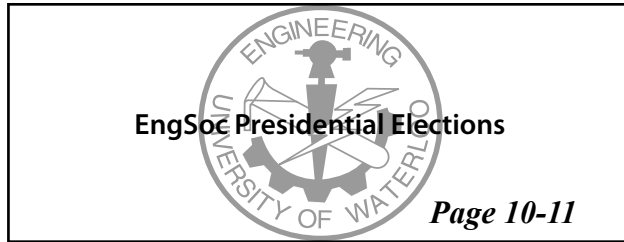


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Engineering Students Plant Trees In Waterloo Park

ALISON LEE
2B NANOTECHNOLOGY

On Saturday May 28th, the dreadful, rainy weather held off as the local community in Waterloo came together to plant hundreds of trees at Waterloo Park. All sorts of community members, including families, work groups, and our very own EngSoc, came together to plant about 600 trees in the area of the park near Westmount Road and Father David Bauer Drive. In about an hour and a half, all of the trees were in the ground and will remain there for years to come.

The Community Planting initiative started when the City of Waterloo bid for a grant from the TD Green Streets program to help fund grassroots projects to preserve and protect the environment. The application was successful and the City matched the \$15,000 awarded by TD Friends of the Environment and Tree Canada for a total of \$30,000 for the project. After five months of planning, event coordinator Peggy Stevens was very pleased with how smoothly the event ran. A variety of native tree species like the sugar maple and blue spruce were planted. They were mostly saplings with a few larger trees a couple of feet high. Although species grow at different rates, it will take about 50-60 years on average for them to

grow to mature size.

While planting trees as a community was one focus of the Waterloo Community Planting Event, the other was education at the Urban Forestry tent city. There were stations set up to educate people about the native plant species in the Waterloo Region, promote local park and conservation

areas, and for kids to indulge in arts and crafts. Local plant-related organizations including LEAF, RARE Charitable Research, Laurel Creek Citizens' Working Group, City of Waterloo Forestry, and the Grand River Conservation Authority were present at this event. Other groups there to educate the tree-planting partici-

pants on local animal species were the Canadian Food Inspection Agency, WILD Ontario, Williams and Associates, and the K-W Procession of the Species. Passport stamps at all of the stations made learning more fun, since completed passports could be entered into a prize draw.

The exact location of the tree planting in Waterloo Park may have been tucked away from the main park, but the area was selected with environmental conservation in mind. The spot is right near the Laurel Creek, so having more trees in the area will reduce the need for mowing, which can be destructive to an ecosystem, not to mention expensive. Once the trees have matured, they will act as a wind and noise barrier for the Park, protecting it from the bustle of Westmount Road and the residential complex on the other side of the fence. Planting trees also establishes a solid root network beneath the ground to promote good water drainage and protect against soil erosion.

All in all, it was a great chance to experience the Waterloo community beyond just the university and a reminder that we're surrounded by amazing park space to take advantage of this summer! Congratulations to the City of Waterloo on this successful event, and a special nod to everyone who showed up to represent Waterloo engineers!



Left to right: Josh F, Nan H & Ben S at the TD Tree Planting

Waterloo Transit Indecision

CHRIS LETNICK
3A COMPUTER

The transit debate has been one of the most important issues in the Region of Waterloo for the last several years, and will continue to be for at least another month. The provincial government has mandated that the Region of Waterloo must build infrastructure to handle projected population growth through the *Places to Grow Act* of 2005. The *Places to Grow Act* also legislates that 40% of growth must be in urban areas. All the transit options under consideration take into account the expected population growth for 2031. Population growth projection for the region has been close to, or within the margin of error of the predicted growth rate since the baby-boomer generation of the 60s. In June, the regional council will be making the final decision on which rapid transit option will be implemented.

The transit debate has been under scrutiny since the preliminary phase of the environmental assessment, a report detailing impacts and providing high-level recommendations for routing and implementation, was completed in 2009. At that point, the regional council tentatively approved building a rapid transit system that included light rail. Then regional staff was tasked with securing funding and clarifying details for final review and decision by the regional council. The securing of funding from the provincial and federal

government was completed around the time of the 2010 municipal election. The municipal election in 2010 brought up the rapid transit decision as a major issue. Although many candidates took a stand either for or against light rail, the election results did not indicate a clear winner. Due to the attention drawn to the issue, the newly elected and re-elected regional council requested a rigorous review of implementation options. In February 2011, these options were provided and public consultations for input on these options were held. Most recently, in April 2011, the regional staff has limited the possible options to three.

To understand the options, it is important to understand the technologies under consideration. Light rail rapid transit is a technology that uses electricity-powered light rail passenger vehicles. At intersections, the light rail vehicles should get priority signalling. The service should be very frequent and the vehicles should stop infrequently. Adapted bus rapid transit is similar to how the local iXpress runs. This includes long distances between stops, frequent service, and signal priority at intersections. The standard bus rapid transit technology is the same as adapted bus rapid transit, but uses dedicated roadways. All the technologies require fare-controlled areas such that passengers can board and depart through all doors.

See TRANSIT on Page 4

How to Save a Life

ANGELA STEWART
3A CHEMICAL

Every minute, somewhere in Canada, someone needs blood. Most Canadians can name someone that has received a blood donation or a blood product donation. There are many reasons to need blood, and receiving a donation at the right time can save a life. Medical operations, cancer treatments, surgery and transplants all require between 1 and 100 units of blood (a unit of blood is equivalent to one donation).

Throughout Canada over 2000 units of blood are used every day. Cancer patients undergoing regular treatment need up to eight units of blood per week. With an estimated 173,800 new cases of cancer and 76,200 deaths in Canada in 2010, it is safe to say that donors play an integral role in the care of people with cancer. There is a good chance that most of the current generation of students will be faced with cancer at some point in their lives. By donating blood, a positive impact can be made on the countless people faced with cancer.

Blood is carried in all parts of your body. Like electrons are essential for circuits, particles for controlling chemical reactions and forces for ruling the world of mechanics, without the different components of your blood, your body cannot function. Imagine a university building without hallways. Red blood cells are needed to convey oxygen to the brain and remove car-

bon dioxide through the lungs. In order to protect the body from illnesses, your body uses white blood cells (however, these are often removed from donations to prevent your blood from infecting the receiver). Platelets aid in clotting so that you can recover from your injuries and plasma brings nutrients to your tissues and removes waste through the lungs, liver and kidneys.

Becoming a blood donor is relatively simple. If you're between the ages of 17 and 71, and at least 110 lbs, you basically qualify. Overall, you must be in general good health. If you have had dental treatment, you must wait up to 72 hours or until full recovery. You must also be fully recovered from any colds, sore throats or the flu. If you have had an ear or body piercing, or a tattoo, you must wait a minimum of six months.

Each blood donation made can save up to three lives. That basically makes you a superhero. Blood donation rates among university-aged eligible donors are disappointingly low; most donors are in the 55+ range. It's time for Canada's youth to step up. A speaker will be present at the next EngSoc meeting to on June 8th to address how lives have been impacted by blood donations. Educational resources will be available in the Engineering Society Office so that students can get informed about eligibility requirements and the donation process.

See DONATION on Page 8

Letter from the Editor



**MIKAYLA
MICOMONACO**
EDITOR-IN-CHIEF

As I sit here on a Friday night listening to Harry Potter music and contemplating the fact that I'm required to come up with yet another topic for my editorial, I am, once again, starved for ideas (I should really figure this choosing topics thing out, I have three more editorials to write after this). However, moving on, in an effort to make this first paragraph connected to the rest of my editorial, I will talk about books.

I'm a bookworm. During school terms I don't get to read very much, but I make up for it on work terms. Even during a school term, grabbing a book for a few minutes of reading can be a great way to relieve stress. If you're looking for other ways to relieve stress, you should check out the Stress-busters article on page eight. Books are a great form of entertainment, and they're also much more reliable than internet. Your books don't crash the way the University internet does on Saturday of production weekend. They'll always be there, unless you dump them in water or burn them, but that applies to the internet (or at least computers) too.

I love fantasy books, particularly epic fantasy. If you're not sure what epic fantasy is, think of *The Lord of the Rings* type of books. (Don't you DARE mention *Twilight*. Don't even THINK about *Twilight*. If you want to see my opinion, go look at *The Tin Soldier* PCP from Spring 09. I still stand by that, and could probably write this entire editorial about the evils of *Twilight*. It is a horrible series that isn't about vampires. Vampires DON'T sparkle.) If you're looking for some self-help-make-yourself-a-better-person books, you're looking in the wrong place, but if you're looking for books about magic, swords, and battles I might be able to help.

A fantasy series I've been reading for a long time is *The Wheel of Time*, by Robert Jordan. It's consists of 13 books plus a prequel, with the last book coming out next year (I hope). The series is based on the idea of cyclic time, as the events of the past come around again. The Dragon, the champion of the Light who saved the world from the Dark One, is remembered with fear for the destruction in the aftermath of the war. He has been reborn again, and his birth marks the resumption of that war. Throughout the series the books explore not only the story of the man meant to save the world and destroy it, but also the state of the world as a whole. How is this divided world still suffering from events of the distant past going to unite to prevent its own destruction?

Jordan has created a complex world, with a staggering cast of characters. Start-

ing small, with a single village, Jordan soon throws readers onto a world stage. With different nationalities, political factions, and power struggles, we see everything from dramatic battles to the struggle of one man trying to shoulder the destiny he was prophesized to fulfill, and the personal cost of shouldering the fate of the world, of being named responsible for not only its salvation but also its destruction. Prophecies such as "Yet one shall be born to face the Shadow, born once more as he was born before and shall be born again, time without end. The Dragon shall be Reborn, and there shall be wailing and gnashing of teeth at his rebirth. ... Like the unfettered dawn shall he blind us, and burn us, yet shall the Dragon Reborn confront the Shadow at the Last Battle, and his blood shall give us the Light. Let tears flow, O ye people of the world. Weep for your salvation." (*The Great Hunt*, Book Two of *The Wheel of Time*), point out over and over that he will bring destruction as well as hope. Jordan skilfully places us within the mind of a man trying to handle the pressures of these expectations.

Some of the best praise I can come up with for Jordan is that, when he places us within the mind of a madman, he manages to make him seem sane from the reader's perspective. It's only once you step into another character's point of view that you realize that perhaps things that seemed completely rational don't actually make any rational sense. Any author that can convince you, at least temporarily, that hearing voices is ok, is skilled indeed.

Unfortunately, Robert Jordan passed away before he could finish *The Wheel of Time*. He knew this might happen, and he left enough material behind for someone else to finish his work. The author chosen was Brandon Sanderson, who has done an amazing job so far with *The Gathering Storm* and *The Towers of Midnight*, books eleven and thirteen. Book fourteen, *A Memory of Light*, should be coming out in 2012, and I await it with anticipation.

Every cloud has a silver lining, and this was no exception. In this case, it led me to my current favourite book, Brandon Sanderson's *The Way of Kings*. It's the start of a new epic fantasy series called *The Stormlight Archive*. Again, this is a society in ruins. The peace and prosperity of the past is a distant memory, from a time before the Knights Radiant, a group of people sworn to protect people with their magical abilities, abandoned their duty. These once revered people are remembered with anger for abandoning their charge and leaving a world fighting over the remains of what is left of their power.

The story follows four main characters, an assassin who doesn't want to kill; a healer who has become a slave, facing certain death on a battle line; a young scholar who is planning a daring theft; and a war leader

tired of war, trying to find the meaning of leadership from old writings.

Another book I like is *Gardens of the Moon*, by Steven Erikson. It's the first book in the series, *A Tale of the Malazan Book of the Fallen*. I haven't actually finished this series yet, since it's a series which really requires you to pay close attention (not the kind of book to read in 5 minute segments). Erikson takes a "sink or swim" approach to his books; rather than starting with something small and moving you into the larger scheme of things with explanations, he dumps you right in the middle of a war. Without much backstory, the reader is scrambling to figure out characters motivations, and the laws of the world they have been immersed in.

In a way, this makes the story that much more real. The characters themselves rarely know the motivations of those around them, and the history they know is rarely complete. You're along for the ride and struggling as much as the characters are to determine what's really happening and why. There are enough details to suggest there are reasons for what's happening, you just have to work to get them.

I fully intend to read this series cover to cover during my next work term. *Gardens of the Moon* was excellent and I think that the entire series will be a rewarding read. There are also some additional books that are set in the world by Ian Cameron Easley, who created the Malazan world with Erikson. I haven't read those either but they're also supposed to be good.

While I do read fantasy books for the escapism aspect, they can still be used as a commentary on the world around us or to explore. The books I've mentioned cover topics such as responsibility, politics, trust, and justice. Whether it's a leader so obsessed with personal power that they hurt the cause they claim to serve, or a slave trying to find meaning in a life which could end at any time, they allow us to reflect on our own choices and culture, if we choose to do so. It is by no means a requirement, and I definitely read more for the story and characters than any kind of social commentary. If I don't care about the characters, then no amount of social commentary is going to keep me reading.

If these types of books aren't your first choice, and you still managed to read until this point, I still highly encourage you to go pick up a book. There are all kinds of books of which you never know what you're going to find. Books are an easily-portable source of endless entertainment. Some books, especially the ones I mentioned above, are better on the re-read. The number of seemingly-throwaway dialogue or characters that have so much more meaning when you read through them a second time in *The Wheel of Time* is incredible.

Go read a good book!

THE IRON WARRIOR

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

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Canadian Language, eh?



**MICHAEL
LAANVERE**
1B MECHANICAL

Canadian English (CE) is one of the official languages of Canada, and yet it is so often butchered. In case you did not know, CE is a variety of English and is spoken fluently by 28 million people worldwide. Due to Canada's history, CE is a mixture of American and British English, but there are also distinct "Canadianisms" associated with the language. People in Canada should know how their language works, so here is a rundown of the history, as well as facts and rules, about our language.

Canadian spelling conventions are usually derived from Canada's history associated with the specific words. Things associated with cars are generally spelled in the American style because the Canadian car industry is dominated by them. For example, in Canada, it is spelt *tire* and *curb*, not *tyre* and *kerb* like in Britain. Other car words like *truck* instead of *lorry*, *gas* instead of *petrol*, and *hood* instead of *bonnet*, are examples of how we follow American English in the automotive industry.

On the other hand, since our political institutions and banking systems were modelled after the British, we spell cheque as opposed to check, and all government papers are written in a British style.

Some general rules for proper CE spelling are as follows. Words like colour, favour and honour should be spelled with *-our* as opposed to *-or*. Words like realize, revolutionize, and marginalize should be spelt with *-ize* instead of *-ise*. Words should end in *-re* rather than *-er* like centre, metre, and litre. Canadian spelling also uses the British style of double consonants when adding a suffix, such as

travelled instead of *traveled*.

On the phonetic side of the language, I won't even try to explain how Canadians generally pronounce things, but I will mention two practices. One is that we have very little dialect diversity compared to the States, but there are still obvious differences between different regions like the Maritimes and the Prairies. The second is the phonetic phenomenon of "Canadian Raising." Most Canadians and some Americans have this attribute which is really hard to explain without actually hearing it. Basically it means Canadians "raise" certain diphthongs, making words like "out" sound like "oat" to the untrained ear. This term is used worldwide, which promotes Canada's individual culture and language.

"Canadianisms" are words that are generally only used by Canadians. They can either be words invented in Canada or words that are only still used in Canada. There are some Canadianisms that are used across the country as well as some that are more localized. Other than the obvious "eh," some general Canadianisms are: freezies, pencil crayons, smarties, homo milk, hydro, eavestroughs, chesterfield, washroom, and fire hall. Some terms are specific to regions. For example, in the Prairies, a bunny hug is a sweater or Vi-Co is used sometimes as a term for chocolate milk.

A language is a key part of a people's culture. CE is a major part of what makes Canada a unique and independent nation. The Canadian language is being threatened because the majority of computer programs and television shows that consume our time are made in America and, therefore, use American English. So please, next time you are writing a paper, or report, or newspaper article, write it in Canadian English; it is a part of our culture and heritage, and besides, it is one more way we are different from those Americans.

Undergraduates in Research



**KRISHNA
IYER**
2B NANOTECHNOLOGY

As people evolve, so do their needs. In a society like ours, which is becoming progressively more complacent with our lifestyles, there is constant room for improvement and discovery. While greatly improving our standard of living, these improvements encourage the lazy lifestyle we lead. Constant improvement over the past decades has resulted in better drugs, faster computers, more efficient engines, etc. This is possible only through constant innovation and improvement (a.k.a. research). Research is the basis for all advancements made. Without research, there wouldn't be fire or agriculture.

Doing research expands your horizons. As a primarily research-oriented university, the University of Waterloo is the best place to experience cutting edge, trend-setting research. A little-known fact is that one student's research is responsible for changing the shape of the internet and ushering in what was deemed "Web 2.0." Rasmus Lerdorf was a proud student of Waterloo Engineering's System Design program. His brainchild and research is responsible for the inception of the ubiquitous online scripting language, PHP, which is used for social networking sites like Facebook. With the onset of modern technology research under the Institute of Quantum Computing (IQC) and Waterloo Institute of Nanotechnology (WIN) there is a lot of scope for research today to make a better tomorrow.

You should get involved! One great way to do so is through the "Undergraduate Research Assistantship" program offered. You can take part in this process and proudly say

"I do stuff that's never been done before, everyday." As a participant in this program, I would highly recommend this, because it supplements your everyday textbook knowledge with application in cutting edge technology and research. Many professors offer URA positions every term. A commitment of just six hours weekly ensures that as a professional, you will be up to date with the latest trends. Employers have been known to favour students with such experience as it exhibits initiative and a desire to learn. Also, there is monetary compensation for your effort (which is always nifty).

Another way to get involved is to do co-op terms with a professor. This gives an in-depth perspective on the way research and development works and how to be on top of the game. Often, undergraduate researchers are funded (in part) by the Natural Sciences and Engineering Research Council of Canada through the Undergraduate Student Research Awards and other awards (including some through the Sandford Flemming Foundation). Professors sometimes prefer hard-working co-op students to graduate students due to their tendency to work harder and their desire to accomplish something before the end of the four-month period. Although the salary may not be comparable to an industry job, research co-op terms improve employability and odds of acceptance to the finest institutions for graduate studies. Finally, publications obtained while on such a term also enhance your credibility.

Involvement in research activities as an undergraduate is a definite step towards making yourself a very employable and informed professional engineer when you graduate. Take action now to advance your credibility by getting involved in undergraduate research.

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Waterloo Transit Indecision 2011

TRANSIT from Page 1

The present debate is for the rapid transit system. However, it is important to mention another transit project that was voted on and approved in 2010. The Region Transportation Master Plan is a \$2 billion overall transit plan that includes increased road capacity and public transit capacity. This plan also includes the operating costs of the rapid transit system chosen. The Regional Transit Master Plan relies on a central rapid transit line, and would need to be heavily modified if a decision to abandon rapid transit is made.

The least preferred of the three options, according to regional staff, is to build a light rail system from Conestoga Mall to Ottawa Street in Kitchener. The rest of the route to Cambridge would then be serviced by an adapted bus rapid transit system. This option will result in a property tax increase of 1.5% per year from 2012 to 2018. The second option is to build light rail from Conestoga Mall to Fairview Mall. The rest of the route would again be serviced by the adapted bus rapid transit to Cambridge. This option would result in a property tax increase of 2.0% per year from 2012 to 2018. The most preferred option is the same construction as the second option, but with different funding options. This option pushes back the implementation of the traditional bus portion of the Regional Transportation Master Plan from 60% by 2018 to 40% by 2018. This would result in the same property tax increase as option one of 1.5% per year from 2012 to 2018. The full 100% of the traditional bus portion will still be completed by 2031. All these costs assume that the funding will come entirely from property tax. The region is exploring other funding sources to help reduce these costs.

Although regional staff has limited the options to the three that include a light rail component, there are still mixed public opinions over whether the eliminated options should be reconsidered. Polls run and commissioned by The Record have shown results in favour of rapid transit with mixed results between light rail and bus options. During the public info-sessions in winter 2011, the region used a comment form to get public feedback. The questions on the comment form was, "Which of the above options do you support and why?" To this question, 78% of 705 responded indicating an option in support of rapid transit, with 66% of 705 responding in support of light rail. A very recent poll, May 25th, 2011, commissioned by the advocacy group opposing light rail, Taxpayers For Sensible Transit, shows mixed results for its few non-framed questions. However this last poll does show a large public support for a referendum to decide what transit option should be implemented. The most recent poll, published after this article was first written on May 27th 2011, commissioned by a Waterloo design company that appears to be in support of light rail, Machteld Faas Xander (MFX), shows strong support for rapid transit with strong support for light rail.

Brenda Halloran, the mayor of Waterloo, has indicated her plan to motion at regional council for a referendum on the issue. Holding a referendum on this issue would have several problems. First, adequate measures would have to be taken to inform the public on the issue. As a representative democracy, Canadians elect representatives to spend the necessary time to review decisions appropriately. Most individual citizens do not have the necessary time to appropriately review such a decision. The second concern with a referendum is that,

by Ontario law, referendum questions must be answerable with "yes" or "no." Since this decision has many options and public opinion is currently split, it is very possible that a referendum with a multi-question ballot would not result in a majority "yes" for any single option. The final concern is the cost of a referendum and delaying the project. The cost of a regional referendum would be approximately \$1 million. The inflationary cost of the delay would be around \$20 million dollars. This adds to the existing inflationary delay costs associated with re-reviewing the original decision that was made prior to the election. Putting off the start of construction also provides a higher risk of funding being pulled if a Conservative provincial government gets elected this fall.

Light rail rapid transit has many benefits over the alternative solutions. One of the most important is to meet the requirement for a high-speed and high-capacity interconnection between the nodes of the region. Light rail is seen as a more reliable transit solution than buses, and will attract more riders. Light rail will help to further intensify the urban areas of the region. Property value near light rail nodes will increase for commercial and residential use. Light rail rapid transit is easier to distinguish than bus rapid transit from regular buses; making it easier for people from out of town to use. Light rail will take buses off the existing roads. Finally, light rail will produce less greenhouse gas than the alternatives. These benefits are aligned with the Regional Growth Management Strategy and goals of the region. For these reasons, light rail is supported by a wide range of groups. These groups include technology companies such as Google, universities such as the University of Waterloo, and other organizations such as The Record. Groups

such as the Waterloo Federation of Agriculture and the region's townships support light rail because it will help keep regional growth centralized in the cities.

The primary concerns voiced in regards to light rail are cost-related. However, the options that will satisfy the Ontario *Places to Grow Act* of 2005 are all equally or more expensive to the region. The second commonly-voiced concern is that the light rail vehicles will be disruptive to traffic. Although this concern has some validity, light rail will also take buses off the primary roads. A much more valid concern about light rail is its impact on the landscape of Uptown. Although this and several other similar concerns are valid, they are also qualitative; their impact cannot be easily evaluated and opinions are mixed. Calls for review have been heard and listened to with the review of possible options released in February 2011, a further option short-listing report in April 2011, and a peer review report in April 2011.

The history of the light rail debate is long, the decision is complicated, and the time for conclusion is soon. Although light rail is a technically superior choice, the other qualitative factors will have to be taken account when the regional council decides in June. Regional council will have to take into account the evidence presented to them as well as the opinions of their constituents. A follow-up article will be issued after the decision.

For further information, here are some useful links.

The region's rapid transit information page at <http://rapidtransit.region.waterloo.on.ca>

The anti-light-rail advocacy group's page at <http://www.t4st.com>

The pro-light-rail advocacy group's page at <http://www.tritag.ca>

Welcome Back EWbers!



**FARZI
YUSUFALI**
2B NANOTECHNOLOGY

Hello engineers! Engineers Without Borders welcomes you back to campus for the spring term. Now that a new term has begun, the UW chapter of EWB would like to update you on the goals and current going-ons for this term.

The main focus of this term will be to spread the "Be Orange" message virally throughout the UW student body and the surrounding Waterloo community. In

communicating this message, we want to help students become aware of the social and socio-economic factors of simple decisions they make everyday. For example, if you are buying a new set of shoes, we want the average student to consider the company's ethical business practices as part of the decision making process. With the "Be Orange" campaign, EWB will focus on engaging students in political activism, buying ethically-sourced goods and supporting fair trade in Waterloo. Along with the "Be Orange" campaign posters around the Waterloo community (including UW), information on fair trade practices in Waterloo will become availa-

ble via "Be Orange" photo booths and numerous information stations at engineering competitions and events. To further promote a "Be Orange" attitude, EWB has accepted the quest to certify the City of Waterloo as a "Fair Trade Municipality."

Alongside the "Be Orange" campaign, EWB sponsors two UW Junior Fellows (overseas volunteers) every spring to work in developing countries to help build sustainable government practices and local businesses that benefit people at the grassroots level. Currently, two UW engineering students have landed in Ghana as Junior Fellows for the spring term. EWB's initiatives include preparing the

two fellows for a term in a developing country and helping with the expenses of living there. Furthermore, EWB strives to educate students on governing bodies, international policies, fair trade and ethical business practices.

If you are interested in volunteering your time to this organization on campus, email EWB at ewb@uwaterloo.ca to get more information on the various teams within the EWB organization and how to get involved. If you wish to see the EWbers and get information first-hand, a general EWB meeting is held every Tuesday in RCH 305 at 5:30pm. New members are always welcome!

PD Statistical Review



**ALEXANDER
HOGEVEEN
RUTTER**
4A ELECTRICAL

Winter 2011 marked a watershed term for the professional development of UW Engineers. For the first time, we were allowed to take Professional Development (PD) rather than the outgoing PDEng courses. Furthermore, PD20, the new course for first-term engineering co-ops was released.

PD Electives (Communication, Teamwork, Project Management, Problem Solving, Conflict Resolution)

Engineering students scored well in the PD electives, with averages in the 70s and low 80s. In fact, in all but one of the

electives, engineering students actually scored slightly higher than our non-engineering counterparts. Aside from students who did not engage with the course content at all, there was only a tiny handful who failed.

A majority of students 'agreed' or 'strongly agreed' with the statement that their skills had improved due to course content in each of the 5 electives. Each of the 5 electives had 'pre-' and 'post' tests to assess learning from the course and not only did the average score from all faculties rise substantially, engineers scored slightly above the non-engineering average on the post-tests. Finally, in exit surveys, each elective scored in the 3s or 4s out of 5 for 'overall evaluation of this course' and 'I would recommend this course to other students.'

PD20-Developing Reasoned Conclusions

Students largely succeeded in PD20, with 95% of students passing (and about half of the remaining 5% had withdrawn from engineering and therefore did not engage at all) and a course average of 78%. Only 14% of students took more than 25 hours to complete the course.

While the PD staff will work on areas of negative feedback, the positive comments definitely outweighed the negative. Scores on all 20 or so metrics were in high 3s and low 4s (out of 5), including an overall rating of 3.97/5 and 61% agree or strongly agree the course helped them develop reasoned conclusions.

Overall attitude toward course evaluation and improvement

The PD Team uses the Kirkpatrick

Training Model as a guide in developing, assessing and adapting their courses. They assess students on reaction to the course, learning from the course, behaviours attributable to the course and results. This feedback is subsequently used to revise the course and delivery for future editions.

The team (including course author) used student feedback and other mechanisms to make improvements to areas of weakness and reinforce areas of strength. Interestingly, the quantity of written comments on PD20 was higher than any seen before. While the majority of these comments were quite positive, the PD20 instructor and PD staff were very appreciative of the high level of professionalism in the constructive comments provided and are already working towards making improvements in the course.

Exchange Expands Experience

PETER ROE

DIRECTOR OF EXCHANGE PROGRAMS

If you are in 1B, it has now been nine months since you first came to Engineering at Waterloo, which, for many, is the first adult experience of prolonged independence. Since this is such an important change in life, some people find it difficult while some find it exciting. As time passes, everyone settles into life in a co-op system, where challenging academics in one of the world's foremost Engineering Faculties alternates with interesting job opportunities in the workplace. This is just a taste of what can take place in the future.

This short article suggests one way to make your relatively new independence even stronger. You can extend it by traveling and experiencing a distinctly different cultural and educational environment in Europe, Asia, or Australia. This extension, which will create in you a person who comprehends the way our world works much more fully than someone who never leaves North America, Canada or even Ontario, is available as a privilege that we extend to anyone after their 2B term (provided they meet certain simple criteria). Furthermore, it happens without delaying graduation and without disrupting your normal progress through the co-op system.

INTERNATIONAL EXCHANGE is the key. It is a great, fun and life-changing experience. You can read a great deal about it at www.eng.uwaterloo.ca/~exchange. You can come to my office or visit Cindy Howe inside the undergraduate office (CPH 1320). There you can find out about the nearly 70 universities and engineer-

ing schools in the world that are open for Waterloo Engineering students – top class engineering schools where you can do 3A, 3B, or both, or perhaps 4A, and still maintain your position as a Waterloo Engineer.

Over 100 students go on exchange every year. In all my years as the Director of the program, I have not met a single returned exchange student who has told me that he or she regretted it. Students come to me when it's too late to apply, saying "I wish I had known about it earlier." Spaces at some of our partners are limited, and we assign them to qualified candidates largely on a first-come, first-served basis. So those who read this article have a head start.

If you're in 1B now, there's time to plan for exchange; if you're in 2B, time is getting very short, but there are still places open. We have exchange partner schools in Australia, Austria, Chile, China, the Czech Republic, Denmark, Finland, France, Germany, Holland, Hong Kong, India, Ireland, Italy, Japan, Mexico, Norway, Poland, Singapore, South Korea, Sweden, Switzerland, Taiwan, Turkey and Wales. Classes are in English in the majority of places, but in some, such as China, France, Germany, Italy and Japan, classes are in the local language, and you will need to learn it. But what an advantage you will have if you become multilingual – and you have time to learn. On exchange, you pay normal UW fees, except in four universities in Austria and Germany where you pay their tuition costs, saving about \$5,500 a term (not a bad return for learning German). There is other financial assistance available.

This article is a wake-up call for a great opportunity. Exchange is a fabulous experience. Don't overlook it.

Ask the Dean

ADEL SEDRA
DEAN OF ENGINEERING

Question: The students from the UAE campus are arriving January 2012. How are these students going to be integrated into the campus?

As many of you may know, the University of Waterloo's United Arab Emirates (UAE) campus opened in 2009. In partnership with Higher Colleges of Technology (HCT), UAE's largest educational institution, we are bringing the same educational standards and commitment to the UAE as you receive here at Waterloo. It is an exciting educational experience for everyone involved.

On the UAE campus Waterloo offers programs in chemical and civil engineering. These are two plus two programs – two years of study at the UAE campus and two academic years at the Waterloo campus. The engineering students starting at the UAE campus are in full co-op programs like you. To ensure these students receive the same quality Waterloo program you do they are taught by Waterloo Engineering professors.

The first 15 UAE engineering students will be arriving in Waterloo in January for the 2012 winter term. This number will grow to 34 the subsequent year and will continue to increase year after year until reaching a maximum of about 120 students. The UAE students will join our Waterloo campus's chemical and civil 3A classes. These students will be indistinguishable academically, but will be new classmates. The plan is to assist the UAE students with attaining co-op jobs in Canada for the fall to help them acclimatize to the culture. When these new students arrive in January they will be provided with orientation to Waterloo's campus. Part of the orientation will be learning about the services available to all students on our large campus.

There is currently a committee working on the details of the student transition from the UAE campus to the Waterloo campus. I trust you will welcome the UAE students to your classes in January.

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

FedS Councillor Report

TREVOR JENKINS & JUZER SHARAFALI
FEDS ENGINEERING COUNCILLORS

Hi everybody! We're Trevor Jenkins and Juzer Sharafali, two of your Federation of Students' Councillors for this 2011-2012 academic year. We're here to represent the interests of engineering students within FedS in order to make sure the Federation is serving the needs of engineers and remaining accountable to students. We're unfortunately both out of town this term for co-op, so you won't be able to find us in the halls, but if you ever have any concerns, drop us a line at t.ek.jenkins@gmail.com or juzer89@gmail.com.

Federation Hall

As many of you have probably heard, the university has sent notice to the Federation stating that they have decided not to renew the lease of Fed Hall past its expiration in April 2012. How can they take control of a building paid for entirely and directly by student fees for over 15 years?

Essentially, all buildings on campus are owned by the university, so when a building like Fed Hall is built, a lease is signed with the university for a set period of time. In the case of Fed Hall, the original 20-year lease, which expired in 2004, contained a clause preventing the university from withholding renewal of the lease without reasonable cause. This was subsequently removed from the following lease that expired in 2010 and in the one which expires in 2012. Technically, the university is within its right to take over the building without any form of compensation to students or FedS for constructing, maintaining or equipping the building, or for establishing a reputation as a premier banquet facility in the region.

The university hasn't finalized its plans for what it intends to do with Fed Hall. According to the latest information provided, it would see Food/Catering Services relocated to Fed Hall from SCH, which would then become the new home to the Student Success Office. Fed Hall would likely continue to operate in some capacity as a banquet facility, but early reports indicate the second floor mezzanine may be converted into offices, thereby removing the area commonly used as the 19+ area.

One of the university's arguments for taking over the venue is that about half of the events are for off-campus groups like RIM, high school proms and weddings,

something the university states the venue hadn't been intended for. However, these groups ultimately subsidize student groups, who rent the hall either at reduced rates or even free. With no other large banquet facilities on campus, and both Bomber and SCH having limited capacities, it's difficult to find space for large student gatherings on-campus. Should the university take over operations, the future of events like ComEng, society semi-formals and Frosh Week could potentially be impacted.

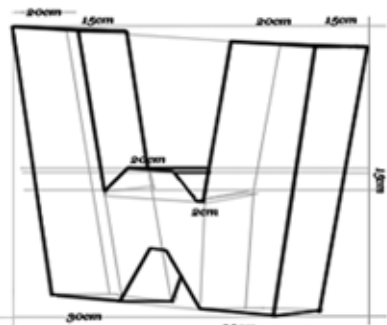
The Federation is opposed to this move and is in the process of establishing a student consultation strategy to see how students feel about this issue. From the information already gathered, students are either strongly opposed to the move or are impartial. Most view Fed Hall as a valuable resource to have for large events and don't mind it being used by off-campus groups like RIM, since it does ultimately make the venue more affordable for student groups operating on shoe-string budgets.

For the sake of space I'll cut this topic off here. For more information on the issue as a whole, check out feds.ca, under the story "Fed Hall Update-May 20, 2011" or contact me at t.ek.jenkins@gmail.com. Any further comments or opinions can also be directed to any of your friendly FedS Councillors.

Federation By-Elections-RUN RUN RUN!

Due to the huge number of students within Engineering, our faculty has six seats on the Federation of Students Council, with only three currently filled. As a result, there will be a by-election this spring to elect students to the remaining three seats of council. Any student within the faculty can run (with the exception of Architecture, which has its own separate seat) regardless of term, society (A- vs. B-Soc) or whether they are on campus or not. Since all the current councillors are on co-op, it'd be great to get some on-campus representatives to help with consultation and representation. Dates for the election are TBA, and I'll pass them on once I hear. If you have any questions about the role or election procedures, please don't hesitate to contact either one of us.

If you have any questions, comments or concerns about anything related to FedS or the university in general, please don't hesitate to contact us at t.ek.jenkins@gmail.com and juzer89@gmail.com. Best of luck to all of you as the impending midterm season approaches!



The Spring 2011

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Skype: Microsoft is Back in the Game

THE IRON WARRIOR NEWS BUREAU

Earlier this month, Microsoft secured the largest deal in the company's history: purchasing Skype for \$8.5 billion. What most readers aren't aware of is the story behind the transaction.

What you may not know is that the "For Sale" sign has been pitched in Skype's front yard for a long time. Skype's major investors, eBay and Silver Lake, were getting nervous about delaying the public offering of Skype. Many outsiders speculated the motive that could warrant investors to sell Skype, a program with so much unleashed potential. Actually, Skype had recently filed for an initial public offering (IPO) even in the light of nearly a billion dollars in revenue. Some, however, suggested that Skype's revenues were stalling while others said that

Silver Lake and eBay were simply too impatient and wanted to secure their profits.

Initially, Facebook and Google danced with Skype, while Microsoft came fashionably late to the party. With Google's Google Voice, and Apple's FaceTime, Microsoft had been left out in the cold blistering winds of insufficient voice communication for quite a while; thus, this purchase would've been the perfect opportunity to get Microsoft back in the game.

Why is Skype so attractive? Skype has a great team pushing its technology forward. Provided they aren't forced to jump ship when dealing with the infamous Microsoft bureaucracy, they will be a source of bountiful opportunities for Microsoft. Skype also allows the Windows giant to step into the enterprise collaboration market with its voice, video and sharing capabilities. With this move, Microsoft will now be able to

directly compete with Cisco and Google. The next logical step for Skype has been interaction with mobile phone carriers. Now, this is Microsoft's next step. Partnering up with cellphone carriers will become rewarding as the transition to LTE-based networks sets in. Skype can also help Microsoft in the creation and adoption of future version of the Windows Mobile OS; hence, Skype will also compete in this market against Google Voice and FaceTime.

Another interesting aspect to this situation is that Microsoft is an investor in Facebook. Facebook needed Skype desperately; in order for Facebook to get levelled on the market, it needed to improve its chat system. However, if Facebook had pursued the conventional path of building its own offering of voice- and video-calling software, the costs would skyrocket. Now that Facebook can piggy-back off Microsoft

and has access to Skype assets, it is able to do this relatively cost-free. Facebook can also help Skype get more customers for its SkypeOut service. Integration between the two could mean Facebook Credits used for Skype Minutes. Is Facebook the biggest winner?

Despite the cost, Microsoft needed to secure this software to stay competitive. Now that Microsoft has this weapon in its arsenal, we can see who made how much out of the deal. eBay received \$2.55 billion dollars. The co-founders, Niklas Zennstrom and Janus Friis, take home a well-deserved \$1.19 billion. Silver Lake, Andreessen Horowitz (a venture capital firm) and Canada Pension Plan Investment Board jointly own 56% of the company, earning \$4.76 Billion. Finally, the last stake goes to Andreessen Horowitz who made a \$205 million profit on their \$50 million dollar initial investment.

Talk TED Talks

The Age of the Silk Superhighway



**BRENT
MCCLEAVE**
1T NANOTECHNOLOGY

When trying to deal with a problem we're facing, we often attempt to create radical new solutions rather than revisiting and modifying older ideas. However, in a TED presentation this past March, Fiorenzo Omenetto has chosen to look to the past to find valuable and resilient materials to replace our currently unfavourable ones. More specifically, Omenetto has focused his research on the applications of silk in materials engineering. The most commonly-used silk fibre is produced by the silkworm *Bombyx mori*, and therefore there will be no Spiderman references in the article (I'm kidding, it's actually because Spiderman sucks).

Historically, silk has been used primarily as a fibre in textile goods such as clothing and fabrics. On the other hand, Omenetto's research is predominately focused on using silk as a bulk material, where silk (or more specifically, fibroin, one of two proteins that make up silk) demonstrates remarkable properties. It's biodegradable, non-toxic, and extremely durable. These properties make the hardened fibroin applicable in a myriad of areas including, but not limited to, biomedical applications and environmental-safe technologies.

Within the body, fibroin is completely non-toxic and does not trigger an immune response, so our anatomy can cope with the material. As a result, it can be used to replace bones and cartilage, as well as fasten broken pieces together much like stainless steel braces do now. In addition, the silk can be easily altered to make it "programmably degradable," meaning that the time it takes to degrade can be adjusted, allowing for more accurate drug delivery. In fact, on top of all that unimportant stuff, ink can be replaced with silk networks to create functioning LED tattoos.

Outside of the body, fibroin is a very environmentally safe material. Due to its short degradation time in water, products such as silk disposable cups can be thrown away without occupying our already overflowing landfills. It can also be used as a packaging material, for both manufactured goods and foods because it's apparently edible (steak was never that great anyway).

Despite being such an ancient material, new engineering innovations have shown that silk is indeed a material of the future. Capable of replacing our wasteful materials and parts of our own bodies, fibroin silk is also revolutionizing the digital world by allowing electronic devices to be grown on thin, flexible films. The Silk Road is long gone, but with Omenetto's silk optical fibres, we may just be entering the age of the Silk Superhighway.

Power of Voice

THE IRON WARRIOR NEWS BUREAU

Words are the most powerful weapons in your arsenal. These versatile units of communication take brainwaves and transform them into reading material. They make swords of our tongues and cause revolutions. They energize our spirits when we feel powerless. Now, they also energize your phone when it feels powerless.

Step aside solar power, wind power, and nuclear power, electrical engineers have developed a new technique for turning sound into electricity, translating call-time into battery power. So while you're talking, you can also be charging your phone. This technology is so sensitive that it has the ability to harness background noise and music to charge a phone, but not as efficiently as the human voice. Incredibly, this is not new technology: it has been used in ships for emergencies for more than 30 years. What's new is the technique and the more global application.

The technology works as follows: it uses tiny strands of zinc oxide between two electrodes. A sound-absorbing pad placed on top vibrates and causes the strands of zinc oxide wires to compress and release. This movement generates an electrical current.

Apart from its current inefficiency (100 decibels--the sound of traffic--to 50 mV), the other downside is that in order to charge the phone, you must use the phone.

Dr. Sang-Woo Kim, the pioneer of this design at the institute of nanotechnology at

Sungkyunkwan University in Seoul, South Korea, envisions that this form of power generation has multiple uses. It could be used to generate electricity for lights on highways. If it was efficient enough, it could also mean that a party could generate its own power. Dr. Kim believes nanogenerators could also proliferate into other sources of energy and increase efficiency.

In addition to the direct application of this technology, it has spurred another concept to mind: energy scavenging. This concept allows us to become more self-sufficient. For areas which are not on the power grid, energy scavenging-based power generation is possibly a cost-effective way to provide energy. It also is a good way to generate power from multiple sources. As is, power generated from sound is not as efficient as solar cells. But instead of choosing between the two technologies, a combination of both could be used for maximum power generation.

Scientists and engineers are venturing forth and finding other sources such as the collective movement of tree leaves as a source of energy. There has been technology that uses the human heartbeat to power MP3 players. Several companies have successfully utilized movement as a form of power generation. This simply proves that even if you aren't capable of finding the next big scientific discovery, you are capable of finding old ones and applying them in a more efficient way. Sometimes it does not take a technological revolution, but simply the power of the human voice.

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Space Shuttle Endeavour Launches on Penultimate Shuttle Mission



JACOB TERRY
1T NANOTECHNOLOGY

Readers who were around last term may remember my article about Space Shuttle Discovery's final flight in February and the two remaining Space Shuttle missions NASA has planned. The first of those two missions began on May 18th, sending the newer Space Shuttle, Endeavour, on its last mission. While the mission, labeled STS-134, was to be the final mission for the Space Shuttle program, the United States Government approved to convert Endeavour's Launch-on-Need rescue mission into a final regular mission STS-135, which is due to launch in July. STS-134 was scheduled to launch at the end of April with U.S. President Barack Obama in attendance along with Shuttle Commander Mark Kelly's wife, U.S. Representative Gabrielle Giffords, who was seriously wounded in a shooting in January. The launch was delayed a couple weeks and Giffords was able to attend the successful launch.

Endeavour was authorized for construction in 1987 after its predecessor, Challenger, suffered a devastating accident seconds after launch. On its first missions, it held the Spacelab module, which allowed astronauts to conduct experiments in microgravity. In 2000, it migrated to installing components on the International Space Station such as the Canadarm2, and acted as a sort of space ferry for astronauts to get to and from the Space Station.

For Endeavour's final mission, it carried eight components, experiments and tools: the Alpha Magnetic Spectrometer, the EXPRESS Logistics Carrier 3 (ELC-3), the Materials on International Space Station Experiment 8 (MISSE-8), the Orion Rel-nav Sensor, a GLACIER Freezer Module, an Orbiter Boom Sensor System (OBSS), Lego kits and STEM Bars. The STEM Bars were brought to support high school students Mikayla and Shannon Diesch, who created the nutrition bars and aim to raise awareness of STEM education (science, technology,

and mathematics). The Lego kits were also brought for a school-focused project, aimed to see how models react in microgravity. The OBSS is an extension for the Canadarm2 already attached to the Space Station, but Endeavour is leaving an OBSS on the Space Station permanently so that future missions can make use of it. In addition to allowing the Canadarm2 to reach previously unreachable locations on the Space Station, it has a handrail along its side so astronauts can conduct spacewalks with it.

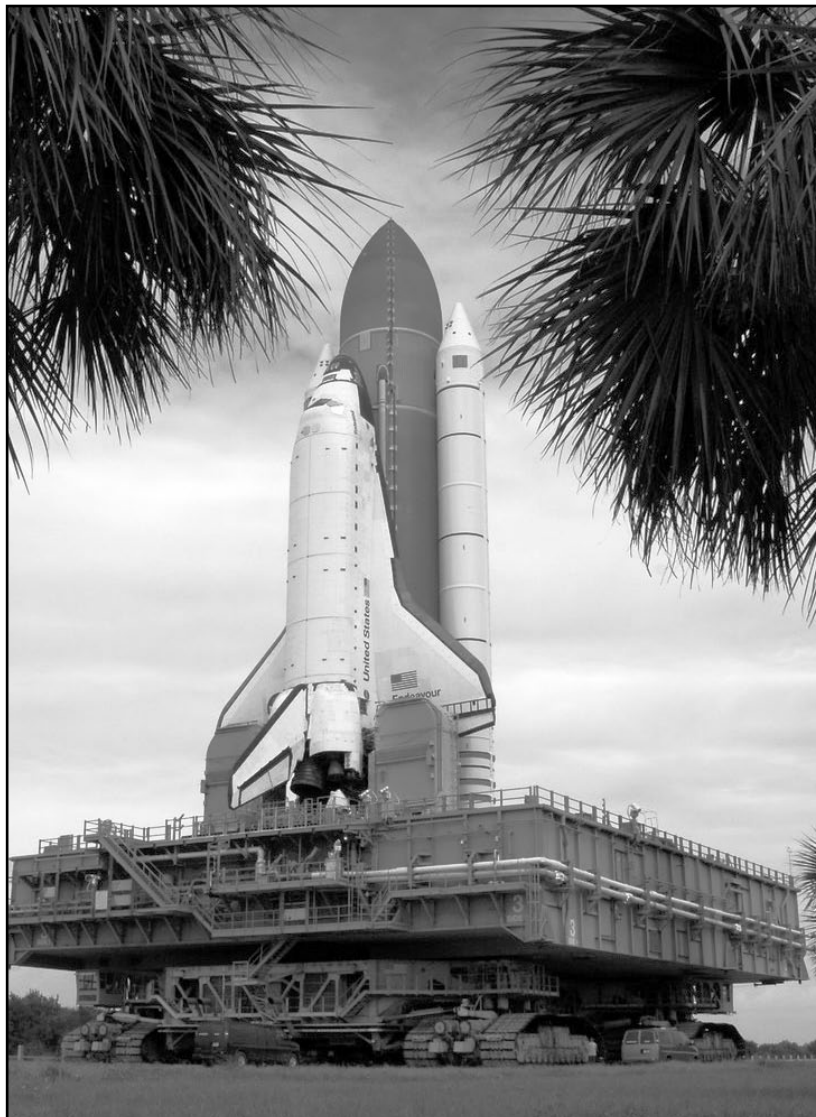
Endeavour brought a GLACIER Freezer Module and is returning two older ones. The GLACIER Modules are used for storing and bringing science samples to the Space Shuttle. It also brought the Orion Rel-nav Sensor to test its performance. The sensor would be used on NASA's Orion spacecraft, which is in development as a small unit for carrying astronauts in the future.

The main component brought was the Alpha Magnetic Spectrometer, which is a particle physics detector with a large magnet, designed to investigate antimatter and dark matter. This unit is the final version of the one placed before it, and is designed by over 500 scientists from 16 countries and 56 institutions. Although controversial for its \$1.5 billion price tag, it could prove incredibly useful in understanding the universe and unexplored particles.

Other parts brought on Endeavour include the MISSE-8, which is part of a series of experiments on the ISS to measure the effects on materials done by long-term exposure to space. MISSE-7 was conducted over the last two years and was returned with Endeavour. Another part, ELC-3, brings large and heavy Orbital Replacement Units for other spacecraft. This includes a High Pressure Gas Tank, Am-

monia Tank Assembly and Dextre, a Canadian contribution which acts as a hand to the Canadarm.

When Endeavour returns, it will be decommissioned and placed in the California Science Center. The Canadarm aboard the shuttle will be removed and sent to a currently undetermined museum in Canada. The final Space Shuttle launch will take place on July 8th, unless weather or technical delays push it back further. This is your last chance to see a NASA Space Shuttle launch, so make sure to watch it if you can or read up on it. The Space Shuttle program will undoubtedly be read about in history books centuries from now.









Endeavour at launch site

floridatoday.com

engineering and mathematics). The Lego kits were also brought for a school-focused project, aimed to see how models react in microgravity.

The OBSS is an extension for the Canadarm2 already attached to the Space Station, but Endeavour is leaving an OBSS on the Space Station permanently so that future missions can make use of it.

Thumbs up Thumbs down

	DNS servers crashing	
	Air conditioning in the summer	
	InDesign crashing	
	Matlab functions that answer the question why	
	Non-vector images	
	Minions building spaceships	

TechnoSpeak : Remember Memory

AMMAR MASUD & KRISHNA IYER
2B NANOTECHNOLOGY

Sharing data at ridiculous speeds across the world is an amazing feat and one that is exercised to a tremendous extent. However, we must handle this data once it is received and the obvious solution is to store it until desired. What's not so obvious is how to store that data. Here is a list of common storage formats and their benefits and drawbacks.

Hard Disk Drive (HDD):

The most well-known and commonly used device for storage in practically any computer since the 1960s. They are electromechanical and are commonly found in external storage devices. HDDs are the only storage device that operates with moving parts on this list, using a spinning disk coated with ferromagnetic material, that varies in rotational speed from 3000-15000RPM. The rotational speed is one of the main factors that determine data transfer rates (another being data recording density), and can vary but does not stray

far from 1030Mbits/sec. The reason HDDs have not become obsolete (yet) is due to their continuous advancement in data storage density. A drawback of HDD storage is power consumption which is a rising issue in portable devices striving for a longer battery life.

USB:

USB storage devices have now (slowly but surely) phased out all other portable media devices. As I write this article on my laptop, I think back to those days when CD ROMs were the rage (yep, I was born AFTER the floppy disk era). USB storage devices a.k.a. Pen Drives a.k.a. Thumb Drives a.k.a. Flash Drives a.k.a. USB Keys, have changed the face of computing as we know it. These handy portable devices have the advantage of being rewritable, compact, widely compatible and cheap. These attributes have made them a staple for anybody who uses multiple computers. Newer USB storage drives use the new standard of data transfer, USB 3.0, enabling almost instantaneous transfer speeds. Moving forward, we can expect even faster USB drives which use newer

and faster interfaces.

Solid-State Drive (SSD):

Get comfortable with seeing SSDs more frequently in most devices as a common replacement to HDDs. It has already begun to take over in the portable electronics market due to its better efficiency for battery longevity. They utilize NAND-based flash memory that does not require constant power consumption. SSDs trump HDDs in many other aspects including lower random access time and latency time, lack of defragmentation requirement, quiet operation, imperviousness to magnets, and lower weight. With all these benefits, why do we still use HDDs? Patience! We are getting there. Due to their limited number of writes, SSDs do not have a very long life span and they are dependent on frequency of use. Combine that with a cost of replacement up to \$2/GB compared to the \$0.10/GB for that of HDDs and progress must still be made before completely replacing HDD technology.

Memory cards:

Memory cards have changed the face of portable storage on devices such as cellu-

lar telephones, digital cameras and portable media players. Right now, 64GB (or about 100 CD ROMs) of data at your fingertips is very much a reality. These nifty little gadgets will only grow in capacity and improve in speed while still maintaining the small form factor required by the applications they are used in. These memory cards are as cutting edge as technology gets and a prime example of "size matters."

Memristors:

Memristors are devices which were hypothesized in the early seventies. As hypothesized, these devices are designed to "remember" the amount of current passed through and have a memory of this even after the passage of current has ceased. In 2008, HP Labs succeeded in fabricating the very first real-world memristor prototype using thin films of titanium dioxide and nanowires. These devices promise to reduce to the energy consumption of memory devices vastly. Also, as small as these devices are, they can replace traditional NAND transistor based storage, thus vastly increasing the density of storage.

Stressbusters

Fight away academic blues



**KRISHNA
IYER**
2B NANOTECHNOLOGY

So, it has been just four weeks into the term and I have made it to a record high of five all-nighters to complete homework (among other things). The stress is really getting on my nerves. If you are an average engineer, drinking away your sorrows would suffice; but as a non-alcoholic, that option is ruled out. With that being said, I figured out some ways to not make my life as miserable and I would like to share them with you. Voila!

Athletics

I have found that physical exertion works wonders on your body. When you are tired, sleeping for six hours feels like an incredibly relaxing coma. I found that squash is an amazing sport for this reason. Not only is it physically exerting, but hitting the ball allows you to take out your frustrations on the (poor) ball. Soccer is also amazing at making you feel like a zombie by the end of it (which makes your physical state so pitiful that you forget your worries). Some of my friends chose to run or work out in the gym (which I personally do not find as satisfying) but that is also a viable option too.

Socialization

I feel that social interactions and meeting people is a great way to fight the homework blues. Meeting people makes me extremely relaxed (being the extrovert that I am). Just coming to POETS everyday between classes and homework proves to be a very invigorating experience for me. Seeing people just relaxing or eating their lunch allows me to unwind and takes my mind off bigger calamities of life (like a certain course with electrons doing impossible things).

Reading

I recently found how relaxing reading can be. Just picking up a book (preferably fiction) immerses me into a whole other world with my imagination buzzing. Dragons, spies, murder mysteries, magic, fairies or vampires provide an alternate universe in which anything is possible. This drowns out the constant irritation of assignments being due or lab reports to be completed.

TV Shows and Movies

TV shows and movies are a great way to detach yourself from reality and engage in the misadventures of bumbling main characters or follow the passionate love story of good looking characters. I, however, must warn you that this can be a huge disaster. I watched a certain show about an OCD afflicted detective and lost hours of productivity at a stretch. This whirlpool of danger is best avoided as **much** as possible.

Cooking

Cooking is an amazing way to unwind. The scent of the spices like paprika and nutmeg mingling in the nasal cavity is enough to sedate me and make me forget the pain that are assignments. Delicious food in my stomach also gives me

immense amounts of satisfaction which makes me very, very happy.

Gaming

All you gamers out there will agree with me when I say that it is the best way to blow off some steam. A little bit of "shooting-type" games (especially Counter Strike 1.6 nostalgia) is the best way to vent out "aggression" especially at 12 year old kids. Racing around in shiny cities in racing games gives me the adrenaline rush that I can't get in real life. Pwning some n00bs can make you feel so good about yourself and subsequently lose track of time. So, tread with caution when you involve yourself in the immersive gameplay.

Spring-time Picnics

I believe that I like pic-a-nic baskets almost as much as yogi bear. A picnic is an amazing way to unwind on a bright and sunny spring morning. Lying on fragrant green grass, looking up at the clouds pass above your heads in various shapes and sizes, you will forget all the anguish caused by academics (or anything else). I love to see expanses of land covered by dandelions swaying in the gentle breeze. However, be wary of those spring time allergies. It would suck to be sneezing all along.

Rock Out

Everybody in the world is bestowed with the innate ability to create and appreciate melody and rhythm. Those spare hours you have can be used to enhance your musical ability. If you can't play a musical instrument, learning one would be an amazing way to unwind. When you do have the musical ability in you, nothing is better than jamming with your friends (or playing in an orchestra) to make you forget all track of the time-space continuum.

Extra-curricular activities

Being on a buzzing campus like uWaterloo, there is a huge plethora of options to choose from when it comes to extra-curricular activities. For the machine-heads there are the many student design teams. I can tell from personal experience that spending a full day at the machine shop can be weirdly therapeutic. You can choose to help out with The Iron Warrior and learn the skills of the trade. For the culture inclined people, there are various clubs and societies to get engrossed with.

Shopping

Shopping is an amazing way to unwind (if you are cashmoney ballin'). I know girls who can spend hours at a stretch at a mall without buying anything. T's is the summer now and it is time to update your wardrobe with sundresses or sports gear (depending on what type of person you are). I find deal hunting incredibly satisfying for some reason. Personally, I love shopping at St. Jacobs, looking at the colorful array of fruits and vegetables.

I hope my list of stress busters helps someone out there who reads this. I am sure that there are many more stress busters that you can think of. Just make sure you do not take life too seriously or things might tend to go awry. Chillaxing is the key to success and the clichéd and true phrase "all work and no play makes Jack a dull boy" is very much still relevant.

Crazy Co-ops

Working at Diavik Diamond Mine in the NWT



**SPENSER
GOOD**
1B MECHANICAL

To state the obvious, co-operative education plays a huge role in the engineering experience at the University of Waterloo. Every single one of us who graduates in engineering from this University must obtain five co-op credits for four-month work terms. This structure guarantees that each and every one of us gets to experience and learn from a workplace environment. In a new column entitled 'Crazy Co-ops,' *The Iron Warrior* is going to feature some of the more exotic and unique co-op terms experienced by current undergrads in engineering at UW.

This week we will profile Rebecca Cameron and her experiences working at a diamond mine in the Northwest Territories. Rebecca worked at the Diavik Diamond Mine which is located 300 km northeast of Yellowknife on a 20 km² island. Surrounded by very little wildlife or vegetation, the mine is isolated by arctic tundra and is accessible only by an ice road. To say the least, it is very remote. However, the mine produces approximately 90 million dollars of diamonds per year.

Rebecca worked for EBA Engineering, a large consulting firm based out of Edmonton, Alberta, acting as a subcontractor for Diavik. She, along with a couple other co-op students, was responsible for

performing a variety of Quality Assurance work dealing with concrete and soil testing. However, working in the mining industry, especially in a place as remote as the Diavik mine, is very different than being employed in a regular workplace. Rebecca worked for three weeks straight, pulling in over eighty-four hours each of these weeks. Over forty of these hours were considered overtime, resulting in a very lucrative three weeks of work. After the three weeks were completed and her shift was finished, she was given one week off in which she was flown back to Edmonton.

Despite the awesome pay, the job came with some obvious downsides, according to Rebecca. The long time away from home and the ridiculous hours were very tiring. Also, completing a professional development course with a terrible satellite internet connection after working twelve hours per day was a huge downside. The mining industry is also still very male dominated, and the awkward stares were never-ending. Finally, even though Rebecca was employed at Diavik during the spring term, the weather was very cold and unpleasant, and only July and August were free of snow.

However, Rebecca maintains the experience was a good one. The cold weather and creepy stares were offset by a 70% discount on diamonds and great buffet food at the mine cafeteria. If you're looking to get into mining, keep in mind the long hours and remote locations but be assured you will come away with a unique and gratifying experience.

Summer = Happy

CHRISTY ROUAULT
1B ENVIRONMENTAL

Summer school: a term normally used with much negative connotation. For most, the summer term brings to mind two grueling months after grade 11, making up for failed courses. I have noticed that this negative idea is shared with most of the general public, resulting in many sympathetic retorts when the words "summer term" are uttered. The notion that we are miserably suffering through our summer has started to get to me. Contrary to popular belief, campus in the summer is a vibrant and happening place, arguably making it the best semester to be studying at UW. If you feel as though you are currently serving a 4-month sentence, perhaps you haven't yet discovered all of the perks of being on campus during this joyous season! Here are 5 reasons to convince you (and the rest of the world):

1. Fresh, local food! During the summer months we have the opportunity to support local farmers, be friendly to the environment and save money. In a city with wonderful markets and community gardens, you can eat well and be healthy quite easily for these four months.

2. Exercising in the great outdoors. Whether you prefer going out for a long walk or playing competitive sports, we tend to do more physical activity when the weather allows it. Physical activity and the

release of endorphins make everyone happier! As an added bonus, you can help out mother earth by riding your bike instead of driving your car.

3. Many, many, many events. During the warm months, there is tons to do in the Waterloo region. Markets, outdoor concerts, fundraisers, and many more cultural festivities to enjoy. Take advantage of the many university-run events and enjoy what the student life has to offer.

4. The sun makes us happy. As does the warmth. After Canada's long winter, our vitamin D-deficient bodies crave the sunshine, creating a school environment in which students and profs are happy. Studies show that weather indeed does change our mood. A greater number of hours of sunshine tend to reduce anxiety and increase optimism, which in turn increase our grades.

5. A well-rounded lifestyle. In general, we have a more balanced lifestyle in the summer, which is important to succeed in school. Although there are many distractions, look at them as perks. Setting aside time to take your mind off of your studies is beneficial to your efficiency. In the end, you take less time to do more.

So the next time you find yourself complaining about school in the summer, look on the bright side: at least it's not 30 below freezing, the highways aren't too dangerous to get home, and your dinner wasn't flown in from Mexico. Cheer up! It's the happiest season of the year!

How to Save a Life

DONATION from Page 1

This summer, a new initiative has been started to encourage students to donate their blood for the cause. The Summer Inter-faculty Blood Drive will last 56 days from June 1st to July 26th. Any donations made during this period will go to your faculty in a university-wide competition to see which faculties will rise to the chal-

lenge. The Canadian Blood Services clinic in Waterloo (at Weber and Bridgeport) will be offering individual or group bookings. The clinic is accessible by public transit and, for a minimum of three people, you can enjoy a free shuttle to and from the clinic all throughout June. If you miss this opportunity, the on-campus blood donor clinics are scheduled for July 8th, 25th

and 26th. This is your way to save lives, support cancer and dialysis patients, and prove that Engineering is the best faculty at Waterloo!

If you need more information, you can sign up for appointments over the phone (1-888-2-DONATE), online, or in person at the Student Life Center (SLC) the week before the clinic. Students involved with

promoting blood donations this summer are also eligible for a \$1000 award offered by the bursary program of the Canadian Blood Services. All inquiries about the project can also be sent to am3stewa@gmail.com.

You are now smarter than *The Fray*, in that you know how to save a life.

Consider donating today!

Egypt-Gaza Border Opens After Four Years



**DUSHANTH
SEEVARATNAM**
2B NANOTECHNOLOGY

On May 28, 2011 the Egypt-Gaza border, known as the Rafah border or crossing, was open again after a 4-year blockade. Despite the fact that Israel was strongly opposed to this action, Egypt has relaxed its restrictions on the border to allow Palestinians to cross freely. Any women, children, or men over the age of 40 can cross the border with easily obtained travel permits. The real struggle with the border restraints is that men from age of 18 to 40 need an Egyptian visa to cross the border, which can take several weeks to obtain. However, despite the difficulty that young- to middle-aged men have to undergo, this is still a substantial improvement from the restraints of the past.

For the past four years, only about 300 people were allowed to cross the border on any given day. This caused huge problems for the Palestinians living in Gaza. This restriction prevented many of them from getting the necessary medical aid that was available in Egypt, as well as preventing students from Gaza to broaden their knowledge. A majority of the people in Gaza felt as if they were trapped and others stated that it was like "living in a big jail" in Gaza. Furthermore, this caused an economic crisis in the densely populated Gaza region because of the limitations on what could or could not be traded.

The 4-year blockade was due to the brief but bloody civil war that occurred in Gaza between the previously ruling Fatah party and the newly-elected militant group known as Hamas. The war resulted in Hamas taking control of the territory, raising concerns for Israel's security. There has been conflict between Israel and Palestine

for years, but the rise of Hamas stimulated Israel to close the border with the help of former Egyptian president Hosni Mubarak. Based around the 1979 Israel-Egypt Peace Treaty, the Egyptians were responsible for controlling the movement of people while the Israelis were in charge of cargo crossing and a naval blockade. The idea was to prevent the entering of people or items that could possibly harm Israel.

Israel's concern for its own safety may have been the preliminary reason for opposing many of Egypt's political moves over the past few months, as was clearly the case this time. Israel has severely criticized the border move, bringing more tension between the temporary Egyptian government and its own. However, from an Egyptian perspective, this move has many benefits. The Egyptian election is looming closer every day, and this move is something expected to be popular with the public, especially when considering

the criticism that the former Egyptian president Mubarak underwent for placing the blockade. Also, the lightened border restrictions will help improve Egypt's previously problematic relationship with the Palestinians. Finally, the new border condition will help prevent or limit a thriving smuggling business that has grown along the border in the past four years.

An estimated 900 people will cross the border from Gaza to Egypt by the end of the first day. This is three times the amount allowed previously, which then may show signs of hope to all the people in the area, who have suffered a great deal because of the many conflicts. However, the true impact of this event still remains a mystery. Questions will linger about whether the open border crossing remains as symbol of peace between Egypt and Gaza, or whether this helps contribute to more conflict in the already destructive Israel-Palestine crisis.

UN stands for Utter Nonsense



**FARZI
YUSUFALI**
2B NANOTECHNOLOGY

Given the current political situation in Libya, the UN has been thrust into the spotlight once again for its inability to be a relevant global peacekeeping organization. While the UN has a well-written, albeit lengthy, charter, this organization has failed to act as the peacekeeping organization that it claims to be.

For one, since its inception after the Second World War, the UN has been found to hold elitist ideologies since the nations with the most power in the organization are, or were, superpowers at one time. The fact that the founding nations (Russia, United States, China, United Kingdom and France) have unregulated nuclear programs despite being in the UN makes it blatantly obvious that the real function of the UN is to protect these countries' interests. To add insult to injury, the UN often condemns countries outside this elite group for developing their own nuclear programs. In fact, the permanent members of the United Nations Security Council responsible for regulating nuclear power and making major decisions on world issues are comprised of just the founding nations!

Now that we've breached the topic of the United Nations Security Council, it is important to mention the many indiscretions that this group carries for personal gain. As it stands now, the five permanent nations on the council have the power to veto any action the Council decides. Therefore, a veto from any of the five members from the nations mentioned previously would immediately take precedence over all other nations' opinions. With this kind of power, any of the elite nations can stop any action from being taken that does not cater to the political or economic interests of the founding five. To provide evidence for this claim, a total of 215 substantive resolutions were vetoed by these nations, with 93 of them occurring between 1966 and 1985. Interestingly, about 50 of those vetoes were exercised by either the US or the Soviet Union. If you can recall basic history in high school, you'll notice that this period coincides with the Cold War... (it's pretty easy to connect the crater-sized dots here). Now that the extent of this practice has been verified, Dr. Mearsheimer, a leading authority on international relations, has mentioned in best-selling books that the actions related to Israeli-

based resolutions have been vetoed over 82 times despite the opposing opinions of the majority of the council. In addition to this, humanitarian efforts have been halted by the Security Council as the "permanent five" have only allowed proposals with favourable political and strategic motives to be carried forth. An infamous example of this gross negligence were two incidents in the early 90's where the UN sanctioned protection for the oil-rich Kuwaitis during the Iraqi invasion while the Rwandans got no such protection during the 1994 genocide.

Other branches of the UN, much like the UN Security Council, have not performed better when it comes to upholding core ideals. Time and time again, the UN has shown its inability, as a global organization, to handle international conflict on all scales. Since the time of the Cold War (which, in itself,

is an example of the UN's irrelevance in global society), a number of major human rights crises have gone unnoticed or have not been addressed with an appropriate response. The most prominent example of human right violations would be the Darfur crisis in Sudan. While repeated acts of genocide have caused over 300,000



civilian deaths, the UN has failed to act appropriately against such serious human rights violations. Another situation in which the UN has failed to intervene was the Srebrenica massacre where Serbian troops conducted mass murder against Bosnian Muslims.

While Srebrenica had been declared a UN "safe area," it was the Dutch peacekeepers that were responsible for securing the area while the UN did nothing to prevent the genocide.

Alongside the lack of intervention during human rights crises, the UN has been

known to preferentially deal with nations that are of political interest to the permanent five. Israel has been, by far, the most discussed nation at the United Nations, with the most resources and time spent on it than any other issue. If Israel had a particularly bad track record of human rights violations, this amount of attention to Israel by the UN would be warranted; however, this is obviously not the case. The fact that the UN has focused on Israel's issues and has excluded nations with more troubling issues further indicates that the UN acts in the interest of improving political and economical relations for the permanent five (since Israel provides a foothold in the Middle East oil supply).

Before you immediately brand me as a borderline anarchist, it is important to note that I don't hate all global organizations; however, hearing about the use of such organizations to exert power over vulnerable nations tends to leave a bad taste in my mouth. If the UN were to redeem themselves in my eyes, they would have to completely revamp the Security Council so that other nations are represented as permanent members. Finally, the UN would have to rebuild itself from scratch to actually become the relevant global peacekeeping institution that it should be.

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This insert is officially affiliated with the University of Waterloo Engineering Society and is endorsed by the Chief Returning Officer

The Engineering Society President Candidates



Leah Allen

President

3A Chemical Engineering



Eric Evenchick

President

2B Electrical Engineering



Sean Walsh

President

3A Mechatronics Engineering

A Message From Your Chief-Returning-Officer Engineering Society Presidential Election Update

REBECCA CAMERON
CHIEF-RETURNING-OFFICER

Hello everyone! My name is Rebecca Cameron, and I was elected as the EngSoc Spring 2011 CRO (Chief Returning Officer) at the first EngSoc meeting of this term. As CRO, it is my duty to organize the EngSoc elections this term and to make sure that they are well-advertised and fair. This term, we are trying something new - instead of running one election, we will be having two elections. The first election will be for the President position, while the second election will be for the various Vice President and WEEF Director positions.

Nominations for EngSoc President candidates closed

on May 26th, and we are currently in the midst of the EngSoc President campaigning period right now! Please read the opposite page in this issue of The Iron Warrior to learn more about the candidates running for President. Also, the all-candidates forum is TODAY in the CPH foyer at 11:30 AM – all presidential candidates will be there to answer your questions. Once campaigning ends on Friday, June 3rd, we will then begin voting. The voting period will begin Saturday, June 4th, and end on Tuesday, June 7th. You will receive an email with a link that will let you vote, and it will also direct you to a webpage where you can get more information about each of the candidates' platforms. We will have a voting station in the CPH foyer on the Monday and Tuesday of the voting period as well, so

please be sure to vote! The results of the election will be announced at the next EngSoc meeting, on the EngSoc website, and in the next issue of The Iron Warrior.

Nominations for VP-External, VP-Education, VP-Finance, VP-Internal and WEEF Director will open on Friday, June 10th, at 8:30 am, and will remain open until Friday, June 17th, at 4:30 pm. Campaigning will run from June 19th to June 24th, and voting will happen June 25th to June 28th. More details about the second election will be in the next Iron Warrior, and advertised in many other ways as well.

If you have any questions or concerns about the elections this term, please email me at cro@engmail.uwaterloo.ca. Thanks for reading, and happy voting!

Information on How to Vote

You may have browsed through the candidate profiles, read them, or just looked at the pictures, and perhaps now you're wondering how to vote. See below.

You have two options to vote:

Voting Online - You will receive an email regarding how to vote online. When you receive your email, click on the link provided in the email and follow the instructions to cast your vote. If you do not receive an email from by Sunday, June 5th, please contact the CRO at cro@engmail.uwaterloo.ca in order to resolve the situation. Voting online will be open from June 4th-7th. Please note that the email will be sent to the email address you have registered in QUEST.

Voting in Person - During the election, a voting booth will be set up near the Engineering CnD in the Carl Pollock Hall (CPH) Foyer. Show up at the booth on June 6th or 7th and you will be able to put in your credentials to vote!

Make an Informed Decision!

If you want to find our more information regarding each candidate and their platform, read their candidate profile. If you would like more information, check out their website and posters and come out to the Election forum where each candidate will be answering questions from fellow engineering students like you. **The forum is taking place inside the CPH Foyer at 11:30 AM on Wednesday, June 1, 2011.**

You will be voting for the Engineering Society Executive candidate positions for President. Nomination for the positions of VP Education, VP External, VP Finance, VP Internal, and WEEF Director will open June 10th, closing on June 17th.

In the event of the tie, the CRO will have sealed her ballots in an envelope. The envelope would then be opened to reveal the tie breaking vote to decide a winner. If a ties does not exist, the envelope containing the CRO's votes will be destroyed. If you have any questions regarding the election procedure, please contact the CRO at cro@engmail.uwaterloo.ca.

Presidential Election Important Dates

- May 29 - Campaigning Begins
- June 1 - All Candidates Forum
- June 3 - Campaigning Ends
- June 4 - Voting Begins
- June 7 - Voting Ends

VP/WEEF Election Important Dates

- June 10 to 17 - Nomination Period
- June 19 - Campaigning Begins
- June 24 - Campaigning Ends
- June 25 - Voting Begins
- June 28 - Voting Ends

ALL CANDIDATES FORUM



Wednesday June 1st @ 11:30 AM
CPH Foyer

Bring your questions! Bring your friends! It's the perfect lunch date!

CANDIDATE PROFILES

President Candidates

Leah Allen

3A Chemical Engineering



Hello fellow engineering students! My name is Leah Allen and I would like to be your next Engineering Society President. To represent the entire student body and provide them with services they utilize takes experience as well as dedication and I feel like I have just that.

My most valuable experience for this position was my role as VP External for the Engineering Society. With this position I attended conferences for external organizations (such as ESSCO and CFES), where I communicated with the VP Externals from across Ontario and Canada, and participated in debates where I was not hesitant to voice opinions on behalf of our society. By being connected to other school's Engineering Societies, I learned how

they function and I built relationships that I can rely on if we are trying to improve something within our society. This experience also taught me how to work with a variety of personalities to accomplish a specific goal. Also through my VP External role, I provided guidance to many directors to bring the society external events such as the Waterloo Engineering Competition, charity events and much more. Through working with the directors I developed my leadership skills necessary to become President and lead the society.

Apart from my work as VP External, I have been involved in the society since my 1A term, as well as participated in being a leader for orientation week ever since my first year. I feel like I have great knowledge of how the society functions, what works for us, and what the society can improve.

On top of the mandated items in the President portfolio, there are many goals that I wish to accomplish. My main goal is to improve the society's image of being "inward facing" and to create more events and services that would appeal to a greater spectrum of the student body. Currently, the Engineering Society does not appeal to everyone and I plan to encourage diversity within the society. I plan to have brainstorming

sessions with each class to determine how the Engineering Society can serve them better, therefore attracting a greater diversity of people. Another vision I have is to get more recognition for all the great things the society does for the community. This can be done by better promoting our accomplishments with our charity/outreach initiatives by using different means. Engineers in general have a reputation of being a bit "rowdy" but why can't we be the rowdy engineers who give back to the community?

My other goals include efforts to have better society documentation (and updating current documentation), seamless transition to the new Engineering Society executive structure, and having better communication between A-Soc and B-Soc.

If you would like a President who is driven and has the experience necessary to get things done, vote LEAH on the weekend of June 4th.

For more information on my platform (how I plan to accomplish my goals), my experience and to submit any questions or comments, please visit my website at www.leahforpresident.com.

Eric Evenchick

2B Electrical Engineering



Hello, I'm Eric and I'm in 2B Electrical. In the past, I've been a POETS Manager, Canada Day Director, member of several student teams, an orientation week leader, and an active student in our society. Now I want to be your Engineering Society president. My platform is based on three major points that define my vision for our society.

Representation of our Society as a Whole

I feel that strong representation is a critical role of our president, and I want to ensure that our society represents all of its members. I want to hear from all of our members, not only those who attend Society events. This includes our student teams, Women in

Engineering, Engineers Without Borders, and other groups that can benefit from our society's support. I will work to be easily reachable and hold office hours to collect input. As our representative, I will stand up for the views of the society.

Make our Society Welcoming to Everyone

Our society offers many events, services, and opportunities. However, only a small fraction of members take advantage of these. To address this, I first want to make sure that everyone is aware of what the society does and how they can participate. I want to elicit feedback from a wide range of members to try and cater society services to more people. I will look to improve how the society uses its resources and finances to provide more for all members. Personally, I will strive to be an approachable president.

Bettering our Society's Relationships

Our society relationships begin within the society itself. I want to lead a unified A-Soc executive team and strong communications with B-Soc executives. Next are our relationships with our faculty and school administration. We need to keep a good rapport with

these groups, but we cannot be afraid to express the opinions of our members. I want to get to know our other student societies and try to facilitate more inter-faculty activities. Finally, I want to start talking with other Engineering schools about how we can work together. As we are all co-op students, and many of us move around the country, I feel many of our members could benefit from knowing more about activities at other schools. I want to more members to see a benefit from our participation in inter-school councils.

If I am going to be your president, than I want to get to know you regardless of what term you're in, how involved you have been with the Society, or your views on my platform. If we don't already know each other, please feel free to introduce yourself. I'll be trying to get to know as many of you as possible over the coming weeks. Please take time to vote in the elections, and if you feel that I am the best representative for your society, then I ask you to vote for me on the June 4th weekend.

Sean Walsh

3A Mechatronics Engineering



Hello U-Waterloo Engineering students! My name is Sean Walsh and I would like you to trust me in being your next Engineering Society President. I'm currently in 3A Mechatronics. Along with performing as your Vice President Internal I have been

involved in EngSoc since my 1B term and represented Waterloo as a delegate to the 2010 Canadian Federation of Engineering Students (CFES) Congress. In my 2A term I was an Athletics, Music and Shadow Day director and since last September I have been selling you coffee in the C&D.

Why have you been so involved? You might ask me, and I would tell you it is because I want to take part in making the Engineering experience at UW the

best it can be for all students. To do this I know I would have to be a part of the Engineering Society because it affects every student through academic and external representation, social activities and everyday services. Unfortunately many students do not see more than the social activities and feel those elected do nothing for them. I intend to make this the focus of my campaign.

To be clear, I don't just want to spend my time as President finding new ways to show everyone what the Society does; I intend to work towards making it **noticeably yours**.

If you asked me "How?" I would light up with excitement in being able to share my 3 goals with you.

First: Student Society Study Space.

Everyone in Engineering has Academic requirements and when you need to fulfill those you go to a lab, a department study room, the library, or maybe even somewhere off campus. But where is EngSoc in this? I aspire to push for study space similar to that of a library, but facilitated by your Engineering Society.

Second: Financial Offerings.

You pay your Society fees and they help towards the services, activities and representation your EngSoc

provides. If you want to know how your money is being spent you are always welcome to inquire however, if you have an idea that would benefit your Society did you know you could approach EngSoc for assistance? Most do not. I aim to have a committee formed in consideration of a capital fund meant to support innovative ideas each term that would benefit all Engineering Undergraduates.

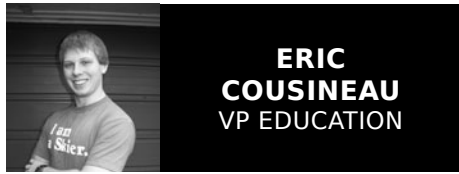
Third: Face to Face.

An initiative started by the former off-stream-society President was to attempt to visit every Engineering Undergraduate class. This is something I would absolutely do if elected. How better to both explain the offerings of your Society and receive feedback on how to improve, than to talk to you in person?

I realize I am but one person, so if any opportunity arises to make a difference that I cannot be a part of I would not hesitate to delegate the responsibilities to a trusted individual in order to see those ideas through.

Help me make the Engineering Society Noticeably Yours. Vote for me, Sean Walsh, on the June 4th weekend.

The Silence Before the Storm



ERIC COUSINEAU
VP EDUCATION

Hey Society Members (yes, that includes you), not too much has been happening with my portfolio during the past two weeks, at least at the time of press (this article was written Thursday, May 26th). For updates about what went on during my last meetings at the beginning of May, check out the first issue of *The Iron Warrior*. This is a short article, so please get ready for lots more updates next time.

The first **WatPD Engineering Curriculum Committee** (WatPD Eng CC) of the term happened on Thursday, May 26th. We talked about the outcome of the first offering of PD20, and the results were very positive. Students were very engaged in the course, with a 95% pass rate and 78% average.

Last issue, I talked about a possible initiative for **co-op is to return to a previous norm** regarding first year students returning to previous employers. I got lots of questions and feedback about this over the three weeks, and I determined that more information about implementa-

tion and exceptions to the rule are needed before proper consultation can be done. This is a long way off, and is still in the idea stage and will be further discussed at the CWG (Coop Working Group) meeting on May 30th.

There are **lots of upcoming meetings** in the next two weeks (from the time of writing) that will be reported on in next issue. FUGS (Faculty Undergraduate Studies Committee) will be happening May 27th-the agenda is composed of entirely housekeeping-style curriculum changes. CWG (Co-op Working Group) will be happening on May 30th. I will be meeting with the faculty to discuss the implementation of the Alumni Mentorship Network on May 31st. The second Academic Rep Meeting of the term will be on June 1st. There will also be CEC (Coop Education Council) June 2nd, UPC (Undergraduate Engineering Planning Committee) June 3rd, and SUC (Senate Undergrad Council) on June 14th. The outcome of these meetings will be covered in my next IW report and in my council report for June 8th's EngSoc Council Meeting.

As always if you have any questions, concerns, or feedback please don't hesitate to fire me off an email! asoc_vpedu@engmail.uwaterloo.ca

Annual General Meeting and MORE!!!



LEAH ALLEN
VP EXTERNAL

Hey A-Soccers!

How's everyone doing today? Swell? Lovely... me too. So there have been some recent developments on the VP-External front lately-so here's the low down.

Currently, (meaning on Friday when I wrote this) I am at the Annual General Meeting (AGM) of ESSCO. If you don't know, ESSCO is the Engineering Student Societies Council of Ontario and they basically represent the Engineering Societies of all the universities in Ontario. In the past two hours, every engineering student society in Ontario presented on something their student society does well. A lot of interesting things came out of that presentation. LIKE did you know that Guelph engineering hosts an event called "Corn Roast" where they bus people out to a field and there's unlimited beer and unlimited corn? SWEET. Also, did you know that Queen's runs a "Tea Room" that can be used as study space and where they serve fair trade products? Next, we have a presentation from the PEO (Professional Engineers of Ontario) and A LOT more interesting sessions to go to for the rest of the weekend. Expect an External Conference Report on the EngSoc website in the next few weeks which will document all the sessions and how they apply to our engineering society.

Now, I will tell you about some external events coming up. Every other Tuesday charities will be hosting a PAN-CAKE BREAKFAST! Since there was one yesterday, the next one is on June 7th from 8 am - 10 am. Show up in the CPH Foyer for three pancakes for \$2 and get P^5 points too!!! Other Charity events coming up this term are a charity bottle

drive sooo KEEP YOUR EMPTIES, a seniors' home visit, and an inter-faculty blood drive competition that will span a total of 56 days!!

Waterloo Engineering Competition (WEC) is another event that will be run this semester and will be on July 8th and 9th. The Women in Engineering directors have been hard at work planning a SUPER sweet event that will celebrate women in engineering so look forward to that!

Another thing that has been in the works lately is planning for National Engineering Month, which spans the entire month of February. I have sat down with representatives from our local PEO Grand River Chapter and they would like to start a collaborative outreach initiative to high schools students with University of Guelph, Conestoga College and us! We are in the brainstorming phase right now, so if you have any ideas please do not hesitate to contact me.

That's about it from the VP-External side of things.... so here's "how you know that you are in engineering:"

- Your ideal evening consists of fast-forwarding through the latest science-fiction movie looking for technical inaccuracies

- You can relate to the comics published by xked

- You have used coat hangers and duct tape for something other than hanging coats and taping ducts

- You want RAM memory for Christmas

- You know the direction the water swirls when you flush

- You can remember seven computer passwords but not your anniversary

- You can type 70 words a minute but can't read your own handwriting

If you have any question please feel free to contact me at asoc_vpeext@uwaterloo.ca.

<3 Leah

Budgets Budgets Budgets!



MARC TAN
VP FINANCE

HELLLLLLLLLLLOOOOOO EngSoc! This is just an update from your neighbourhood-friendly neighbourhood VP-Finance. Here what's going on in my life and on the EngSoc side of things!

I have survived my week from hell be-

cause of doing assignments, fourth-year stuff and the budget. The budget, which we approved at the EngSoc council on May 25th after a long debate, is presented below.

In other news, donation proposals are due in about a month. More to come in my next article. Expect to see a fire sale and new shirts in Novelties soon. And more info about an upcoming coverall day!!!!!!

If you have any questions, email me. Smell you all later.

The Spring 2011 Budget		
Directorship	Asked	Approved
Estimated Income		
Photocopies	\$500.00	\$500.00
Student Fees	\$36,150.00	\$36,150.00
Total	\$36,650.00	\$36,650.00
Fixed Costs		
Super Zorb Ball Purchase	\$0.00	\$0.00
Bank Charges, Payroll, Utilities, Office	\$17,000.00	\$17,000.00
Total	\$17,000.00	\$17,000.00
Expenses		
Exec	\$1,000.00	\$1,000.00
President	\$1,000.00	\$1,000.00
VP Finance	\$500.00	\$500.00
VP Education	\$500.00	\$500.00
VP External	\$500.00	\$500.00
VP Internal	\$500.00	\$500.00
Total	\$4,000.00	\$4,000.00
Directorships		
Prez		
Advertisement	\$275.00	\$50.00
POETS Manager	\$675.00	\$675.00
CRO	\$1,000.00	\$700.00
Speaker	\$3,500.00	\$2,700.00
Prez Subtotal	\$5,450.00	\$4,125.00
Education		
Academic Rep Advisors		\$372.90
Resume Critiques		\$100.00
Mental Health Awareness	\$110.00	\$50.00
Scholarship Awareness	\$5.00	\$5.00
Education Subtotal	\$115.00	\$527.90
External		
Alumni Officer		
Charities	\$1,131.00	\$336.00
Competitions	\$1,495.00	\$1,495.00
Engineering Outreach	\$250.00	\$150.00
Student Life 101	\$500.00	\$350.00
UAE Outreach	\$50.00	\$50.00
WIE	\$645.00	\$500.00
External Subtotal	\$4,071.00	\$2,881.00
Internal		
Arts	\$165.00	\$165.00
Archineering	\$200.00	\$100.00
Athletics: Cricket	\$92.00	\$92.00
Beach Day	\$290.00	\$250.00
Manhunt	\$120.00	\$100.00
Athletics: General	\$202.00	\$150.00
Canada Day	\$648.00	\$600.00
Enginuity	\$250.00	\$250.00
Eng Play	\$417.00	\$417.00
Environment	\$385.00	\$200.00
Exchange	\$17.60	\$17.60
Frosh Mentoring	\$367.00	\$150.00
Genius Bowl	\$500.00	\$500.00
Golf Tournament	\$1,850.00	\$500.00
Historian	\$100.00	\$50.00
Jazz Band	\$1,820.00	\$1,320.00
Laser Quest	\$125.00	\$125.00
Music	\$760.00	\$400.00
P**5	\$1,700.00	\$1,000.00
Scunt	\$565.00	\$565.00
Semi Formal	\$840.00	\$840.00
Student Workshop Cooking	\$260.00	\$260.00
TalEng	\$1,200.00	\$500.00
TSN - EOT Video	\$120.00	\$0.00
Year Spirit 2012	\$200.00	\$100.00
Year Spirit 2013	\$200.00	\$100.00
Year Spirit 2014	\$200.00	\$100.00
Year Spirit 2015	\$200.00	\$100.00
Internal Subtotal	\$13,793.60	\$8,951.60
Total	\$23,429.60	\$16,485.50
Donations		
Gradcom	\$500.00	\$ -
FOC	\$500.00	\$ -
Iron Warrior	\$500.00	\$ -
WEEF	\$500.00	\$ -
Net	-\$17,779.60	-\$5,835.50

Extra! Extra! Read all about it!



**TIM
BANDURA**
PRESIDENT

I need feedback and opinions from all of you. Currently, the University of Waterloo is not planning to renew the Federation Hall lease. Students paid \$1.5 million to construct the building and, despite the rumours stating otherwise, actually use the building on a regular basis. About half of the events run at Fed Hall are planned by student organizations on campus. Changing ownership could result in a loss of a convenient venue for students. For example, ComEng, which runs after every Orientation Week, is one such event. The Federation of Students also provides substantial bursaries for student groups using Fed Hall, making the event more affordable for us. If you have any comments, concerns or ideas, PLEASE pass them onto me or your FedS Councillors. If you want more information, check out this webpage: <http://feds.ca/stories/fed-hall-update-may-20-2011>.

The FedS' "Colour Me Educated" campaign is starting up now! The faculty that raises the most money for the campaign by next Winter will get to pour their Faculty's coloured paint over the President's, as well as some of the Administration's, heads! The overall goal is \$7,000, which is nothing for Engineering to reach on our own! On June 3rd, from 5-8 pm, there will be a soft opening for Zoup in Waterloo Town Square. For \$5, you get a drink, a bowl

of soup, and a chunk of bread! AND all \$5 goes to the Colour Me Educated campaign!

Council meeting #2 happened last Wednesday. At this meeting, we passed the budget and learned a little more about P**5. Dean Sedra also gave a speech for Council. E6 is well on its way, and the Department of Chemical Engineering may start moving over at the end of June. Engineering 5 and 6 have so far reached approximately 97 million dollars in construction costs, with the University, the government and private donors each raising a third of these costs. Engineering 7 is the next building planned. Within Engineering 7, we'll have an atrium with a new CnD and other student space! Any feedback on how the meeting went or for improvements for future meetings is welcome! Next Council meeting is Wednesday, June 8th, at 5:30 PM.

The EngSoc Executives have a meeting with Dean Sedra on June 3rd. If you have any comments or questions for the Dean and want us to bring them up, just tell us!

Please take a look and get informed about each candidate's platform for the EngSoc Presidential elections! It's a big role (I can say that from experience) and I want you to make an informed decision. We already saw some landmark events in our recent federal election. Maybe we'll see some in this one? Good luck to all the candidates. The remaining positions will open for nominations starting June 10th, and their campaigns will begin June 18th.

Until next time A-Soc, stay classy!
PLEASE send me any feedback for the Dean or for Fed Hall!

EVENTS! EVENTS! EVENTS!



**SEAN
WALSH**
VP INTERNAL

Hello everyone and welcome to the second edition of *The Iron Warrior* and thus my second update of the term. As per usual, I will begin by appreciating all that has happened over the past two weeks:

Plenty of Ingenuity events have been run and if you haven't been part of one yet, you are missing out! Praise Kyle Pohl for all of the work he has been putting in to it.

Genius Bowl was hosted last Tuesday and was tons of fun! The winners this year were "Straight Outta Compeng"; congrats to them and a big thank you to everyone who participated as well as the directors who organized such an incredible event.

Believe it or not SCavenger hUNT re-

turned this past Friday/Saturday and what an experience that was! Kudos to the 11 teams that participated. Congratulations to all of the Gods and Directors who made this year's SCavenger hUNT a resounding success and congratulations to SmYDE for winning!

Thank you as well to Kate Heymans for organizing a delicious and fun Exchange Potluck!

DON'T FORGET Tomorrow (June 2nd) is Laser Quest (PewPew!)

In other news, the golf tournament is in the planning stages and almost ready to be announced!

Joint Council is on its way-keep June 25th FREE!

I will be doing a Policy Manual review next week with the B-Soc President, Alesia Danelon.

That's all for now! Have fun at Laser Quest!

WEEF Proposal Time!



**PRAVEEN
ARICHANDRAN**
WEEF DIRECTOR

Welcome back to campus! The term is off to a great start. As of last term, our capital fund was sitting at just over \$9.7 million, making us the largest student-run endowment foundation in the world! Donation returns were open until May 20th and are now being processed as quickly as possible by the lovely people over in finance. Detailed term participation statistics as well as our new capital fund total will be available in the next issue of *The Iron Warrior*.

This term, WEEF will be allocating \$60,000 in funding! Proposals for funding are due June 22nd at 11:59pm to weef@engmail.uwaterloo.ca. Guidelines and forms can be found online at http://www.weef.uwaterloo.ca/proposal_form.

html. Each term, funding allocation decisions are made by WEEF Funding Council. Each engineering class gets one vote on funding council and students decide where all the funding goes each term.

A list of class reps is also available online. Please ensure that your class has a WEEF rep so that you have a say in how the \$60,000 is allocated. Remember, without a class WEEF rep, your class does not have any say in where the funding goes. WEEF is designed to be allocated by the students, for the students. Make sure you are represented!

KEY DATES:

June 22: Proposals due

June 27/28: Proposal presentations

June 30: Funding Council makes allocation decisions

The WEEF Board of Directors will then meet in July to finalize allocations.

As always, feel free to contact me with questions, comments or concerns at weef@engmail.uwaterloo.ca.

Senator Report

BEN SELBY
SENATOR

It's a real pleasure to be writing this, my first update as your engineering senator. I am already looking forward to the next two years! My first senate meeting (and the focus of this update) took place on May 16th. There were a number of interesting facts presented at this meeting that concern the undergraduate student body.

President Feridun Hamadullahpur presented a report to senate that focused mostly on UW's standings concerning international students. UW is currently ranked 10th in Canada for proportion of undergraduate students who are international with 12.6% (McGill is 1st with 21%). However, UW is first in international graduate students with 30%. The goal is to reach 20% international undergraduate students by 2017. The President emphasized that it is essential to maintain language standards and support while increasing that number.

The Vice President Academic & Provost also presented a report to senate. This report revealed that Engineering offers of admission this year dropped by 7% (3576 - 3322). This was due to overshooting last year (remember all those frosh?) and a higher number of applicants ranking UW Engineering first. Engineering also increased its offers to international students by 14%. The UAE campus Engineering program increased its enrollment from 23 to 44. A complete summary on admissions will follow in June.

Access Copyright is a company that handles licensing for copyrighted materials and is used by most academic institu-

tions in Canada, UW included. Originally, Access Copyright charged about \$4 per student to allow for photocopying and use of copyrighted documents. Recently, they proposed to increase the fee to \$45. A number of universities have worked together to bring Access Copyright to court and currently no decision has been reached - the fee remains at \$4. If, in a few years time, it is decided that the fee can be increased to \$45 then all universities will have to make back payments-in UW's case working out to about \$1.5 million a year. This is a serious issue and one to watch for in the future.

Mechatronics Engineering underwent an academic review at this past meeting. This is a comprehensive self-review that must be conducted by each program every seven years. Given that Mechatronics was recently accredited, the accreditation report was used for this review. A number of minor issues were identified with the program and defended by the department to no dispute.

As senator there are a few things I would like to implement. This includes a proxy system (or phone-in system) for senate meetings as currently there are no provisions for senators who cannot attend (this includes co-op terms, which means students may go entire terms without representation). Another is the development of a historian system so that issues dealt with by senate can be recorded and tracked. This is so that in case an issue comes up again (as it often does) a new senator is more prepared to address it. If you have any suggestions, questions, or anything else please email me at senate@engmail.uwaterloo.ca!

POETS

MOVIE SCHEDULE

SHOWINGS BEGIN AT NOON

Wednesday June 1	Thursday June 2	Friday June 3	Monday June 6	Tuesday June 7
The Princess and the Frog Pocahontas Beauty and the Beast	X-Men Trilogy	Star Wars Episode 1, Episode 2, Episode 3	Community	The Fifth Element The Truman Show Stargate
Wednesday June 8	Thursday June 9	Friday June 10	Monday June 13	Tuesday June 14
Spirited Away Wizard of Oz Phantom of the Opera	Die-Hard Trilogy	Star Wars Episode 4, Episode 5, Episode 6	The Evil Dead Evil Dead II: Dead by Dawn Army of Darkness	The Bourne Trilogy

Point Vs. Counterpoint

Universities should emphasize application over theory.

POINT

**ALEXANDER HOGEVEEN
RUTTER**
4A ELECTRICAL

Universities provide a valuable service to society. They foster the intellectual capital required to advance a country's economy and provide services to its citizens. Businesses and other institutions rely on skilled graduates to enhance their productivity and provide innovation. As such, it is incumbent upon universities, as the breeding grounds for those expected to shoulder the majority of this burden, to prepare their students for these challenges. There are a number of reasons application should be emphasized over theory, which fall into a few broad categories:

1. Direct economic benefits of an application emphasis

The benefits to companies and other institutions are obvious: students trained for the workforce will require less training, be more productive and have a greater understanding of the challenges facing industry today. Exposure to current problems facing companies means that students can leverage that experience to positively impact their employer immediately. Emphasizing workplace applications and expectations will result in employees who understand the expectations right away and are far less likely to disappoint employers.

This greater productivity is especially important in employees' formative years as they are still inclined towards innovation and challenging the boundaries before family and other obligations wilt these desires for creativity. Employees who can hit the ground running and apply what they know right away provide that much more opportunity for technical innovation, medical advancements and other revolutionary impacts.

The oft-held snobbery that universities teach something fundamentally different than colleges is fallacious. While universities have the capacity to teach higher-level professional skills such as medicine, law and engineering, these skills are still 'applied' in the sense that they serve a distinct purpose. Just as a plumber must learn how to fix and install piping, an engineer must learn how to design it, not just appreciate its function.

2. Benefits to students

Students also benefit from an application focus. It is not uncommon to start a new job and have to be trained from the basics, and students are left to wonder, 'why did I waste all that time learning at school-shouldn't I have learned this there?' Not only does an application focus ease the transition from school to work, it also opens up opportunities for students to provide greater value to the organization right away. This means higher salaries to pay off student debt and quicker opportunity for advancement. There will be a great deal less stress on students if they enter the workforce knowing what to expect.

Frankly, application is more interesting for the vast majority of students. How many students end up becoming disenfranchised with university and end up underemployed with their skills underutilised? Those with an interest in theory should be able to embrace application, and an application focus ensures top workers are not discouraged by their undergraduate degrees.

Furthermore, application embraces more types of learners. While auditory learners will still benefit from lectures, kinesthetic and visual learners can benefit

more from practical demonstrations and experimentation. While an argument can be levelled that learning about application can become obsolete, so too can theory. While theory may reflect the challenges of decades or even centuries ago, application emphasizes the challenges today. While, ultimately, students must themselves be accountable for learning to adapt to future changes in technology, learning about the most recent technology results in students who are closer to this.

3. Does not compromise and can even enhance deeper understanding

To a certain extent, the dichotomy between theory and application my opponent will surely lament is a false one. Learning about application does not preclude students from understanding fundamental natural laws and principles. Students will often need to learn an underlying principle to apply it effectively. However, starting with the application gives the principles context that allows the students to directly engage with the theory.

Students will have greater motivation to learn theories when they can directly understand the implications. Often, students are incentivized to a 'study to the test' mentality, whereby all relevant theory and formulae are memorized and subsequently forgotten post-exam. Realizing the utility of the content they are learning will encourage students to fully absorb and comprehend the theory: in fact they must if they are to apply it. Giving the theory real-world significance will encourage greater absorption on behalf of the students.

Another main justification behind a theory-based approach is the supposed benefits of 'learning about learning.' One may not need all the math in a day-to-day career, but learning difficult content teaches us about how to learn, research, etc. While there is certainly merit in developing these skills, there is no reason this cannot also be learned through application. Spending less time on theory means more advanced application can be studied and the additional motivation to students will open the door for higher-level topics.

This exposure to higher-level topics is one of the key benefits of application-focused learning. Once the interest has been sparked, students who wish to develop a greater understanding of the theory can opt into undergraduate research or graduate studies. While our society certainly needs some members focused on research and theory, the requirement represents a small fraction of students in attendance at universities. Rather than encumbering otherwise brilliant professionals with clunky theory, this can be reserved for those who have a passion for deeper understanding and the vast majority of students can focus on developing the skills they need to be successful in life. Spending class time on theory is especially wasteful in modern times, where the underlying theory is often readily available from ubiquitous books, journals, and online resources. Application and workplace examples, however, require a firmer hand in the form of the guided instruction that universities provide.

It is clear that students, especially those interested, will still learn theory if universities place a greater emphasis on application and job preparedness. It is also true that the vast majority of students will benefit from such an approach, as will companies, institutions and our overall economy. Therefore, universities should place a greater emphasis on application as opposed to theory.

ANJALI GOPAL
2B NANOTECHNOLOGY

Remember the time when all the Newtons and the Galileos and the Leibnizes pursued a higher education not because it was a norm, but a passion? For broadening the mind, for enriching creativity and ingenuity, for performing triple integration in spherical coordinates for the pure joy of triple integrating in spherical coordinates...? No? Yeah, neither do I. Frankly speaking, I can't remember the last time university wasn't associated with "excessively long or boring classes," "a stepping stone to get a job or get into professional schools," or "a place to live far, far away from home and party all day." Universities' reputations have become tarnished. And yet, more and more students are eagerly applying for universities in the hope that it will prepare them for a career.

Ironically enough, the same voices that preach and praise about university education are the also the ones bemoaning that "nothing you learn in your undergrad will be useful to you later in life." Let us rephrase what this dubious sentence actually means: uni sucks, except for when you get a degree and get a job. Ladies and gentlemen, a career is not a degree. And more importantly, a university is not an employment agency for fresh graduates.

Before we consider what a university actually is, or does, let us consider what a career is. A career is much more than just four years of training in a classroom. Getting a B.A.Sc. makes you an engineer no more than getting a political science degree makes you prime minister of Canada. Rather, a degree provides you with some of the essential qualifications necessary to pursue a career in a certain field. Moreover, as I'm sure we co-op students have heard for the umpteenth time, there are many facets of a career that aren't covered by your university education: interpersonal skills, for instance, is not usually taught in schools.

However, the solution to increasing a student's employability should not rest on the shoulders of the university. More and more students are expecting universities to provide them with career opportunities after graduation, but a lack of career opportunities is not the university's fault. Rather, this line of thinking shows a disconnect between how students perceive university, and how universities perceive universities. The fundamental purpose of a university is to focus on learning: on the acquisition and dissemination of human knowledge. Furthermore, not only are universities responsible for gaining knowledge, they must also ensure that future generations have the ability to expand this knowledge—that is, to train researchers with the same, or greater, problem solving skills and research techniques as current staff.

It could be argued that plenty of other private institutions also carry out research to expand human understanding, and thus, a university might not be as important. However, private organizations do not nearly allow as much freedom in intellectual curiosity as would a university. All research in a private company must, directly or indirectly, help the company's goals. However, in a university, professors

COUNTERPOINT

have the freedom to research and explore their own areas of interest, provided, of course, they can acquire adequate funding. This is also the entire purpose of tenure—it's not for the purpose of breeding lazy professors, but to protect their jobs and their research from the consequences of any socio-political controversy or backlash.

So if universities are just here for learning and you end up forgetting most of what you learn by the time you graduate, why are universities useful to students at all? The most obvious answer is: they're not. University isn't for everyone, and especially not for the person who's thinking that a university is a free ticket to a career. There are plenty of other ways to enhance your career instead of going to a university. Students have the option of going to college, where the emphasis is less on hard academic knowledge and more on the application of such knowledge in a way useful to the workforce. Apprenticeship programs are also a great option, where the emphasis is not on theory and abstract ideas but on equipping the student with the technical training required to complete a task. In fact, with the recent rise of university-bound students and the subsequent decline in students pursuing skilled trades, an apprenticeship program may result in more financial and career success upon completion.

That being said, university does prepare you in the direction of career advancement. Going to university makes you more independent and self-sufficient. Unlike college education, university education has a greater emphasis on problem solving and on understanding the logic and the theory behind a problem. A farming apprenticeship program can teach you how to use a tractor but it won't tell you how to make the tractor more energy-efficient or user friendly. Moreover, universities do provide a plethora of career opportunities for students who want to pursue research—where else would you get a conglomeration of the best and brilliant academics that the world has to offer?

Moreover, the one important piece of the puzzle we have yet to discuss is businesses' involvement in your career. If you're spending four years in university, but plan to spend the next forty years in a business, wouldn't it make more sense for businesses to invest in your training and career advancement? I am assuming, of course, that businesses love ambitious and intelligent university graduates with adequate work-force experience as much as we do. So why aren't businesses putting forth more effort into training graduates, into sending out recruiters, and providing useful sessions to improve the marketability of unemployed youth?

The bottom line is that education should not be a synonym to job. Education should be pursued for the sake of education, and in the same vein, educational institutions should seek to enhance students' knowledge, not students' careers. There are plenty of other organizations devoted to helping students find jobs. Learning should be left alone in the only place where it can be left alone.

(Besides, if Waterloo was any more career focused, just think of how many more PD/PDEng courses you'd have to take.)

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.

Legendary Drum Machines



**JASON
KIM**
4A ELECTRICAL

Although the 80s are long gone, their legacy lives on in the kicks and snares of the following four drum machines: Roland TR-808, Roland TR-909, E-mu SP-1200, and Roland TB-303 (303 is not really a drum machine, but it deserves to be mentioned here). Numerous musicians have used these drum machines to create music in the past and they are still heavily featured on the airwaves today. Countless classic electronic and hip hop tracks would not have been made if it weren't for them.

Roland TR-808 (Featured on Marvin Gaye - Sexual Healing, Beastie Boys - Brass Monkey)

Every bit of 808's sound has been dissected and utilized in all kinds of songs imaginable. Play it straight out? You get an 80s song. More cowbells and hand claps? You get a funkier 80s song. Fiddle around

with EQ and compressor? You get an epic trance kick! Just crank up the gain? You get yourself Lil' Wayne. Notably, 808's kick is one of the most frequently used kick sounds in the music industry. The 808 is incredibly versatile-used in pop, rock, techno, house, and hip hop.

Roland TR-909 (Featured on Daft Punk - Revolution 909)

TR-909 offers more realistic sounds than 808, while retaining the unique analog feel. 909's kick in comparison to 808 is more punchy and tight, which is appropriate for house and techno music. TR-808 had fallen out of favour for some dance music producers because 808 had been so abundantly used in pop music. TR-909 came to the rescue as an ideal alternative to 808 which was different yet familiar. This move turned out to be a futile effort as an increasing number of producers began using 909 and innumerable pop music tracks feature 909 today.

E-mu SP-1200 (Featured on Notorious B.I.G - Juicy)

SP-1200 is a drum machine with a sampler that represents the golden age of hip

hop music. SP-1200 was used to create some of the finest hip hop music in the 90s. SP-1200 can sample up to mere 10 seconds with a poor sampling frequency of 26.04 kHz. However, this poor sampling ability of SP-1200 was actually welcomed by hip hop producers because the sampler had a unique ability to add a warm gritty vinyl texture to its samples. 1200 held a place on every hip hop producer's workspace in the 90s. Although many hip hop producers migrated to Akai MPCs and digital music workspace, drum samples from SP-1200 are still prevalently used today in hop hop.

Roland TB-303 (Featured on Josh Wink - Higher State of Consciousnes, Hardfloor - Aperience 1)

The original rave music genre, acid house, was born with TB-303. TB-303 is not a drum machine. Its original intent was to simulate bass sounds, but it doesn't sound much like a bass at all. Instead, it sounds industrial, edgy, hard-hitting on treble rather than bass, and stereotypically "techno." In the early days of rave, some DJs performed gigs with nothing more than 303 accompanied by 808 or 909 to

fully exploit the explosive sound of 303. 303 can unleash magic with just frequency cutoff, tuning, resonance, and decay parameters alone, but it sounds more expressive when it is played with some effects. 303 appears frequently in techno music.

Keep in mind that the four machines are in way no pushing the technological boundary of audio electronics. In fact, these machines are technologically inferior to their contemporary counterparts and lack a handful of useful features found in more modern drum machines. Some of these machines are so old that they don't even have midi interface. Additionally, all these machines purport to simulate the sound of real drums, despite sounding nothing like them. However, this imperfect simulation of drums is what made these drum machines so special and their sound so enduring. These four drum machines opened up an entirely new outlet of creativity for a generation of electronic and hip hop producers in the 80s and 90s. It seems likely that these four machines will continue to have resounding influence on musicians and music fans alike.

Internet Dependency



**KATE
HEYMANS**
2B CHEMICAL

For those of us unlucky enough to be on campus this past weekend, there was a short timespan during which the internet just stopped working (apparently the DNS-servers crashed). This was a major hassle for those of us on campus. It also raises the question of our dependence on the internet and everything about internet connections.

At Waterloo, not having internet can be an outright disaster. Everything, from assignments on ACE, to your JobMine interviews, suddenly comes crashing down. You can no longer research those random facts that make you seem so intelligent (anyone seen the recent xkcd?). Not having internet can also cut you off from your friends and family. Phones are useful, but they're not nearly as wonderful as being able to talk to your family who are far away for hours without end on Skype for free. For everything that the internet offers, it's become a great way to do almost everything.

Not having internet, however, is sometimes a blessing in disguise. Not having access to everything, from Facebook, to your MSN, can increase your productivity. If your friends can no longer get you online, you could find yourself with an emptier schedule free of random events. Most people find reasons for enjoying a break from the constant pull of the internet.

For some people, however, staying away from the internet is not a possibility. They not only find themselves spending more time than they plan for on games and discussion boards like we all do, but they also give up on their real life activities in favour of online ones. Instead of just using the internet as a medium to access work, events or friends in real life, the internet becomes a virtual substitute. These people suffer the same withdrawal effects as drug addicts.

Using the internet can be a pleasure, but removing its almost constant presence in our lives allows us to take a break and really enjoy what life has to offer. So next time you're tempted to spend your hours of procrastination on reddit, please call your friends up instead and spend some time living in the real world.

Winnipeg Thrashers?



**ANDREW
MCMAHON**
1B ENVIRONMENTAL

David Thomson of True North Sports expressed an interest in buying the Atlanta Thrashers and moving them to Winnipeg back in October 2009. In the last few weeks, negotiations have leapt forward and it seems like a deal is imminent. The team would play out of the MTS centre which is currently home to the AHL's Manitoba Moose. Since, the NHL owns the name 'Jets', rebranding the Thrashers as the Jets would be fairly straight forward.

The Atlanta Thrashers made their first appearance in the NHL during the 1999-2000 season. There was previously an NHL team in Atlanta called the Flames from 1972 until 1980 when the team left for Calgary. The team's first trip to the NHL draft was a major disappointment, considering that their first and second picks Patrik Stefan and Luke Sellars don't even play in the NHL anymore. The next year


they selected Dany Heatley second overall and it looked like the team may be able to improve on their 14-61-7 record during their first season, but it never amounted to much; the team made the playoffs once in their history and was swept that year by the New York Rangers in four games. After starting off strong this past season the team fell off the map, finishing at 27th in the league with 80 points.

The Winnipeg Jets were a team in the WHA and NHL from 1972 to 1996 before the team was moved out of Manitoba as a result of financial troubles. The team was moved to Arizona where it became the Phoenix Coyotes. After a decorated history in the WHA which included three championships, the Jets were unable to win a Stanley Cup in the NHL after being absorbed into the league during the 1979 expansion. In spite of that, they were followed by a loyal fan base and played host to superstars like Teemu Selanne, Bobby Hull, Dale Hawerchuck and Serge Savard. Shane Doan, selected with the team's first round pick in 1995 is the only player from the Jets to still play for the team in Phoenix.

Atlanta could become the first city since the 1967 expansion to lose two teams. Hope remains that a local buyer in Atlanta will come forward to place a bid for the team but the likelihood of that happening seems to be dwindling. If the deal were to go through, the NHL may have some division or even conference realignment in its future. The Atlanta thrashers play in the southeast division which would not be practical for a team in Winnipeg. Changes would likely not be made for next season but a restructure in 2012 would be probable. This may be an opportunity for the Detroit Red Wings, who have expressed an interest in moving to the Eastern Conference.

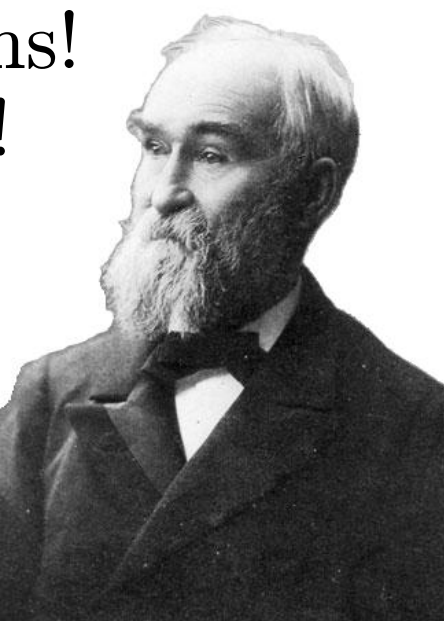
Whether the deal gets finalized or not, negotiations for the relocation of the Thrashers have progressed exponentially faster than those regarding the relocation of the Phoenix Coyotes. It is yet to be seen if this is the effect of overambitious fan support in Winnipeg blowing the story out of proportion or simply the NHL becoming more lenient about relocating struggling franchises.

Don't forget to catch game one of the Stanley Cup finals tonight at 8pm featuring the Boston Bruins against the Vancouver Canucks.



digital!
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analog!
trains!
pull!



The Issues of Our Times Will Be Resolved

July 6, 11:30am

Future of Gaming

Predictions for E3 2011, and Some Rambling Too



JON MARTIN
OBI JON1138

E3, one of the biggest gaming events of the year, and definitely the most commercialized, is almost upon us once again. While you won't see the cool and collected developers showing playable models of their games as much as at GDC, you will get the big announcements of new games, consoles and exclusives. So, what is in store for E3 this year? How the hell should I know? Here are just some ideas.

This issue should come out in the week before E3, which, in case you don't know (shame on you – just kidding), is June 7-9th. This will allow me to do some predictions this article, and then a follow-up next issue, and not look like an idiot by predicting stuff after the event is over. Kind of like last issue – I talked about how the Sony Network was down, and then they restored limited parts right before the issue came out – ahh well, what can you do? Hack their systems again so that I was still right? Not that that wouldn't be appreciated. It might also be slightly illegal.

So anyway, Sony has now partially restored the Playstation Network around the world, with a goal of getting Japan back online before the end of the month (now here is one of those predictions whose outcome will be known by the time you read this), so we will have to see what happens. Sony has also announced the new PSP Remaster series for the PS3. Like the name implies, this group of games is kind of like a platinum hits line of games from PSP, but with HD graphics, better textures and new features for the PSP's big brother. The first game in this new lineup to be announced is Monster Hunter Portable 3, which kind of sounds weird since it will no longer be portable – but who cares?

The new spring dashboard update has been released for Microsoft's Xbox 360 system, enabling a few minor new features as well as a couple of cool new items. Paypal will now be fully functional on Xbox Live, allowing you to purchase Microsoft points using their secure service instead of registering your credit card on their

system. Obviously, the benefits of this kind of system are now apparent in light of Sony's network being hacked and some users' credit card information being stolen. Microsoft is released of any responsibility, and users get the assurance of knowing that the company protecting their credit card information is actually designed for that purpose.

So, on to some E3 predictions. First of all, consoles. As I have said before, both Sony and Microsoft have reiterated their previous statements that they are not looking at releasing new consoles until around 2014. While this may leave them in the dust for a while when Nintendo releases Project Café, they will have around two years to analyze their competition, learn from their successes and mistakes, and revise their own consoles to blow Nintendo

tion systems are out of luck. Interestingly, according to the news release, the processing required to create the stereoscopic 3D effect is actually better suited to the traditional CPU architecture of the 360 than the cell structure of the PS3. However, since the Xbox does not have the capability of reading Blu-ray discs, there is very little chance of 3D movies coming to the system. In contrast, Microsoft has said in the past that they could always release an external Blu-ray player for the system – allowing for both 3D movies and increased storage space for games.

Nintendo, of course, is unveiling Project Café, so we can definitely expect a big show from their camp – release date, launch games, pricing and capabilities are always the big pieces of information everybody wants. I wouldn't expect them all to

system months after others. Another problem with Sony's systems has always been the initial price – hopefully the NGP creates a market through a reasonably-priced technology instead of requiring purchasers to choose between their house and the NGP. On a side note, a Sony representative recently said that there would definitely not be the kind of capital investment in the next Playstation console as there was in the PS3. Not only did Sony decide to go with new cell processor technology, they also incorporated Blu-ray into every system – which was definitely not cheap at the time. While console makers normally operate at a loss for a while until they can decrease the production costs of the system, the PS3 only reached profitability last year.

Creating a new console takes years of development, so I'm not expecting either Sony or Microsoft to suddenly rush their research and development divisions to match Project Café. Instead, I think they are both going to focus on their new tech, the Move and Kinect systems. Here, I think Microsoft has the advantage with the Kinect in terms of originality and longevity, while Sony has the benefit of using tried and true technology. The Kinect actually has the capability to do the full body motion tracking that the Move and Wii can only mimic – just look at Wii bowling, where you don't actually have to bowl, but rather, just flick your wrist the right way and the Wii wouldn't know the difference. As for Sony, I just don't think they have pushed the boundaries as much as they could have. Instead of coming up with something new and revolutionary (like the Kinect), Sony instead made a more accurate Wii: congratulations, you were able to beat their technology after they outsold you for years, but now they are releasing a new console so it really doesn't matter. Like I said, Sony has the advantage of using a proven technology. Developers have been creating successful games for the Wii for several years now, so they should easily be able to adapt these games or create better ones for the Move using the knowledge they already have.

So that is it for this issue: be sure to follow the E3 presentations as each company is bound to have an ace up their sleeves. In the meantime, keep on gaming.



Throngs of people at E3

games4ouc.com

out of the water. One thing that Microsoft is probably going to talk about is a recent announcement they made – full stereoscopic 3D will be coming to the Xbox 360 through a future firmware upgrade. The exact same 3D capabilities of the PS3 will grace the screen of 360 owners, though it will only work with HDMI, so first genera-

tion systems are out of luck. Meanwhile, Sony has the PSP NGP to show, with the big ticket pieces of info being its release date and pricing. Sony has an opportunity here to right some of the mistakes they made with the original PSP. A lot of people complained about the huge difference in the release dates of the original, with some countries getting the

prof Quotes

“Do you appreciate this formula or not? It's very important. You have to *feel* it.”
--Hamed Majedi, ECE 471

“If Math was a fetus and Engineering was a mother, DE's would be an umbilical cord.”
--Eddie Dupont, Math 218

While teaching Quantum Mechanics “For those of you that like reality, forget it.”
--David Cory, NE 232

“In fact computers are perfectly not racist, though they are subject to race conditions”
--Bill Bishop, ECE 224

“We must satisfy the ECE requirement for abusing their students.”
--Karim Karim, ECE 432

Disclaimer:
prof *Quotes* have not been confirmed by *The Iron Warrior* staff and are meant for entertainment only.

Send in your prof *Quotes* to:
iwarrior@engmail.uwaterloo.ca

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#02

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Bacon Cupcakes with Maple-Whiskey Frosting



**CALLIE
HOLT**
3A CHEMICAL

Hello lovely readers! My name is Callie and I'll be acting as your resident foodie.

Part of my love of all things edible is getting creative in the kitchen. This can result in some pretty interesting recipes, which I'm going to be sharing with you through this column! I thought it would be perfect to begin with my absolute favourite dessert: cupcakes.

For some people, there is a fine line between what is and what isn't acceptable to put on a cupcake. Usually things like icing,

candy, chocolates and sprinkles are all acceptable choices, but after a while that gets a little boring, doesn't it?

Sweet and salty is a classic combination, making bacon an odd yet perfect partner to dark chocolate. You may initially get some strange looks when you whip out the phrase "bacon cupcakes," but as Ms. Frizzle says, "don't be afraid to take chances, make mistakes and get messy."

It won't be long before you're a cupcake god(dess) to all the carnivores out there.



Cupcake!

Bacon Cupcakes with Maple-Whiskey Frosting

makes 12 cupcakes

Ingredients

- 3/4 cup flour
- 3/4 cup cocoa powder
- 1 cup sugar
- 3/4 cup butter
- 1/2 cup yogurt
- 3 eggs
- 1/2 tsp baking powder
- 1 tsp vanilla
- 1/4 tsp salt
- 3 slices bacon

Frosting Ingredients

- 1/2 cup butter
- 1/2-3/4 cup powdered sugar
- 1 tbsp maple syrup

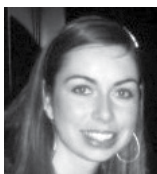
- 1-2 tbsp whiskey (optional)

Directions

1. Preheat oven to 350°F.
2. In food processor, mix together butter and sugar until light and fluffy. Add in eggs one by one and mix until well combined.
3. Sift dry ingredients into a large bowl.
4. Add dry ingredients to wet in food processor, alternating with the yogurt.
5. Fill cupcake trays and bake for 20-25 minutes, or until a toothpick comes out clean. Let cool on a rack before decoration.
6. In food processor, mix together butter, powdered sugar, maple syrup and whiskey (if desired) until desired consistency is reached. Use to frost finished cupcakes.
7. Cook bacon in a pan until crispy and garnish cupcakes as desired.

The Fashion Files

Birkenstocks



**AMANDA
LEDUC**
4A MANAGEMENT

In this article, I will not lecture you about Laws of Fashion. No, I have a life-altering discovery to share with you today.

Recently, my life changed. I was devoted to "fashion over function" in most of my wardrobe and footwear purchases, but as I approach middle age, a strange thought occurred to me. I wondered, is it possible to own comfortable footwear that lasts and looks nice?

With my faithful roommate by my side, we set out to solve our conundrum. We found our way to a quality shoe store stocked with

a mythical brand of comfortable summer footwear: The Birkenstock!

In 1774, Johann Adam Birkenstock, a German shoemaker, had a vision of making a comfortable insole that promoted healthy feet. Today, over 230 years of superb innovation later, modern footbed insoles made by Birkenstock are enjoyed by people everyday.

In 1960, Birkenstock introduced its very first full product, the fitness sandal. This product combined comfort and quality, and was different from anything made before. These remarkable sandals properly supported the feet and improved the posture of the entire body.

Today, there are a myriad of styles and colours of sandals and clogs for men, women and children. From the classic brown leather two-strap Birkenstock, to the synthetic material pattern-printed styles, all are functional and classic.

I used to balk at those people (like my sister) who would wear their Birks all year round. I can almost understand wearing them in the winter with socks, almost. The thought crosses my mind to try it, but I'm not sure if I can bring myself to break such



Angelo Alaimo

Really comfy footwear

a cardinal Law of Fashion.

These sandals are comfortable, supportive and fashionable. So you wonder, why don't you yet own a pair? There is one issue: the price tag. Depending on the style and material, Birks range from \$80 - \$140 plus tax which is a bit beyond the price range of most students. That said, they last forever and are a timeless piece that can be worn season after season.

I highly recommend that if you haven't done so already, try on a pair Birkenstocks; you won't regret it!

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

Foodtimes

The Return of Patio Season!



**ALISON
LEE**
2B NANOTECHNOLOGY

It's finally warm enough to sit out on a patio without wearing an annoying winter jacket, so what's a better reason to leave the library than to grab a pint? Whether you're having a relaxing cold beer with friends or a romantic dinner date, any food venue in Waterloo with a patio is worth using.

In the summer, the evenings are mild and the sunlight lasts late, so my advice is to enjoy it before you're stuck with another winter term! Here's a list of some of the patio options around Waterloo, depending on what you're looking for:

Pubcrawl Classics: Most of the Pubcrawl stops have patios, which makes more room for fun (and clearer air). This includes POETS, Mongolian Grill, The Grill, Molly Bloom's, Front Row, Morty's, and Chainsaw. Most of these are pretty big, so they are a good place for any type of big get-togethers like a birthday, reunion party, team dinner or post-midterm party.

Beer Me Some More: Right on campus, the Bomber patio is open with a beautiful view of the Quantum Nano Centre construction site. Barley Works in Uptown Waterloo has a gigantic patio and the usual selection of Lion Brewery beers. Their food is decent, but it's the rooftop view of Uptown that makes this a solid stop. McMullans is also a go-to drinking establishment with a modest-sized patio (although it's also where the smokers hang out) and plenty of room inside if it rains. The patio at Ethel's Lounge is larger than you might expect, and the Duke of Wellington pub on Erb St. has a small

patio and pretty decent food.

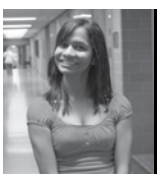
Good Food First: Whole Lotta Gelata in Uptown Waterloo always has a few tables outside their café, which not only serves gelato that's better than Marble Slab, but homemade pasta, panini, salad, and typical café items. Everything is made to order and prices are very reasonable. If you're thinking Indian, Masala Bay has a pretty large patio, and there's always Symposium next door if that's full. For Thai food, Thai Sun has a large patio and a standard selection of Thai dishes (I recommend Thai iced tea if you've never had it). Even though it's in Kitchener, I have to give a nod to the City Café Bakery on Victoria St. for their wood-fire bagels, pizza, melts and epic brownies and butter tarts. All in all, if the weather's nice and a restaurant has decent sidewalk space, there will probably be a couple tables and chairs out for you to enjoy.

Date Best-Bets: There are a couple of good patio date spots in Uptown--most notably Hometown Eatery, which is tucked away on William St. just past Caroline St. They've got a diverse range of homemade classics (build-your-own burgers, pasta, salad) with a modern twist and really great desserts! Not too far away is Gourmet Pizza behind Waterloo Town Square. They have a great variety of pizzas that they bake in a stone oven and bring to your little table outside the shop: perfect for sharing! If you and your date are into Mexican, Margarita's (next to Symposium) has good Mexican standards, especially...margaritas! Finally, at Conestoga Mall you can go for a nice dinner and movie at either Spring Rolls or Oliver and Bonnacini.

So whether you're looking for a party, a drink or a dinner, patios are the way to go during the lovely summer months!

Book Review

World War I with Robots and Genetic Beasts!



**ANJALI
GOPAL**
2B NANOTECHNOLOGY

Ever met an Artsie who could create six-legged steam-powered steel war machines and genetically engineer a whale airship ecosystem? Meet Scott Westerfeld. His newest books, Leviathan (the first instalment) and Behemoth (the second instalment) are the latest and greatest in the era of "Steampunk" fiction—that is, Alternative Universe (AU) historical

sci-fi, where steam power has been exploited to spawn more than just a choo-choo train.

The Leviathan series is brilliant for its rich political history and culture. The story starts with the murder of Archduke Franz Ferdinand and his wife Sophie, which has catapulted Europe into World War I. Sixteen-year-old Aleksander Ferdinand, the only son of his parents' left-handed marriage (a marriage of unequal rank), is on the run, armed with a handful of loyal men and a giant, two-legged, steel Stormwalker. Meanwhile, British "Darwinist" Deryn Sharp has disguised

herself as a young midshipman and finds herself aboard the Leviathan, the whale airship.

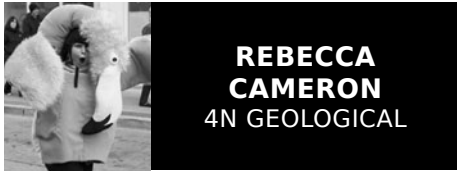
The appeal of Alek's spoiled naiveté and Deryn's crude boy disguise aside, Leviathan has a remarkable cast of trope-free characters. Take the lady scientist who's not just intelligent and haughty, but also knows how to use her charm to manipulate people around her—or the bi-curious character who does nothing stereotypically homosexual. (Yes, people like that actually exist.)

But the main reason why I'm in love with this series? Leviathan is of the

very few science-fiction books I've read where science hasn't been used with excessive flair or arrogant carelessness to create time travel, artificial intelligence, and allow access to the fourth dimension. Westerfeld's science is both creative and succinct. His machines are powerful but faulty, his breed of mutated animals can only take talking and walking so far, and his range of scientific innovation is very realistic for his narrow historical time-frame.

And in case you were wondering, Westerfeld is a philosophy major. Yes, geniuses like him actually exist.

The Birds and the Bees: Animal Reproduction Facts



REBECCA
CAMERON
4N GEOLOGICAL

Spring is finally here and with it comes the bizarre sex habits of many animals. Hold onto your hats and get ready to be amazed and disgusted.

One interesting animal is the cat – cat sex is a very noisy affair which sounds like the cats are tearing each other apart. This is close to the truth; the female cat is screaming due to the male cat's penis having backwards-pointing spines about a millimetre long all over it. When the penis is removed, its spines rake the walls of the female's vagina. This triggers ovulation and clears out sperm deposited by other cats.

But don't worry – females get the last laugh in many cases, especially in the insect world. Many insect species engage in sexual

cannibalism and it's usually the female who gets to have a meal. One species of praying mantis requires that the head of the male is removed during the act for successful mating to occur – removing the head causes the male's body to ejaculate fast enough to ensure offspring will be produced. In general, sexual cannibalism occurs when the female is hungry or feels threatened.

Another type of animal that enjoys an exciting sex life is birds. One species of crane takes joining the mile high club to new heights – the male and female will fly up into the air and then begin to dive towards the ground. While diving, they engage in sex, and if they don't finish quickly enough, they will slam into the ground. The male bowerbird goes as far as to build a little hut out of



digalist.com
Barnacles Mating

twigs, called a bower, for its potential mate. It then decorates it with items such as flowers, feathers, stones and bits of plastic and glass. All of the items will be of a similar colour and are given to the female as gifts. Male bowerbirds will often raid each other's bowers so they can steal stuff and destroy the competition.

Other animals have a more low-key sex life, such as the barnacle (those crustaceans which stick onto docks and boats). Since barnacles can't move, they have an ingenious way of mating – the barnacle has an inflatable penis that can be up to 50 times as long as its body (see photo). This allows it to mate with surrounding barnacles. Interestingly enough, the barnacle has the longest penis of any animal relative to body length!

One of the most interesting animals in terms of its reproductive organs is the mallard duck. It has the longest penis of any bird species – its penis is an average of 17 inches long, which is also the length of the duck from head to toe. The reason for the length of the penis is that mallard ducks are very promiscuous, and its length helps to attract females. The duck will also use the penis to keep a female within its grasp if she tries to get away. But that's not the only interesting thing about the mallard duck's penis – it is also corkscrew shaped! The reason for this is that the females have evolved to have maze-like genitals to prevent the aggressive mallard ducks from impregnating them.

So to recap what we have learned: Nature is scary, barnacles have some mad sex prowess, and ducks really need to learn how to treat the ladies right. Finally, I don't normally dress like a flamingo – but when I do, it is to explore the sex lives of my fellow animals!

TOPZ (with a Z): Procrastination

ALDOUS WILDE &
OSCAR HUXLEY
TIME AND SPACE

So, you have that big assignment/exam/project/interview tomorrow, but doing work sucks and not doing work makes you feel bad (which sucks!). So, we've saved you time by making this quick reference guide to the top rationalizations for putting off work – because we have a passionalization for rationalization of procrastinalization.

Cook: Well obviously, you'd love to

do your work, but you want to do a good job, and no great work in human history has ever been accomplished on an empty stomach (probably).

Exercise: Before you start working, you want to burn off those calories as a healthy mind needs a healthy body because healthy is sexy and only sexy people get work done, you sexy engineer, you.

Nap: Well you're tired after working out, and a quick thirty-minute nap will make you refreshed and ready to give it 110 % (± 10%).

Clean: So you wake up three hours later and notice your room is a sty. Who can get work done in a messy room?? No one, that's who.

Access Private Browsing: To "plan a surprise party." *Cough*

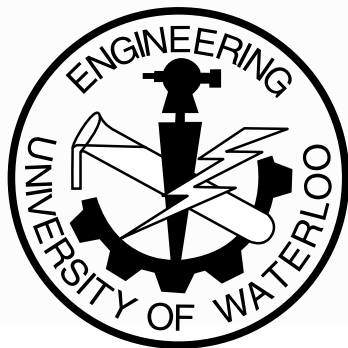
Shower: Your room is clean but look at you now: you're sweaty and dirty from all your preparation. Better take a hot, steamy shower and then it's to the books!

Sleep: It's getting late and you can't think straight. You're better off just waiting until morning when you're fresh and it's bright out. So after 30 more minutes

on Facebook it's off to bed with you!

Start a Fight Club: You wake up for class at CPH, DWE, E3. You wake up for Calculus, Thermodynamics, Fluid Mechanics. Lectures, labs, tutorials. Lose an hour, gain an hour. This is your life, and it's ending one minute at a time.

So now it's the big day and you've failed to even start your work, despite all your effort and good intentions. Next time, for sure, you're totally going to do it differently. Really. Next time you're going to buckle down and work hard. Seriously.



VOTE



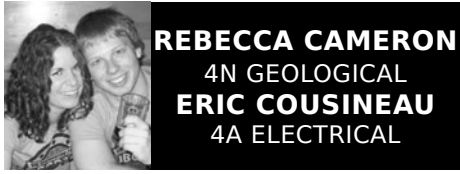
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A polling station will also be located in the CPH Foyer on Monday and Tuesday of the voting period.

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Beer Buzz: Proper Glassware and a Dead Elephant...



REBECCA CAMERON
4N GEOLOGICAL
ERIC COUSINEAU
4A ELECTRICAL

Hi there beer fans! It's been two weeks since our last article came out and we hope you had the chance to try a Black and Tan. If not, head over to Molly's right now and order one, or at least after reading this article! Today, we are talking about two topics: choosing the right glass for your beer, and reviewing one of our favourite beers, Dead Elephant by Railway City Brewing.

Proper Glassware

As you begin on your beer adventure, you will notice that most beers have their own branded glassware in which they are best served. This is because different styles of beers are best suited for particular styles of glassware. There are many different kinds of glassware commonly used for beer, and the picture in this article gives an idea of this. Below we will talk about seven of the most common styles of beer glassware.

The Shaker Pint glass is represented by the Mill St. glass and is the standard glass used in much of the United States and Canada (at least for Microbreweries). This glass is not particularly flattering for the flavour or aroma of the beer and was originally invented to be used as a cocktail shaker.

The English tulip pint is very recognizable-it is represented by the Guinness glass and has found a home with Irish stouts and ales. It serves a similar purpose to the shaker glass and is used to measure a proper pint and to give the beer a bit more flourish.

The 'Nonick' (no nick) pint glass has

been used with English ales since the 1960s and is designed with functionality in mind. The bump makes it easy to hold while standing and protects the rim from chipping if dropped on its side. This is represented by the glass with no branding in the picture.

The Stemmed Tulip glass is designed to augment the physical characteristics of the beer, and it is represented by the Duvel glass. The inward taper holds aroma, and the outward flare supports head retention and fits the lips. This is one of the most

German brewer of wheat beers. The inward taper at the top of the glass concentrates the head, and helps retain it.

The Tapered Pilsner glass is represented by the Bitburger glass, and is designed to showcase the beer. The narrow shape of the glass shows off the pale colour of the Pilsner, the outward taper of the glass supports head retention, and the footed design adds elegance to the glass. Fun fact: Did you know that the Pilsner style got its name from a town called Pilsen in modern day Czech Republic?



Examples of a variety of beer glassware

Eric Cousineau

varied glasses out there and can be used with both strong Belgian ales, and IPAs.

The Weissbier vase is designed to hold the large amount of head generally associated with wheat beers. It is represented by the Lowenbrau glass, which is a large

The final beer glass style we wanted to discuss is the Goblet, which is represented by Maredsous. This glass has found its home with very strong beers because it is designed to concentrate the head and aroma.

Dead Elephant

Now that we have been talking about beer glassware we are getting really thirsty – so let's talk about beer! We are looking at Dead Elephant by Railway City Brewing. The Railway City Brewery is situated in St. Thomas, Ontario and handcrafts their beers using a small 10-hectoliter system. This ale is named after Jumbo the Elephant who was killed in an unfortunate railroad accident in St. Thomas in 1885.

The beer is amber-coloured and pours with a white medium density head which dissipates after a minute or two. Our noses detect flavours of citrus fruit, followed by the usual bready malt. The stemmed tulip glass we used in this pour definitely served to amplify these aromas. This ale tastes similar to its smell – fruity, with some bready malts and tastes of hops coming through. It has a rather strong taste and smell for an ale, but is very smooth. For those of you who tend to shy away from stronger-tasting beers, this may be one you could consider as a gateway to some of the high IBU IPAs out there (IBU stands for International Bitterness Unit, a scale that rates the bitterness of beers). The hop flavours linger long after you have taken a sip and makes you want more of this delicious brew! This beer is 6.8% alcohol by volume, so it is stronger than most average beers (average beers tend to sit around 5.0%).

This has been one of our favourite beers since we tried it last summer at the Kitchener Rib and Beerfest. Kickoffs has it on tap every few weeks, though the keg tends to last only 24 hours before it is finished. The LCBO on King St. regularly has Dead Elephant in stock and we highly recommend you give this drink a shot. As we always say, Fear No Beer!

Unheralded Heroes (of Our Time)



BROCK GRAEME SCOTTKOPP
1A JOURNALISM

I would like to thank everyone for the overwhelming amount of mail I have received in the past two weeks. Unfortunately, due to space constraints, I can only answer the most important one: Why are you so handsome? To quote the great Lady Gaga, I was born this way.

But on to more pressing matters; the

defenders of our green space. The university has come under fire more and more lately as a result of our ever-dwindling green space. Few people left remember the biology green or the rolling hills under optometry. While many students try to preserve these hidden gems by covering POETS and RCH in grass or raising the issue in public forums, no recognition has gone to the ever vigilant protectors, our geese.

These majestic creatures hold vigil on the University's grass year-round, making sure that no students or unruly construc-

tion workers stray too far off the paths. But like all heroes, they get nothing but negative publicity. One-sided stories such as "those ****ing geese attacked me again" are all too common these days from people too ignorant to realize just how critical geese are to the functioning of our society.

If my moral arguments can't sway you, maybe a little bit of economics can change your mind. Each goose deposits approximately 2 pounds of fertilizer on the grass each day (tinyurl.com/ilovegeese). With an estimated population of 200 birds, this results in 400 pounds of fresh fertilizer being spread across our campus on a daily basis. That's over 66 metric tons a year! The obvious savings in fertilizer and labour costs are in the tens of thousands.

But I digress.

Like these noble defenders of our green space, there are also unsung heroes in other places. Again and again, I have seen and taken note of fine people, gentlemen (and ladies) of the streets, who are heroes of the road. I have seen many of these exemplary individuals including those who drive slowly in the passing lane, to ensure nobody is speeding. I also can't avoid mentioning those who neglect their signals, just to make sure other drivers are paying extra-special attention to their surroundings. The finest people on the road must undoubtedly be those who follow slower moving cars very closely at the rear and weave in and out of lanes on the highway in a noble attempt to encourage better and speedier traffic flow so that nobody is late for work or other important things (you know what I mean).

These model citizens display the utmost courtesy and consideration for both

fellow drivers and pedestrians alike. If someone is breaking the law by jaywalking you should not slow down, but speed up so they know that disregarding the law is not acceptable, no matter who they are (even if their name is Nicolas Cage).

To say these people deserve some kind of public recognition is a gross understatement. For the commitment these fine folks show toward protecting others, I personally believe they deserve some sort of financial, or material award (like fresh fruit, or several puppies).

This model behaviour is, luckily for all of us, not simply reserved for the streets. NO, NO!

This behaviour has transferred to our sidewalks and our hallways. For example, people who walk slowly and in large groups, maintaining a safe pace for those behind them so that they may avoid tripping on surprising obstacles. Their behaviour is so close to that of our green space protectors, the geese. Not only do they walk slowly, they stop suddenly to check their cellphones mid-pace, making sure those behind them are maintaining a safe following distance. One can only hope such formidable behaviour continues to be shown, perhaps even in greater numbers. For as somebody once probably said at some point "Being considerate is the best way to make friends and have a good time." True story.

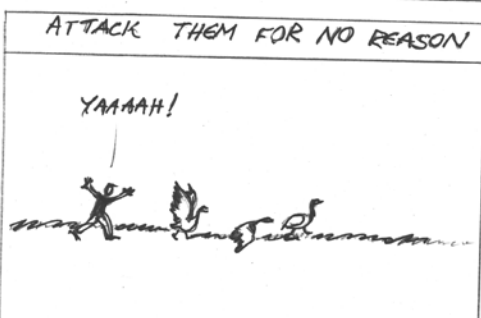
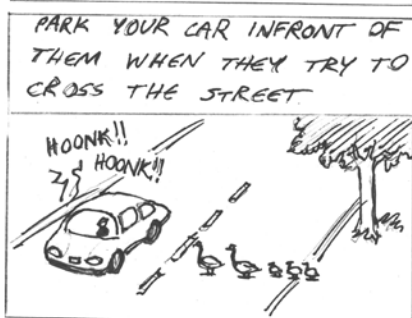
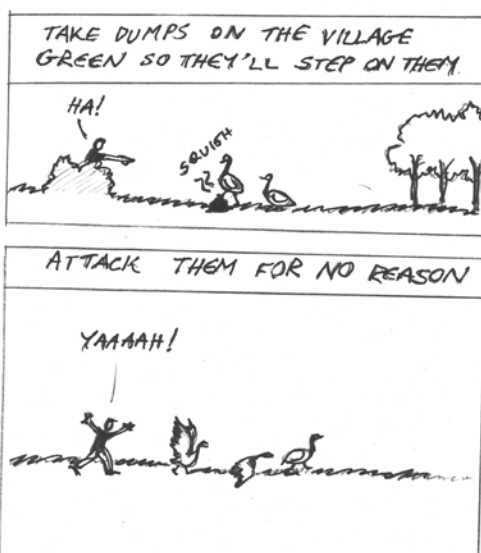
After such an uproarious response to my first piece of writing, I welcome all of you to send any questions, COMMENTS or concerns to brockgraeme@gmail.com and I will be sure to respond within 24 hours (PST).

Sincerely,

Brock Graeme Scottkopp

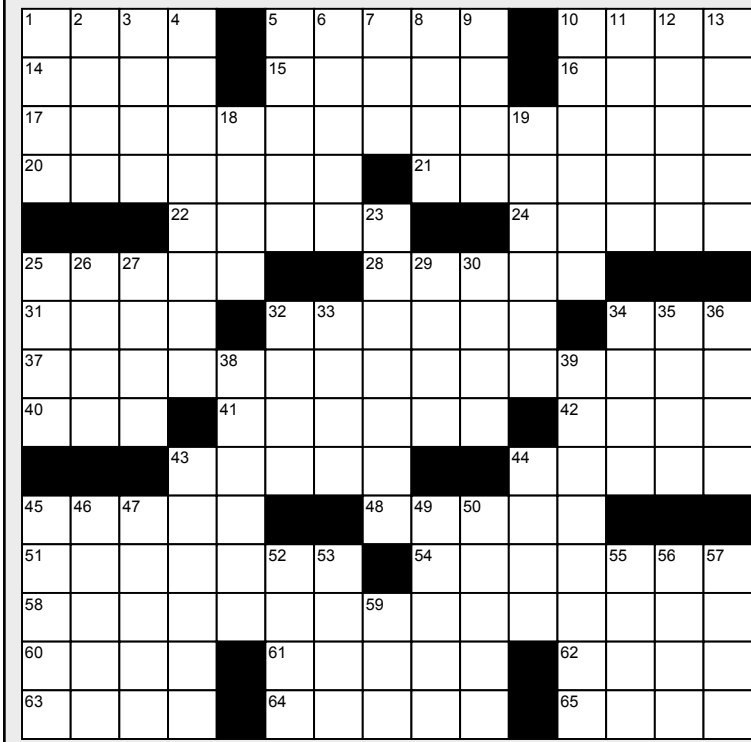
How To Get Revenge On Campus Geese

MICHAEL NEW
4A CIVIL



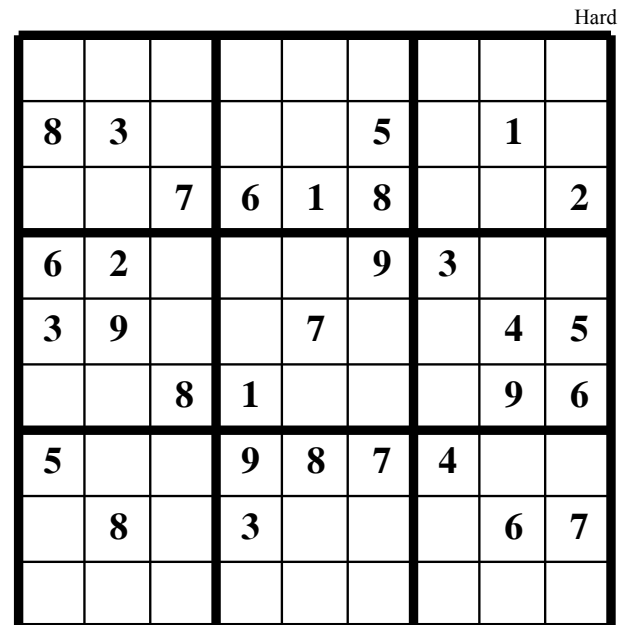
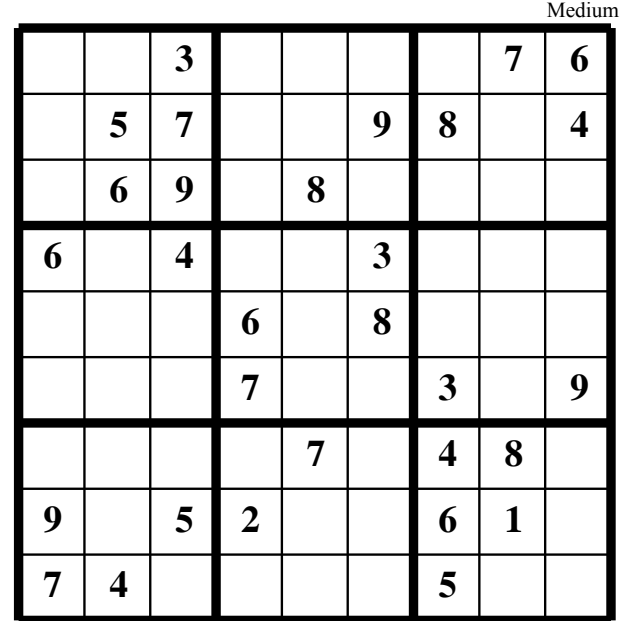
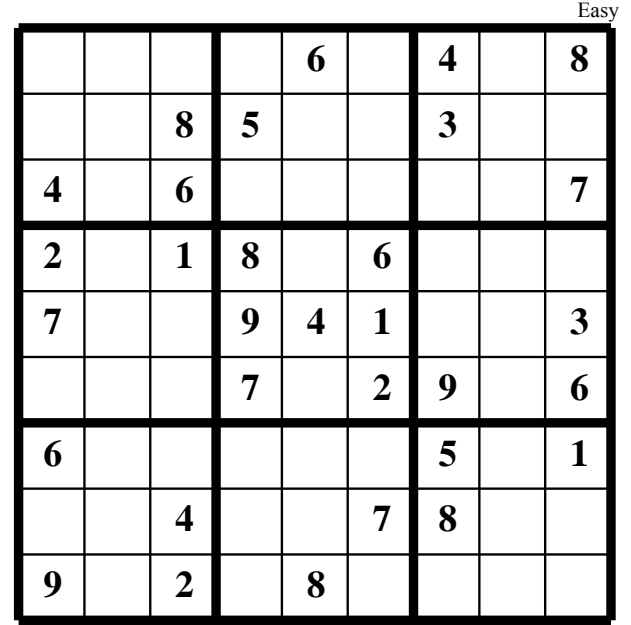
Ess-tended Phrases

STUART LINLEY
2B NANOTECHNOLOGY



- 4 Serve, as in a soup kitchen
- 5 Aroma
- 6 That's *Mister* Potato Head ___ ___!
- 7 When repeated three times, a copper's greeting
- 8 Speak incoherently
- 9 Batman or The Green Lantern
- 10 Streaks with grease
- 11 Socrates' student
- 12 Buenos _____
- 13 Danish fairy
- 18 Chicken, beef, pork, mmm!
- 19 Wizard's implements
- 23 Divide into amounts
- 25 In addition
- 26 Property right
- 27 Rents
- 29 German footballer Oliver
- 30 Hwys.
- 32 Add to the pot
- 33 Former archbishop of New York
- 34 Joe
- 35 Symbol
- 36 Hereditary unit
- 38 Visual basic operator
- 39 Global health issue
- 43 Girl guide badge holders
- 44 Flemming and McKellan
- 45 Sonic consoles
- 46 Plebeian
- 47 _____ Center (Toronto mall)
- 49 Shrek and the like
- 50 Alcoholic honey beverages
- 52 Singer McEntire
- 53 Type of wound
- 55 Older Jackson
- 56 Small intestines
- 57 Maple leaf coin
- 59 Boxing victory

- ACROSS**
- 1 Lowest dose causing effect, in toxicology
 - 5 Personal collection
 - 10 Wing or life go-with
 - 14 Opinion
 - 15 Glue, to Pierre
 - 16 1052, to Cato
 - 17 Marc Antony's request for a department store?
 - 20 Talk show host with a thing for cars
 - 21 Alters the angle
 - 22 Adore
 - 24 Sat up
 - 25 Portion out
 - 28 Mediocre camping vans
 - 31 Instead (with in)
 - 32 Introduce oxygen
 - 34 Irish folk dance
 - 37 Choosing \mathbb{R} or \mathbb{C} for example?
- DOWN**
- 40 Not offs
 - 41 Marks
 - 42 Shakespeare's river
 - 43 Secr.'s forte
 - 44 Idiomatic
 - 45 Pike
 - 48 Wanderer
 - 51 Correction by erasing
 - 54 Like hair or eye colour
 - 58 Fit another patient in, as a dentist?
 - 60 Burn soother
 - 61 Rode in
 - 62 Place ___ the dropbox
 - 63 Ott. hockey team
 - 64 On _____ of the dice
 - 65 Layer



THE IRON INQUISITION
Chris Letnick, 3A Computer

“What is the most exciting thing you’ve acquired on the scavenger hunt?”



“A love letter to the tool.”
Nicole Faris, 1B Environment



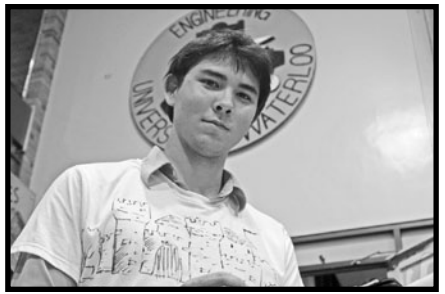
“A golden ticket.”
Kristen Sperduti, 1B Geological



“Ben’s Naked Body.”
David Birnbaum, 1B Mechatronics



“Prehistoric bone that led to the discovery of a new species.”
Gary Guo, 1B Electrical



“A dirty piece of watermelon.”
Michael New, 4A Civil



“Scantily clad cowboys.”
Michelle Conway, 2A Math