and graduated in 1977. Before his big TV days, he started off his career working at Boeing where he developed a hydraulic pressure resonance surpressor used in the 747, and also starred in training films on the side. True story. He later worked as a consultant in the aeronautics industry, and applied to NASA every few years to be an astronaut, but always got turned down.

Nye started in the entertainment industry with a local sketch comedy show in Seattle called Almost Live! He corrected the host of the show when they tried to pronounce 'gigawatt' as 'jigowatt', to which the host replied, "Who do you think you are – Bill Nye the Science Guy?" Needless to say, the name stuck both on the show and for years to come in Nye's career.

Following his Almost Live! stint, Nye appeared on the live-action educational segments of Back to the Future: The Animated Series from 1992-1993 where he had a non-speaking role as an assistant to Dr. Emmett Brown, played by Christopher Lloyd. Nye's character would demonstrate science with Lloyd's voice-over. It was the success and popularity of these segments that prompted the creation of the much loved Bill Nye the Science Guy that we all know. Although it was targeted for a pre-teen audience, it became rapidly popular in all age groups. Nye also wrote several books under the Bill Nye character and he also produced the show during its 4 year run, which was filmed in Seattle.

Following the show, Nye remained active in the promotion of science and technology within the entertainment industry. He created a 13 episode series for PBS entitled Through the Eyes of Nye, which was targeted at an audience slightly older than that of his first show. During which, he discussed relevant current hot topics such as genetically engineered food, global warming and race. He's also made a host of television and movie appearances since then, mainly as his Bill Nye persona, including the VH1 show America's Most Smartest Model and The Doctor Oz Show.

In true engineering fashion, he's also returned to work as an engineer as well, just for fun. In the early 2000's, he assisted in the development of a small sundial that was included in the Mars Exploration Rover, known as MarsDial. The device had small colour panels used for the purposes of colour calibration in images, as well as a sundial that was used to keep track of time. From 2005 to 2010 he was the vice president of The Planetary Society, an organization who advocates space science research and exploration. He became the organization's second executive director in 2010. He also holds several United States patents, including one for a magnifying glass created by filling a plastic bag with water, and another for ballet shoes.

Although it's true that engineers influence the lives of many, no one drives that point home quite like Bill Nye. You'd be hard pressed to find at least one person who hasn't at least heard of the infamous science guy, or seen at least one of his shows – and this is over 10 years since his shows have been off the air! My great recommendation for hell week this year is to pay some tribute to one of the world's most favorite engineer and procrastinate with an episode's of everyone's favorite science guy – Bill! Bill! Bill! Bill!

# My Iron Ring Ceremony

## Recalling the Day Of

**BOBBY LEUNG**
4B MECHANICAL

February 5, 2011. This Saturday started identically like most others. My alarm rang for the first time at 10:00AM. I let it crescendo for a few beeps, and turned it off. My second alarm triggered ten minutes later. This time, I was more conscious and reacted more quickly. I woke up an hour later. After years of having to wake up early, it is apparent that there are two kinds of waking up. The first kind is the terrible kind, where nothing seems to go your way. It is the kind where you feel the bed pulling you back into its grasp as you try to sit upright. Your joints creak with every move you make. Your eyes refuse to open fully, so the first hour of your day is cast in shadow. The second kind is the one where you wake up with a passion. You know your day will be different from the rest, so when you get up, it already feels like midday. Your day has a purpose, so you bounce off your bed with vigour. On February 5, 2011, I woke up with a passion, because there would be no other Saturday like this one ever again.

The Iron Ring Ceremony, as described by the Iron Ring wardens in the previous week, sounded very ritualistic. It was described as a solemn ceremony, and professional behaviour was emphasized. My positive side envisioned some form of a Stonecutter party, while the negative side recalled the torch-lit secret practices of the Priory of Sion. In either case, the business attire requirement served as the first deviation from a normal day. I did not have my suit jacket, so I decided to wear a tie with my dress shirt. My battle with the perfect knot cannot be captured either in a few minutes or in a few sentences. I confess that I worked on it the night before to reduce the stress of getting dressed up for the next day. In retrospect, a tight noose on an excitable but nerve-wracking day was not a great combination. After a lunch of leftover sushi, I stepped out into the winter air. Either my shirt collar shrank, or my neck fattened, as breathing became uncomfortably difficult. A deep, long exhale was required. Why was I a nervous mess?

At first glance, the iron ring is not that big of a deal. It has no legal significance. It has no true academic significance. It also plays no role in engineering licensing. On its own, its presence on our working pinkie finger means that we made it to the second month of 4B. However, this apparent lack of excitement is the true beauty of the ring. The ring is symbolic of an engineer's professional pride and humility. It also reminds us and shows others that we have been Obligated. That is, we have taken an expression of intent to follow the true ideals of a professional engineer: to act with the highest professional conduct and prioritize the well-being of society. That this small, light, iron loop fits onto our weakest finger wonderfully contrasts with the seriousness it represents. The ring is not going to grant us our license to practice engineering, but it represents the soul and spirit of the humble engineer. The iron ring is very important after all.

I was thinking about this as I entered the Modern Languages building to exchange my ceremony ticket for my iron ring. Throughout the day, I kept patting my right pants pocket to check that I still had my admission into IRC. The line-ups were organized by the initial of the surname, so I stood behind the "G-L" sign. The warden was friendly. She began sifting through the small white envelopes, each containing the iron ring and a copy of the Obligation for a fellow colleague. Her positive demeanour shifted from amicable to anxious after her fourth time flipping through the envelopes. Did she just lose my iron ring on my behalf? I quickly wondered if she would pay the $20 fee to get a new ring on the refitting day. Thankfully, there were a stack of misplaced L's in another warden's pile of envelopes, and I got through into the Modern Languages Theatre. My tie still felt tight.

The Ceremony itself I will not disclose to you. It would be unfair of me to take any part of that experience away from you. The theatre was dark but surprisingly cool. It was stuffy, but it was due more to the importance of the situation. Upon the conclusion of the ceremony, my first thought was that I had to address my serious need for fresh air. Through the lower exit, I exited the theatre into the cold, crisp air. The stifling theatre was replaced with natural light and the humming of the wind. I took a deep breath, and watched my frozen breath slowly dissipate in the afternoon sky. February 5, 2011, 2:17PM. It was a unique day. It was a significant day. It was the beginning of a new stage in my life. And it could all be summed up unassumingly on my pinkie.

# The End is Nigh! Just Call Me Mr. Big

**CHAD SEXINGTON**
4.5X MANGINEERING

Good Afternoon Sexy Readers,

With graduation coming up soon for many of the fourth years, it gets one to thinking about their time here and how much they have changed. Our younger selves often had hopes and dreams completely different than what we have now. Their worries and cares were different. Their ambitions and expectations were not what they are now. The experience they were expecting might not be the same as what they got. I know that I had a lot of things that I was expecting to do, see and hear when I got here, I never wrote it down, and in hindsight it seems like that would have been a good idea to ensure that I got myself a true university experience. Often times this is called a 'bucket list' but is that really a good descriptor for someone who isn't about to kick the bucket? Why isn't it called a Before I Graduate List? A BIG List, and that's what it can be if you have enough time to fill it. But what would you put on it? Here's a few things I think you might find good to put on yours.

Cook your own food.
Go to a Party
Skydive
Climb a mountain
Skip class
Road trip
Travel through time
Wrestle a Bear
Get over 90 in a class
Take a completely random course
Make a difference in someone's life
Eat Kraft dinner
Go streaking
Spend a night being nostalgic
Make friends
Make enemies
Make friends out of your enemies
Write for the newspaper
Protest something
Do something dumb
Be there for someone
Eat the crippler at C&G
Stay silent for a day
Grow out your hair
Pull an all-nighter
Vote
Fall in love
Fall out of love
Sing karaoke
Shave your head
Paint a picture
Pull a prank
Have an adventure
Be 'that guy'
Get a nickname
Take a picture
Pwn a n00b
Work abroad
Play the piano
Win
Take a nap in the shade
Swim in a lake
Fy a kite
Visit all the buildings on campus
Eat at all the places in plaza
Wear a silly costume
Try C&D chili
Be in a photoshoot
Get a job
Insert activity here____
Get the story that you tell everyone when you meet them
Go to the moon

If you like the way these sound, maybe you should cut this out and take it with you. Cross out each thing that you want to do before you get out of this place. Or write your own and keep it in your back pocket. Before you get 'too old' (though that can't ever really happen) try to get through at least 90% of it. I promise you'll be a more worldly (though maybe not improved) person for it.

Until Next Time,
Stay Sexy.

# BIG THINGS with Will Zochodne

## World's Biggest Gun (or things you don't want to get capped with)

**WILL ZOCHODNE**
3B MECHANICAL

**Total Weight:** 2.6 Million lbs
**Barrel Diameter:** 2.6 ft
**Barrel Length:** 105 ft
**Shell Weight:** 15,600 lbs
**Max Range:** 48 km

The Gustav gun is BIG. So big, in fact, that it took a 500-man crew to fire it and required a 1.5 km long train traveling on two parallel sets of tracks just to move it. Prior to the Second World War, Nazi Germany had a big time inferiority complex and decided to build the biggest of everything, including the worlds biggest gun (even to this day).

What was it like to be on the receiving end of this beast? You could take four minivans, load them up with kittens and shoot them from the Waterloo campus to the Guelph campus and still expect the kitten filled vans to have enough energy to pierce through 40 feet of concrete. For real, there is a reason why this gun could only be fired once every hour.

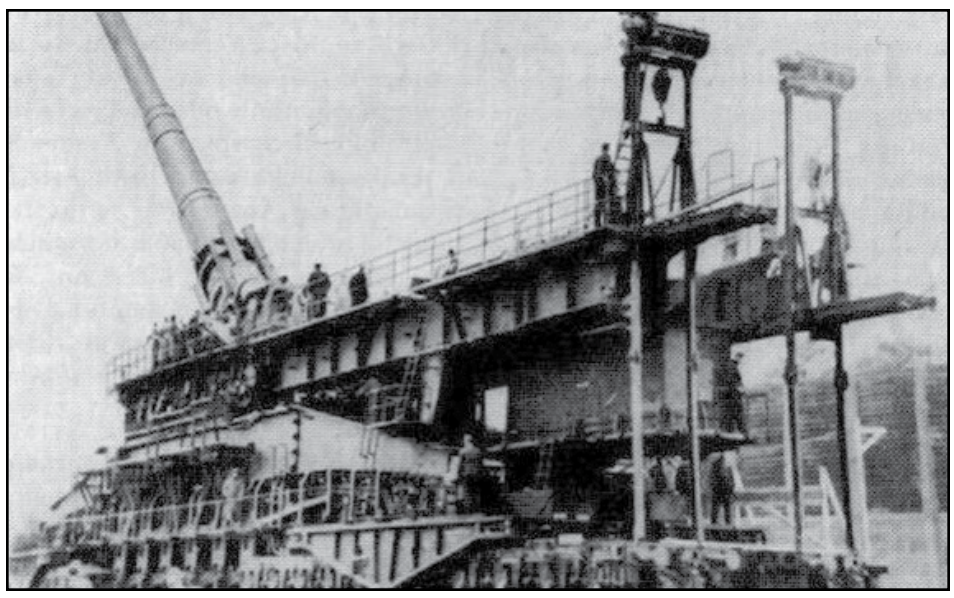
Seriously though, this thing is powerful. In one battle, the Gustav shot a shell that traveled 25 km, went 100 ft underwater, through 33 feet of concrete and then destroyed an ammunition dump. Not only this, a nearby ship capsized just from the shell hitting the water. ONE shell causing a ship to sink WITHOUT EVEN HITTING IT.

Let's say that you are as strong as Will and decided to absorb the impact of a shell fired from the Gustav. Assuming the shell stops after hitting me, I would travel around the earth (at the equator) 96 times at a speed of 279,457 km/h. Each revolution around the earth would take 82 seconds and is completed some ten times faster than the space shuttle.

Perhaps the most impressive part of the Gustav gun is that it was engineered in 1941 without the use of any modern computing. Could you imagine busting out the slide rules to try and calculate anything having to do with something so impressive? Imagine how far we could make Windstars fly with the technology we have available today! I challenge the world.

Big things rock!

**As always, send article suggestions to *w.zochodne@gmail.com***



**The Gustav Gun in all its BIG THINGS glory**

**My shell is bigger than your tank, I win.**

**Four of these, at the same time, leaving 30 ft X 30 ft craters of utter destruction. Finally, the Ford Windstar is put to good use.**

# Lost in the Webspace

**KIRUSHA SRI**
1N ELECTRICAL

So the February Blues are in full swing. Our New Year's Resolutions might seem as over as the holidays, but there is hope. To combat the woes of the cold, there has been a surge in humorous web content. We've all heard of the common sources of web humor: XKCD (Look it up if you haven't), viral videos like the infamous Double Rainbow and the more local Overheards on OMGUW. A couple of months ago I realized that I had tapped my normal sources dry. So I began an adventure across the web to find what there is to be found and to share the findings with my friends. After hours of rummaging through site after site of mediocre web comics, I decided to recommend the comics below. Enjoy!

**The Oatmeal**

This recommendation originally came from Miles G. back in 1A. Thanks Miles!

Author: Matthew Inman

URL: theoatmeal.com/comics

Token to Awesomeness: The Oatmeal contains a medley of comics about everything from the proper use of punctuation, to why it would be awesome to date a unicorn. It's come far since its launch back in mid-2009, as it now receives more than 4 million hits every month. Each comic is unique and follows its own storyline, but expect some very odd, slightly sadistic twists. Santa just might eat reindeer poop or show you the evolution of Matt's handwriting (and perhaps your own). If you're technologically inclined and have a slightly sarcastic sense of humor, you'll love the candor of The Oatmeal. I'm sure it'll at least make you smile. Some of the most popular themes include: the internet, computer skills, taking over the world, strange dating stories and public toilets.

Recommended strips:
"Minor Differences"
"Ten Types of Crappy Interviewees"
"Why Some Emails go Unanswered"
Overall Rating: 3.5/5

**The Doghouse Diaries**

Author: Ray, Raf and Will

URL: thedoghousediaries.com

Token to Awesomeness: This comic is my personal favorite. Instead of sticking to a conventional comic strip layout, there is a medley of three part strips, funny drawings and even some graphs. With a more backdoor approach to nerd humor, it pokes fun at all the banalities of everyday life. It takes a shot at everything from Twitter addicts to global warming. This comic seems to have nameless recurring characters, which makes it a little different from other web comics. Instead of being written by one person, the comic is written by a team. You can tell by the FAQs how seriously they take their work; they believe the answer to ending the global warming crisis can be found in the world of web comics (oh dear :P). Well even though you probably shouldn't count on seeing them on the cover of Time magazine for saving the ice caps, you can count on seeing a new comic published every Monday, Wednesday and Friday.

Recommended strips:
"The Truth About Facebook"
"Guyology Lesson 1"
" Carrying a Conversation"
Overall Rating: 3.5/5

**Abstruse Goose**

Author: The Goose

URL: abstrusegoose.com

Token to Awesomeness: This comic plays on the inner nerd in all of us. It's a minimalist's paradise. Some of the comics feature only character heads and others no dialogue. The humor is all in the details. The Goose is a technical so it features quite a bit of subject specific humor: mainly mathematics, physics and chemistry. There are some comics that play off the theories and propositions of popular scientists. One of the most popular mini-series of this type is about possible miscalculations in the Schrodinger's Cat paradox. Part three is particularly funny. If you don't have time to go from comic to comic or would like to see them all at once I highly recommend you download the free e-book, which is a compilation of the first 100 comics.

Recommended strips:
"Calc-zilla"
"Party"
"Is the Universe a Computer"
Overall Rating: 4/5

# Review Based on a Trailer

## Super Bowl Super Movie Trailer Super Bonanza!

**JON RADICE**
4B CHEMICAL

Hiya moviegoers! We've got a packed article today so let's get down to business.

Everyone and their mother will tell you that the Canadian feeds of the Super Bowl are entirely terrible. The main reason for that is we miss all those killer ads that cost oh-so-much to make. Along with being the biggest sporting event of the year, this little game also becomes the biggest advertising day of the year. With that comes the best time for Hollywood to showcase what they have in store for us in the upcoming few months. All the blockbusters get their time to shine, and let's have a little look-see into the latest and greatest 30-second spots you may have missed from watching a northern feed.

**Super Heroes!**

The two most notable trailers to hit the big game are, yet again, ones from the comic rack. Thor and Captain America took center stage in this cavalcade and in a few words, I'm not terribly impressed. Super hero movies over the last few years have become the staple of the Hollywood blockbuster, are being put out at a frantic pace, and bore the living hell out of me. The trailers for both of these movies do nothing to dissuade my opinion. Quick question. Do you know the backstory behind the comic book Thor? No? That's because it's not that good of a backstory. You see, Thor is a god on earth, immortal, and carries a massive hammer. His Wikipedia page says he also has the power of ventriloquism, I shit you not. The trailer looks so generic, that minus the hammer, you could fit any B-hero in there and shoot the movie the same. It comes out May 6th, and I'd rank it slightly better than Spiderman 3, but slightly worse than that crappy version of the Hulk.

If I had to pick a better movie of the two, I'd say Captain America takes it. Partially because movies set in World War II have a lot more material to work with, partially because his nemesis, Red Skull, is a well-established and worthy villain (I have a soft spot for villains who have no actual powers). Well defined and more apparent super heroes have a better structure, and Captain America allows for that more than Thor. Besides that, the action in the trailer seems hokey, with its slow motion jump shots, and typical fight scenes. A step up from Thor, this movie comes out on the 22nd of July.

**Super Sequels!**

It wouldn't be summer without a bunch of sequels you never wanted! Pirates of the Caribbean 4, Fast (and Furious) Five, Transformers 3, and Kung-Fu Panda 2 highlight the new trailers for old ideas. You can't really fault Pirates for making another movie: until one of those films makes under $500 million, they're going to keep turning them out. The movies are fun, Johnny Depp as Jack Sparrow is by now a classic cinema character, and is always good for a chuckle. Mermaids, Zombies and Blackbeard make up the baddies, much better than those squidfaces of previous movies. Seems alright. Go see it on May 20th if you've watched the others, don't lose sleep if you haven't.

I've already blasted the likes of Transformers two times now, so I'll keep it short. The plotline is just as stupid; I don't understand the need for Shia to be in these movies, and the action is still so shaky that you'll have no idea what's going on. I'll skip it, you'll watch it, and that will be that. July 1st.

Fast Five is a guilty pleasure for the heads of gear and meat variety. Cars go fast, cops try to get them. They're in Brazi;, the Rock is in it. Expect lots of Bikini bottom and loud exhaust. The trailer has more fist fighting than car driving, which is never a good sign in a car movie. Nothing new to see when it comes out on April 29th.

The trailer for Kung-Fu Panda really annoyed me. We Will Rock You is so overused in bad movies that the mere sound of its initial stomps is enough for me to turn off the TV. Luckily I didn't, or else I would have missed the godawful 'We Will Wok You' line. This is the second of a planned 6 (!?) KFP movies, and I'm already tired of the idea of an animated Beverly Hills Ninja.This movie woks the theatre on May 26th.

**Super Aliens!**

This is an interesting category. There are two Alien movies coming to us soon. Both actually look pretty good. Battle: Los Angeles takes place in modern times with Aliens invading most of California. Shaky-cam filming, faked news reports and a whole lot of scary shit blowing up makes this trailer pretty intriguing. The movie looks tense and filled to the brim with action, something that other actions movie sometimes forget to add. Luckily, we don't have to wait long for the movie to hit, as it takes the screen on March 11th.

Cowboys & Aliens is a fun one. Take a good cast, with Daniel Craig, Harrison Ford, Sam Rockwell, and Olivia (Tron Girl) Wilde, combine a funny premise of out-dated rifles getting blown to pieces by lasers and you have a movie that makes me want to put my butt in the seat. I have no idea how this movie is going to play out, what the ending will be like or how this will pull together at all, but I want to know. This thrill ride comes out July 29th.

**Super 8!**

While there are other movies I wanted to look at, it looks like I'm running out of precious IW space to talk about them all. My pick for the best Super Bowl Movie is none other than JJ Abrams' Super 8. From the guy that did Cloverfield, Lost, and Star Trek, comes a movie just as shrouded in mystery as the others. The Wikipedia plot is two lines: a bunch of school kids are filming their own zombie movie. They witness a train crash and something inhuman emerges. Beautiful cinematography is bred from a great story filmed by a guy who has done nothing short of excellent in my books. The mystery makes it all the more appetizing and this is my movie I can't wait for this summer. It comes out on June 10th. Not nearly soon enough, but it'll definitely be worth the wait.

For all those other movies? Assume the rest of them are crap. Except Rango, but that's for another day.

# The Brew Man Group - Nørrebros Julebryg

**DAN ARMSTRONG**
4B MECHANICAL
**NEIL PARTRIDGE**
4B CHEMICAL

**Dan:** The past week has been crazy cold. I can attest to this based on two consecutive nights walking home in shorts (thank you IRS and the day before IRS). I could have taken a cab home like that pansy Neil but I really, really had to have a burrito. I thank that magical Mexican snack for a hangover-free Sunday, contrasting Neil's two days in a bath robe. Getting back to the point though, we are currently in the middle of a rather chilly interval and at these times, we beer lovers reach for a Winter Warmer. Today's example of the style is part of a current LCBO brewery feature on Denmark's Nørrebro Bryghus. Julebryg is one of five such (not so reasonably-priced, but reportedly delicious) beers currently available.

**Neil:** Yes, I learned a valuable lesson that fateful IRS night about how similar Corona and tequila look in clear beer bottles... Nonetheless, I survived and can still share some brewery wisdom with all of you. The story of Nørrebro Bryghus is centered around the passion of brew master Anders Kissmeyer. Originally a graduate from chemical engineering (Denmark), Kissmeyer was quickly scooped up by Carlsberg and put in charge of supervision and quality control in beer production (jealous!). Shortly thereafter, Kissmeyer took a business trip to America to observe and learn about the emerging craft beers and breweries, specifically New York-based Brooklyn Brewery. Astounded by the quality and number of the brews being produced, the inspired Kissmeyer reported back to Carlsberg about all he had discovered. However, it was determined that there would be only a small market for craft beer in the Danish community, and furthermore, thinking otherwise was a naive dream. Fast-forward one year to 2003, and Kissmeyer leaves the company with the goal of starting his own microbrewery, dedicated to spreading the appreciation of great beer to the fine Dames (kidding, Danes). The resulting Nørrebro Bryghus was, and still is, a success, creating many award-winning brews that our local LCBO will only have for a short time.

**Dan:** The Winter Warmer, in the traditional sense, is simply an English strong ale. These dark, sweet, relatively high-alcohol beers were brewed in the autumn for the upcoming festival season, ensuring drinkers would keep warm and jolly. Plenty of crystal malts, a light hopping, and an English ale yeast resulted in strong caramel flavours with some light fruity esters and minimal bitterness. Eventually, some brewers took inspiration from the classic winter drink of wassail and decided to spice the sh*t out of their beer to make it extra festive-y. This is the more common modern interpretation of the style and can include ingredients such as ginger, cloves, orange rind, nutmeg, anise, cardamom, allspice- the list goes on.

Strength-wise, Winter Warmers typically lie between 6% and 8% ABV, with Nørrebros Julebryg coming in at a mean 7% (get it!?). Translating the Danish on the side of the bottle, the beer claims to contain secret spices (and I think there's some cooking tips or something), but the LCBO-applied sticker reveals that it's just ginger and cloves. The translation also taught me that the beer's name (Julebryg) means 'Christmas beer' in Danish... sounded cooler before I knew what it meant.


Ilya Panchenko

**Nørrebros Julebryg: a Winter Warmer from Denmark, but a perfect companion to Canadian winter.**

**Neil:** To be honest I love a garnet/ruby coloured beer; there's something mystical about it... Kinda like if Dan grew a horn out of his forehead, or perhaps two from each side of his skull when he's having a crappy day. Nonetheless, I was already biased when this one came out of the bottle. The first whiff immediately brought some allspice or cloves to my attention, the latter of which was actually an ingredient. Apparently there's also ginger, but for some reason I couldn't quite detect it past the malty-clove profile. My first taste revealed a very sweet and bready malt profile, with a full-bodied mouthfeel. It almost borderlines the same sweetness as if there were lactose added, for those of you who are beer savvy. The cloves and ginger back up the malt nicely, but remain balanced and never overpowering. Finally, the gentle warming from the 7% ABV soothes the soul on its way down. How can I describe this brew further? Balanced. This beer has really captured an obscure style and found the middle-ground where anyone can enjoy it. Bravo, this is often tough to do, and shows the professionalism of brew master Anders Kissmeyer **[4/5]**.

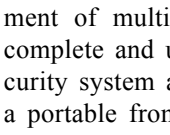
**Dan:** This beer's aroma is pretty intense. Literally, I could smell ginger before the beer even left the bottle. Couple that with some clove and light fruit, and you've got the quintessential aroma for the style. Given such an intense spicy smell, the taste is much smoother than you'd expect; sweet bready caramel malts provide a very solid backbone to the spice, and even let a hint of chocolate cherry come through. All this sits on top of a smooth, full body with fine bubbles of carbonation, perfect for a strong ale of English origin. The alcohol is virtually undetectable yet still provides plenty of comfort after a long pants-less walk in the snow. In summary, dude... this is actually the best Winter Warmer I've had. There's a limited supply of this so please seek it out while you can (at the Uptown or Northfield LCBOs). **[4.5/5]**

Recommended for consumption if you enjoy: Great Lakes Winter Ale, Samuel Smith's Winter Welcome, gingerbread.

Special Announcement! Dan and Neil are graduating this spring and Iron Warrior is looking for a new beer lover (or group of lovers) to start up a new beer column. If you love craft brews and can sound even half as pretentious as us, please send an email to Iron Warrior to express your drunken interest. Let us know what term you're in, and feel free to name-drop your favourites or tell us why our reviews sucked and why yours would be better.

*Props to hops //* Dan and Neil

# Future of Gaming: Visions of the Future



**JON MARTIN**
OBI JON1138

Recently, we have seen the announcement of multiple gaming systems, the complete and utter failure of Sony's security system and the continued lack of a portable from Microsoft. So here is a recap, as well as my own vision for the future.

In my last article, I covered Sony's reveal of the PSP NPG, basically the Playstation Portable 2, but they have also finally officially revealed the Sony Ericsson Z1. The PSP phone, as it is being called, is a fully functional smart phone that is also capable of playing Sony games. Another one of Sony's worst kept secrets, the Ericsson Z1 has been leaked in photos for months and actual units have surfaced and been completely disassembled, so once again Sony is a little late on the ball for actually issuing the announcement. It will be very interesting to see how Sony is going to attempt to separate the two peripherals. If the Z1 is capable of playing full NGP games while also offering standard smart phone capabilities it could detract from sales of the NGP. Hopefully, Sony can successfully implement games to take advantage of the new controls of the NGP while not relegating the Z1 to be the final resting place of dumbed-down games for its simpler controls. That will be an interesting challenge to watch.

Next, a quick update on the Sony PS3 hack saga. Sony is now widening the target area for their mass lawsuit war. Sony has put in a new proposal for Google to release the information of anyone who has reposted the root code hack – which many people are calling completely ridiculous. On an entertaining side note, Sony PS3 spokesman Kevin Butler has seriously impacted his own reputation, or at least the people who manage his Twitter account did. Butler tweeted a string of letters and numbers, along with a battleship related joke – unfortunately, the string was actually a code that was used to hack the PS3 last year. Now this hack was fixed soon after it appeared through a firmware upgrade, but still, Kevin Butler has now taken part in spreading a PS3 hack. Ouch, that can't be good for publicity and credibility.

Nintendo is now releasing their newest generation of the Nintendo DS, the 3DS, which features a revolutionary screen capable of displaying 3D images without glasses. Meanwhile, Sony is now releasing the second generation of its own Playstation Portable, featuring a touch screen, a rear touch panel, and dual analog controllers (finally). And Microsoft has done.... um, nothing. I have been waiting years for Microsoft to finally enter the portable gaming market, but there haven't been any announcements, there haven't really been any solid rumours – basically nothing. Microsoft needs to offer their own portable, with full gamepad controls so that they can just skip the awkward stage that the PSP has been stuck in since its initial release. An Xbox Portable would be a great platform for Xbox Live Arcade games, or even full console type games distributed through digital downloads. New tech shown off in the iPad, iPhone, PSP NGP, has shown that full console level games are now possible on a portable system – they can run the newest physics and 3D engines, instead of just the standard simplified portable games to which we have become accustomed.

Now to the future, and my vision of the Future of Gaming. Both Kinect and Move have provided a glimpse into the future of the gaming industry and I am optimistic of the future development. I think that full motion gaming is here to stay, with more advanced tech of course, and much greater accuracy. I think the future of motion gaming will be a combination of both the Kinect and the Move systems, taking the benefits of each and bringing the entire industry forward. Imagine playing a full motion control game, standing in the middle of a room in front of a Kinect camera and holding a Move type controller in each hand; finally let's insert a tech that isn't really viable yet, headset goggles. Let's say you are playing a first person shooter (FPS) and you hear something over your left shoulder, so you look over your left shoulder and find the enemy, take aim and get a perfect headshot. The controllers you are holding provide the buttons required for precise control and rapid feedback for hardcore gaming applications. The use of controllers is a direct response to one of the common complaints about the Kinect-the lack of accuracy. As a Kinect owner, I fully agree that the Kinect lacks the accuracy necessary for a lot of current games, though this could be related to the games that are currently available. None of the launch titles have actually offered anything similar to an FPS game, so we really can't say how accurate it is – I'm still hopeful. Anyway, when you heard that enemy over your left shoulder you instinctively turned toward the sound, the motion camera sees the movement and turns the image viewpoint at the exact rate and direction to match your actual movement. To achieve this connection and level of realism the goggles you are wearing need to be fully incorporated into the system, offering an image that matches the limits of your own peripheral vision.

So that is my vision of the future of gaming, mostly using tech that already exists with a few improvements, maybe a few years ahead of the present. This kind of set-up is the level of integration that I am looking forward to in the future. So many games try to draw you into their world through the story, the surroundings, the music and sound effects – and then you see the edge of the tv screen, or you realise you are sitting on your couch. These limits to gaming interaction and immersion have plagued the industry for too long.

Bring on the new technology, look toward the future, and, as always, Keep on Gaming.

# The Five-Tool Player- Hitting for Value: Studs and Duds

**BOBBY LEUNG**
4B MECHANICAL

In most circles, February 14th is popularly known as Valentine's day, but we fantasy gamers have to show some love to professional baseball, as it is also the voluntary Spring Training reporting date for pitchers, catchers and injured players! Mock season is heating up, so we have to start thinking about guys we want to target who will give us a great return on our investments. Studs and Duds will analyze and present some players that are over or undervalued. This week, we are focusing on batters. Next issue we will look at pitchers.

**Studs**

Kendry Morales, LAA, 1B (Average Draft Position 58.87)

If you have read the previous FTP's, then you are well aware of my man lust for the Cuban Missile. A lot of us remember Morales' freak leg injury last year after jumping on home plate to celebrate a walk-off homerun. In 2009, when he was fifth in MVP voting, he hit 34 HR, 108 RBI, 86 R, and a .306 average. His leg is fine now and his offensive presence is one reason why the Angels did not go all out in the offseason. Moreover, he is the 11th first-bagger off the boards! He is being drafted after his 1B piers who have certain category liabilities. I'd much rather have the balanced offensive production from Morales rather than Dunn (48.80), a liability in batting average, and Morneau (49.02), who is still recovering from post-concussion symptoms.

Drew Stubbs, CIN, OF (172.12)

Trivia time. Three players in 2010 hit 20 home runs and stole 30 bases. One of them is Hanley Ramirez, the best fantasy shortstop in the game. Another one is Alex Rios, a toolsy outfielder for the White Sox who is hitting his stride after being traded from the Jays. The third is Drew Stubbs. Stubbs probably posted the quietest 20-30 season ever. The Reds are on the rise this season with the newly minted NL MVP in Joey Votto, establishing franchise cornerstones (Votto and Jay Bruce), and cementing their pitching staff (Edinson Volquez, Johnny Cueto, Bronson Arroyo, and Aroldis Chapman). Many players can be overlooked in this crowd, but Stubbs can play some ball. He has the pedigree of being the eighth overall player drafted in the 2006 amateur draft. His .255 hampered his value somewhat, but he is a boon in runs, and his power-speed combination is a luxury in the fantasy game. He has a minor league career average of .269, so his average can come up a bit. If he can stick in the leadoff role, expect those runs scored to explode and Stubbs to be recognized as a major contributor to the modern Big Red Machine. Being drafted after Chris Young (ARI), Denard Span, and Manny Ramirez, if you can get the former Texas Longhorn in the 14th round or later in a 12-team league, you are committing highway robbery.

Jason Bay, NYM, OF (184.73)

The Mets had a forgettable 2010 season, mostly because the injury bug bit deep into their roster. Despite a 4 year/$66 million contract, Bay played only 95 games before being shut down by a concussion. Despite his terrible statistics from a season ago, do not forget that he is teeming with talent. Bay is one season removed from the epic 36-119-103 season he had in Boston. This offseason, he has been working hard to be more balanced at the plate. A career .278 hitter, I have faith that the Canadian can bring his average back up to the .270 range, with 90 runs and RBI's hitting with Jose Reyes and David Wright in that line up. His 2005-2009 statistics are sufficient proof that he is a professional hitter and a prime fantasy contributor. Stash Bay in your line-up as an OF4 or on your bench and reap the rewards. He can be one of the big bargains of this season.

Ian Desmond, WAS, SS (191.57)

Shortstop is a very shallow position this year. After Hanley Ramirez, Troy Tulowitzki, and Jose Reyes, the talent dries up faster than the attendance at Nationals Park. Desmond is often overlooked because he plays in Washington, and the Nationals have been the bedrock of the NL East ocean. But did you know this: only seven shortstops posted double digits in both home runs and stolen bases, and Desmond was one of them. Even though the Nationals are a few years away from even being allowed to feel they are contenders, we can expect Desmond to improve his offensive numbers as he enters his power peak. Considering how little SS talent there is in fantasy baseball, getting a 15-15 player who can give you 75 RBI's and runs without a terrible average around the 200th pick can go a long way towards a fantasy championship.

**Duds**

Ichiro, SEA, OF (33.5)

There is no question that Ichiro is a hitting machine. A 10-year MLB career average of .331 is worthy of the hall of fame one day. Averaging almost 40 steals is equally laudable. He is truly one of the best table setters in the game, shrouded somewhat by playing in Seattle. His accolades are certainly well deserved, but Ichiro's particular skill set does not translate well in the fantasy game. Because he does not take many walks, he has many at-bats, so his high batting average goes a long way. Unfortunately, Ichiro is the offensive equivalent of a relief pitcher: he is essentially a one-trick pony. The historically offensive incompetence of the Mariners has been well documented. Ichiro only hit 6HR, scored 74 runs, and hit 43 RBI in 2010. He is a sinkhole in three offensive categories. For a player being drafted in the middle of the third round, this is crippling. Furthermore, if Ichiro has an off year at the plate, like when he posted a .315 average, then his value plummets to the fantasy depths. As great a hitter Ichiro is, he is too great of a fantasy risk to be considered a cornerstone of your team.

Jimmy Rollins, PHI, SS (43.15); Derek Jeter, NYY, SS (48.25)

If I told you Player A hit .282-18-70-83-13, Player B hit .278-15-61-83-10, Player C hit .270-10-67-111-18, and Player D hit .243-8-41-43-17, who do you feel is the best player? Other than the 111 runs scored by Player C, it is fair to say that Players A and B are more well rounded than C and D, and Player D is clearly the worst of the bunch. Well, Player C is Jeter, Player D is Rollins, and Players A and B are Alexei Ramirez (97.37) and Stephen Drew (124.26). Jeter and Rollins play for high-profile teams and are big names in their own right, but that is all they are. Each coming off disappointing seasons, they are being drafted right after the top tier shortstops Hanley, Tulo, and Reyes. Wait 40 or 50 picks later and target Alexei Ramirez or Stephen Drew instead.

Jacoby Ellsbury, BOS, OF (68.60)

Boston made lots of news this offseason with their major acquisitions in Carl Crawford and Adrian Gonzalez. Along with Red Sox incumbents Kevin Youkilis, Dustin Pedroia, David Ortiz, and J.D Drew, the top of the Red Sox line-up will strike fear into the majors this season. These six guys will take over the first six spots of the batting order, which leaves Ellsbury to be surrounded by the likes of Marco Scutaro and Jarrod Saltalamacchia. Ellsbury will have less RBI opportunities hitting in the bottom-third of the order, which also means he will have less protection. Ellsbury's clear strength is base stealing, but after multiple injuries in 2010, I am going stay clear of Ellsbury and let a bandwagon hopper take the bait.

Paul Konerko, CHW, 1B (71.12)

Konerko, by most accounts, is a great leader in the locker room and has provided the White Sox with veteran leadership and stability for 12 seasons. Prior to last season, his career was in decline, with his RBI mark not topping 90, and runs scored not surpassing 75. Then Konerko drank the elixir of life and broke through with an MVP campaign in 2010, hitting 39-111-86 with a slash line of .312/.393/.584. I am going to let you in on a little secret: do not pay for career years, especially not one from a 34-year-old first basemen. In a deep position, if you still have not gotten your 1B at this point in the draft, or you are reinforcing a corner infield position, you should target the youth like Billy Butler or Gaby Sanchez.

Solution To Last Issue's Iron Crossword

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 R | 2 A | 3 C | 4 E | 5 D | ■ | 6 O | 7 S | 8 A | 9 P | ■ | 10 D | 11 R | 12 A | 13 B |
| 14 E | R | O | D | E | ■ | 15 R | A | T | E | ■ | 16 E | A | S | E |
| 17 P | A | P | E | R | 18 M | A | R | I | O | ■ | 19 D | I | S | E |
| 20 O | N | E | M | A | Y | ■ | 21 I | M | P | 22 R | I | N | T | S |
| ■ | ■ | ■ | 23 A | I | R | 24 E | ■ | 25 E | L | E | C | ■ | ■ | ■ |
| 26 A | 27 C | 28 M | ■ | 29 L | I | A | 30 M | ■ | 31 E | N | A | 32 M | 33 E | 34 L |
| 35 D | O | A | ■ | ■ | 36 A | P | O | 37 A | ■ | 38 E | T | A | P | E |
| 39 D | R | G | 40 O | 41 R | D | O | N | F | 42 R | E | E | M | A | N |
| 43 M | A | N | I | A | ■ | 44 E | T | T | E | ■ | ■ | 45 B | C | D |
| 46 E | L | A | N | D | 47 S | ■ | 48 H | E | M | 49 P | ■ | 50 A | T | S |
| ■ | ■ | ■ | 51 T | I | O | 52 S | ■ | 53 R | A | R | 54 E | ■ | ■ | ■ |
| 55 T | 56 E | 57 R | M | I | N | U | 58 S | ■ | 59 D | E | M | 60 O | 61 D | 62 E |
| 63 A | L | O | E | ■ | 64 A | S | H | 65 K | E | T | C | H | U | M |
| 66 C | L | A | N | ■ | 67 T | H | A | I | ■ | 68 T | E | M | P | O |
| 69 T | A | R | T | ■ | 70 A | I | D | A | ■ | 71 Y | E | S | E | S |

# Running Through the Frigid February Cold Snaps

**KIRSTEN HOEDLMOSER**
4B CHEMICAL

It's February, and that means one thing… ok, it means several things (Reading Week, 4th years dressed in crazy costumes, midterms, etc), but in terms of weather it usually means a cold snap. When you check the weather forecast and see the temperature dipping down to -30 °C with the wind chill, the first thing most people want to do is make a hot chocolate, curl up with a blanket and wait for spring.

Temperatures like these make it really hard to stick to your workout or training schedule if your exercise takes you outside. Running in this kind of weather can be tough – tough on the lungs, legs, and mind. If you're dedicated to your run and don't want to let Old Man Winter keep you inside, hopefully you'll find some helpful tips on staying warm inside this article.

In general, there are a few things you should always try to do:

1. Dress in layers. Multiple layers help trap heat better than one big layer, so try to put on a base layer, a mid layer, and a shell. More on that later, though.

2. Material matters. Cotton is convenient, but when you sweat cotton will just soak it all up and keep it next to your skin. In frigid temperatures, your cotton sweat sponge can freeze, or at the least get incredibly heavy and cold, and can make your run a miserable one. If you have the option, a tech fabric is always better. These garments wick the sweat away from your skin but won't get soggy, keeping you from getting chilled.

3. Protect your skin. Frostbite is no fun – avoid it by putting Vaseline or lip balm on your cheeks or other exposed areas. Frostbite, if you've never had it, makes your skin look waxy and white. If you do get frostbite, don't rub it! Hold your warm hand over it until the area returns to a normal colour. Make sure you protect it the next time you go out in the cold with warm clothing or lip balm, since the area will be more susceptible to frostbite once it's already been damaged.

4. Help your lungs out a little. After a cold run, it's normal for people to have a deep ache in their chest from breathing in the cold air. To prevent this, try to wear a scarf, neck tube, or high-necked jacket on your run. Breathing into this layer will help warm the air before you breathe it in, making your run less harsh on your throat and lungs.

Now that those are out of the way, let's move into a head-to-toe on how to dress for running through a cold snap:

- Head: about 1/5 to 1/3 of total body heat loss is through your head. To stay warm, make sure you wear a hat! Lots of running caps are available. A regular knit toque works just fine if you won't be sweating much, but if you're going for a long or tough run you don't want a knit fabric to soak up your sweat and freeze on your head. Choose a cap that is wicking and windproof to keep your noggin warm. Ear warmers are also great to wear under or over your hat, for an extra layer of protection.
- Torso: this is where we get into the base layer, mid-layer, and shell. On really cold days these three layers will keep you warm, and if you start to overheat it's easy to pull off a layer. For a base layer, try thermal underwear. A long-sleeved microfiber shirt is perfect for keeping warm air trapped close to your skin and wicking away sweat to keep you shiver-free. A mid-layer can be anything from a short-sleeved shirt layered over your base layer, a long sleeved cotton or tech shirt, or a heavier sweater or jacket. For a shell, a windbreaker works great for keeping the wind out and your inside toasty. As it's easy to overheat in a windbreaker, since they don't breathe very well, pick one with zippers under the sleeves you can open when you start to heat up.
- Hands: Gloves or mittens? The choice is yours. Two layers are usually a good choice: an inner warm layer, and an outer wind-stopping layer. Cheap, thin, cotton gloves from Canadian tire work surprisingly well as an inner layer. Running stores offer plenty of the windproof variety to layer over top.
- Legs: two words: thermal underwear. There is nothing better for keeping your butt warm on a really cold day. As mentioned above, tech underwear won't soak up your sweat and make you freeze your junk off… literally. There are lots of options to wear on your bottom half, but again, layers are key. Try wearing fleece-lined running tights if you have the cash, or if you're on a budget, long underwear under track pants work great as well.
- Feet: proper socks are a must. SmartWool socks are a personal favourite – they manage temperature, are breathable, and odour-free. Proper running or athletic shoes are a must. If you're going off-road and are worried about slipping, running stores sell YakTrax and similar products that wrap over the bottom of your shoe and provide great traction on icy surfaces.

There you have it: a basic head-to-toe guide on how to dress for the frigid February runs that are headed our way this month. Everyone is different, so you might need to alter this guide a little bit to suit your needs, but hopefully this points you in the right direction.

On the topic of February runs, the 14th Annual "Re-Fridgee-Eighter" Run is coming up on Sunday February 20th. The run is either 8k or 8 miles, so if you're looking to get into road races this spring or just want to challenge yourself, this run is a favourite in Waterloo every year. Details on the run, and registration information, can be found at www.runwaterloo.com/r8.html. As always, if you're looking for running buddies to get you motivated or just want some company, all are welcome at the Engineering running group on Tuesdays and Thursdays at 5:00. Meet up at the POETS patio.

Stay Warm!

# Janet Jackson's Boob Curse Strikes Again

## Super Bowl XLV's Performers Set a New Low

**SPENSER GOOD**
1N MECHANICAL

For myself, the most enjoyable aspect of this year's Super Bowl half time show was searching for a malfunctioning light in the 1000 or so white tight clad 'dancers' during the Black Eyed Peas vomit worthy performance. This year's half time show was worse than bad. It was boring, flat, uninspired and yet another blatant example of the NFL trying, but failing, to attract us 'youth' to the sport of football. I guess you could call it the 'boob curse', because ever since Janet Jackson's 'wardrobe malfunction' the NFL just can't seem to get it right at half time. Half time is either more boring than looking through your Grandpa's stamp collection (cough cough* the Who, Paul McCartney) or over the top stupid and short on talent like last night's performance by Will.I.Am and the gang.

I must admit that the NFL is in a difficult position. In a market where the fan base is dominated by baby boomer males, and in which the future lies in attracting a newer generation to the game it's difficult to find a performer that grabs the attention of us radical youth and doesn't sicken all the 50 and 60 something John Mellencamp and Bruce Springsteen fans out there. But, I think it's safe to say that Will.I.Am dancing around in what looked like a Jetson's Halloween costume and Fergie butchering Sweet Child O' Mine is not the solution (no matter how skanky her outfit may be). Let's be frank, Hip-Hop generally makes your ears bleed in live performances. I guess Usher realized that, because unless he had bronchitis or a malfunctioning microphone, he didn't even try to sing last night. But I got to hand it to him he's got some sweet moves. Getting back to the point, the answer for the NFL lies in a good performer. By that I mean someone who is flashy and stylish but can also sing. Artists like that are few and far between in today's music industry, and looking for one that would entertain the younger and older generation makes it even more challenging. Inevitably somebody is going to be unhappy, but I think we can agree this year set the bar at a new low.

Unfortunately I didn't catch Christina Aguilera's lyrical flop during her rendition of the Star Spangled Banner, I'm sure if I were American I'd probably be insulted, but as a Canadian I have to admit that I took a bit of satisfaction that amidst all the glamour and over the top patriotism (F22 fighter jets included), something as simple as the anthem got fudged up. Wrong notes have come to be expected…..but forgetting the words of your national anthem is just embarrassing.

It's a good thing the game was exciting, but I think it is fair to say that in five years if we remember any of Superbowl XLV it won't be the Steeler's costly turnovers or Aaron Rodger's clutch performance, it will be Christina Aguilera fudging the anthem and those silly Gaga like dancers trying to distract from the horrid performance put on by the Black Eyed Peas. The Superbowl will never be super without good performers, because that's what people remember. If you don't believe me….well, what do you remember most from Super Bowl XXXVII, Adam Vinatieri kicking the winning field goal to clinch the Patriot's second Superbowl in three years, or Janet Jackson's boob flash? Point and case.

# It's the Most Wonderful Time of the Year (To Ride a Bike)

**ROB REID**
2A ENVIRONMENTAL

If you think that the fact that the campus bike racks are buried in snow or that the snowbanks encroaching on the city's bike lanes is Nature telling you to forget about your bike until spring, you are sorely mistaken. Winter riding is a fantastic way to keep in shape, get around quickly, and build skills for summer riding, in addition to showing motorists how much fun they could be having. There are a few things to consider to optimize your winter riding experience.

**Your ride**

You can really ride any style of bike in the winter, so long as you don't care about it too much. Road salt is about as good for exposed steel as it is for ground water. You will be able to keep it ridable, but it will probably never be as good as it was before. I use an old mountain bike for winter riding because it accepts wider tires, but I've seen many people using road bikes as well. Buying a winter tire with metal studs is a very good idea. Just like for cars, there is no real all-season tire. Running a studded tire at least on your front wheel will help you turn, stop, and hold a line on a bumpy trail. They cost around $50.

**Clothing**

Riding in the winter makes keeping dry a challenge if you get sweaty. You can spend a lot of money on technical garments designed to keep you both dry and waterproofed, but I find it works just as well to wear long underwear or sweatpants under running pants and a thin jacket and sweater. Since Waterloo is a slushy town (slushy in the winter, soggy in the summer), some rain boots and rain pants are a very good idea on certain days. To keep your head warm, most toques fit nicely under bike helmets (unless they are cool and have a pom pom on top), and ski goggles are a big plus when it's snowing. Mittens or gloves are a must.

**Maintenance**

Personally, I do not maintain my winter bike whatsoever. It's a good idea to keep it outside to prevent melting so that there is less salt water running into vital components. If seizure does occur, letting the part soak in light oil before trying to move it again works well. Rusty snow is a surprisingly good drivetrain lubricant.

**Courtesy**

Just like the rest of the year, cyclists need to be courteous and share the roads and trails with motorists and pedestrians. In the winter, this is even more important because it takes longer to stop, you can't turn as sharply, and snowbanks restrict where you can ride. Be sure to use hand signals, obey traffic lights, let pedestrians know you exist with a "heads up" or bell, and use lights at night.

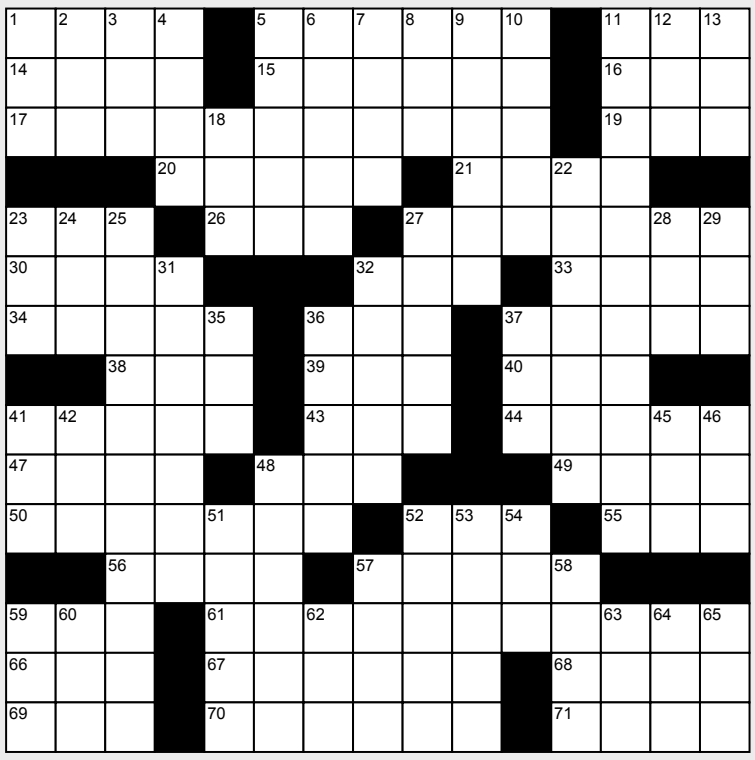
**Technique**

Anyone who has taken PHYS 115 can understand how the friction coefficients at play in the winter make riding a challenge. You need to stop sooner, turn slower, and balance more when riding in snow. All this really builds on your handling skills which will pay off in the summer. For those of you who will be spending the summer in Waterloo, I can highly recommend the Hydro Cut (access from Glasgow Street, west of Ira Needles Boulevard) for great mountain biking!

I hope this humble advice will inspire some of you to rethink your winter transportation and recreation and that the first time you pedal through a fresh snowfall will be as magical as mine. Happy trails!

# Go Betweens

**STUART LINLEY**
2N NANOTECHNOLOGY



**ACROSS**

**1** Some shirts
**5** "Hot __"
**11** Officer
**14** Brainstorm
**15** Bran go with
**16** Hydrocarbon suffix 1
**17** A painter from central Africa?
**19** Promote (Abbr.)
**20** That's _ ____ (Hilarious)
**21** Pointy math (Abbr.)
**23** Music or sculpture
**26** ___ Arbor
**27** Get it done
**30** College sports abbreviation
**32** Sn
**33** Mode from "The Incredibles"
**34** Jive
**36** Flower or river go with
**37** Gospel
**38** Obtain
**39** See 45-Across
**40** Opinion from a sheep
**41** Giraffe features
**43** Greek vowel
**44** He "shrugged"
**47** With 39-Across, food brand
**48** "Whatever"
**49** Slippery, as a certain fish
**50** Harmed
**52** Ruckus
**55** Embarassed
**56** Rebellious one
**57** Fragrance
**59** Pond fish
**61** Furtado listeners with a craving for fruit?
**66** Chapel words
**67** Greek markets
**68** Invalid
**69** Early Nintendo
**70** "Hirst"s or "Koons"s
**71** Author Blyton

**DOWN**

**1** Twitch
**2** Tokyo's previous name
**3** Even, poetically
**4** An epic, like "Star Wars"
**5** Via transport?
**6** Moses' brother
**7** Baseball glove
**8** "__ _ walk through the valley..."
**9** Eavesdrop
**10** Preneur go-with
**11** One trading in shipping crates?
**12** Less than two
**13** Type of rally
**18** Mouths, anatomically
**22** Repeat, as Euler's method
**23** Fish/chips linker
**24** TV cable type
**25** Ballroom dance percentages?
**27** Face of a 45 with more airtime
**28** "In the nature of" suffix
**29** Little bit
**31** Overhead slide material?
**32** Shark feature
**35** UFO pilots
**36** Run, as dyes
**37** First of 26, backwards
**41** Snake sound
**42** Large on-campus gym
**45** Ginger ___
**46** Early Pink Floyd member Barret
**48** _____ a Trois
**51** Defender of Grayskull
**52** Rife with laughter
**53** Carry out, biblically
**54** Dutch grandma
**57** Taj Mahal site
**58** Come __ __, bro!
**59** Clan relative
**60** Grecian Urn poem
**62** Present
**63** Geological time
**64** French king
**65** AIDS, for example

Easy

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

Medium

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

Hard

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

THE IRON INQUISITION
*Jon Martin, 3A Civil*

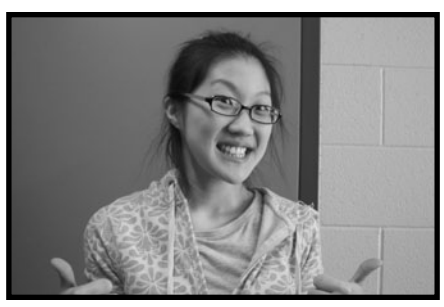
## *"If money was no object, what would you do for reading week?"*

***"Go to Barcelona for the week and hit up Sweden as well"***
Chris Wiebe, 3B Electrical

***"Bungie Jumping"***
Ted Basilopoulos, Mechanical '09

***"Travel to Brazil"***
Mohammed Basiri, Mechatronics '10

***"Spend the week swing dancing"***
Penelope Osterman,1B Civil



***"Get out to Sunny California"***
Joomin Yeom, 3B Electrical

***"Travel to a remote beach cabin without any means of communication so I can focus on work"***
Angelo Alaimo, 3B Electrical