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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY | VOLUME 29 ISSUE 12 | WEDNESDAY, OCTOBER 8, 2008

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http://iwarrior.uwaterloo.ca

Detecting Extrasolar Planets

OM PATANGE
3B NANOTECHNOLOGY

The first general meeting of the term for the Waterloo Space Society took place on Wednesday, September 24. New arrival to Systems Design Engineering, Professor Arsen Hajian, gave a presentation on methods of detecting extrasolar planets.

Prof. Hajian hails from the US Naval Observatory where he was leading a group in the detection of extrasolar planets using a novel spectrometer he invented – the dispersed Fourier Transform Spectrometer.

His interest in extrasolar planets was spurred by discussions he had during his graduate work at Cornell University. At that time he realized how difficult it was to measure distances concerning celestial bodies from our planet. As an example of this, consider that stars are on the order of many light-years (~10^{13} km) away from us. On the other hand, a star will wobble on the order of 10^3 km due to the presence of an orbiting planet. This wobble is the effect used for the detection of the majority of planets found so far.

The task of measuring these changes in distances, explained Prof. Hajian, is made even harder if optical methods are used, such as optical Doppler shifts. This is due to the wavelength of the light that is used to make the measurements, which is on the order of 500 nm. Traditionally, for astronomical observations, the optical equipment has been large enough to fill a small tutorial room in RCH. Thus, a small change in temperature over time and distance of the machine will cause fluctuations in the dimensions of the equipment that are on the order of the wavelength of the light. So, the signal measured will have drastic errors.

Prof. Hajian's dFTS instrument solved these problems by being small and fast. Using the concept of an artifact that disperses the light at the output of a traditional FTS, Prof. Hajian was able to make measurements 11,000 times faster and using an instrument that fit on an optical breadboard of a few meters squared.

At UW, Prof. Hajian will continue his research in astrophysics as well as embark on the development of new kinds of medical detection systems.

Prior to Prof. Hajian's lecture, the WSS executive introduced themselves, showcased past events and promoted various events they hope to run this term. A very eclectic group of people comprise the executive ranging from an English major to Engineering students. The message of inclusivity was made very clear – all are welcome to join the WSS.

Some events to keep an eye out for include field trips to space-companies, seminars, rocketry workshops, and a University Rover Competition entry. If you are interested in getting involved in this exciting campus-wide club, visit http://spacesoc.uwaterloo.ca/index.html and be sure to attend their next event.

Om Patange

Dr. Hajian discussing his work finding extrasolar planets

Dana Porter Renovations

JOAN ANG
2B SYSTEMS DESIGN

For those new or returning to campus, finding out that the main floor of the Dana Porter Library was closed for renovations may have come as a surprise and inconvenience.

Well there's good news! The renovations are approaching completion.

The renovation plans, announced earlier this year in January, were guided by five principles: creating a welcoming vital space, opening up exterior views to the public, increasing the amount of public space, encouraging information discovery and maximizing flexibility in physical design. During the planning stages, input from students, faculty and others was collected via surveys, informal interviews, a furniture charrette, and a six-week "mini case" done by students in Systems Design 348.

On October 1, I had the opportunity to tour the mostly finished floor with Alex McCulloch, Chair of the Renovation Planning Team, and Nancy Collins, Communications and Liaison Librarian.

For the most part, McCulloch explained, the services offered and layout of the floor have not changed, as they worked well before. The most noticeable changes are the increase in student space and the relocation of the Adaptive Technology Centre. There are now three main areas for students, one for individual study, one for group study and a lounge by Browsers Café and Graphics Copy Centre. The Adaptive Technology Centre is no longer beside Graphics, but is now located across and to the right of the main entrance.

Of course there are many other changes. The number of work stations has increased, electrical and network connections are available at all study tables and also in the lounge to accommodate laptops, the bookshelves have been refinished, furniture has been replaced or refurbished and main entrance has sliding doors.

Overall, I was very impressed with the new look and feel of the main floor. During the tour, one thing that left an impression was the amount of natural sunlight and the view of the surroundings from inside the library. The other thing that excites me is the new lounge space and how the walls around Graphics help create the space. The walls will prevent the darkness and feeling of emptiness that occurred when the Copy Centre is closed (if you don't know what I'm talking about, check out the DC library at night).

With most of the work complete, the carpet and furnishings are being installed, books are returning to their shelves and the floor will soon be open to staff.

And the question that still remains…when will the main floor reopen to students?

Tuesday, October 14th!

For pictures, updates and more information on the renovations visit: http://www.lib.uwaterloo.ca/porter_reno/index.html

Dana Porter Renovations Team

The new Circulation and Reserves desk at Dana Porter library.

Planning Begins for Engineering VI

MATTHEW CASSWELL
2A CIVIL

With the construction of the Engineering V building already well underway across from the Davis Centre, the attention of the University is turning to the next phase of its expansion, the Engineering VI building. *The Iron Warrior* had the chance to sit down and ask B-Soc User Committee Student Representative, David Kadish some questions. Additional information came from Sue Gooding and Ron Venter.

Iron Warrior: Is the new E6 building going to be solely occupied by the Chemical Engineering Department upon the buildings' completion?

David Kadish: Yes. The plan at the moment - pending funding - is for the Chemical Engineering Dept. to be the sole occupant the building.

IW: What are some of the new facilities and features that the new E6 building will bring to UW?

DK: I can't give specifics as to what new facilities will be there (I don't know the specifics at this point). What I can say is that the current ChemEng spaces are around 50 years old and any new facilities in E6 will be an improvement to those current facilities.

IW: Is there going to be any direct connection (ie. tunnel or bridge) connection from E6 to E5/E7?

DK: At the moment there are no plans for a direct connection to E5/E7 that I am aware of.

IW: The new building would be located on the far east side of campus, away from the current cluster of engineering buildings. Are there any current plans to try and better integrate the new building with the rest of campus?

DK: The building is located where it is simply because there is no space left inside Ring Road to develop new buildings. I'm not completely sure what you mean by integrating new buildings with the rest of campus. East campus - currently home to Fine Arts and the under-construction E5 and the likely location for E6 - will be connected to E3 via an enclosed bridge that runs over the railroad tracks. Other than that, I'm not aware of any additional integration plans.

IW: Are there any cost estimates for the building right now?

See E6 ON THE HORIZON on Page 13

Letter from the Editor

Be Thankful this Weekend!

STUART PEARSON
EDITOR-IN-CHIEF

Hi everyone! I hope that your term is going well so far and that you're not too stressed out just yet. September is already over, October is whizzing by and midterms are practically on top of us. *The Iron Warrior* has seen tremendous growth this term, so our new issue is bursting at the seams with great submissions. We have information about the new E6 building, updates on renovations to the Dana Porter library, and more about everything that has happened around campus in the past two weeks. Also noteworthy are the updates we will be making to *The Iron Warrior* website to make it more interactive for you, the reader. Through the help of a handy little application called SOEIE, users will now be able to comment on articles, and will be given links to other interesting pieces.

I'd like to say a quick thank you to my amazing team of assistant and layout editors, Michelle, Dave, and Trevor who gave up a significant portion of their weekend to sit in a stuffy office and help put this paper together. Thanks also goes out to everyone who submitted their articles early, because it makes our jobs so much easier. Hope you enjoy the issue!

Thanksgiving is coming up in a few days, and that means something different to everybody. To some it's a chance to go home and see family and friends again, while to others it might just be another day off school. I happen to be a big fan of turkey and family reunions, myself. Regardless of how much good food and good company you will experience this weekend, you should sit back and reflect for a few moments.

We have so many things to be thankful for, and I think that we sometimes forget about it in the hustle and bustle of a busy student life. We live in Canada, the best country in the world, and we go to the best engineering school in that nation (No, we're not biased here at *The Iron Warrior*). As engineers, we all have reasonably good career opportunities to look forward to, so the future looks bright. We have food on our tables (Kraft Dinner and Mr. Noodle count, right?) and clean water to drink from. We have roofs over our heads and clothes on our backs. At the end of the day though, the most important things are family and friends. Even when the road gets bumpy, I still feel like the luckiest guy in the world because I have them.

However, rather than ramble on about how thankful I am for different people in my life, I thought I would take this opportunity to reflect on some of the little things in life that I appreciate but normally take for granted:

Indoor Plumbing

We can thank the Romans for this one. The fact that we can flush away all sorts of unpleasantries at the touch of a button is something that we definitely take for granted. That we don't need to worry about cleaning out latrines or emptying septic tanks is a huge luxury that many people around the world don't have. Wastewater treatment engineers are the unsung heroes of our squeaky clean North American lives.

Those Little Plastic Things on the End of Your Shoelaces

Called an aglet, that little plastic bit is an integral part of the device. Once it breaks, I usually just replace my laces because as far as I'm concerned, they're essentially useless without them. They fray and become difficult to thread through the holes or even to tie. Then they begin to fall apart and start flopping around, eventually breaking. You never really notice them while they're doing their job, but only once they're gone can you appreciate how much they help.

Pavement

My appreciation for asphalt has nothing to do with some weird Civil Engineering affection for construction materials. It all comes down to driving, personally. The construction site where I worked this summer required a 30 minute drive along a dirt road before reaching the paved highway. After half an hour of being bounced around in a little van like rag dolls, finally arriving on the smooth pavement brought relief and a simple kind of joy to my heart every single time.

Mechanical Pencils

I love the smell of wood shavings in the morning, and nothing beats a freshly sharpened yellow HB pencil. However, that brief period of glory quickly wanes as your pencil's sharp point dulls after a few sentences of writing. What's a boy to do? Enter the mechanical pencil. Thanks to mechanical pencils, my chicken scratch becomes slightly more legible and my terrible drawings slightly less appalling.

Alumni

After meeting several alumni at Homecoming last weekend, I have become very thankful for them. They were the ones who started all of our favourite crazy traditions, from the Tool to P**5 and everything in between. Alumni are responsible for everything that makes going to our school worthwhile, and have built Waterloo an internationally-respected reputation despite the university's relatively brief history. WEEF, Engineers Without Borders, and even *The Iron Warrior* owe their beginnings to alumni who stood up and decided to make a difference. Their donations fund so many of the facilities and projects that we use here. In some cases, they even become our employers or mentors. They've all been through the same challenges as us and we can learn a lot from them.

Staying Connected

With the internet we are all so well-connected and we definitely take for granted the fact that people are so easy to contact. Between cell phones, text messages, email, and even just the basic ability to make a long-distance call, it has become so much easier to stay in touch with the people we care about. I spent the summer working on a remote construction site and one of the only things that helped me keep my sanity in the middle of nowhere was being able to talk to my friends and family through email or the phone. Thousands of kilometres and two time zones vanished at the touch of a button. A century ago this was impossible, but given the rapid pace of technological growth we experience today, the limitations on how we can communicate are growing fewer and fewer.

Knowing What Time of Day It Is

I went camping once and I forgot my watch at home. With no way to mark the passing of time, I decided to adapt by creating a makeshift sundial (ie. ramming a stick into the ground). However, I neglected to account for cloudy skies and found myself staring at a shadowless stick in the ground with no idea of how long I had been there. When you have no means of gauging how much time has elapsed, minutes turn quickly into hours, and it doesn't take long for your sanity to abandon you.

Clean Water

We just turn on a tap and out comes water. We drink it, bathe in it, wash our dishes with it, and probably never really think about it. However, unsanitary water is a grim reality facing much of the world, something that we are rarely forced to consider here in Waterloo. It really is a shame that we spend so much money and generate such significant quantities of waste from plastic bottles of water when we are lucky enough to have such a convenient, cheap, and clean supply from our taps.

Honey-Flavoured Shreddies

As of this writing, I harbour a special affection for that particular breakfast cereal, seeing as it has helped me survive this production weekend. I am in dire need of a trip to the grocery store, so in the absence of real food to keep me going this weekend, I instead ran to the Plaza to buy the first remotely nutritious thing I saw. I probably should have gone for the 12-grain-multivitamin-ultrahealthy-extra-fibre cereal instead, but I haven't had Shreddies for years so out of nostalgia, I succumbed to temptation. An unwise decision, perhaps, but I have no regrets.

Sleep

Sleep is something that I definitely need to become better-acquainted with. Without at least six hours of sleep I turn into a grumpy, inattentive, and generally unpleasant zombie. Some may argue that the above description is hardly a change from my normal state, but pay them no heed. This long weekend, go home, take some time and reacquaint yourself with that long-lost friend, sleep. It's waiting for you.

Honest People

Honesty is underrated. Whether that means a stranger who turns in a lost wallet instead of keeping it, or just a good friend who you can count on to be truthful with you, honest people make the world go around. Anyone who has ever been touched by random acts of kindness from a stranger can attest to the warm feelings of gratitude that accompany them. This weekend, don't just sit around and eat turkey— go out into the world and make a difference! Hold the door open for somebody, be extra nice to your little brother, or donate cans to a local food bank. Getting by in this world can be difficult, but if we all help out and show a little bit of kindness to our fellow human beings, it'll make the road less bumpy for everyone. Now *that* would be something to be thankful for.

Enjoy your weekend off and try not to get too bogged down with school work. Eat, drink, be merry, and if you can, spend some time in the company of people you love. Happy Thanksgiving!

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

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

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IPC Calls on UW

SARAH SCHARF & TYLER GALE
2B ELECTRICAL & 4A GEOLOGICAL

At the conclusion of her talk, "Change the Paradigm: Embed Privacy into Technology" on Monday, Ontario's Information and Privacy Commissioner Ann Cavoukian called for assistance from the University of Waterloo's researchers to fight for our privacy. Keeping our personal information protected from those that would use it against us is the main objective of the Information and Privacy Commission of Ontario. The task has become especially complex in recent times as advances in technology enable more sophisticated security equipment. Ann and her team have been working to change the current paradigm "zero-sum," where one requirement is sacrificed for another, i.e. privacy is sacrificed for security, to a "positive-sum", where both privacy and security play a vital role in all surveillance and identifications technologies.

The IPC commissioner informed the lecture attendees that the best way to ensure that a "positive-sum" paradigm is adopted and upheld is to re-invent our current security systems with privacy protection measures built right in, or "Privacy by Design" as the commissioner calls it. Ann has dubbed these "Privacy by Design" technologies as transformative technologies.

Encryption, specifically Biometric Encryption, is one of a few transformative technologies that Ann discussed in her lecture. Encryption on its own uses a key, often in the form of a password or PIN, that a program uses to turn regular typed out information into a language that only a person with this key is able to unlock and translate back. As Ann said in her lecture, PINs and passwords can be taken or discovered, even forgotten, rendering the information harmful or useless. Biometric Encryption replaces this PIN or password with a very long key that is generated using biometrics, aka your finger prints or a retina scan. Since metrics are unique to you and cannot be forgotten (and are difficult to steal), only you will be able to access the information and it will be very safe from those who would take it.

A second privacy enhancing technology (PET) discussed during the commissioner's lecture was privacy-enhancing video surveillance. As this technology currently stands, it can be used to track the activities of many people, even without their expressed permission. The IPC has been working with two people from the University of Toronto, Karl Martin and Kostas Plataniotis, on new privacy-enhancing video surveillance technology. Instead of a video of everyone within range being viewed by a security guard, etc, the display of the feed will show either an empty room, or a blurred shape form instead of a person. The video feed will be encrypted by a program written by the 2 gentlemen to display the empty room or blurred forms, and only those with the encryption key, such as the police, can view the original footage. This will ensure that even when an area is under camera surveillance, no one's privacy needs to be invaded, unless a crime is suspected.

Radio Identification Tags, or RFIDs, are very small chips that can be attached to products or other items for security purposes. They contain information about the item, and the type of information will vary depending on what the chip is attached to. If it is attached to a product from a store, it may have the product number, the price, the store name, and a brief description. If this same technology is used on a driver's license, it would contain your personal information such as your full name, date of birth, address, etc. This technology is being looked into by the IPC as a possible weak point for keeping private information secure, but also as something to take advantage of. If this technology can be re-invented with privacy in mind, such as using an "on-off" switch, then it can be used to make identification much quicker and easier.

The IPC is now looking to us as new and innovative thinkers to continue pursuing these new technologies, as well as coming up with a few of our own ideas to help them in the fight against the "zero-sum," and to usher in the new paradigm of "positive-sum." If anyone has any thoughts or interest in this field, there is a research group on campus, the Cryptography, Security, and Privacy (CrySP) Research Group who are always interested to hear new ideas in the field of privacy protection.

Changing The World

One Conference at a Time

MILENA BELOIA-CHERES
2A CIVIL

From November 14-16, the University of Waterloo, along with Wilfred Laurier University, will be hosting the Second Annual Waterloo Conference on Social Entrepreneurship, aiming to help both current and potential social entrepreneurs become more successful in improving the world.

The concept of social entrepreneurship represents the process of recognizing a social problem and solving it using discipline, innovation and knowledge of traditional business fields and of entrepreneurial principles. The conference is organized by the Laurel Centre for Social Entrepreneurship, following the success of their first conference last year, when more than 200 people from around the world attended the event. The Centre is a not-for-profit organization founded in 2007, that works to connect entrepreneurs with the relevant industries to educate the public. As the Centre's Director of Communications Suzanne Gardner informs, the organization was established by UW Master's candidate Andrew Dilts, along with a group of UW alumni and several UW and WLU students. "We found that the field is currently experiencing a rising prominence, with today's entrepreneurs enjoying access to knowledge and resources unprecedented in society," notes Gardner. The target group of the Laurel Centre includes active and potential social entrepreneurs, such as students, community members, and businesses. Programs such as the Lecture Series with four community leaders like Paul Born, founder of Tamarack, and Larry Smith, UW economics professor, have seen significant success. As Suzanne Gardner informs, "This past May, the Laurel Centre hosted their inaugural Social Entrepreneurship Intensive, nicknamed the 'bootcamp', which saw more than 25 up-and-coming social entrepreneurs immerse themselves in learning for three full days of workshops, presentations, and collaboration sessions on a wide range of topics related to social enterprise".

Entitled "Change the World", the upcoming conference will circle themes of health leadership, education and international development. The opening keynote address will be delivered at 7pm on Friday, November 14th, by Marc Kielburger. He is the chief executive director of "Free the Children", which currently has more than 1 million children involved in education and development programs in 45

See LAUREL CENTRE CONFERENCE on Page 13

Mental Illness Awareness Week

October 5 -11, 2008

JEFFREY LIPNICKY
4A MECHANICAL

This week (October 5 – 11) is Mental Illness Awareness Week. As many of you are aware (or at least, should be) this is a very important issue that I am hoping to make a difference for during this term. Having MIAW fall during the term is just a convenience. It is my goal to break down the barriers and overcome the stigmas that surround mental illness and the related effects in our society.

Mental illness is very common – 1 in 5 Canadians will experience it in their lifetime. The effects are felt far beyond the individual and can affect the person's family, friends, and community. In order for the person to be able to thrive and lead a successful life, they require support from a variety of different sources. The aim of MIAW is to help make those sources available by encouraging people to openly discuss the issues and also share information about the different treatments that are available.

I personally suffer from mental illness – I have been diagnosed with severe depression with suicidal tendencies and have been receiving treatment since Winter 2005. My journey has been difficult, but I have made it through with the support of family, friends, and medical professionals. I am not "in the clear", and I do not know if I will ever be, however, I take each day as it comes and do my best to make a difference in the world.

This week, I have arranged 2 events that focus on mental health – a Movie/Info Night in POETS and a day of Movies in POETS. On Tuesday night, from 7-10ish, I will be showing a movie that has to do with mental health. As well, there will be pamphlets and information about the different resources available – and of course, I will be there to talk to anyone and answer any of your questions. On Thursday during the day, we will be showing 3 different movies with a mental health theme. Although it is a very serious subject, it is not my intention to make the halls of Engineering dark and dreary. We will be showing movies that everyone can appreciate, but still get the message (e.g. Patch Adams, A Beautiful Mind).

I have worked with the folks in counselling services to arrange a QPR (suicide prevention/awareness program) session for later in the term. Unfortunately, we weren't able to schedule it during MIAW, but there will be a session in Engineering in early November. More information on this to come as it is finalized.

Again, I would like to thank everyone who has offered their assistance to me in this cause. It is greatly appreciated. At Meeting #3 (Oct. 8) I will be announcing my plans to have the counselling support available to students increased. I will also provide this information in the next IW and over the mailing list. In the meantime, if there is anything that I can do to help, let me know.

iGEM: Engineering Biology at the DNA Level

HILLARY YEUNG
2A CHEMICAL

A synthetic blood substitute. Solutions for HIV and cancer using specific molecular receptors. Sensors for environmental toxins. A computational device capable of solving complex mathematical problems that challenge today's computer processors. These innovative projects are adventurous, ambitious, and very real ventures that arose directly from the emerging field of synthetic biology. Amazingly, these inventions were developed by undergraduate students all over the world as part of the iGEM competition.

At the heart of the International Genetically Engineered Machines (iGEM) competition is the emergent area of synthetic biology, a new field that applies engineering principles to the domain of biology. Undergraduate teams from across five different continents compete by using advanced genetic technologies and modular genetic components to construct genetically engineered biological systems. Novel biological devices are built from standardized DNA "parts" and operate inside living cells, most often bacteria. This standardization greatly facilitates manipulation of genetic components and allows biological processes to be engineered more like electrical and software systems. Although established scientists in synthetic biology may have unrivalled academic backgrounds, many iGEM teams are able to produce truly extraordinary devices that demonstrate ingenuity and, in some cases, surpass the imagination of existing researchers in many disciplines of engineering and biology.

These student teams are able to take risks and reach farther than most commercial biotech companies in terms of ingenuity and creativity simply because they are free of constraints that such companies are often bound by. The only real restrictions limiting many iGEM teams are budget and lab resources or facilities. The student teams each produce their own design for a novel biological system or device, and follow through with related mathematical modelling and laboratory implementation themselves. Teams consist of a mix of upper- and lower-year students; these ambitious undergrads have the opportunity to perform at the level of many graduate students, limited only by their commitment to their team's project and their drive to learn. Students are being cultivated to become more creative, more innovative and more resourceful – and companies and graduate programs are taking notice, recruiting notable iGEM alumni once they graduate.

The UW iGEM team is highly interdisciplinary, consisting of undergraduate students and graduate and faculty advisors from the Faculties of Math, Engineering and Science. This broad range of skills and perspectives has enabled them to design ambitious projects for the 2007 and 2008 competitions. The 2008 UW iGEM project is a genome-free expression system for the production of useful gene products in response to environmental signals. Once its genome is degraded, the cell will be incapable of its regular metabolic processes, performing only the functions encoded on a plasmid that will remain intact after genome degradation. The cell will continue to express its plasmid-encoded genes only until the required materials inside the cell have been exhausted.

The potential for a system that will transiently produce specified proteins in response to an environmental signal is great, considering the possible applications in areas ranging from agriculture to therapeutics; the limited "shelf-life" of the system also helps to address issues related to introducing genetically modified organisms into the environment or into an animal. These cells could be engineered to produce pesticides, and would stop production of the chemicals once the cell degrades, posing a decreased threat to the plant and to the environment, as there will be no prolonged production of pesticides when it is not needed. Similarly, the cells could be designed to target cancer cells, the transient and targeted nature of their product expression ultimately reducing unnecessary destructive effects to the surrounding cells.

The 2008 UW iGEM Team will be travelling to MIT for the competition Jamboree held on November 8-9. There they will present their project design and progress amongst 83 other teams from around the world, including an estimated 1000 Jamboree attendees. After the Jamboree, the team will begin some early recruitment for next year's team, as well as start considering new ideas for the 2009 competition.

Visit http://igem.uwaterloo.ca for more!

Ex-CEO of McDonalds Pays Visit to ManEng Classes

TREVOR JENKINS
2A MANAGEMENT

As part of a series of 1A/2A ManEng meetings, the Department of Management Science brought in Mr. Bill Johnson, the former CEO of McDonald's Mexico and McDonald's Canada.

Mr. Johnson has worked in every position in the McDonald's corporation. He started working as a crew-member in 1970 in the first eastern Canadian location in London and ultimately worked his way up to CEO over 30 years later. During his career, he oversaw the tremendous growth in Mexico, the expansion into the Soviet Union and then ultimately ended up as the top man in Canada. During the meeting, he spoke about issues relating to the supply chain field and how McDonald's is integrating ideas into the way it works.

Supply chains in the restaurant are an integral part of the operations. The goal of keeping a drive-thru visit under the two minutes customers expect has meant that all food preparation that is required must be kept under an average of 90 seconds. This idea was what ultimately led to the death of McDonald's pizza. The 8 minutes it took to prepare wrecked havoc. The ultimate decision to eliminate it from menus has meant that the drive-thru business now encompasses 60% of total business in Canada, compared to 30% beforehand.

Another key aspect discussed was the role that branding played. For instance, many Canadians and Americans simply look at the golden arches and see "fast-food". However, the expansion into Mexico found that customers saw the arches as "America", and going to McDonald's was an "American" activity, something the average Mexican desired to emulate. The Soviet-era expansion into Russia has meant that the golden arches have come to mean "food is always here", a reflection on the fact that McDonald's always had food in stock despite the constant shortages in the nation. Due to "food villages", large farms owned directly by the corporation, food was always available and after the collapse of the USSR, this meant that excess food could be exported to support other European operations.

Mr. Johnson provided valuable insight into possible career opportunities in ManEng. With more meetings tentatively planned for the rest of the term, the two classes will get to learn more about the field.

Problems with PDEng

ERIKA JANITZ
2A ELECTRICAL

Beyond the drinking, studying and revilement of the math faculty, there is one commonality that unites all Waterloo engineering students; a passionate and utter loathing of the PDEng program. These courses that all Waterloo engineering students must endure while on co-op promise that "through participation... students are encouraged to develop the essential professional skills that build a solid foundation for success both during work terms and after graduation;" an innocent mission statement at first glance, until you realize that completion is mandatory for your degree.

Having just completed PDEng 15, I realize that I may not fully understand the toll or duress several courses can have on an engineer who is simultaneously working full-time; but perhaps there are some parallels that can be drawn from my own colourful experiences. Just a few weeks ago, an entire summer of working in the dregs of Toronto at a job that was in no way applicable to my new major culminated into a single anxious moment of staring at my Quest account expecting my "NG" to turn into "NCR". It was the one weak section, manifesting into the one weak assignment, which had the power to obliterate the hours of frustrating essay writing that had been unfortunately wiped from my hard drive. Had my reign as the affectionately nick-named "Jane and Finch Barbie" been completely in vain? Had I feverishly studied the blogs of Farrah and Eric for nothing?! I had come to assume so as my classmates frantically pre-booked their workshop sessions in anticipation of failure. Thankfully, the PDEng Gods took mercy on me and I received the coveted "CR"; the final passing mark of my brief stint in chemical engineering. Although this memory is mild in comparison to those of my peers, it was certainly enough to leave a bad taste in my mouth.

After quizzing leagues of engineers as to what they dislike about the course, the most popular response was described as "the feeling of coming home from a long day of work... to an unwritten PDEng assignment that's due at 11:45"; like being metaphorically kicked when you're down. I luckily chose a co-op position that required me to live alone in an unsavoury area of the city, so remaining inside after dusk to complete said assignments versus evening strolls down Finch Avenue was not a difficult choice. My major qualm with PDEng stems from the air of ambiguity that surrounds almost every aspect of the program, from what it has against Vista, to why late assignments always deserve 5%. I would gladly admit that only I find these tasks and idiosyncrasies confusing if I had not received exactly the same complaints from my dishevelled peers. Some of the other quirks took a little longer to discover but were equally as earth-shattering, such as the moment I realized that minor assignments did not have to be resubmitted... after the course had ended. I suppose I can take solace in the fact that I can now regurgitate Policy 71 and the content of Module 4 without the slightest error.

Looking back on our careers at Waterloo, perhaps the hours dedicated to essays of professionalism and ethics will be remembered with a chuckle and warm feelings...perhaps not. In the end, the high concentration of supportive quotes featured on the PDEng website from Engineering Alumni far outweigh the opinion of this disgruntled second year student. I must admit that the skills and lessons learned through the PDEng course will probably assist future engineering graduates in terms of communication and professionalism, but in the mean time it remains as the irritating cross all engineering students must bear.

Go Eng Girl

MICHELLE CROAL
2B CHEMICAL

Go Eng Girl! is an annual initiative created by the Ontario Society of Professional Engineers (OSPE) and hosted by 15 universities across the province. The event is a daylong opportunity for gr.7-10 girls to learn about engineering as a post-secondary option and a profession from women in the industry, academics and students.

The Waterloo event includes guest speakers, an information fair, opportunities to meet current female engineering students and staff, participate in an exciting applied activity and enjoy a tasty free lunch! Cat Goode (Electrical '01) will address the participants as a keynote speaker, after which girls are split into two groups (gr.7-8 and gr. 9-10) to participate in projects which demonstrate engineering applications. Parents and guests at this time will listen to three more speakers on careers, academics and university admissions. After lunch there will be an undergrad discussion panel as well as a showcase of student groups/organizations.

Admission is free, but requires preregistration and the completion of a permission form available at http://www.eng.uwaterloo.ca/wie/Events/GoEngGirl.htm

Pumpkinfest

JON MARTIN
1A CIVIL

With the beginning of October comes anticipation of fall colours and Halloween, as well as Oktoberfest of course. The municipality of Saugeen Shores, made up of the towns of Port Elgin and Southampton, have their own festival to celebrate. This weekend saw the town decorated in orange to celebrate Pumpkinfest, a yearly festival always on the first weekend in October.

The main Pumpkinfest Village is located on the grounds of the Saugeen District Secondary School, complete with carnivals, craft shows, and the International Pumpkin Weigh-off. Pumpkinfest garnered attention in recent years with the attainment of a new world record in the form of the heaviest pumpkin, well over 1500 pounds. This year's champion pumpkin weighed in at a staggering 1395.5 lbs. The international weigh-off also includes other vegetables, this year saw a cabbage approximately one metre in diameter weighing 52.2lbs, a tomato at 5.32lbs and a squash at 1065.5lbs he children's carnival with rollercoaster's, games and pumpkin carving contest kept everyone happy for the two day festival. Ontario Power Generation and representatives from MacGregor Point Provincial Park as well as the Bruce Peninsula Bird Observatory taught the public about nature and birds of prey. Some of the major sponsors of Pumpkinfest included Bruce Power, OLG, Ontario Power, and Hydro One.

Stretching down the main street and overflowing into many side streets, the Cinderella's Carriage Car Show kept a constant crowd roaming the roads closed to traffic for the day. With close to eight hundred classic cars registered for Saturday alone, the car show was great entertainment for everyone.

Jon Martin

Some visitors are dwarfed by the prize-winners at Pumpkinfest.

POETS MOVIE SCHEDULE

SHOWINGS BEGIN AT NOON

		Wednesday October 8 One Flew Over the Cuckoo's Nest Rain Man Forrest Gump	**Thursday October 9** **Mental Health Awareness Day** K-Pax Patch Adams A Beautiful Mind	**Friday October 10** Planes, Trains & Automobiles The Ice Storm Home for the Holidays
Monday October 13 **Thanksgiving**	**Tuesday October 14** **Voting Day** Man of the Year Swing Vote Napoleon Dynamite	**Wednesday October 15** **POETS Request** Rudy Any Given Sunday The Program	**Thursday October 16** **Superheroes** Hancock The Fantastic Four The Fantastic Four: Rise...	**Friday October 17** **Montreal** The Whole Nine Yards The Score Bon Cop Bad Cop
Monday October 20 **1930's** Memoirs of a Geisha Citizen Kane The Aviator	**Tuesday October 21** **Filmed in Super 35** Jumper Inside Man Vantage Point	**Wednesday October 22** **Guess the Connection** Cashback 2001: A Space Odyssey Donnie Darko	**Thursday October 23** **Not Human** King Kong Hellboy Hellboy 2	**Friday October 24** **Human Alteration** Iron Man The Incredible Hulk Daredevil

Citizen's Action

MEGAN CAMPBELL
SYSTEMS DESIGN 07

If there's one thing I miss about Canada, it's the apple turnovers from the C&D. Ok, I guess I miss my friends and family a bit too, but they can't really compare to that sweet apple-y deliciousness. Even the fresh fried banana fritters they sell on the streets here in Malawi don't quite measure up.

Now imagine you're standing outside the C&D, out of cash but with a powerful yearning for a turnover, and you ask your friend to lend you the money. He says sure, but only if you walk all the way down to the corner store his parents own at University and King and buy it there. You might protest that that's not fair – it'll take ages to walk all that way and his parents' store only sells the hugely inferior cherry turnovers! But your friend won't listen – either his money goes to a turnover from his parents' store or you don't get to eat.

The turnover analogy might be a bit flippant but it's not that far off from what can happen with tied aid in development. One of my good friends at work, Loti, was listing the drawbacks of the pickup trucks that our water and sanitation project uses: they can only carry three people, they breakdown a lot and they can't make it to many remote villages during the rainy season. He said that project management should have bought more robust trucks, so I asked the obvious question – why didn't they? Turns out it's because the main donor to the project stipulated that all the vehicles had to be bought from the donor country, and these sub-par trucks were the only choice. The same sort of tied aid conditions meant the project had major trouble finding a borehole drilling rig they were allowed to buy, putting them over a year behind schedule.

It's Malawian villagers who pay the price when they have to wait an extra year for a borehole they need so that they can stop using an open pit as their well for drinking water. So the news that last week Canada untied all its aid made me prouder to be Canadian, especially a Canadian overseas. It also reminds me of the immense opportunities we have to take action in Canada. The advocates of untying aid had access to information about how our government spends its aid budget, could engage with MPs who would listen to them, and broadcast their voice through public events and media coverage. It's something that any one of us can do on any issue if we want to, and my work is helping me see how rare and valuable that opportunity is.

I've just started working on a pilot called 'Citizen's Action,' or *Liwu la mzika* in Chichewa, that's trying to help villagers understand what water services they're entitled to, and demand those services from the government departments and NGOs who are supposed to provide them. I was shocked to find out from a co-worker that the policies about water services (for example, the one that says every person in Malawi should have a safe water supply less than 250 metres from their home) aren't even widely available to district government employees, let alone to most villagers. So how can villagers hold their government accountable for providing water services if they don't even know what services they're supposed to receive? Who can they go to when an NGO promises to drill them a borehole but then doesn't return to their village for over a year? Hopefully this pilot will help villagers find answers to those questions. It's a small step towards helping Malawians access the kind of opportunities – to get information, to make their voices heard, to hold accountable the government and NGOs that are supposed to be working for them – that we enjoy in Canada, and the power to change their lives that comes with it.

Megan graduated from Systems Design Engineering in 2007 and is currently working in Malawi on a two-year placement with Engineers Without Borders. This is her second article in a series on her life in Malawi – for more stories (including how she accidentally crossed the Mozambican border, how she had a rooster as a roommate, and how she is increasingly fascinated with human excrement) see whereismegan.blogspot.com.

EWB Gala

JULIA CHERNUSHEVICH
1A MECHATRONICS

The third annual Engineers Without Borders Gala took place Wednesday, October 1 at the Accelerator Centre just north of campus. A fair number of people came out, including our own Acting Dean of Engineering, Leo Rothenburg, who I had the pleasure of speaking to, as well as UW's president, David Johnston. Other faculty and university staff members were also present among the many supporters of EWB.

The gala started with a silent auction, various 'souvenirs' from Ghana, Malawi and Zambia were donated to the auction by the overseas volunteers. The objects ranged from hand-made pipes to postcards, and even shea butter soap. Everything was bid on, including one painting of women carrying water which sold for seventy-five dollars. My friends and I gladly acquired a set of metal bracelets and ring from Ghana.

As the auction continued to run, several addresses were made. Firstly, David Johnston, President of our University, gave a very engaging speech about his travels and family stories. His wisdom went a long way when he presented an intriguing metaphor illustrating the effects of our smallest actions on the larger world. President Johnston compared EWB's volunteers, both in-Canada and overseas, to drops of red food colouring added to a glass of water; although the drop is small, it has the ability to turn the whole glass a magnificent rose colour. As President Johnston put it, your smallest actions today do in fact create change, and they inspire further change.

The inspiration did not end there, the overseas volunteers told their stories and what they had learned from their experiences on the other side of the world. Some mentioned the obstacles they had to overcome, some spoke of the issues present in the communities they worked with, but there is one story that I'd like to echo. Dane Corneil narrated a paradigm he encountered: after spending some time with the farmers in his rural community, one man spoke up and asked him a question, "A lot of people come here to talk to us, and some of them stay in our community and get to know us and our difficulties, and they really make a difference; and some, they come for only a very short time, they don't know who we are, they ask us questions and they go back to their country and write a paper, and we never hear from them again. So, which kind of person are you?" Dane described how the question caught him off guard and made him question his presence in Ghana. He continued by explaining that you bring individuals like that with you throughout your life, the farmer that challenges you and reminds you of your duty in this world. Although I had never met the farmer, I learned something from Dane's story and I think it's something I'll bring with me throughout my own journeys.

That's when I wondered how much of an effect this gala would have. Whether it's the money raised by the auction, or the lessons learned from the speakers; ultimately, what impact will the event have? Would people change their behaviour, or as the farmer said, would they continue to write their reports and never return to a prior issue? From the group of people in the room, I would definitely say that minds were taken aback in thought, but I'm still interested in what the overall effect had been.

In due course, the evening had come to an end, after an enlivening time of mingling and interacting with each other, as well as a night of admiring the cultural clothing and stories that brought a touch of Africa to Waterloo. I took pleasure in the gala, and I'm sure everyone who had come out enjoyed it just as much.

A True Renaissance Man

STUART PEARSON
2A CIVIL

Engineers have long fought to shed the nerdy image which has been associated with them for so long. Back in the 1800s, a man named Isambard Kingdom Brunel made a huge case against this through a full and eclectic life. Completely defying the stereotype of the stuffy Victorian Era intellectual, Brunel was one of the fathers of modern civil engineering and also quite the renaissance man.

Brunel was one of the pioneers of underwater tunnelling. He came up with the idea of using a "tunnelling shield" after watching a worm eat through a piece of wood. The system was first used to great effect on the Thames Tunnel beneath the River Thames in England. It was a forerunner of the modern Tunnel-Boring Machine (TBM) used in most current tunnelling projects, and Brunel's Thames Tunnel itself is still used today for the London Underground.

Brunel was also a pioneer in bridge and railway design, building many innovative new structures including the longest suspension bridge in the world at the time. He was also in charge of the Great Western Railway, a project that linked London to the southwest corner of England.

Among Brunel's more bizarre and less successful ventures was a Pneumatic Subway. Trains were to be powered at speeds of up to 30km/h by an elaborate series of vacuums, tubes, and pistons. Eventually the project was scrapped because it was deemed too complicated to be feasible on a grand scale.

In yet another bizarre incident, he was performing a magic trick for his family when a coin became lodged in his throat. When he couldn't cough it up, they tried using forceps but to no avail. Ever the engineer, he actually designed a contraption to extract the wedged coin. One must assume that Brunel either had enough air to breathe or was a quick thinker of unparalleled magnitude. With no other options, they strapped him to a board, flipped him upside down, and shook him violently until the object became loose. Brunel managed to live another 16 years after that harrowing incident before dying of a stroke at age 53.

In conclusive proof that Engineers Rule The World, Brunel was recently selected as one of the greatest British citizens of all time. Beating out everyone from David Bowie to Henry VIII and even Shakespeare, Brunel finished in second place, behind only Sir Winston Churchill. It is suspected by many that a well-organized voting campaign by Britain's engineers was responsible for Brunel's pleasant but unusually high placement. It just goes to show what thousands of engineers can do when they put their mind to it!

Lastly, one of Brunel's greatest contributions to society was not a bold or innovative element of our infrastructure, but rather a much more cultural artefact: the bar. Yes, the simple chest-height counter used to serve beverages in fine establishments everywhere was invented by an engineer. Next time you go out on a pubcrawl, reach across the bar, hoist your glass aloft and toast to Isambard Brunel!

The Wall

CHRIS TOGERETZ
4N CIVIL

As a nearly-graduated engineering student, I can't tell you how many times I've been "suffering" through a lecture and thought to myself, "wow, this is so boring and useless. There is NO WAY that I will EVER need to know this!" Well, I can tell you that I was completely wrong in my thinking on more than one occasion.

This article illustrates this common occurrence using a diagram. The diagram below shows the current situation, with an imaginary wall that reduces the flow of knowledge from the classroom to the workplace and vice versa. Personally, I am not always able to find out a lot about my classmate's coop experiences, much less the experiences of engineers in other disciplines! This reduces the flow of information from the work term to the classroom.

This wall also slows down the amount of classroom learning that could be used in the workplace, as students in class are not sure why or how the information will be useful to them!

How have you broken down the wall; or at least got around it? Do you see the same situation (an imaginary wall slowing down interaction between your schooling and your work terms)?

Write me at design@design.uwaterloo.ca, I'll publish a few of the comments if they're insightful or funny … and be sure to check out "Part II" of this article in the next *Iron Warrior*!

ENGINEERING SOCIETY EXECUTIVE REPORTS

Presidential Report

TYLER GALE
PRESIDENT

Call for volunteers – UW Thank-You-A-Thon 2008

Every year the university orchestrates a huge phone party to thank all of the people who have made donations to contribute to the school's success over the past year. It's happening November 8th from 11:30am to 5pm, and the call has gone out to engineering students to help out. I volunteered last year and it was pretty cool to be having conversations with a bunch of successful alumni. If you're interested please contact Robin Jardin, the student relations office in the Dean's office (rjardin@engmail.uwaterloo.ca). Lunch and refreshments will be provided throughout the day, and if you can only help out for part of the day that works too.

Follow up to Alumni Weekend

Thank you to all the volunteers who helped out with the alumni weekend. It was a pleasure to have alumni out to POETS on Saturday afternoon. It's always amazing the people you get the opportunity to meet at these events. For example, this year I ran into the creator of P**5 and a member of our historic world boat racing champions.

Information Privacy Commissioner of Ontario

The information privacy commissioner of Ontario, Dr. Ann Cavoukian, lectured at the Humanities Theatre on Monday September 29th. A few of us joined Dr. Cavoukian for lunch afterward and had a round table discussion about modern issues in information privacy and the role UW could play in developing technology to address these issues. For more, refer to the article in this issue written by Sarah Scharf.

Find Out More

The best way to hear about what's been happening and what's up and coming with the Engineering Society is to join us at the council meetings:

Council meeting 3: October 8th 2008

Council meeting 4: October 29th 2008

They always happen Wednesday evenings, at 5:30pm, in CPH 3385. You can contact me as well at asoc_prez@engmail.uwaterloo.ca

VPEd Report

JEFFREY LIPNICKY
VP EDUCATION

This week I have things to talk about, so sadly, no stories. Maybe next issue...

#1. I would like to apologize for the inaccuracies in my last exec report. Many of the claims that I meant about the first-year engineering co-op system were incorrect. I did not have all of the information on the situation, and my comments were made in haste. Since that time, I have had a meeting with the personnel from CECS and with our Associate Dean in charge of Cooperative Education and Professional Affairs. It was a very productive meeting and assisted both sides to come closer together. Many things have changed in recent years for the co-op orientation program – it has come a long way from the Thursday sessions in Hagey Hall. There have been many improvements made, but as with anything else, there is always room to make things better. The new system includes a "course" on UW-ACE that provides students with useful information on resumes, JobMine, and the entire co-op process. There are also classroom sessions integrated into the concept courses that supplement the online resources.

Moving forward, CECS and EngSoc are going to work together to make this experience better for everyone involved. EngSoc will be participating in the first year sessions as student mentors to i) learn about the changes to the co-op system, and ii) to provide support to CECS and WEEF TAs in answering student questions. Since first year students are still adjusting to the new university life, they are more likely relate to fellow students than to administrative staff, which is the primary motivator for this shift.

It is important to note that it doesn't matter how much effort we put in if the students are not willing to do the work themselves. We aren't going to hold their hands (no dirty jokes guys and gals); they need to do this on their own. Much of the issue has to do with the attitude and maturity of the students in first year. They need to take the responsibility for their education and lives – no one can do that for them. This is an issue that is far beyond the realms of anything in the scope of this institution – it requires a societal shift. Anyway, that is my philosophical note for this issue.

#2. The PDEng Independent Review is moving as fast as a snail going up a hill. Currently, the Self-Study is with the Deans for their review. Based on my conversation with Acting Dean Rothenburg, the Self-Study will be sent back to PDEng staff for revisions – a "resubmission" of sorts. Once the final changes have been made, hard copies of the document will be presented to the Department Chairs and the Steering Committee members. It is not likely that this document will be made public; however, I will do my best to make sure that as much information can be presented to students as possible.

Once the Self-Study is complete, then the external review committee will be formed and they can begin the process. At present, only the chair of the committee has been contacted – but I do not know who they are. Once the committee is formed, the visit to campus will be arranged and the reviewers will decide on how input will be received. The submissions from students that were given to Dean Sedra in the Winter will be provided to the reviewers – and hopefully when the reviewers are on campus, they will take time to discuss the issue with students as well. The particular methodology will be decided upon later.

I have not been given a concrete timeline for the completion of this Self-Study. However, based on my experience with this process, I do not expect to see the external reviewers until Winter. If the review committee is not formed by October 29th (Meeting #4), then I will be submitting a formal letter to the Deans for an explanation of the delays. I will also be ensuring that this letter and any subsequent communications on the issue will be provided to the external reviewers. Any input that you have on this issue (or if you would like to submit your own letter) will be received by me for consideration. But please, make it constructive.

#3. Mental Illness Awareness Week is this week (October 5 – 11). I would like to thank everyone for their support of this initiative. Ever since my presentations to council, I have lost count of how many people have offered to assist me with this cause. It is greatly appreciated. This is an issue that needs attention – and I am glad to see that people are starting to pay attention. More information on this cause is discussed in my other article in this issue. Again, if I can be any support or assistance to anyone, please do not hesitate to let me know.

VPI Report

SARAH SCHARF
VP INTERNAL

Hi there everyone! Is it just me, or does it seem like UW Engineering is saying "Welcome (back) to UW! Have some assignments! Oh, not done those yet? Have some labs anyways! Don't forget those quizzes!"? It's like they think that as soon as frosh week ends, we no longer need to sleep or eat. We also need to save some of our ever-dwindling energy to study for those upcoming midterms! Ahhhhh! Don't push yourselves too hard, or you'll never make it through hell week (October 20-24th for those of you who don't know)! The best way to keep from burning yourself out is to take some time off from studying and have some fun.

Since October is a busy month for engineering students, EngSoc has a lighter number of events planned. However, this week before we get too close to midterms there will be a couple of things to get you out of that library. **Wednesday, October 8 at 5:30 pm in CPH3385 is EngSoc Meeting #3!** Yay! There will be free food, free fun, and the 4th years will be there for free entertainment. Enginuity #2, "Go Deep!" is also going to be the next day, **Thursday, October 9 at 11:30 am** in the CPH foyer. If you like being enginuitive, or just making a mess, this event is definitely for you. Your VP Education and myself participated in the last one, and we had a great time.

I would again like to thank Marc Tan for hosting our second Open Mic of the term. This happened at POETS from 12-4 pm, it was a great chance for talented engineers to show their stuff. I'm sure we can look forward to more awesome events from our Music Director soon.

While I'm on the topic of talent, I'm looking for drawings, designs, and/or photographs made by our very own students to be put up on my currently very empty Arts Board. If you have any of these, or have some talent/interest and wouldn't mind displaying it for all to see, please send it to my lovely Arts Directors at asoc_arts@engmail.uwaterloo.ca. Provided it is tasteful, it will be put up on the Engineering Arts Board.

I know, I know, there's not enough going on! Well, don't you worry. We've got some great events coming your way as soon as the majority of the midterms are completed. A team of EngSoc minions (aka directors) will be running a Pumpkin Carving Event, a Pumpkin Pie Eating Contest, and a MOT Halloween Party.

Enjoy your Thanksgiving Holiday everyone (and your turkey if you're having any). Take the time to relax so you'll be well rested when school starts up again. Bye for now! :)

VPX Report

DAVE HALFORD
VP EXTERNAL

Hello Everyone,

I hope that everyone's term is going well. I only have a few things to mention this week so I will try to keep my report brief.

Two weeks ago Tyler and I attended ESSCO PM, which was held in Oshawa. During this conference a member of B-Soc, Stephen Lake was voted in as ESSCO's new VP Services. We also heard from the ESSCO Exec on the progress of their various projects and there should be some interesting things coming out of ESSCO in the months to come.

This weekend I will be travelling to Sherbrooke, Quebec to attend the Canadian Federation of Engineering Students Presidents' Meeting (CFES PM). During this conference I will be meeting with representatives from many of the engineering societies from across the country in order to share new ideas and give direction to the CFES Executive on A-Soc's behalf.

I also have the great privilege to announce that this term's major charity event will be "Movember". This event takes place during the month of November and is a fundraiser for prostate cancer research, as well as aiming to promote awareness of male health issues. During the month, participants known as "Mo Bros" will grow moustaches in exchange for pledges. The moustache growing will commence on November 1st and will end at EOT with a big party. Just in case you ladies think that we've forgotten about you, we haven't. Ladies, known as "Mo Sistas" are encouraged to support the men in growing their moustaches and also help collect pledges and help promote health awareness.

Last but not least, OSPE is hosting a conference in Toronto on October 16th entitled "Engineering a Climate Change". The price is $229 for OSPE members and $249 for non-members. Information can be found at http://www.ospe.on.ca/Climatechange/registration.html

I hope that everyone has a safe and happy holiday weekend!

VPF Report

ADAM MELNIK
VP FINANCE

A thought [read: joke] on today's economy:

If you bought $1,000 worth of Goldman-Sachs stock one year ago, it would now be worth $49.

If you bought $1,000 worth of Molson Canadian (the beer, not the stock) one year ago, drank all the beer, and traded in the cans for the nickel deposit, you would have $79.

My advice to you is to start drinking heavily.

But seriously, don't. Midterms are right around the corner and we can't have you sacrificing your precious study time to entertain the thought of having an extravagant social life. Ha!

On business, this week the term Budget was unveiled and students were shocked and appalled to learn that we are planning to be in the black for yet another term! Regardless, the student fee referendum, which includes a proposal to increase the Engineering Society student fee to $16, will be addressed later in the term. Thank you to all Directors who submitted Budget Proposals in a timely manner. Please join us at Meeting #3 on Wednesday October 8 to approve the final Budget.

It is important to note that an additional $500 has been allocated towards donations for student teams, clubs, groups, and projects for a new total of $2500 of available funding! Donation Proposals will be due Monday October 27 at 4:30 pm. Proposal forms can be found in the Orifice or online at http://engsoc.uwaterloo.ca/www/society.php. Groups seeking a donation will be required to present their proposals at Meeting #4 on Wednesday October 29!

Look for new 0.6 L red and white UW Engineering SIGG bottles in Novelties soon!

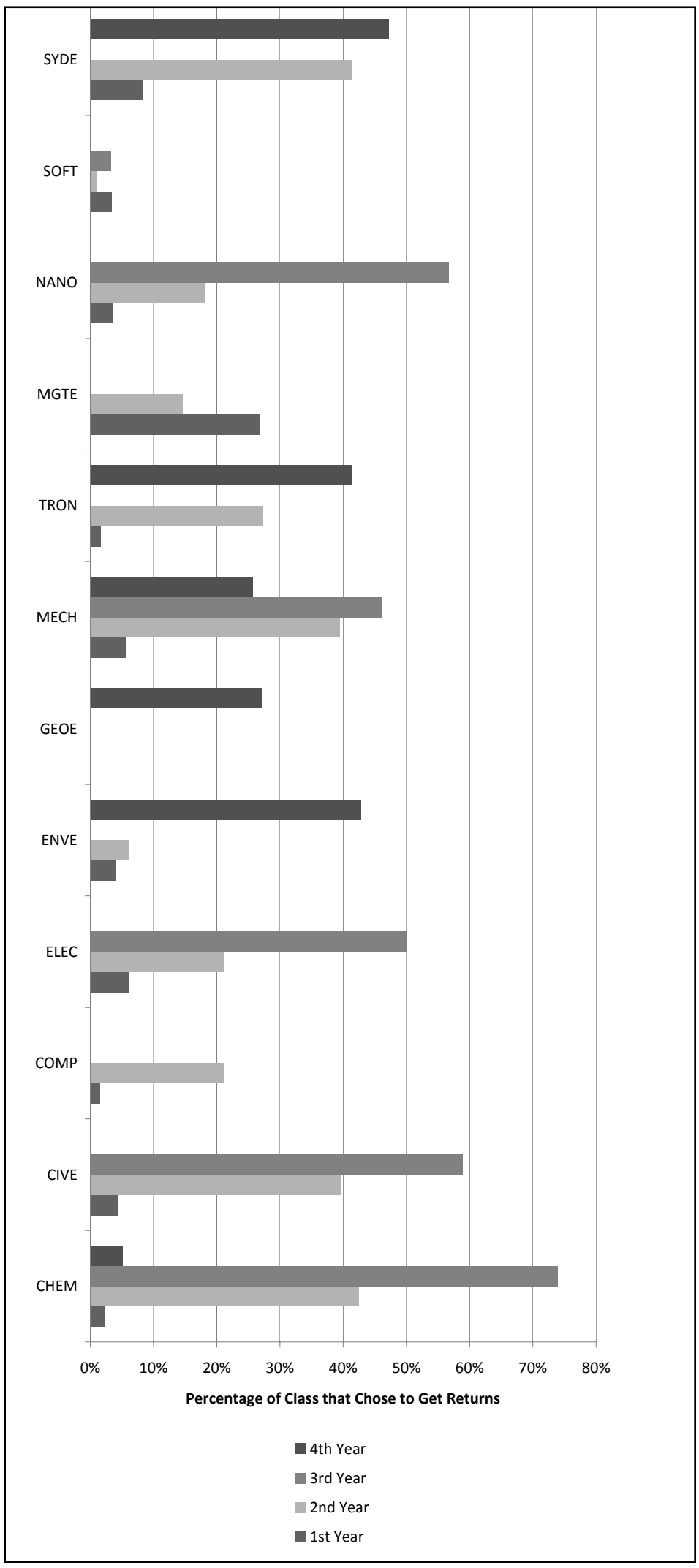
WEEF Report

BRANDON DEHART
WEEF DIRECTOR

Greetings and salutations! The first month of the term has come and gone already, and with it the charitable donation returns are finished. I am very happy to say that just over 80% of engineering undergrads have each donated $75 towards the Waterloo Engineering Endowment Foundation! According to these numbers, one fifth of engineering undergraduates don't use labs (computer or class based), aren't on any student teams, don't read *The Iron Warrior* (so I guess they won't see this), and feel that the reputation of Waterloo Engineering as a whole doesn't benefit from students having a say in what parts of their education are improved.

Alright, enough with the ranting. Since it is the second month of the term, it is high time that anyone out there (and I mean anyone) starts submitting proposals for WEEF funding. The deadline for these proposals is still TBD, but will be some time near the end of October. Do you have a lab with really old or broken equipment? Do you always have to move around to different parts of Helix or Wedge to find a computer that works? Have you ever wondered why X lab didn't have Y equipment? Well you, that's right YOU, can help make that easier and better for yourself and for future students. Visit www.weef.uwaterloo.ca for more information.

WEEF Returns by Class



Movember

MARISSA BALE
2T CHEMICAL

This November, the charities directors (Aditya Sharma and myself) along with the VP-X are launching a new month-long event: Movember.

Movember is the month formerly known as "November", and is somewhat akin to a charity head shave event. Except instead of people paying you to remove your hair, Movember involves the growing of hair (more specifically, a moustache or "mo") all month long. Men who grow moustaches in support of Movember are known as "Mo Bros".

This event would seem to completely leave out the girls in our faculty. Not so. "Mo Sistas" are the women of Movember who encourage the men to participate, raise funds, and help organise the event. They can play any part from helping a Mo Bro raise money, convincing someone to grow a mo if a certain monetary limit is reached, or just spreading the word. Mo Sistas also help out by attending the fabulous "Gala Parté" held at the end of the month.

Now, Movember isn't all fun and games (not quite). There's a very serious motivation behind this very silly event. Movember is an event meant to raise awareness of men's health issues. Men are far less healthy than women. The average life expectancy for men is five years less than it is for women. But why? Men often lack awareness about the health issues they face. Many men feel they have to be a "real man" and refuse to see a doctor about an illness or for check ups. The aim of Movember is to change this attitude.

The Movember Foundation is an Australian based charitable organisation that implements Movember each year around the world. In Canada, Movember is partnering with the Prostate Cancer Research Fund of Canada (PCRFC). All funds raised will go directly to the PCRFC to create awareness and fund research for prostate cancer. Did you know:

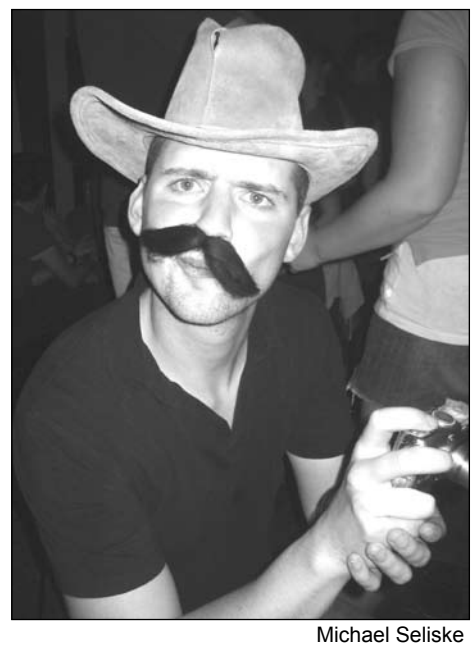
• Every year around 24,700 Canadian men are diagnosed with prostate cancer and about 4,300 die of the disease, making it the number one cancer threat to Canadian men.

• 1 in 7 men will develop prostate cancer in their lifetime.

• Prostate cancer is 95% curable if detected and treated early.

How can you participate? Well, if you're male, become a Mo Bro. If you're female, become a Mo Sista and encourage all the guys you know to become Mo Bros. Mo Bros then raise money throughout October and November to grow their moustaches. You can also talk to your profs and TAs and ask them to participate if your class raises a certain amount of money. Don't be afraid to get creative!

Keep an eye out throughout October for posters and other information about Movember. If you're interested in participating, or plan on encouraging someone else to



Michael Seliske

participate, donation forms will be available in the Orifice. More information is available at http://ca.movember.com, or email me at mbale@engmail.uwaterloo.ca. If you would like to register to be on our Movember "team", go to http://ca.movember.com/ca/register and follow the steps. Once registered you'll be sent all the information you need to get donations and get growing as part of our Movember team. You'll need these details to register online:

• Captain's registration number: 1334741

• Captain's email address: mbale@engmail.uwaterloo.ca

Whether or not you register online, please come register in CPH foyer at the end of October (there's P**5 points!).

We challenge you to change the face of men's health.

Disclaimer: *The Charities directors, the VP-X, and the Movember Foundation do not take any responsibility for lost jobs, lost girlfriends, or lost dignity due to participation in Movember.*

Customizing Your IW

GABRIEL CHAN
SYSTEMS DESIGN 08

The Iron Warrior has been the voice of UW engineering students since 1980. We have to admit that some articles may be more interesting than others. But what is interesting for you may not be so interesting for another person.

Recently, we added new features to the online edition to encourage even more participation from our readers. If you go to our website http://iwarrior.uwaterloo.ca you will find that on every article there are new goodies at the bottom of the page: related stories, ratings, and comments about the story. These personalization features are called *Soeie* and were designed with you in mind, so you can login with your engmail ID and password to find more ways to personalize your online IW experience. Besides logging on with your Nexus identity, you can also use your login credentials from Facebook or MSN Messenger. If you have signed up with *Soeie* earlier, you use that email to login. We hope to make the online edition of *The Iron Warrior* like a personalized newspaper, serving relevant articles and websites to you, whether it was published today or in 1980.

Under "related" section, you can see a list of recommended articles. The recommendation is based on the content of the article that you are on, the comments that sit on the bottom of the page, the rating, and other personalized attributes. Results are more relevant and personalized if you login to the site.

Too busy to write a letter to the editor? At least leave your thoughts with our commenting section! In addition to helping us keep track of what you think of us, it also helps you keep track of what interests you, enabling you to discover more interesting things. All comments that you create are collected into a central command dashboard interface at the *Soeie* website (www.soeie.com), where your comments (and your friends' comments) are sorted by privacy level: public, private, and shared.

Besides clipping your favourite articles and discovering new reads, *Soeie* can also be used as a collaboration tool for group projects, assignments and research. If you ever used the 'Share on Facebook' feature, it is the same idea: drag the *SoeiePad* (a portable version of the service on the IW website) from the *Soeie* website to your bookmark bar and click on it whenever you are on a webpage that you want to take notes on (for example, a good reference or relevant data for your assignment) or share with your teammates or classmates.

The Great Debate: Words from your Future MPs

JON RADICE
2B CHEMICAL

On Thursday October 2nd, the main hall in the SLC lent its floor to your federal candidates: the five men and women running for the Waterloo region riding in the House of Commons. The debate featured Liberal candidate Andrew Telegdi, Conservative representative Peter Braid, NDP representative Cindy Jacobson, Green Party candidate Cathy MacLellan and Canadian Action Party representative Kyle Huntingdon. This debate, centered around the issues that affect us the most, gave a chance for the students to pose their own questions for the Ottawa-bound hopefuls.

Running for re-election, this riding has been known as a Liberal stronghold thanks to Andrew Telegdi. A strong member of parliament for the Liberals since 1993, Telegdi has been known to support the desire of his riding over the will of his party. This was emphasized when he resigned his position as the Secretary to the Minister of Immigration, when he did not agree with his party's proposed and controversial Citizenship Act. A former President of the Federation of Students at UW from 1973 to 1975, Telegdi sides very heavily with the student view. Vowing to help alleviate student loans by lowering interest to prime + one percent, increase research grants by 34% and increase the ease for international students to apply for bursaries and citizenship after schooling, Telegdi focused primarily on the students with logical measures, definitive numbers and statistics from the Liberal platform. Telegdi took every moment he could to emphasize the looming Neoconservative crisis if Harper's Conservatives continue to run the Parliament; stating that more tax breaks for big corporations, desecration of the environment, and the leaving behind of the lower class is in the cards with a Conservative future.

Peter Braid played a very cool hand for the entire debate. Facing attacks from the other four candidates, the Conservative hopeful stuck to his plan: to outline how the Conservatives have benefited Canadians while in power. From reducing taxes across the board, wiping out two percent of the GST, to helping students by increasing university funding by 40% in 2007, Braid was very specific on the changes the Conservatives have brought to students in their short time as government. However, the Conservatives have still not released their platform at the time of the debate, leaving Peter to only cite past achievements rather than focusing on current issues more effectively. Braid was focused on hammering home that the Conservative Party is a party that takes action, that Conservatives regularly get their platforms accomplished unlike previous Liberal governments, who Peter states "would ratify accords but not act on them". In closing, Peter Braid assured that a vote for him and the Conservatives would ensure a strong Canadian economy in these shaky times, something that would benefit all Canadians as a result.

Cindy Jacobson has been a strong member of the community for a very long time. From working as a pastor and therapist in Waterloo, Cindy says she better understands the needs of the people of this community as a result. The platform of the NDP is very student friendly; by placing a cap on student loans, investing more in universities in order to lower tuition, and giving more to public research grants. Cindy claims that this is feasible, and many of the other promises that the NDP have, by disallowing the Big Oil companies the 52 Billion dollars in tax breaks that Harper's Conservatives have planned. Cindy was quick to jump on the Conservatives for the issues of lowering arts funding, cozying up to the United States' demands and the blunders in Afghanistan. Cindy follows Jack Layton's platform very closely, which emphasizes on building up the lower class by new government programs and more affordable housing in order to improve and stabilize the Canadian economy with a strong working base. Cindy says that the NDP will help out citizens of Canada by impeding Harper's plans of entertaining corporations at the expense of Canada's identity.

No matter who provides your ideal vision for Canada, get out to the stations and vote!

Cathy MacLellan and the entire Green Party have had an impressive run this election campaign. Allowing Green Party leader Elizabeth May to participate in the national debate for the first time proved the legitimacy of the Green Party on Canada's electoral stage. Cathy claims the Greens can help provide a better future for Canada with an Agenda appealing to youth voters: cutting student debts by 50% upon successful completion of a post-secondary degree, reducing tuition by revamping enrollment practices and building a strong economy by shifting a large part of the economy to development of sustainable technology through grants. MacLellan was quick to attack both Telegdi and Braid. She slammed the Conservatives for offsetting the problems of today's economy onto the people of tomorrow, saying that getting cozy with oil companies and US influence will quickly lead Canada to the current crisis that America is facing today. She also blasted the Liberals and Conservatives for their inability to follow up on acting on the Kyoto accord after agreeing to it. Cathy was able to show that the Green Party was not just trees and flowers, but bases their platform on a strong economy based on sustainable technology and a future-centric mindset.

Kyle Huntingdon is a young, University of Laurier student who decided to take politics in his own hands and run for the Canadian Action Party. The Canadian Action Party has two main tenets: to prevent the loss of sovereignty and identity to the US influence, and using the monetary system effectively by removing the debt incurred by the Bank of Canada. Kyle claims that effective use of the Bank of Canada can free up around 40 billion dollars, which can be used to help alleviate student debts, improve research funding, and be pumped into government programs for lower income families. Often noted for being nervous at previous debates, Kyle remained calm and composed for the entire debate. This shows that this young politician has a good future in this small party or something greater.

Each candidate showed their own strengths at the debate; Telegdi with the organization that comes with being a member of parliament for such a long time, Braid with his cool and collected presentation of delivered and deliverable goals, Jacobson provided a platform that was very sympathetic to the needs of struggling people in Canada, MacLellan with exuding charisma and the fearlessness to question the big dogs and Huntingdon offered the voice of someone who experiences the same difficulties with the government that we feel now. No matter who sounds appealing and who provides your ideal vision for Canada, on October 14th, get out to the stations and vote for who you believe in!

How We Nearly Became Felons

SKANDA SHRIDHAR
2A ELECTRICAL

"You could be pushed off an 80 story building and for 79 stories think you're flying."

Those were the words of a CNN talking head I stumbled upon while channel surfing one evening. He was waxing about the raging mayhem on Wall Street. Being a safe distance from bleeding American investment banks, I couldn't bring myself to muster much concern. But the words remained with me. And the Bill C-61 story later made me realize that it wasn't just the unfortunate patrons of Wall Street who'd been labouring under delusions of flight.

We've all shuffled musical tracks between our iPods and computers. Some of us might have downloaded the occasional free MP3. Others might belong to the coveted clique of techies known to lesser beings as hackers. All of us blissfully believed that we were flying. And Bill C-61 was the cold, hard earth, rising to meet us.

Don't let the flashy metaphors turn you off. They're an attempt to enliven the discussion of a dead, not to mention hideously dull piece of legislation. I'll confess: when the hue and cry began, I tried reading Bill C-61. Two minutes and I'd sacrificed it for online poker. I sought to blame my failure on my natural disposition: I'm a student of engineering, not arcane copyright law. Fortunately for me, a law professor from the University of Ottawa had anticipated wayward cases like mine. Michael Geist's analysis (published on his blog) brought Bill C-61 to thousands of legally challenged lay persons.

Bill C-61 was an "Act to Amend the Copyright Act". Most people agree that copyright reform is something artists desperately need. Organized, large-scale piracy thrives in today's digital age, aided immensely by the internet. Bill C-61 was undoubtedly crafted as a move to aggressively tackle this issue on multiple fronts. But something went awry between conception and completion, because the final product resembled a double edged sword wielded by someone who was not sober.

To say we had a problem with the Bill would be an understatement. It levied hefty fines for offences that most people are guilty of (like transferring music from audio CDs to your iPod). It made token "exemptions". It then rendered these null and void. It proposed a "5 day access rule" for academic material that was widely hailed as being ludicrous beyond belief. It suggested that it was a good idea for teachers to destroy their materials at the end of a course and then remake them from scratch. Most agreed that this deplorable overestimation of idle hours in the academic community was inexcusable, among other things, and it led people to wonder: Are they for real?

The Bill also raised questions about its implementation, which protagonist Jim Prentice dismissed as being "up to the creators". One theory was that violations could be policed in the same way as with child pornography. One method of accomplishing the latter is by random checks on suspect people's computers. This obviously failed to realize that the target group now was not simply a demented demographic, but half the country. Some fantasized that the "creators" might just hire armies of scripting geniuses who would unleash web robots upon the internet to remotely inspect personal machines and perhaps even infiltrate iPods. Just as unappealing. A member of Geist's Facebook group voiced a common concern when she wrote "The criminals will find a way around this and we will be the ones who pay."

With C-61's ignominious death (the call for elections killed it) we may all breathe a temporary sigh of relief. To be fair it had its band of applauders, but most people were up in arms. Opposition leaders denounced it (predictably) as "a piece of half-baked legislation". But there can be no doubt that it had its share of positive impact. The massive response it galvanized was unprecedented. The affair also served to educate. It was an awakening for the many of us who've grown accustomed to the culture of unrestricted digital media access. They just had a rude awakening of a different sort on Wall Street. But they had to smash into the dirt to come to their senses. We haven't yet and don't have to. And the next time an amendment to the Copyright Act is proposed, we'll all be watching it, every step of the way.

The Great Canadian SCavenger hUNT

TREVOR JENKINS
2A MANAGEMENT

This term's SCavenger hUNT started off with a bang on September 26 at noon. This Scunt had a strong peak turnout of about ten teams but by the end of the night, only three remained standing. The Gods choose the ever appropriate theme of The Great Canadian Wilderness.

Some highlights of the night include Pudding Drop, Shoe-Toss, Jeff Lipnicky getting a megaphone taped to his head and hand and left on, large amounts of undercooked pancakes with missing ingredients being cooked and devoured, a controversial game of name-that-tune, dinosaur gummies being thrown from the POETS balcony, learning that red-rover was fun as a kid but dangerous with Edcom, finding out that self-inflicted bodily harm may be rewarded, and road/walking trips to Mount Forrest and Uptown.

Eight engineering teams showed up to compete for the crown including Civil 2012, ManEng '13, Team Edcom, Nano '13, and two teams from other faculties showed up (Physics and Math). Physics and Math both had powerful turnouts, only outnumbered by Edcom during the hunt. Only 6 teams began at the beginning, and all started off strong, and as more teams slowly showed up competition got fierce. Unfortunately, fatigue set in and only three teams made it to the end: Civil 2012, Nano '13 and Physics.

The three duked it out for Scunt supremacy. Civil 2012 will be remembered for its awesome A-Soc EngSoc rap, featuring some of the most talented gangsta white kids engineering has seen. Due to a dissection by Physics' on roadkill to obtain a heart, an illusive item on the acquisition list, Physics managed to win the title though, while Civil 2012 brought home second place. Congratulations to all teams and to the Gods for organizing an awesome event. Here's to hoping that the next Gods can pull off one that is just as good.

British Engineering Traditions

Customs From Across the Pond

TREVOR JENKINS
2A MANAGEMENT

We have all grown accustomed to hearing about the traditions and symbols of the other engineering schools across Canada. Whether it's licking the Guelph stick, the acceptance purpling Frosh at Queens, or our glorious mascot: The Tool, we've all heard the stories and misadventures these of these traditions and symbols.

But what happens beyond these? This will hopefully be the first in a series of articles examining engineer school traditions from across the globe. Up first, we will travel across the pond and explore the UK.

The biggest event of all though is the annual Frank Morton Games, one of the UK's largest interuniversity sporting events with over 1000 participants, representing the chemical engineering societies across the nation. Beyond the two required engineering events of "excessive drinking and drinking excessively", the event is a daylong competition to decide who the top dog is. Sixteen different sporting events are competed, ranging from swimming, tug-of-war, and soccer to the slightly unconventional Welly Wanging, an event where competitors see who can kick off a Wellington Boot the furthest. The night culminates with the competitions in dart, pool and the ultimate pub quiz but since everyone is "tanked up on 'hoppy' juice", those results rarely get recorded.

The next tradition is from the University of Oxford's engineering pub crawls. While pub crawls are not anything new at any engineering school, Oxford engineers take it one step further and have "three-legged" pub crawls; bringing new meaning to the phrase "never drink alone". Mini events are held throughout the night to encourage "team bonding" that include boat races, the "rope down the trouser game" (with no further description to explain it), and the "orange under the chin game".

The most intriguing of all though, is the tradition of a large number of engineering societies hosting "Fresher Balls" for new incoming students. The lavish parties are like "welcoming proms" that are held within the first week of classes held specifically for the freshers. High class food, a ritzy venue and over the top decorations seem to be the foundation of these events. Since the freshers don't buy tickets for these events, it remains unclear how they actually get financed.

Overall, engineering traditions in the UK seem to be fairly tame. Whether it's due to the smaller size of the faculties, or whether it's because they really don't want the good stuff easily accessible on the internet, they could use some spicing up. But one reassuring thing comes from the countless pub crawl, pub golf, "random drink nights" and similar events: they know how to drink like engineers.

Short End of the Stick

The Tragic Life of Oliver Heaviside

THE IRON WARRIOR
NEWS BUREAU

Oliver Heaviside was a well known electrical engineer, mathematician and physicist whose life was filled with tragedy.

Heaviside was born in England in 1850. As a child, he became ill with scarlet fever; as a result he was left partially deaf, and would become increasingly deaf as the years went on. Being deaf separated him from other children and is suspected to be one of the reasons he left school at just 16.

Heaviside was self-taught. He learned two languages and Morse code to become a telegraph operator. In his early 20s, Heaviside was first published for his research in the area of electric circuits and telegraphy. In 1874, Heaviside quit his first and only regular job to further his studies after reading "Treatise on Electricity and Magnetism" by James Maxwell.

Heaviside devoted his whole life to research. He assisted in the development of the transmission line theory, conducted successful research in regards to electromagnetism and researched the skin effects in telegraph transmission rides. In 1884, Heaviside revamped Maxwell's 20 equations with 20 unknowns to 4 partially differentiated equations; he achieved this using operational calculus, which he first began to develop in 1890 and continued to develop until 1897. The 4 equations, however, are what we know as Maxwell's equations, despite the fact that Heaviside did a significant amount of work in regards to them.

Heaviside was also left unrecognized for his involvement in the development of Hertz's equations, given that Hertz admitted to using Heaviside's ideas to create them.

The operational calculus he developed from 1880 to 1887 was greeted with much controversy because of a lack of proof. Heaviside fought for his theories in one of his famous sayings "Why should I refuse a good dinner simply because I don't understand the digestive processes involved?"

Heaviside continued to make progress with his research. In the late 1880s and early 1890s, Heaviside studied fields surrounding moving charges and the concept of electromagnetic mass. In 1902, he proposed a theory regarding the existence of the ionosphere. His theory was proved in 1923, and the layer was named after him and another scientist, who had come up with the same theory around the same time, called the Kennelly-Heaviside Layer.

Heaviside did receive additional acknowledgment for his research. He was named a Fellow of the Royal Society by the British Royal Society for his mathematical description of electromagnetic phenomena. He was also given an honorary doctorate by the University of Gottingen.

Heaviside only ever had one regular job, was well known for his constant lack of money and remained single his whole life. Heaviside passed away in 1925, with most of his recognition being gained after his death.

How is a Musician Like an Engineer?

SHELDON FERNANDES
1A SYSTEMS

I'm a musician (*www.myspace.com/shieldnoshield*). I'm an engineering student (that's why you're reading this). Can the two be related? Engineers design products, right? Musicians create music right? In most cases, the development process takes a long time, right? For a product lasting as long as 15 years or even more, like a car, an 8 year development cycle is standard procedure. For an album, 6 months is generally what it takes, and the album is generally popular for about a week to a month. Accounting for touring, the album's cycle would last a year or so. Engineers use a technical skills to "improve the life of the general public", right? Don't musicians do the same, technically? If you're in doubt, imagine walking from here to Toronto instead of driving. Remember that time no one was there for you, and you just listened to music, didn't you feel better? In order to design a building, many theoretical and practical facts are required knowledge. In order to play an instrument or even to sing, the method of how-to is incredibly important: rhythm and melody can essentially be considered requirements for musicians.

The most important criterion in engineering is safety. Stringent safety requirements have to be met before the product designed could reach mass production and become profitable. Speaking metaphorically, let's say "safety" for a musician is not losing fans or support or money, in general, but still being "at the top of the charts". Let's look at two recent examples:

According to fans and critics alike, Metallica, on their latest album "Death Magnetic", have changed their sound from their last album, "St. Anger". So, they risked losing fans and support in order to maintain musical integrity and try something new, similar to how some engineers create new products, and if they pass the design phase, put them into production and gauge public reaction. It must be noted that many of these original engineering designs never make it into production and thus very few people k now they even existed.

Have you heard AC/DC's new single, "Rock 'n' Roll Train"? To me, it sounds just like their older songs (then again, I'm not really a fan). So AC/DC wanted to stay in the safe area, keep all their fans, and much like some engineers, design updated, not original products to ensure that a profit is made.

Some musicians create music for the masses, often gaining the label "sell-out". However, if musician = engineer, a "sell-out" would be the one who designs a product that meets the most user requirements, and thus has the most satisfied end-user. Then again, some engineers might find the user requirements that the most people want simply so that the product would become publicly available and would turn in a hefty profit.

Producers are musicians as well – the word remix comes to mind. Producers would be the type of engineer who works as an inspector – they check to make sure that the album is safe, but more than once, they're way off, so some albums are failures while some are successes. For engineering safety advisors, the regulations are much stricter... it really does matter if the design of your building is not a success when it falls down.

In the end, it doesn't even matter. I had to fall to lose it all...just kidding. I think musicians are similar to engineers, but they're perceived to have taken many more risks simply because music is the longest and largest ongoing worldwide phenomenon that is constantly in the public eye. Next time you see an engineer (shouldn't be too long here), call them a musician, see how they respond. Or, find a musician, call them an engineer, see how they take it. Or, just pick up a guitar. You can play it.

Homecoming Fever Hits Waterloo

MICHAEL SELISKE
1T COMPUTER

One Saturday per year in the month of September, the University of Waterloo invites all alumni and students to special events held throughout campus. Engineering Alumni Affairs arranged an action-packed day of good people and good times for the classes of '63, '68, '73, '78, '83, '88, '93, '98, '03 and '07. The day kicked off with a "Get Reacquainted Lunch Buffet" and continued with a CPH open house. The lunch buffet included student run campus tours, which allowed the grads to see how much the campus has grown in such a short period of time, and provided time to get reacquainted with old friends.

The afternoon events took place in and around CPH foyer and provided alumni the opportunity to see The Tool, meet the current exec and talk to other notable alumni like Jim Pike, Tool founder and the man who created P**5.

Elsewhere on campus there was a lot going on as well. A beach volleyball tournament was held at Fed Hall followed by the football game against Laurier. The game was very exciting and well attended but Laurier ended up taking the lead in the 4th quarter to hand Waterloo their 4th loss (38-23) of the season.

Following the game was a great free concert showcasing the talents of the Canadian rock band, The Trews. The concert was full of energy and the drummer got into the spirit by putting on a Homecoming bandana. Whether attending the engineering events or the ones meant for the rest of campus, Homecoming 2008 provided a great opportunity to have fun, be merry and catch up.

Michael Seliske

POINT VS. COUNTERPOINT

Should Voting be Made Mandatory?

POINT

TREVOR JENKINS
2A MANAGEMENT

The right to vote has been something that people around the world and in history have strived to gain. However, in the 2006 federal election, less than 65% of eligible voters cast ballots, and only 1 in 4 young people under the age of 25 voted. These startling numbers only support the drive to make voting mandatory in all elections in Canada.

Canada has faced many challenges in its past in regards to voting. 1921 saw women gain the right to vote federally for the first time since Confederation, Aboriginals gained the same right in 1960 after restrictions were removed that required them to give up their registered status and the 1963 election was the first election in which racial and religious restrictions were lifted for a number of minorities groups, including peoples of East Indian, Chinese, Mennonite and even certain Catholic roots.

After years of battling for the right to vote, many Canadians have lost track of the duty involved. Voting is a duty to society, just like paying taxes, sitting on a jury, and following the laws set out for the betterment of society. A political scientist once said "A political system with the universal right to vote but with only a tiny fraction of citizens exercising this right should be regarded as a democracy in merely a...hollow sense of the term." Reasonable limits on rights are a necessity to maintain a progressive state such as Hate Speech limits which help sustain a tolerant society. Similar limits on voting are required in order to guarantee that our government actually reflect the desires of the Canadian public.

Many opponents would argue that not voting is a form of protest against what people see as "the same old" while others say it's like just voting for the "status quo". The aim of a protest is to make your opinion clear to decision makers, yet not voting fails to accomplish this. Choosing to leave a ballot blank is a far more effective way of sending your message or better yet REFUSE your ballot. Register like normal, but when they hand you your ballot, refuse to accept it and, if desired, make a grand speech about why you're not voting. This is a completely legal act; however Elections Canada never has really informed voters about THAT choice. One interesting fact: spoiling a ballot (ie. Selecting multiple candidates, drawing a picture, etc.) is a federal crime under section 167(2)(a) of the Canada Elections Act, "no person shall willfully alter, deface or destroy a ballot," and can result in fines up to $500 or 3 months in jail. However, the chance of being caught are nil and anyone accusing you of doing so is likely going to face a much harsher punishment for looking at your vote.

Mandatory voting isn't a new concept. Thirty-three nations around the world already require it, with sixteen having a similar democratic system as the one commonly proposed in Canada. Australia started it over 80 years ago in response to the 1922 election having a turn out of less than 58%. Since then, election turn outs have consistently been 90%+. The remaining 10% of voters face fines of $20AUS for failing to vote, the average cost of running the election per person. However, 95% of no-show voters on average are given exemptions if they can prove they were travelling, ill or cannot vote due to religious beliefs. This means those less than 1% of voters pay the fine and consciously choose not to vote. 77% of voters supported this system without hesitation. The economic, social and historical similarities between Canada and Australia are striking and based on this resemblance, one would expect a similar trend to emerge in Canada.

A short-sighted argument against mandatory voting is the fact uninformed voters will be forced to participate in something they know nothing about, giving them the potential to skew results based on their own stupidity. However, our history of "behaviour-modifying" legislation would show that people will change their opinion if they realize the importance of the change. Less than 50% of drivers and passengers wore seatbelts during the 1970s, but with amendments to provincial Highway Traffic Acts, that number has now skyrocketed to 93%. Of those 93%, it's likely the majority of them would never consider NOT wearing a seatbelt. Behaviour-altering legislation clearly has an impact on the way people act once they realize the importance of the laws presented to them.

Overall, it is in the betterment of Canadian society to make voting a mandatory requirement for all eligible citizens. Doing so will result in a more democratic process, and make sure that all interests are represented but still allow citizens the right to protest through blank ballots.

COUNTERPOINT

ADRIANA CAMERON
2A CIVIL

In Canada, voter turnout has decreased over the last 30 years. Typically only about 65% of eligible voters actually vote. Countries such as Australia, Belgium and Cuba, see a greater voter turnout as voting is compulsory in these countries. Since Confederation, only two bills were debated in House of Commons calling for mandatory voting in Canada. However, neither of these bills ever made it beyond the second reading.

The first of these bills was by Guillame Amyot of the Nationalist-Conservative Party in the 1890s. Amyot proposed a bill entitled "An Act to Make Voting Compulsory", in order to combat electoral corruption. At the time in which the bill was introduced, it was not uncommon for candidates to essentially use bribery in order to ensure that voters would come to the polls and vote for them. In addition to offering transportation to the polls for their supporters, many candidates added a financial incentive as well. Amyot believed that the bill would help maintain purity in politics, as candidates would not have to bribe voters to ensure that they show up on Election Day. Furthermore, if the candidates did try to woo voters with financial bonuses, these bonuses would have to be less due to the larger voter turnout. Under this bill, voters would be allowed to opt out at least 30 days prior to the election without penalty. Otherwise, if they did not show up on Election Day, they would have to deal with a $50 fine (equivalent to over $1000 now) or a jail sentence.

A second bill, called "An Act to Make Voting Mandatory" was introduced 115 years later, and was aimed to increase political engagement rather than to end electoral corruption. The bill introduced by Liberal Senator Mac Harb in 2005, following a record low voter turnout in the 2004 federal election, in which only 60.9 % of electors voted. Harb's bill would amend the Canada Elections Act by making it compulsory to vote, make it a punishable offence to not vote, adding a "none of the candidates" option to the ballot, and allow electors to vote for someone whose name does not appear on the regular ballot. If an elector did not turnout on Election Day, and did not have a valid excuse, a $50 fine would be issued.

In both cases, the bills failed to make it beyond the second reading. A major reason for this is because mandatory voting infringes on the right of choice of the elector. Much like how voters are allowed to choose a candidate to vote for, they should also be allowed to choose whether they wish to vote. The Canadian Charter of Rights and Freedoms, states that the right to vote "is inclusive of the right not to vote".

The idea of introducing mandatory voting in order to ensure that the vote more accurately reflects the beliefs' of Canadians is counterproductive. Forcing people who possess an apathetic attitude towards politics to vote would result in an increase in the number of careless and uninformed votes being cast. These careless votes would overshadow the votes of more informed voters, who actually care about who will lead the country. This increase in the number of careless electors, would allow political parties to target these groups in order to easily obtain votes. Voting irresponsibly is even worse than not voting at all.

Electors should not be forced to go to the polls if they feel that their vote is meaningless, or if they feel that none of the candidates are worth voting for. Many people feel that the government has lost the ability to respond to their needs, and as a result, do not feel the need to vote.

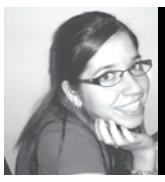
Likewise, many people feel voting is pointless because it is highly unlikely that election promises will actually be met. Some people view voting as pointless, because the media often times predicts the winner of the election weeks before it occurs. Similarly, some may choose not to vote because the party that they would like to win (Libertarian Party of Canada, Canadian Action Party, Communist Party of Canada, etc) has no chance of winning.

Mandatory voting would require much effort to enforce. A lot of resources, which could be better used elsewhere, would have to be allocated to determine who has not voted, and if their reason for not voting was valid.

Making voting compulsorily is a poor way to combat declining voter turnout. Sure, mandatory voting would increase the number of votes, but it would also increase the amount of careless votes. In order to increase voter turnout it would be necessary deal with voter apathy and voter cynicism. Rather than forcing people to vote, politicians should work on making people want to vote.

Basic Fix-Its

Basic Plumbing for Plummers



MICHELLE CROAL
2B CHEMICAL

I received a fair amount of enthusiastic feedback from last issue's article on how to fix a bicycle tire, which was pretty exciting. I also actually managed to successfully fix my own tire and keep it fixed since then, which is pretty exciting in itself…

So anyway, this week let's talk about fluid flow through pipes, and what to do when it flows either too much or not enough! Again with my obligatory don't-blame-me clause: serious plumbing is a full time career that people get paid for, and often charge significantly extra for "fixing the problem you tried to fix yourself". That said, basic plumbing skills can save you (or your landlord) a lot of money if you do it right.

Before anything major, turn off the main water supply to the building. Ignoring that sentence will make your life that much more hilarious (and probably ruin all your stuff). It can be found under the kitchen sink, near the water heater, or in the basement and should be accompanied by a meter similar to that for your electricity use. The main valve can be manual or may require a wrench so it's a good idea to check it out before anything floods.

Toilets

Running:

A running toilet could be caused by a few different things that are easily fixed. If jiggling the flush lever stops it, the handle could be too loose. Simply tightening the nut on the inside should help. Adjusting the slack on the lift chain can also work; you should have about half an inch and this can be adjusted by moving it along the bar where it's attached. Finally, the last cause could be a problem with the flapper or flush ball. This rubber piece falls into the tank drain and allows the tank to fill up properly. Turn off the water supply behind the toilet and let the tank drain. You can replace the flush ball, but a cheaper temporary solution is to dry, then lube up the ball and the rim of the drain with petroleum jelly to renew the seal.

Clogged:

This section is not for the faint of heart! It happens to the best of us; deny it though you may… Face it, you're on work term in the middle of nowhere, it's 30c/min long distance to call your mom or dad who you're not calling anyway because of the shame of it. All that's left is you and the plunger.

1. Bail out standing water into another bucket. If you can't handle this, and there isn't that much in the toilet, leave it…

2. Refill with enough clean water to cover the suction cup. Ideally, you have a "bulb-type" plunger handy, with a lip specially designed for toilets; otherwise a regular "bowl-type" should be fine.

3. Check out the direction of the "exit hole", which is 99% of the time at the back bottom of the toilet bowl. Plunging in the wrong direction will cause more harm than good, mostly of the flooding type...

4. Create a good seal by sticking the plunger in with the lip around the hole. Petroleum jelly can help again with this. Pull and push the stick of the plunger without breaking the seal to loosen the clog. Don't flush again until a satisfying squelch tells you that things are clear.

5. Lysol. Lysol is your friend, use it well.

Taps

The most common problem you'll encounter with a tap or faucet is that it leaks. If you study in the kitchen and are annoyed by the constant drip drip drip, then this is a problem that's easily solved:

1. Turn of the water main, and open the taps to drain any extra water. Plug the sink so you don't lose any parts that might drop in.

2. Use a small screwdriver to remove the "hot/cold" label and expose a screw holding the knob underneath. Unscrew this, and lift off the knob cover.

3. Use a correctly sized wrench (woot for adjustable!) to release the "tap valve". Hold the faucet itself tightly, and move only the valve (moving the tap itself may cause additional leaks under the basin). The valve should detach, but not all valves do.

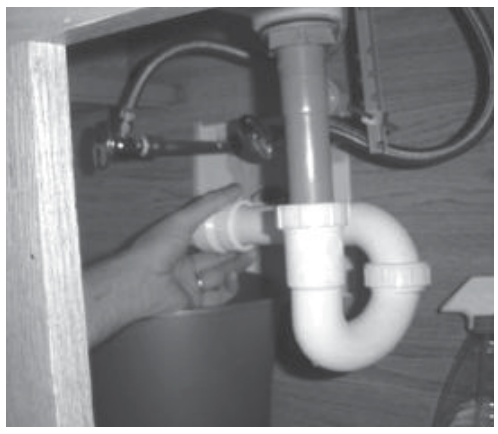
4. The most common problem is the washer. Look for a black rubber ring on the base of the valve. Take this off and replace it with a new one (which you conveniently remembered to purchase prior to taking your bathroom apart).

5. Replace the parts in the order you removed them. If the tap still leaks, the valve or "seat" itself may be damaged (corrosion, grinding) and need more advanced repair.

Drains

The most common drain problem is blockage, which, with the right tools is a messy, if not a difficult problem. There are many (expensive) manufactured chemicals available for clearing clogged or slow drains; however a student-budget eco-friendly alternative is simply boiling water. Preceding this with a cup of baking soda and then a cup of vinegar is also a highly effective way of clearing out minor plugs and clogs. For a persistent clogged drain, it may be worth your time to actually take the drain apart and clean out the pipes.

1. Under the sink your should find a "J-bend" or "U-joint", essentially a 180º turn in a piece of piping that serves as a seal between the drain and the rest of the water system. Get a bucket and possibly some old towels to catch the muck that will come out as you work.



Mark J. Donovan

2. Some J-bends have a removable trap on the base. You can then access the piping, and use a wire coat hanger or screwdriver (and gloves! Gloves are good!) to loosen and remove debris inside, usually hair, scum and other generally gross sludge.

3. Without a clean-out plug, most modern J-bends have couplings which you can loosen by hand or with pliers. Then remove the J-bend and follow the same steps as above.

4. Clean everything out really well, and reassemble. Feel free to sell the diamond ring you found on Ebay and pay for next term's textbooks (or rather, next term's pubcrawls. All term.)

Living For Less

TIM BANDURA
2A MECHANICAL

Engineering is expensive. There's no doubt about it. Tuition, food, entertainment, pubcrawls, and housing all take money. Lots of it. Even with co-op every four months, it sometimes isn't enough. Most of these are common sense, but here are a few tips for saving money. They also can improve your health at the same time.

Learn to cook: This one is fairly obvious. Cooking is not particularly hard to learn, and making your own meals is rewarding, healthier and cheaper for you than buying freeze dried. If you don't know how, find someone who does, and learn from them. In addition, the ability to cook can make for a special night out with someone not only cheaper, but better. I recommend searching www.kraftcanada.com. This is a great site that provides recipes that are easy and require very little time to prepare and cook. One really great feature I love about this site is right of the page, there's a little search engine where you type in ingredients you have lying around, and it spits out a list of possible recipes. I tried "chicken", "tomato", and "cheddar" and found a rice skillet that takes only 30 minutes to make and will feed me for a few days.

Buy in bulk: Buying certain products, such as flour, sugar, and other cooking necessities, at a bulk food store saves you money. Buying there allows you to get only the amounts you need. If your housemates are willing, put your money together for food and other household products. Also, buy foods on sale (if you need it!).

Avoid name brands: Buying name brands costs more. But you can figure that out by looking at price labels.

Use your U-Pass: Yes, I'm well aware that GRT has horrible service at times and that they are anything but convenient for certain areas (It takes me an hour each day to get here). But it is a non-refundable part of your student fee, and gas is expensive. Grabbing one of the Route 8 via Weber will take you past a Sobey's and Bulk Barn. 7C and iXpress take you out to Conestoga Mall.

Volunteer: There are many opportunities to volunteer on campus. A lot of the time, they require a small commitment and will either provide a snazzy shirt or food. In addition, you're helping out the community and doesn't that feel good?

Grab a part-time job on campus: Not really a money-saving technique, but it provides money for beverages and the like. Most campus jobs have flexible hours and we typically spend a lot of time on campus anyways. I'd personally recommend working as a referee for Campus Recreation. You pick the hours and most referee positions are open to people with little or no experience.

Iron Chef

Potluck Potatoes

SYLVIA WU
1T MECHATRONICS

Ingredients:
1/4 cup French or Catalina dressing
4-5 medium potatoes
1 cup chopped celery stalk
1/4 cup chopped onion
4 hard cooked eggs
1 teaspoon salt
2 teaspoon pickle juice
1/2 cup mayonnaise
1 teaspoon celery seed (optional)

Instructions:

1. Bring a pot of water to the boil. Put potatoes into the pot and cook in jackets, uncovered on medium-high heat. The length of cooking depends on the type of potatoes you purchase. Use white or Russet potatoes for a crunchier salad, while yellow potatoes will come out mushier. 30-40 minutes usually suffice. Check the potatoes from time to time and take them out when they are tender. Peel and cube.

2. Pour French/Catalina dressing over the potatoes while they are still warm. Mix gently. Chill for 2 hours.

3. Boil the eggs and slice. The instructions on how to boil a perfect egg are readily available on Google.

4. Add celery, onion, eggs to the potato and dressing mixture.

5. Mix salt, pickle juice, and mayonnaise well in a separate bowl, pour over existing salad.

6. Sprinkle celery seed on top.

7. Mix carefully and evenly distribute the dressing.

8. Chill 8 hours.

Serves 8.

The final potato salad will be orange or red in colour as opposed to your traditional... beige. Fall colours, get it?

New Chem Eng Building on East Campus

E6 ON THE HORIZON
from Page 1

DK: At the moment I'm not sure what the cost estimates are. The cost will be based on the design and the architect's bid for the building. This process has not been completed yet and so I don't think one exists.

IW: Assume that right now, there existed the ability to re-locate the entire Chem Eng. Dept. to another existing building on campus. Why build a new building in the proposed location rather than remodel/expand/demolish and rebuild DWE, as it has a far more central location?

DK: There are two answers to this question. First of all, it is a logistical problem. Because Waterloo runs classes throughout the year, there is no good time to do a thorough renovation of the building. People are always using DWE, which would severely limit the cost-effectiveness of renovating (having to ensure that it is safe for students at all times) and would increase the time needed to perform the renovation. Secondly, the Faculty is planning to expand as per the Vision 2010 plan and more space is necessary for that. So, the plan is actually to do both: build and renovate. The Chemical Dept. will be moved into E6, and then DWE will be renovated once it is unoccupied so that it can be re-occupied when needed.

IW: What benefits are there of the proposed building's location in parking lot B4 rather than in lot A (across University Avenue, as there is already the pedestrian overpass there).

DK: The same question was addressed when it came to E5. One of the big reasons is that people do not use the overpass. They simply jaywalk. There is less traffic across the railroad tracks, so this is less of an issue. As I understand it, it was recommended to the University (I'm not sure whether it was the city or the planners that UW hired) that they build on East Campus instead. Now that E5 will be there, it simply makes sense to keep expanding that location.

IW: An earlier idea for this building was to construct it as a "shell," leaving some of the floors unfinished, and then built later as funds become available. Is this still being considered, and if so, what are the basic principles behind the idea?

DK: As I understand it, this is still being considered. The main principle is future-proofing (if you will). The idea is that the university will almost certainly continue to grow, but the extra space is not needed now. It is much cheaper to build the exterior but not finish the interior than it is to build a building and then try to add on top (as was done with CPH in the past few years). This strategy will allow the university to expand within its existing space in the years to come.

IW: What is the role of the Building Users Committee in the design and planning of the new E6 building?

DK: This is the committee of administration, faculty and, now, students, that decides what the requirements will be for the buildings. These requirements include things like room layouts, outlet and network connection requirements, etc. The committee decides on these requirements and then the architects and building engineers use those to design the building.

IW: How much influence will it really have on the overall outcome of the final plan for E6? Will you be working directly with the faculty or architects, or are you simply creating proposals to be presented to them as considerations for the design?

DK: It will have a lot of influence on *what* goes in the building, but considerably less on *how* it goes in the building. The committee simply lays out what the building needs to provide its occupants.

IW: How can non-committee members (ie. other students) get involved in the process, or stay updated on the design process?

DK: I, along with whoever is selected to represent the current stream, will be updating EngSoc and ChemEngSoc on developments as they happen. I hope to get a page up on the EngSoc website to post updates as well, but this has yet to happen.

IW: Thank you for your time, David.

Since the building has not yet received full approval, no information can yet be completely confirmed. All responses are based facts available as the IW went to press.

Social Entrepreneurship

LAUREL CENTRE CONFERENCE
from Page 3

countries. Gala speakers will include Dr. Sue Horton and Dr. Frances Westley. The former is a visiting scientist at the Micronutrient Initiative, an organization working to eliminate vitamin and mineral deficiencies around the world, as well as an economics professor at WLU; her work was ranked highest in the Copenhagen Consensus, making it one of the best investments in global issues. Dr. Westley is the JW McConnell Chair of the Social Innovation Generation (SiG) group at UW, a cross-sectoral partnership to build capacity for social innovation in Canada; she is also author of *Getting to Maybe* and *Experiments in Consilience*. The conference will also incorporate a research component, where leaders can present their findings in the field, and 7 workshops: Securing Sponsorship, Revenue Generation, Business Planning, Entrepreneurship, Working with Media, and Negotiation.

The themes chosen for this year's conference are meant to address all aspects of social entrepreneurship. According to Suzanne Gardner, "Responding to feedback from last year's conference, we added health leadership as a central theme this year, recognizing the innovative and entrepreneurial measures that are being taken to improve health conditions and systems."

Approximately 100 students and 50 community members are expected to attend. Tickets purchased before October 17th cost $30 for students and $90 for community members, rising to $40 and $100, respectively, after October 17th. Those interested in attending the Kielburger address alone may do so at a cost of $6 per student or $15 for community delegates.

"The conference aims to inform, engage, and drive our participants forward towards changing the world," communicates Gardner. If you are interested in this new opportunity, don't miss your chance to attend and visit www.laurelcentre.ca for more details.

Thumbs Up/Thumbs Down

Thumbs down to the sandwiches at the new Juice Goose place in the plaza (more boring than empty fridge emergency sandwiches). Good smoothies though.

Thumbs up to Battlestar Galactica action figures. Apollo beats G.I. Joe any day hands down.

Thumbs down to people who ride their bikes on the sidewalk, especially when there's a bike lane on the road.

Send in your Thumbs Up/Thumbs Down to
iwarrior@engmail.uwaterloo.ca

IW RECOMMENDS

Website
StumbleUpon
www.stumbleupon.com

AMIR TALEGHANI
2A CIVIL

Hard to categorize. Is it a social networking site? Is it a search engine? Is it a button on your browser toolbar? Well it's kind of all of them at the same time. StumbleUpon is an online community where users find and rate websites. A user rates a website with a thumbs up or a thumbs down, and other users can find websites based on their friends' ratings. It's all basically done through a toolbar on your browser. It has lots of social networking opportunities through looking at what your friends like or dislike etc. but recommended for sure is the "search by subject" feature; this is an amazing waste of time online. Click the StumbleUpon button, choose a category and you get random websites on that subject; it's a more fun version of clicking "next blog" on blogger.

Better Know A Beer

The Brewing Process

RORY ARNOLD
4A MECHANICAL

I have accomplished many things in my life, but probably none greater than this. I finally brewed my first batch of beer. Due to the financial and moving requirements of Waterloo Engineering's co-op program, I had yet to buy a home brewing kit, but it was definitely on my list of things to get when I settle down. However, I came upon a place right here in Waterloo where they provide all the equipment you need, all you have to do is show up and add the ingredients. Although it differs from the process used by a regular brewery, the main steps are the same.

The process starts with turning the barley into malt. The barley is soaked and allowed to germinate, then dried. The product is the malt and the ingredient the brewers need to start their process.

Mashing is the first step that takes place at the brewery. The malt is heated slowly and periodically held at an elevated temperature for an extended amount of time in water to allow the enzymes in the grain to begin breaking down the natural starches into maltose. This results in a product called mash.

The spent grains then need to be filtered out in a process called lautering. The resulting liquid is referred to as wort. The spent grains are sent for cattle feed. Then the cattle get turned into steaks for you to enjoy while drinking your beer.

The wort is then boiled. This is done in the big copper (or stainless steel) kettles that breweries are often so proud of. The next step is to hop the beer. During the boil, hops are added and the amount of hops added with the amount of boiling time determines how bitter the beer will be. The hops and other solids that have formed are allowed to settle out as the liquid cools. This step usually lasts about an hour.

When the liquid has cooled and the solids are filtered out, the yeast is added. There are two main divisions of yeast, top fermenting yeast and bottom fermenting yeast. Top fermenting yeast will produce an ale and are typically fermented between 15-20°C. Bottom fermenting yeast will produce a lager and ferment at a lower temperature and require more time. These strains come from their medieval predecessors. For example, yeast in Germany had to withstand colder temperatures than yeast in Britain. This explains why the British more commonly produce ales and Germany is more known for its lagers.

Finally the beer is filtered and kegged or bottled. Sometimes a process called secondary fermentation occurs where yeast is re-added and allowed to ferment in the bottle. This means extra CO2 does not need to be added and provides a fresher taste. There will also be a small amount of yeast in the bottom of the bottle.

When brewing your own beer, this is probably the best part. You start by sampling your beer (of course). When you find out how good and fresh it is, you sample more. You then fill and cap a few cases worth of bottles. This will have made you thirsty and you take another sample. At this point, we had ran out of bottles and began filling some cans, which requires some cool equipment. They even give you a machine to put the plastic on to turn your cans into six packs.

This is the brewing process in its simplest terms and there are many ways to deviate. Craft brewers often try new and creative ways to change the process to achieve new and exciting beers. Common ways to change the recipe include adding spices or coffee, or using wheat or rye malt with the barley malt.

There is one last step however, before you get to drink your beer, and that is to name it. We brewed an Oktoberfest style lager and aptly named it Arrogant German. We hope to continue this naming scheme with our future beers, Angry Russian, Cheap Scot, Loud Dutchman and Pussy Frenchman etc.

Finally, the step that you have waited weeks for: you drink the beer. Don't drink from the bottle. You want to experience every flavour and aroma, as well as stare in awe at its rich colour. Drink it slowly, drink it with friends. It was cheaper than if you had of bought beer from the Beer Store, so don't be afraid to share it with friends.

www.scienceofdrink.com

Mixology 101

Highballs

AMANDA LEDUC
2A MANAGEMENT

Mixing a good drink isn't tough; mixing an awesome drink on the other hand requires an understanding of the finer points of cocktail mixing.

Cocktail bartenders are akin to chefs, but not the ones who follow recipes exactly. No, cocktail bartenders are more like sauciers; they have a basic recipe, but tinker with it to suit personal taste.

There is only one way to be able to effectively tinker with a recipe and produce something that actually tastes appealing: product knowledge. Product knowledge can be easily obtained by tasting and re-tasting cocktail ingredients over and over again until the flavour profile is forever burned into your taste memories.

Now for the most important part, the mechanics of mixing of the drink itself. This article will focus on the creation of the most common type of drink you'll likely mix: highballs! These tall drinks are easy to make and the possibility for creativity and drink inventing is endless.

To begin, fill a high ball glass 2/3 full of ice. This leaves 5-6 ounces of space for the liquids.

Next add the liquor of your choice. A single shot is 1.5 oz of liquor. If you don't happen to have a shot measuring glass or sure-shot on hand don't fret, there is a fairly easy way to determine this amount. If you're using a typical highball glass, wrap two fingers around the base of the glass. Pour alcohol until it reaches the top of your second finger and that should be roughly 1.5 oz. For doubles, triples and so on, place the bottom of your two fingers at the point the alcohol reaches and repeat.

After that, add a mixer that will nicely complement the alcohol you have chosen. If you choose a non-carbonated mixer such as juice, you really should mix it using a stir stick or straw, if available. If you choose a carbonated mixer, the bubbles will mix the drink for you and the drink is done. You can mix a carbonated drink but it will reduce the fizziness of the drink. You may also add a garnish such as a cherry if the drink is sweet or a lemon wedge if the drink has a citrus base.

Finally, test your drink! Place the glass to your mouth, tip it back and hope to God you didn't mix something revolting.

If per chance you've managed to mix something vile, try one of the tested and true recipes below to get an idea of what goes well together. I've kept the ingredient requirements for these recipes to a minimum so they should be pretty easy to mix.

Tip: When the mixer you have selected isn't carbonated, leave some space after adding the mixer and try adding a bit of Sprite/7Up to the top. I usually mix 3 parts mixer to 1 part Sprite. Aside from adding fizz, this will slightly sweeten your drink. If you want the fizz but not the sweetness, club soda has the same effect.

Interesting Fact: A standard drink is a base measurement of alcohol and is an easy way to keep track of how much alcohol you or a friend has consumed - 1.5 oz of 40% liquor = 12oz of 5% beer = 5oz of 12% wine.

Cheers and Happy Mixing!

Easy Drink Mixes

Screwdriver
1.5 oz vodka
5 oz orange juice
splash of sprite (optional)

Simplified Sex on the Beach
1.5 oz vodka
3 oz orange juice
3 oz cranberry juice
splash of sprite (optional)

Barney on Acid
1.5 oz Jagermeister
1.5 oz Blue Curacao
5 oz cranberry juice

Sky Highball
2 oz Scotch Whiskey
0.5 oz Blue Curacao

Oktoberfest Preview

SYLVIA WU
1T MECHATRONICS

Fall is upon us and so is Oktoberfest! What is Oktoberfest you ask? It is a jolly occasion to drink up, eat up, and polka. The festival originated in Munich, Bavaria, Germany as the 1810 wedding celebration of a Bavarian prince. The prince, who was later crowned King Ludwig I, invited all the people of Munich to a horse race, and probably offered copious amount of beer at the after-party. Since then, Oktoberfest was celebrated yearly in Munich, on the original wedding site Theresienwiese (named after Ludwig's bride Terese), except during the wars.

The Kitchener-Waterloo version of the festival was founded in 1969 as an opportunity to celebrate the local German Canadian heritage. The nine-day festival, starting on the Friday before Canadian Thanksgiving and running until the Saturday after, draws in 700,000 visitors annually, which makes it the second largest Oktoberfest celebration in the world after the one in Munich. It has developed its own traditions, including the only major Thanksgiving Day parade in Canada, televised on CTV across the nation.

Major events of the week:

Friday October 10: Opening ceremonies at Kitchener City Hall; 40th annual keg-tapping to start the festival.

Saturday Oct. 11: Free pancake breakfast for all visitors; keg-rolling race.

Both events take place in Uptown Waterloo.

Sunday Oct. 12: Rocktoberfest, a concert featuring rock as well as traditional music takes place in Queensmount Arena, Kitchener

Monday Oct 13.: Thanksgiving Day parade down King Street in both cities

Thursday Oct 16.: Universities Night at Bingeman's, tickets $10 at Feds office

Friday Oct. 17: UW Engineering exclusive section at Concordia Club, $17 per guest but... sold out already! Worry not, a Sigma Chi-sponsored student night taking place at Karlsberhaus Festhalle still has tickets available for $20. Ticket orders are available at http://www.uwfest.ca/tickets.htm and the host advises ordering more than a week in advance since this will likely be another sold-out event.

Saturday Oct. 18: Bavarian Strongman Challenge at Heidelberg Haus (Moses Springer Arena), Waterloo

Cultural events also take place all over KW during the festival, make sure to check out the website www.oktoberfest.ca for a more detailed listing of events.

The Adventures of Dangerman

Faire les Quatre Cents Coup[1] - A New Dangerman to be Selected?!?

DANGERMAN
4A CHEMICAL

Dearest Reader,

Whenever I have read articles by 4th years in the past (i.e. when I wasn't in 4th year), I always hated that none of them could stop carrying on and on, whining incessantly about how their pathetic coming-of-age tales were finally ending. Real jobs?! Real lives?! (Dangerman sarcastically makes excruciating baby-crying onomatopoeias and then vomits dramatically).

Seriously, 4th year Engineering students: more irritating and obnoxious than small children throwing tantrums in supermarkets. "Buy our 50/50 tickets! Buy our pizza!! Buy our eye-sore Soviet-McDonald's PubCrawl T-shirts!!! Gimme, gimme, gimme!"

Worst of all, now that I'm in 4th year I'm pretty much the epitome of what I've described above; probably the most irritating, mega-phoning, give-me-your-money bum out there. Therefore, since I've already sold myself down the river, I might as well completely jump the shark and write one of my own lame, "So I guess I'm graduating…" articles, chock full of lame literary quotes and tear-jerking "Remember when(s)…".

"So you're really going to miss us Dangerman?!"

No, I just don't have any integrity… Fine, I am going to miss you, I admit it. We've been through a whole heap together, and I know all these years I threatened to go find a younger more exciting readership to disappoint on a biweekly basis, but honestly I like disappointing you guys the most.

I'll further admit that the looming promise of graduation and an Iron Ring does fill me with a certain trepidation. Plus, with September ended, and October marching on it will probably be less than 170 days until IRS[2] by the time you read this.

"*Bright yellow, red and orange, the leaves come down in hosts, the trees are Indian princes, but soon they'll turn to ghosts. The scanty pears and apples hang russet on the bow, 'tis Autumn Autumn Autumn late, it will soon be Winter now.*"[3].

Oh reader… whatever will I do when no longer I can be the Dangerous Man, which actually brings up another important question that I receive often:

Am I going pass on my namesake to someone else when I'm gone, and bring about a second coming of Dangerman?

Some of you young kids won't remember, but a similar newspaper personality to my own called "LowRider" used to haunt the 3rd page of the IW, until a certain scoundrel of an EIC named Bahman banished him and I to the second last page (shakes a fist). LowRider was generally acknowledged to be a very funny writer, and quite awesome besides. More importantly, there were in fact four generations of LowRiders, stretching back almost 15 years…

Therefore, in the spirit of the fallen house of LowRider, I will open up competitions this term and next to choose my potential successor(s). Keep your eyes peeled, and both ears to the ground to find out more in the coming weeks.

Till next time,

Dangerman
Eric.dangerman@gmail.com

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1. To lead a wild and reckless life; literally, go sow your wild oats.
2. Iron Ring Stag
3. *Robin Redbreast*, by William Allingham.

Road Trip!

How to survive a road trip on your own

ALEX GIROUX
3B MECHANICAL

This summer, circumstance forced me to drive from Waterloo to Saskatoon, from Saskatoon to Wainwright, Alberta and back several times, and then back to Waterloo in time for classes. To put that into a little bit of perspective, from Waterloo to Saskatoon is about 32 hours of driving, and Saskatoon to Wainwright is between three and four hours. The scary thing is, I did it all on my own. That's right folks, I drove all those long kilometres without someone else in the car. I figured that I should share some of the wisdom I gained along the way with you, dear reader, so I have compiled a list of handy hints to help you get from Province A to Province B safely and with most of your sanity intact.

1. **Safety First!** It's not just Edcom's favourite thing to yell during Orientation, it's also a good rule to follow in general. Trust your instincts and don't do anything stupid. Spending an extra night in Thunder Bay because of inclement weather or making sure someone knows your route and a general idea of your travel plans may cost you money and take up your valuable time, but it really is better to be safe than sorry.

2. **Get Organized and Stay Organized!** If there's stuff you're going to need along the way, pack accordingly. That way, you won't be stopped in a parking lot unloading your car because something you need is underneath everything else. If nothing else, know where your maps are. And of course, never forget your towel.

3. **Know Where You're Going!** Maps are your friends, especially if you're not familiar with the route.

4. **Take a Break. Seriously.** Pull over, get out of the car, take a walk, read a book. See that tourist attraction you're always hearing about but never got the chance to see. More than anything, pulling off the road will give you a chance to stretch your legs, especially if you don't have someone else in the car to take over driving for a bit. If you have to, spend an extra night somewhere. Visit some relatives. Find a coffee shop that isn't a Tim Horton's.

5. **Know Your Vehicle and How to Fix It.** Let's face it, cars break down. Before you leave, check the fluid levels and put together some tools and supplies. It doesn't have to be fancy – I carry just basic fluids (oil being the biggest one), paper towels or rags and an oil funnel cut from a water bottle in addition to a few other tools I've collected over the years. Before you set off on a major road trip, you may also want to get a regular maintenance check done beforehand, just to make sure there's nothing that could surprise you when you're in the middle of nowhere. And in the end, if your car does break down, there's always CAA (if you have a membership). Because shit happens.

6. **Turn Up the Music.** There's no one else in the car. Put on whatever you want, but I've found that the faster, louder, and catchier the better. Sing along at the top of your lungs if you so desire. Play all the stuff you don't want anyone else to hear. You're headed somewhere and you need something to break up the boredom. This is how I know the words to so many Arrogant Worms songs. Hey, it works.

Finally, just relax a bit. Canada is a big country, but it's not scary. The biggest thing I've found is that people are always willing to talk to you and if you do get into trouble, don't be afraid to ask for help. Besides, I spent a hundred hours in a car alone this summer, and I'm still relatively sane… Right?

Iron Sudoku

MATTHEW CASSWELL
2A CIVIL

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

Caption Contest Results

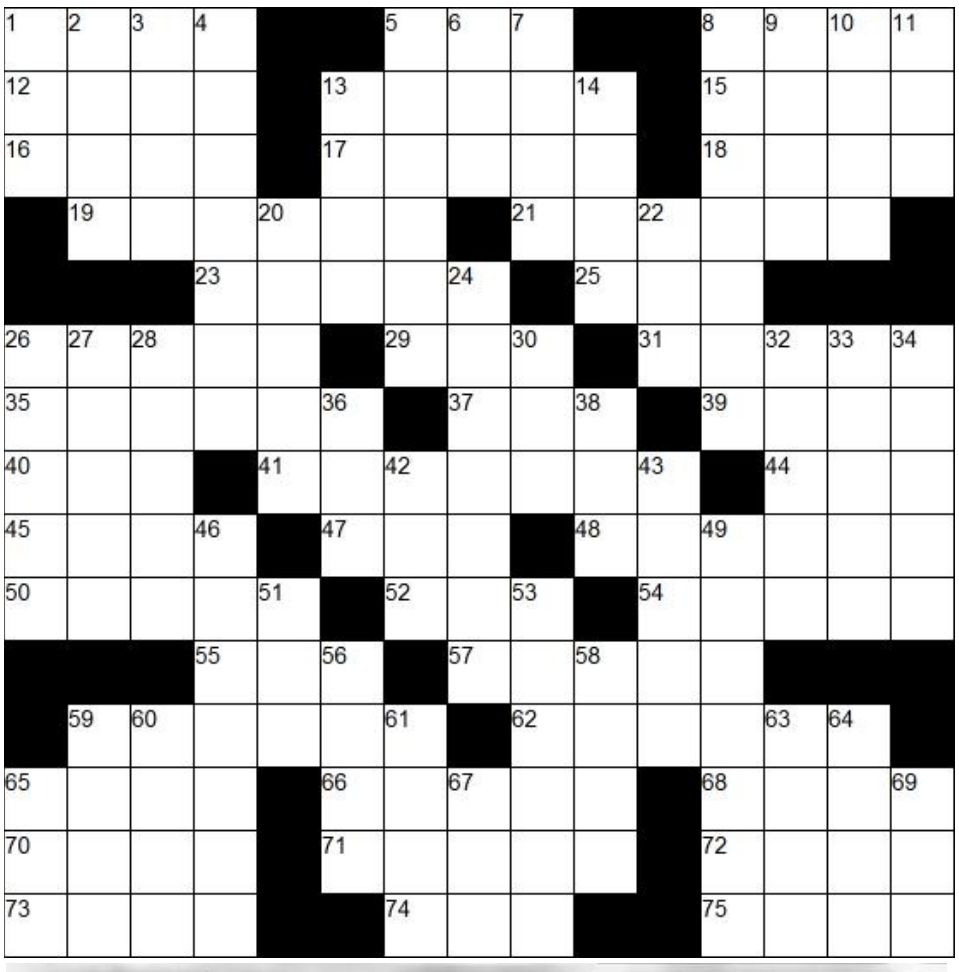
Last Week's Winning Entry

SYLVIA WU
1T TRON

"My anaconda don't want none
Unless you've got buns, hun!"
- Paul Fugere, Comp Eng, 2B

The Iron Crossword

MATTHEW CASSWELL
2A CIVIL



Crossword Clues

Across

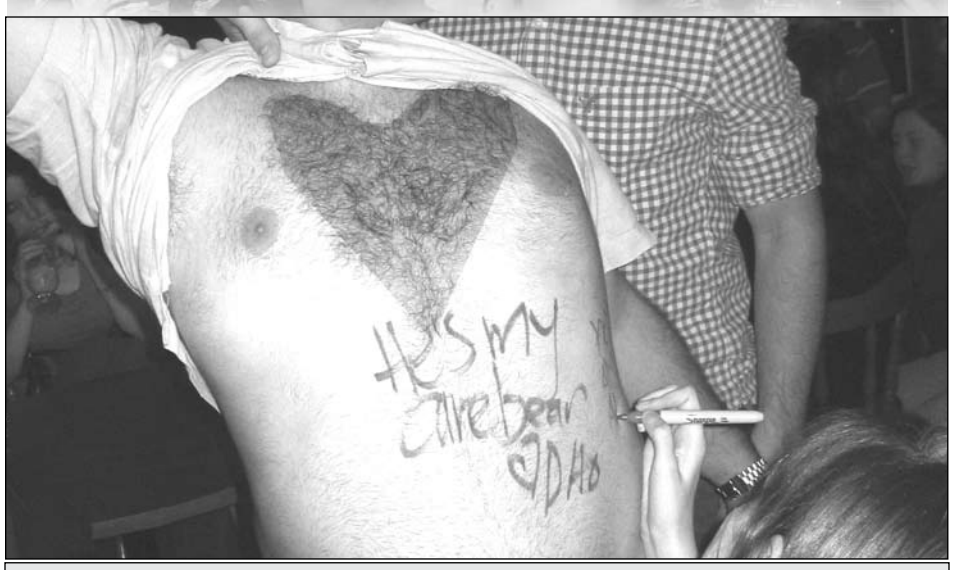
1. Novel by Jane Austen
5. The direction to CPH relative to The Grill
8. What every engineering student tries to do to their ChE 102 textbook, but rarely succeeds
12. The reason why your windshield is cracked after the storm last night
13. One of these is 1/24 purity by mass
15. Heed!
16. Solid
17. The Makers of Guinness
18. Single
19. Mute
21. (P/A, g, i, N)
23. How often you've actually been able to tolerate anyone from Queen's
25. Monster's ____
26. Corruptible
29. They live in Room 101 of your V1 residence
21. Floral leaf
35. Sounds like "in act"
27. ABBA song
39. English equivalent of a Feinkost
40. Scooby-do and the gang always ___s the villain
41. European country
44. Pork ones are good on the barbecue
45. Scholars from this university tend to frequent The Price Is Right
47. Where engineers go Friday nights
48. Delta's easterly neighbour
50. Deer
52. Puppies
54. Country containing the former Ashanti Empire
55. Stretch to make do
57. The first word of a song by Village People on their album "Just a Gigolo"
59. Asian capital city
62. Fumed (2 words)
65. Whey's partner
66. A ready-to-be-cooked fish
68. You calculate the moment at the end of these
70. The Far East
71. Cosmopolitan
72. Song by the Goo Goo Dolls
73. Cincinnati baseball team

Down

1. Frequencies between 30 to 300 GHz
2. Domestic help
3. Bog down
4. What the farmer's publish
5. What your mom said before you came home with your first hangover
6. ____ Lanka
7. Evil yellow-and-black creatures
8. Comforted
9. Describes black things
10. Part of a camera
11. Corrosive alkaline substance
13. City south of Chernobyl
14. Seafood curry is this kind of food
20. Word used in two other hints in this crossword
22. Gross National Product
24. Beaklike or snoutlike projection
26. Brand of razor
27. Playact
28. Delta's inverted cousin
30. Neither's partner
32. Latin word for Earth
33. They landed in Roswell, New Mexico
34. Rhymes with tibia
36. U-boat
38. If it's not a brother from another mother, it's a this from another mister
42. Comes out of a tree
43. Nothing
46. Something you always try to use, but never do
49. The highest development of longwire antennas is this kind of antenna
51. There's not enough of these types of hills in Ontario
53. Type of temple
56. Part of an "IF" statement in programming
48. Regulation
59. Ruminate
60. Desert conditions
61. There are 3 of these for Dr. Horrible
63. Visionary
64. Another word for a raised platform (ie. in a lecture hall)
65. Coupé
67. French for "Road"
69. Time zone UTC -7

74. Smaller than an ocean but larger than a lake
75. Saclike structures filled with fluid or diseased matter

Caption Photo of the Every-Other-Week Contest



You can win P**5 points by winning the caption contest!
Submit your caption to iwarrior@engmail.uwaterloo.ca
Be sure to put "Photo Caption Contest" as the subject,
and include your name, program and term.

THE IRON INQUISITION

"What is the worst lie you have ever told in an interview?"

Stuart Pearson, 2A Civil

Ari Taub
4N Mechanical
"I'm actually qualified for this job"

April Russell
4A Chemical
"I wouldn't mind going back to Fort Mac..."

Mike Raymer
2A Civil
"Your bridge inspired me to be an engineer."

Kevin Choboter
4N Computer
"I don't lie in interviews; I do the weird stuff."

James Des Cotes
4A Chemical
"I AM interested in nanotechnology."