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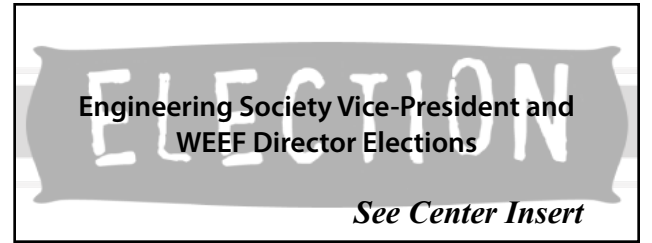
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## UWAFT Places Third in GM EcoCAR Challenge

**ERIC EVENCHICK &  
ANJALI GOPAL**  
2B ELECTRICAL &  
2B NANOTECHNOLOGY

On June 16<sup>th</sup>, the University of Waterloo Alternative Fuels Team (UWAFT) won third place at the EcoCAR Challenge's year three finals. The EcoCAR Challenge is a three-year Advanced Vehicle Technology Competition which challenges sixteen teams to reengineer a stock General Motors vehicle using an alternative power train.

The EcoCAR Challenge encourages teams to follow "a real-world approach, modeled after GM's global vehicle development process." Teams of students from 16 universities — 3 from Canada and 13 from the US — must develop a car that minimizes fuel consumption, greenhouse gas emissions, and petroleum energy use, while maintaining performance, safety, and consumer acceptability.

The University of Waterloo team had worked on the car since September 2008. In year

one of the competition, the team designed and modeled the car using math-based design tools. In year two, the team received the stock car from GM and worked on implementing the design for the following two years. Year three of the competition focused on the refinement of the vehicle and multiple outreach efforts.

For this competition, the team chose a fuel-cell hybrid electric vehicle design. The hydrogen fuel cell was donated by GM, which replaced the stock gas engine. Two electric motors were used to give the vehicle its 230 horsepower, four wheel drive capabilities. The team also used a battery pack, donated by A123 Systems, to allow

for hybrid operation. With this design, the team achieved a fuel economy of 3 L/100 km, which is an improvement on the stock economy of 12.5 L/100 km. The fuel cell car also had zero tail pipe emissions, with the exception of water.

The first half of the competition took place at General Motor's Proving Grounds in Milford, Michigan. In a tragic turn of events, the team arrived at competition with a vehicle that did not run. A few days before shipping, the front power electronics failed. This meant that the team had to replace these components before they could compete. After three days of work, the team passed safety inspection and was entered into the events. These events included 0-100 km/h acceleration and braking. The car also had to undergo a drive of 160 miles without fault to measure its efficiency. There was a towing event where the vehicle towed a trailer at 45 miles/h. Drive quality and consumer acceptability were also judged.



UWAFT team poses with their EcoCAR competition vehicle

US Department of Energy

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## Perimeter Institute Hosts the Equinox Energy Summit

**ALISON LEE**  
2B NANOTECHNOLOGY

From June 5<sup>th</sup>-9<sup>th</sup>, leading scientific, political, and business minds came together at the Perimeter Institute for the first-ever Equinox Summit: Energy 2030. The goal was to devise a blueprint for a low-carbon, electrified future that accounts for ever-expanding energy demands, security issues, and efficiency improvements within the next decade and a half. This summit is the brainchild of the Waterloo Global Science Initiative (WGSi), a non-profit partnership between the Perimeter Institute and the University of Waterloo. Formed in 2009, their overall mandate is to facilitate an international conference that catalyzes long-term scientific and technological solutions to global issues.

The Equinox Summit was the result of that effort and produced an Equinox Communique to summarize conference conclusions and outputs. The Summit was comprised of four parts. The first was a series of workshops and debates by a scientific quorum about key future energy technologies and systems. Some sessions were closed-door and some were open to the media. Among the panel of experts was Dr. Cathy Foley, president of the Federation of Australian Scientific and Technological Societies, Dr. Yacine Kadi, CERN project leader, and the University of Waterloo's very own Dr. Linda Nazar, ECE professor and member of the Waterloo Institute for Nanotechnology.

The second component, a social forum, gave feedback to the quorum on how their recommendations mesh with governments, industries, and civil society. The third component was an advisory panel that essentially mentored the forum. The advisors made sure the quorum and forum participants stayed relevant to current economic and political issues. They were typically from multidisciplinary backgrounds, such as Dr. Jason Blackstock of the Centre for International Governance Innovation in Waterloo, who works in energy and environmental policy but has a background in physics. The idea behind this advisory panel was to ensure realistic and implementable recommendations that work from both a political and technological standpoint. Members of the panels were certainly from around the world; experts came from institutes in China, the USA, Australia, the UK, Nigeria, Brazil, Denmark, India, Indonesia, and more.

The fourth component was about engaging the public. Public lectures were given daily by the summit's experts. Such keynote speakers included Dr. David Keith on global climate engineering and energy land footprints, and UW's own Thomas Homer-Dixon on Energy, Complexity, and Human Survival. TVO's current events talk show *The Agenda* with Steve Paiken aired live from the Summit every night, which was a great chance to experience a live television show if you were lucky enough to get tickets or sneak in the day-of. The show typically involves the host (who also moderated the

past federal election English debate) posing questions to a multi-perspective panel while audience members are occasionally polled and an online feed gets input from viewers across the country.

The taping I attended was about energy efficiency in urban buildings. The five panelists, two from Waterloo, one from Calgary, and two from Australia, covered the basic facts about what makes or breaks a building's energy efficiency. One third of Canada's energy consumption is residential, but most homes with advanced energy efficiency design are highly expensive - catering to the "boutique home buyer." Dr. David Keith emphasized the need for more affordable energy-saving measures in large, shared buildings, and to keep in mind that, although our buildings are becoming better insulated and have less resource-intensive components, we are also building for more area per person in most modern buildings, effectively cancelling out the energy savings. This is an example of the Jevons paradox, where increased efficiency can actually help contribute to greater consumption.

The panels took examples from foreign countries like Denmark, Japan and the USA, where natural variations in sunlight, temperature, and precipitation are considered to minimize the amount of energy spent to control the building's internal climate. A key problem addressed to engineers was the lack of "reporting back" about the effects of so-called energy-saving legislation. An example of this was the reported energy savings from a subsidized

CFL light bulb program in Quebec, which were somewhat false because they forgot to account for the fact that the heat previously generated from incandescent bulbs reduced the energy required to heat homes in the winter. This is a simple example of how complexly interconnected human patterns of energy consumption are.

The Equinox Summit wrapped up without a hitch, and they swiftly released the Equinox Communique (available online at [wgsi.org](http://wgsi.org)). Though concise, it is certainly more than a fluffy conference report. It goes into brief technical analysis of options to replace coal as an energy baseload. The options explored are geothermal power, improved renewable energy storage, and nuclear power. In the context of urban centres, it touches on energy mobility and efficient infrastructure. It also addresses rural electrification strategies. In the coming months, a detailed Equinox Blueprint will be published to inform policy makers, industry leaders, and technology influencers of the Equinox quorum's collective thoughts.

With organizations like WGSi forging partnerships between the University of Waterloo and a wide range of local and international experts, it is not difficult to involve yourself in intellectual and multidisciplinary community events such as the Equinox Summit. Events like this often give our roles as engineers in society some perspective. Especially regarding global energy problems, well-rounded practical insight from engineers who also understand policy will be in high demand in years to come.

# Letter from the Editor

## Undergraduate Education



**MIKAYLA  
MICOMONACO**  
EDITOR-IN-CHIEF

Universities fulfill many roles in today's society. Not only do they educate us, but they also provide opportunities for innovation and research. Waterloo's website proudly proclaiming "Everything you discover at Waterloo belongs to you," just underlines how much more happens at a university than students sitting in classrooms.

The University of Waterloo puts a lot of resources and energy into research and innovation. Initiatives such as VeloCity and the David Johnston Research and Technology Park give new companies and ideas the chance to get off the ground. A glance through the Waterloo Engineering 2010 Annual Report highlights some of the research going on in the various departments. Entrepreneurship and research are important – even vital – parts of a university. It is also important to remember the other reason that universities exist.

Universities educate us. They are certainly not the only path out of high school, but they are a popular one. In my very biased opinion as an undergrad, I would be willing to say that teaching could be one of the most important functions that universities fulfill. They provide the world with the engineers, architects, doctors, etc. Only a fraction of these students will go into research. Far more will go into industry. Giving them the knowledge they need to succeed should be considered as important as funding research.

This leads to the question, where should the lines be drawn?

I'm sure most undergrad engineering students have had an amazing lecturer who does no research, or a professor who is a brilliant researcher but has no talent for teaching. It makes me wonder whether our current model is working. It seems, at least to me, that teaching is considered an add-on to research. Don't get me wrong, I've had some amazing profs, but I've also had ones that are clearly researchers first and teach as an afterthought.

I've heard that professors, at least in my department, are evaluated based on the three categories: research, teaching, and service. Sometimes I wonder if that's a good thing. Researchers teach, regardless of whether they have any passion or skill for teaching. Just because someone understands a topic does not necessarily mean that they can explain the topic to a classroom full of students. Is forcing them to teach doing anyone any favours? Neither the students nor the professor will benefit from such an experience.

In the June 1<sup>st</sup> issue of *The Iron Warrior*, the Point vs. Counterpoint section debated what universities should be teaching us. While the question of theory versus application is important, I would argue that how they teach us as important as what they teach us. A bad professor can destroy a perfectly good course; a good one can make a painful course into something much less onerous.

The problem does not solely reside with the administration and faculty, either. Course critiques are one of the few ways that students can get their opinions and suggestions heard. However, time after time, I hear classmates telling me that they aren't going to bother. Either that, or they give every prof they ever had a perfect score with no comments. They tell me they think that the course evaluations are useless, so there is no point in wasting their time on it, or they're convinced that the prof will take revenge on the class for a bad evaluation, even after I've assured them that the critiques won't be seen until after the final marks have been submitted. Can we, the student body, demand better teaching if we can't even take ten minutes out of our lives to tell the university where there is a problem?

I think a solution needs to be pursued with input from both sides of the situation. For example, to make course critiques more effective, students need to complete them intelligently. At the same time, if administration made the effect of the feedback more obvious, students would feel like they were worth their time. Anything that opens communication links between students and administration is a step in the right direction.

Sometimes a prof might just need some input to improve the class. Telling a prof that the class dislikes the PowerPoint slides and would prefer he use the blackboard, or that his handwriting is difficult to read might be something small that can dramatically change the quality of the class. These are small examples. The idea can hold for more complicated issues as well, they may just take more time or effort to fix and may need to involve more people.

Entrepreneurship, while also an important initiative, is something that only helps a small subset of the student population. While some students will start up their own business, and it's great that the resources are available to help them achieve this, the vast majority of students, at least in my experience, are not planning on starting their own businesses. Sometimes it feels like in the push for an "innovative, unconventional, collaborative, risk-taking, creative, courageous, connected, and critical thinking" university, the students are being left behind. All the things mentioned on the banners on University Ave. are wonderful, but they aren't necessarily why most students come.

Another assumption I've come across is

that we're learning all the right things on co-op. I've heard an excuse for not teaching us a particular skill is that we'll learn it while we're on co-op. I don't agree with this, as the quality and content of work terms vary widely. You're not going to learn much about circuits while doing software quality assurance. Co-op should complement our formal instruction, not replace it. It can be a great opportunity, and I'm very glad for its existence, but, particularly for early work terms, the quality of the job should not be taken for granted.

Assessment methods are another important part of education. Assignments and labs can be used to enhance students' understanding and assess their performance. They can also be busy work – assignments completed because they are required for marks without actually learning anything from completing them. When assignments are so frequent that learning is sacrificed for simply completing them, is that really education? It's one thing to keep students accountable for the material covered; it's another thing to keep them so busy that they can't actually spend the time required to learn the material. The same thing follows with labs. They are important learning tools, but if they are bogged down by make-work prelabs and lab reports, their usefulness gets lost in the sheer volume of work. I know that I'm guilty of doing minimum required for labs or assignments, because there are simply not enough hours in the day to give them the time and thought that they deserve. I feel like I'm wasting my time. I may be completing the work, but I'm not actually taking any value out of the exercise.

In conclusion, I feel like there are some issues with the way universities teach undergrads the skills that the majority of them will need when they enter the workplace. Professors who want to teach and possess the necessary skills, along with assignments and labs which are designed to enhance learning without drowning students in too much work, are important for students' education. Students also need to be active in the process to enhance learning, as there is no way for the university to correct problems if they don't know the problems exist. Constructive feedback can help improve problems; whining or saying nothing only ensures that problems will continue without attention. These problems are, to an extent, embedded in the model of a university, and will probably be difficult, if not impossible to correct. However, if these issues aren't raised, nothing will ever be done to correct them.

How do you feel about these issues? I'd love to hear your comments, about my editorial or anything else in this paper. Letters to the Editor can be submitted to [iwarrior@engmail.uwaterloo.ca](mailto:iwarrior@engmail.uwaterloo.ca)

THE IRON WARRIOR

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Send your submissions to [iwarrior@engmail.uwaterloo.ca](mailto:iwarrior@engmail.uwaterloo.ca)

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# Midnight Sun Showcases New Solar Race Car



**KRISHNA IYER**  
2B NANOTECHNOLOGY

On June 3<sup>rd</sup>, the Midnight Sun student team unveiled the brand new iteration of their award-winning solar powered race car, the Midnight Sun X. They celebrated the 23<sup>rd</sup> year of the Midnight Sun student team by unveiling their tenth edition of their race car. The day started off in the brand new Student Design Center at the University of Waterloo's newest building, Engineering 5, with a presentation by Daniel Matzeg, the Midnight Sun Project Manager who is in fourth year Mechanical Engineering. Exciting videos from the World Solar Challenge of 2009 with the Midnight Sun 9 crew racing across the Australian outback set the mood for the day ahead.

The Midnight Sun X started off in the winter of 2010 with a brand new design cycle. The Midnight Sun Team is completely run by students with the assistance of alumni previously involved in the project as well as professors. The car is built from scratch with almost all of it fabricated in-house at the Student Machine Shop located in the Student Design Center. The car comprises of two main parts, the aerobody shell made of Kevlar and Nomex which houses the solar cells; and the chassis which contains the aluminum frame, the driver's cockpit, the

batteries, wheels, etc. The aerobody was also painstakingly shaped by hand to smooth out irregularities which may affect the performance of the car.

The team, although presently short of funds, expects to compete in the World Solar Challenge this October. The team had earlier withdrawn from the American Solar Challenge this year because the car was not in racing shape due to dearth of funding. The World Solar Challenge is a 3,000 kilometre long race from Darwin at the northern end of the Australia to Adelaide in southern Australia. The team is allowed to take as many pit-stops to charge up their car as required. One of the most important aspects of racing, as one would know, is strategy. The Midnight Sun team has their own strategy team comprised of expert mathematicians that decide when and how the car stops to charge up, what speed it runs at and other aspects of com-



Angelo Alaimo

The Midnight Sun team unveiling the tenth edition of their solar race car

petition. This team is normally seen following the race car in a separate chase car during the race.

The launch was graced by the presence of the Dean of Engineering, Adiel Sedra, the Director of the Student Design Center, Dr. Peter Teerstra, as well as several sponsors and some alumni that had contributed extensively to the team's success in the past. One of them was Silvia Pascual, one of the drivers who drove the Midnight Sun 7 across the North American continent to make it the longest journey ever made by a solar powered vehicle. Greg Thompson, one of the engineers involved with the Midnight Sun 6, 7 and 8, followed and said that "it is nice to see the project continue. The new headquar-

ters looks awesome and I hope that they continue to leave a long lasting legacy." Dean Sedra too expressed his pride to be involved with such a project. He stressed the importance of learning teamwork through such student-run projects and commended the effort of the team members.

The car rested below a Canadian flag before it was officially unveiled. It was then taken for a drive around the campus. As it drove around Ring Road, people just stood and watched the majestic car as it passed by. The team demonstrated the importance of interdisciplinary engineering and design and in Dean Sedra's words "truly made Waterloo Engineering proud."

## Ask The Dean

**ADEL SEDRA**  
DEAN OF ENGINEERING

*Question: I have heard an eight-month co-op term is planned for all engineering programs. Is this change being made and, if it is, when will it be implemented?*

In response to a survey of co-op employers which indicated a strong interest in longer work terms, the associate deans and department chairs are currently considering changing the sequencing of academic and work terms so as to make one of the work terms eight months in duration. A longer work term would not only benefit employers, it would allow students to work on more substantial projects and help ensure that they have meaningful co-op experiences.

Over the next few months there will be on-going consultations about introducing an eight-month co-op term. Preliminary discussions have begun with Co-

operative Education and Career Services (CECS) to identify the challenges associated with extended work terms. There have been discussions with the departments to identify interest in an elective model or a fixed model. Representatives of the nanotechnology program which currently includes eight-month co-op terms have noted that the fixed model works well for their students. Wayne Parker, engineering's Associate Dean of Co-operative Education and Professional Affairs, will be working towards the development of a plan that addresses CECS and student issues.

The structure of our undergraduate programs is complex and major changes cannot be easily made, so any change to the length of a co-op term would take at least a year to plan and implement.

*Please submit questions for the Dean to Meg Bauman, Student Relations Officer at mebauman@uwaterloo.ca.*

## UWAFTEcoCAR

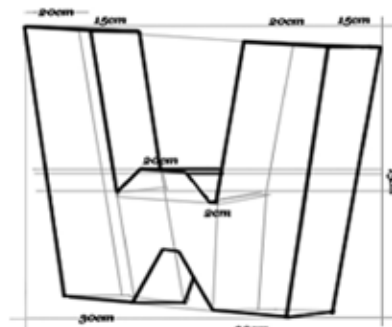
Continued from UWAFTEcoCAR on page 1

Finally, there was an autocross event where teams raced around a GM track. The team placed second by 0.023 seconds. It was a huge surprise because the team didn't expect to do well in the autocross event. They wanted to take it slow to ensure they could run through all the events. However, on the last lap, they told the GM driver to give it his all, and he showed that cars powered by fuel cells can run fast, too. The Waterloo team managed to finish all events without fault. Each event gave the team points towards their total score.

After a week at the GM proving grounds, the team headed to Washington, D.C. for the second part of the competition. The second part of the competition consisted of presentations that included both technical and outreach components. The outreach component included community events

with vehicle, educational events, and more. The team placed first in "Best Media Relations Campaign," "Best Sponsor Success Story," "Best Consumer Campaign," "Best Final Presentation," and, as a result, won first place for "Best Overall Outreach Program." The competition concluded with a ceremony at the Library of Congress in Washington, D.C. where the team received the award for third place overall.

The team has been accepted into EcoCAR 2, another 3 year competition. For EcoCAR 2, the team will be working on a 2013 Chevrolet Malibu. Although the competition officially starts in September, UWAFTEcoCAR team members are planning to work on it all summer. After a strong finish in the EcoCAR Challenge, the team hopes to be successful in the upcoming competition. For more information about the team, or to find out how to get involved, visit their website at [www.uwafteco.com](http://www.uwafteco.com).



## The Spring 2011

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# Waterloo Region Light Rail Transit Decision



**CHRIS LETNICK**  
3A COMPUTER

It's been almost a decade since the Region of Waterloo Council first started exploring the options for a rapid transit system. There have been committees, there have been meetings, there have been public inquiries, there have been reports, there has been politics, and there has been indecision. This has now changed. There was an article outlining the history of this decision published in the June 1<sup>st</sup>, 2011 issue of The Iron Warrior. This article will focus on what has happened since June 1<sup>st</sup>, 2011 and the details of the plan moving forward.

On May 31<sup>st</sup> and June 1<sup>st</sup> of 2011, regional council held two public input sessions. These input sessions ran for a total of over 12 hours with delegations for and against light rail. Delegations consisted of people from many demographics and with many points of view on the issue. A highlight near the end of the second night included a man who had built a model of a downtown street with sponges and glue sticks. He voiced a concern that models would help the public understand the changes to the street-scape.

At Speaker's Corner in Kitchener on the 11<sup>th</sup> of June, there were two rallies. One rally was in support of light rail, and one rally was opposed to light rail. The rally in favour of light rail started at 12 pm and ran for one hour. With many speakers and a crowd of between 200 and 250, the rally in support of light rail demonstrated strong support of light rail. However, the counter-rally was not as successful. With a few speakers and a crowd of no more than 20, the counter-rally was unsuccessful at showing a strong opposition to light rail. It can be noted that the man mentioned

previously with the sponge model was an organizer for the counter light rail rally.

The council chambers had little standing room remaining due to the sizable crowd that waited patiently for the deciding vote. The meeting started with topics that were unrelated, and then moved to delegations. After several delegations talked in support for and against light rail, the councillors took time to explain their position on the matter. Those in favour of light rail cited

who spoke against light rail. Councillor Millar very explicitly indicated her support for light rail but indicated that she wants Cambridge to have light rail in the first phase. One member of council was away due to a medical accident and was advised not to attend by her doctor. Four other councillors declared a conflict of interest in regards to their employers or private capital gaining from the construction of light rail.

construction in 2014 and be completed by 2017 at the latest. The system will cost approximately \$818 million. With \$300 million being provided by the provincial government and \$265 million being provided by the federal government, the total cost to the region is going to be \$253 million. This will be paid for with several sources including a 0.7% per year property tax increase for seven years, much less than the previously advertised 1.5%. The region is



**Audience applauds regional council for coming to a decision on rapid transit**

Chris Letnick

the need for action and the need for dedication to the future. Some concerns were voiced, but most of these agreed that now it is time to move forward. After each councillor spoke in regards to their decision, a final vote was tallied.

The Region of Waterloo Council has voted 9 to 2 in favor of building a light rail system from Conestoga mall to Fairview mall and an adapted bus rapid transit system from Fairview mall to Cambridge. Waterloo mayor, Brenda Halloran, and Cambridge councilor, Claudette Millar, were the two members of regional council who voted against the plan. Mayor Halloran was the only member of council

After the council agreed to adjourn the meeting, the audience gave a standing ovation. The audience was not hushed, but reminded that this would not normally be permitted behavior. When asked, "How do you feel about Benda Halloran's position on light rail?" a concerned citizen gave the following response: "I was shocked when I first found she took a stance against light rail. I voted for her, believing that she was the Mayoral candidate who was the strongest supporter of light rail."

The light rail transit system will be build from Conestoga mall to Fairview mall with adapted bus rapid transit to Cambridge. The system is expected to start

also continuing to work on making this number smaller.

Light rail will pass through all the major nodes in the region. The system stops will include Conestoga mall, the Research and Technology Park, the University of Waterloo, Waterloo Park, Uptown Waterloo, Downtown Kitchener, and Fairview Park mall. There will be a total of 14 stops on the light rail portion of the system. The light rail transit will also be complemented by improved bus service throughout the entire region. The closing disappointment is that it will not likely be complete before most of the current student population graduates.

## The World's Reaction to Japan's Nuclear Disaster



**CHRISTY ROUAULT**  
1B ENVIRONMENTAL

Three months after the most significant nuclear disaster since Chernobyl, Japan is still in a state of emergency. With cities lying in complete ruin, hundreds of thousands left homeless and many questions about the Fukushima Power Plant remaining unanswered, fear looms of what is yet to come. Although most of us have stopped talking about the nuclear threat half a world away, news of the Temco power plant seems to be turning more and more severe. Reports from the Japanese government still seem quite calm, contrary to those from elsewhere. So who are we sup-

posed to believe? Also, why are there so many skewed statistics circulating around the globe? The differences in reports and opinions make it nearly impossible to decipher truth from fable.

In the five days after the largest earthquake in Japan's history, the radiation emitted was already at 15% of Chernobyl's total emissions. After this startling number was released along with many other statistics, citizens were fleeing from their homes to find safety. While over 100 000 people are still sleeping on gymnasium floors, Temco has yet to release more data. After much outrage and pressure from the public, a report is said to be due for release in August. In the mean time, the zones that have been labelled as uninhabitable are growing, while people are slowly migrating back to the homes that are all that they

have left. Every day there is news that the situation is worse than previously thought, and suspicions are mounting that the Japanese government is concealing information. Record high measurements of radioactivity in Tokyo have been announced, as well as evidence of it wafting over the Pacific and leaving traces in North America.

In North America and Europe, the news is not being taken with the same level of composure. Germany has announced that they will shut down all of their reactors by 2022, and pressure to reassure citizens of safety precautions is being felt worldwide. Recent news that 4 of the 6 reactors have undergone a partial meltdown, one of which is rumoured to be a complete meltdown is not easing minds either. It seems that the disaster has almost completely dropped off of the mainstream media ra-

dar, but online chats, social networks, YouTube, and discussion boards are still buzzing with concern. A video was posted at the end of May of an "ear-less bunny" born near Fukushima; with over a million hits, the bunny is just another reminder of the implications of a nuclear disaster.

So are we getting worked up over nothing? Is the bunny just another mutation which could have happened anywhere in the world, or is this a nuclear accident so severe that it will rival Nagasaki and Hiroshima combined? If nothing else, this incident has reminded us of the long term effects of the Chernobyl accident, forcing us to wonder if we are making the right decisions as a society. True facts about the state of the power plant today are still a murky topic. We can only hope that closure will be given sooner than later.

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# US Presidential Elections: Here We Go Again!



**FARZI  
YUSUFALI**  
2B NANOTECHNOLOGY

If Canada were to hold another election in 2012 (god forbid!), the chances of hearing about MPs on the campaign trail a year before voting day would be slim to none. However, this is exactly what has been the focus of America's attention for the past couple of months now. Members of the Democratic and Republican Party (also known as the GOP) have already begun formally announcing their candidacy and rallying for their nomination as the primary candidate for their respective parties. A quick outline of select formally announced candidates, the focus of their platforms and the likelihood of being a primary candidate (in my opinion) for the major parties are as follows.

## Democratic Party:

### Barack Obama:

The 44<sup>th</sup> and current President of the United States formally announced his candidacy as the primary nomination on April 4<sup>th</sup> of this year. As he has served one term in office, he is eligible to seek a second term; however, he may not seek more terms afterwards. Those who worked their magic as head of his campaign staff and policy team are to return with full force with the added arsenal of high-profile figures like Rahm Emanuel, former Chief of Staff and current Mayor of Chicago, and Jim Messina, former Deputy Chief of Staff, as campaign manager. President Obama's platform on health care reform, economic policies on federal spending, foreign policy regarding Middle East relations, the Iraq and Afghanistan War and Libyan sanctions are expected to remain the same for the 2012 campaign. Little is known about new platforms or the platform's main focus.

*Likelihood of being the Democratic Party Presidential Nominee: 95%*

### Randall Terry:

The second candidate for Democratic Party nomination is well-known as being a "pro-life" activist based out of New York. His claim-to-fame is "Operation Rescue," an organization he founded that opposed the legality of human-induced abortion.

Terry has been known for his controversial statements, the most famous being that abortion is essentially murder and should be treated as a capital offence. His career in parliament extends to his running for Congress in upstate New York in 1998 and for a seat in the Florida State Senate; he lost both times in the Republican primary.

*Likelihood of being the Democratic Party Presidential Nominee: 5%*

It is important to note that Hillary Rodham Clinton, the 67<sup>th</sup> and current Secretary of State for President Obama's administration, has definitively declined to run for president in 2012.

## Republican Party:

Unlike the Democratic Party, the candidates for GOP presidential nomination are widespread with support for each is divided. The few selected below are considered the front runners in terms of public and financial support.

### Mitt Romney:

Being a seasoned candidate for the presidential race, it came as no surprise when Mitt Romney, former Governor of Massachusetts and successful businessman, announced his intention to run for Republican presidential nomination on June 2<sup>nd</sup> of this year. During his previous run for presidential nomination in 2008, he won multiple caucus and primaries (votes from party members in each region) but ultimately lost to future nominee, John McCain. Since his loss in 2008, he has kept much of the money fundraised to pay salaries to his political staff and build a political infrastructure that has become campaign valued at a staggering \$1 billion this year. Also, he continued to make speeches and raise campaign funds while still remaining out of the public eye until making his formal announcement. His platform remains mostly unchanged from his 2008 run at president; however some marked changes in his health care, taxes and environmental changes have given him a much needed boost in opinion polls conducted so far. The focuses of his platform are for job creation, immigration and fiscal discipline.

*Likelihood of being the Republican Party Presidential Nominee: 40%*

### Mike Huckabee:

Like Romney, Mike Huckabee, former Governor of Arkansas and host of Fox News Channel talk Show, Huckabee, has

been penned to be a leading figure in the opinion polls conducted this year. Like Romney, he was also a candidate for the 2008 Republican nomination primaries and finished in an overall third behind McCain and Romney. Despite the setback, he was mentioned as being on the short-list to be McCain's running mate; unfortunately, he was passed over by Sarah Palin. Recently, he has been the centre of some controversy regarding statements made to others ranging from President Obama to Natalie Portman. While he did decline running for candidacy in May, he has not made any confirmation of this statement and is still speculated to run given his nation-wide popularity in recent polls. Like his run in 2008, his platform on education, environmental issues, immigration and foreign policy have remained the same; however, his focus has shifted more towards environment, immigration compared to education.

*Likelihood of being the Republican Party Presidential Nominee: 15%*

### Newt Gingrich:

Being the oldest and the most seasoned of this group of candidates, it came as no surprise that Newt Gingrich, former Speaker of the United States House of Representatives, announced his candidacy on May 11<sup>th</sup>, 2011. Like Romney, Gingrich was poised to become the Republican nomination soon after the 2008 presidential election concluded. He began campaigning in 2010 in Iowa and New Hampshire (both primary states) and took part in the Conservative Political Action Conference in 2011, thus fuelling more speculation of a potential run at GOP nomination. The focus of his platform is expected to cover national security, immigration (however, unlike other candidates, favours a "guest worker" initiative) and economical policy. He has also been known to hold slightly controversial views including Obama's "socialist" agenda. In his road to becoming the GOP's nominee for president, he suffered a major setback on June 9<sup>th</sup> when his entire team of senior campaign aides, including his campaign manager, left the campaign citing differences in campaign direction and Gingrich's commitment to this run for Republican nomination.

*Likelihood of being the Republican Party Presidential Nominee: 20%*

### Sarah Palin:

This well-known and often mocked politician has recently been thrust back into the spotlight amidst rumours that she may run for GOP nomination for the presidential election. Formerly known as the Governor of Alaska and the nominee for Vice President alongside John McCain in 2008, she has gained national attention for her comments during the 2008 presidential election and scandal surrounding her family. While running for vice-president, she experienced intense media scrutiny due to her inexperience in politics, her aggressive conduct during rallies and her expenditure of campaign funds. Following the election, Sarah Palin became a pop culture figure that spawned into best-selling books, a TV show and the foundation of several organizations under her name. While she has not formally declared candidacy, recent tours overseas and comments suggesting her inclusion in the presidential race suggest that she is likely to declare candidacy. Her platform on health care, education, gun safety and foreign policy are slated to stay the same with a new focus on the environment to come if or when she declares candidacy.

*Likelihood of being the Republican Party Presidential Nominee: 20%*

It is important to note that Donald Trump, successful businessman and TV personality, has officially declined candidacy for the Republican presidential nomination. Also, a number of other declared candidates have risen in poll standings; therefore, the proposed leaders for GOP nomination are subject to change as the year goes on.

With the impending American election next year, the world will once again shift its focus to this country to watch the race for presidency unfold. While the actual run for presidency may not be as heated as it was in 2008, the re-election of the House of Representatives and the Senate may prove to be more interesting since its role in legislation and policy-making has become apparent after the last three years of internal conflict in the House under Obama's rule. While that is a major event of interest over the next two years, the most exciting part of the presidential race that I will be following is the Republican nomination death-match that will take place in the near future.

## Local Organization Nurtures International Governance Conversations



**ALEXANDER  
HOGEVEEN  
RUTTER**  
4A ELECTRICAL

The Centre for International Governance Innovation (CIGI) hosted its penultimate public event of the season, a signature lecture on "Predictive Failures in the Global Economic Crisis," featuring a former senior deputy governor of the Bank of Canada, the Deputy Director of the Independent Evaluation Office of the IMF (IEO-IMF) and the Canada Research Chair in Globalization and Governance. CIGI is a non-profit, independent think tank on international governance.

Ruben Lamdany of the IEO-IMF had an especially critical perspective as he presented the failings of global institutions in predicting the recent economic crisis. Among the main culprits were a lack of direct accountabilities and a culture of stifling dissenting opinions while promoting positive viewpoints without question. It was a sobering reminder of the importance

of questioning authority with critical analysis rather than accepting existing dogma.

This reminder is especially relevant to future professionals such as engineering students. Any engineer will often be submitting designs to more senior employees, or be asked to evaluate or double-check existing policies and projects. In this instance, much of the fault lies with those who designed economic models, and it is clear that engineers model and analyze important challenges such as financial markets on a routine basis. We must remember our obligation to society to provide fresh perspectives and challenge established thought.

Such critical analysis, with such noteworthy presenters, is not uncommon at CIGI and it's all just a short walk across the park from the University of Waterloo, at the corner of Erb and Caroline. The final public lecture of the season will be on June 21<sup>st</sup> about "Muzzled Media-The Global Challenge." A new season begins in October with a discussion on the economics and econometrics of a financial crisis.

Furthermore, all past webcasts are avail-

able online, so we can experience the expert analyses from the comfort of our own homes. This expertise is also available in series of less public conferences and workshops. Such events are also available on the website, along with weekly podcasts, policy briefs and social media fields. Given the growing uncertainty and challenges facing governments here and around the world, third-party think tanks such as CIGI play a critical niche in developing and promulgating policy solutions to the public and government officials.

However, the nature of our streamlined education system often means the policy thinkers work in isolation from technical experts. Alison Lee, a former co-op research assistant, says, "While many CIGI experts have international policy expertise, there is certainly a shortage of technical and scientific knowledge. It is critical to understand the interface between scientific study and the corresponding policies. Only then can we claim to have thoroughly analyzed a problem and confidently make decisions." There is a significant role for engineers to play in helping evaluate,

analyze and design solutions, especially when working with financial and development models or environmental and energy challenges (all among the key priorities of CIGI).

As computers take over more and more of the technical computation grunt work, the role of engineers as ambassadors of technology becomes more critical. Globalized systems create ever-more complex challenges for engineers to address. As such complexity increases, we must consider the policy implications of our technological design. Similarly, technological development can dictate significant political results; understanding the impacts of our work can both provide motivation and direction for our studies.

Most of the greatest challenges facing our globe, such as infrastructure, poverty and energy, have a technical component but are not solely technical challenges. The world needs thinkers who are comfortable in the realms of policy, technology and the interplay of the two. Engineers should think seriously about the benefits of learning from CIGI and similar institutions.

# Facebook Deploys Political Ambassadors



**ALEXANDER  
HOGEVEEN  
RUTTER**  
4A ELECTRICAL

We have long since entered the era of globalization where mega-corporations hold as much power, if not more, than local governments. It has long been cited that if Wal-Mart were a country, its GDP would rival that of Sweden or Saudi Arabia (which is still more or less true: Wal-Mart's revenue of \$420 Billion would rank it around 22<sup>nd</sup> in GDP, were it a country).

While economic success is an important measure of a company's relevance, companies still lack the political clout that a government may wield. However, Facebook is now following Google's footsteps in taking a significant stride toward legitimacy as a relevant political force: ambassadors.

Facebook's ambassadors, or "foreign policy directors," are to be deployed to the Middle East, Scandinavia, Britain, India and Spain, among others. The general idea is to avoid antagonizing dictators

and to placate privacy concerns in liberal democracies. While the positions vary in scope, with some looking to promote use by government and others looking to more actively address policy, the goal is clear: Facebook is taking governments seriously and expects to be received in a similar fashion.

Companies have a long history of lobbying governments for taxation benefits and similar financial gain. This century, however, marks a shift in thinking; instead of acting to maximize profit after the revenue is made, they have begun to actively shape policy in certain (presumably profit-making) directions.

With over 600 million users, Facebook already has some political sway. For example, Kosovo's recognition as a country by Facebook has been deemed, by most, to have more significance than recognition by state players. Also, the languages a website, like Facebook, chooses to recognize can help legitimize or de-legitimize the use of that language elsewhere.

While Google was the first to hire positions of this nature, Facebook following such a development is, by far, more

critical to this change. The most courageous is not the first bold innovator, but the first to follow, thus, being the indicator to all of the rest that the time has come for change. While Yahoo also has some activity in this area, the publicity and boldness of Facebook's move will shake up other companies and lead them to inspect their own operations and how they deal with a number of state governing bodies. While, Google's actions were a result of immediate political expediency over privacy concerns, Facebook's move came as somewhat of a pre-emptive strike. While legal action is looming against Facebook, it is clear they are looking to shape policy broadly and not just over a single issue.

Facebook's relevance is especially important, given its role in recent events occurring in the Middle East. Though revolutions are an obvious example, even day-to-day operations can be significant. For example, what is more important to India? The trade policies of Ecuador or the privacy and security settings of Google? It's fairly clear that we will soon start to see reciprocal diplomacy with governments sending ambassadors to maintain

their interests with large companies, especially those with a strong internet presence.

As the advantages of such relationships become clear, we can expect other companies to follow suit. Greater scrutiny of private-public relationships and an examination of the role companies play in our economies, our culture and our political systems will become necessary. Ambassadors and diplomats between companies and countries, and perhaps companies among themselves may become commonplace in the near future.

Such diplomats are a decisive step toward entrenching companies as the dominant political force of our era. Companies have long shown their ability to sway government incentives with the offer of jobs: it is naïve to think governments will be able to resist similar temptations on policy. Furthermore, as the uprisings in the Middle East demonstrate, internet companies, in particular, can play a pivotal role in political affairs. As it is abundantly clear, companies hold economic power over the citizens of the globe; it is not long before this power shifts to the political arena.

## Marco Polio: The Eradication of the Polio Virus

**KEVIN JOSEPH**  
2B NANOTECHNOLOGY

In 1798, Edward Jenner delivered one of the greatest gifts humanity has ever received: the first vaccine for smallpox. He famously observed that milkmaids, who were commonly infected with the relatively benign cowpox, seemed to have protection from smallpox. Jenner was able to successfully demonstrate that cowpox served as an effective immunization from smallpox, changing the world forever. According to the World Health Organization smallpox is "one of the most devastating diseases known to humanity," originating over 3000 years ago. Of those infected with the disease, 30% were killed, 65-80% were left with permanent pockmark scars, predominantly in the facial region, and 33% were left blind. Between the 1950s and 1967, the estimated number of cases of smallpox fell from 50 million to 10-15 million due to the effectiveness of vaccination. In 1967, a rigorous campaign was set into motion by the WHO to wipe out the scourge once and for all and, in 1979,

smallpox became the first disease to be successfully eradicated. Since then, contrary to common belief, only one more disease has been successfully eradicated: rinderpest in 2001.

As for yellow fever, measles, mumps and whooping cough, those living in the developed world may live with the luxury of not fearing the untimely deaths or suffering of their children at the hands of such ailments, but in many parts of the world these are still very real threats. One disease on the verge of joining the ranks of smallpox and rinderpest is poliomyelitis. Mainly affecting children under the age of five, polio can cause paralysis within hours, eventually culminating in death when breathing is inhibited from paralysis. People would live out the rest of their lives in iron lungs, large machines capable of "breathing" for the afflicted person. Polio, according to the WHO, has been reduced by 99% and is limited to four countries (India, Afghanistan, Nigeria and Pakistan) since 1988 due to an intense global effort. This effort was bolstered by a new polio vaccine which specifically targeted

remaining types of polio (type 2 polio was eradicated in 1999, though type 1 and 3 remain). This should not be misinterpreted as cause for apathy however, as twenty-three previous polio-free countries were briefly re-infected, including developed countries such as Russia in 2009 and 2010.

In order to finally eradicate polio in the persistent regions, major steps must be taken with strong initiative, cooperation and commitment. Some key strategies include higher rates of immunization during the first year of life, supplementary doses throughout the next four years, greater surveillance efforts, and targeted campaigns once virus transmission has been detected. Many of the remaining pockets in which polio thrives are politically charged regions, adding another dimension of difficulty for the Global Polio Eradication Initiative. Volunteers must go in during times of shaky metastability through co-operation with competing forces.

Aside from ending the painful deaths of young children, there are many side benefits to the eradication of polio. For

instance, the aid given to impoverished families in afflicted regions helps to fight poverty and gives families a chance at productive and happy lives. Furthermore, in regions in which the Global Polio Eradication Initiative is fighting to end polio, they're able to expand to work on other diseases including Ebola and avian flu. Systems put in place in South Asia were put to use during the aftermath of the 2006 Tsunami. Financial modelling has shown that the eradication of polio will help bring economic prosperity to affected areas.

The future for polio looks bleak; its end is in sight. Commitment, funding and volunteerism from the international community is still necessary. Polio does not kill men and women; it kills boys and girls. It kills the hopes and dreams of parents in desperate regions of the world. It is not a necessary evil and its end will be a triumph for humanity. Once this has been achieved, efforts can be redirected to attacking more potentially eradicable diseases including measles, mumps, rubella, lymphatic filariasis and cysticercosis.

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# Engineering Construction Update

## DWE C-Wing, E6 Construction and Fire



**ANGELO  
ALAIMO**  
4A ELECTRICAL

For the last several years, our campus has been in a constant state of flux. Renovations, additions, and several new buildings have sprung up in one of the largest expansions of our campus in decades. This change in the landscape is set to continue well into 2012 and will hit the current engineering side of campus with the renovation of DWE's C-Wing.

Although the exact details of the renovation are to be finalized, C-Wing (the part of DWE that connects to CPH) will be closed for construction once all current Chemical Engineering occupants have moved to E6. The majority of the work entails a complete asbestos removal followed by a renovation, which will see the space converted for the wing's future occupants, Civil and Environmental Engineering. In speaking with Sue Gooding, Operations Manager in



**Engineering 6 Under Construction**

Angelo Alaimo

the Dean of Engineering Office, construction is expected to start September 1<sup>st</sup> and be completed by Spring 2012.

After the renovation is complete, the space is expected to contain Civil and Environmental Engineering undergraduate

teaching lab space as well as research labs for the same group.

Just to the northeast of DWE, another new Engineering building is almost ready to for occupancy. Engineering 6, which has been under construction since the Fall of

2009, is almost ready to partly house the Chemical Engineering Department which will be moving out of DWE. Substantial completion is expected for the end of June, after which some ChemEng labs and offices will be moved-in.

Fourth year Chemical Engineering students will have a new fourth year room in the new building. In speaking with Sue Gooding, the room will be in the Southwest corner on the 5<sup>th</sup> floor of E6. Students can look forward to a brand new study space complete with sofas, chairs, and tables. Fourth-year students will likely get access to this space shortly after the start of the Fall 2011 term.

While still under construction, a small fire started inside Engineering 6 on Monday, June 6<sup>th</sup>. According to a City of Waterloo media release, the fire, caused by a spark from a welder's torch, was contained to a fume hood and ductwork inside a 4<sup>th</sup> floor lab. The fire did not cause significant damage, and according to the Dean's office, this will not delay the building's construction.

## Greyhound Welcomes the MCI D4505 Buses



**ALISON  
LEE**  
2B NANOTECHNOLOGY

I bet you didn't think it was possible, but it's true – Greyhound buses have gotten even more luxurious! With the recent introduction of a new fleet of MCI D4505 buses in 2010 to a select few routes, you can now recline in a pleather seat, stretch your legs a little farther, and surf the internet via a wireless connection. If that sounds too good to be true, it probably is, but the new fleet of buses is still

an improvement over the older models. Although they do boast those aforementioned amenities, as I sit in one of the new buses writing this article, my laptop is telling me that the Greyhound Wireless network has no internet access. However, my nose is telling me that this bus is the cleanest bus I've ever been on.

Internet troubles aside, the new buses really are a step up from some of the questionably-discoloured and faded fabric seats of the 90s. With some buses more than ten years old, sitting in a bus that hasn't had much chance to get grubby is a practically a dream come true. The MCI D4505 buses seat 50 passengers rather

than 55, improving leg room and backpack space. There are also electrical outlets under each seat to keep your laptop running the whole trip. These buses are more fuel-efficient, wheelchair-accessible, and equipped with a 3-point seatbelt system. Realizing that most people are entertained by their mp3 players, smartphones, and computers, Greyhound also did away with the overhead TVs. The new buses also have open-concept overhead storage instead of the old airplane-like compartments and generally feel roomier because of the fewer seats.

Now don't go running to buy a ticket just to ride a new bus because you might

not get to ride one. The majority of Greyhound's fleet still consists of the old models, and the buses assigned to each route are always subject to change. If you frequent Toronto, you've probably been on a G4500 bus, which entered service in 2002. If you're unlucky, however, you may end up with one of the older models from 1995 or 1989. In total, there are over 400 buses that service Greyhound routes across Canada, most of which are used in south-central Ontario. Sadly, there are only 131 of the new MCI D4505 buses, and most of them service American routes. However, if you're lucky enough, you may be able to ride in style to T-dot sometime soon.

## CHECK this out MATE



**AMMAR  
MASUD**  
2B NANOTECHNOLOGY

Starting at the age of six, around the age we lost nap time privileges at school, chess will become a mandatory course in Armenian primary schools. Arman Aivazian, an official at the Ministry of Education, stated that the goal is to "create a solid basis for the country to become a chess superpower." Not exactly the best reason, in my opinion, but why complain when there are many other benefits for the kids?

Armenia is no stranger to the world of chess. It is already considered one of the world's leading chess-playing nations, and for good reason: its national team has placed first twice at the biennial International Chess Olympiad in the last five years. The country currently treats chess grandmasters like we do sports stars, and with this schooling change, it will only further promote this particular aspect of Armenian culture.

Aivazian extolled the expected benefit of "fostering schoolchildren's intellectual development," along with research to support the claim. Research studies reveal significant correlations between the introduction of a chess program and the improvement in students' reading performance.

Chess has more in common with reading than what you would expect: they are both decision-making activities that overlap in

how they are processed in the comprehension and analytical parts of the brain. The proof of this relationship was established by Dr. Stuart Margulies, an educational psychologist, who performed two studies with school children in the USA. Students who were introduced to a chess program showed higher standardized reading test scores compared to student's scores in the control group. These students also outperformed the average student's test performance in the country. Such proofs reveals great potential for Armenia's school children.

Another major advantage of chess is that it allows almost any combination of two individuals to play together. Chess games can be played between people of differing age, sex, language and even location around the world. The game would be expected to grow drastically in popularity if other school systems around the world adopted it.

The Armenian government is facing criticism due to the \$1.43 million they are committing to the change which, although small by Canadian standards, could be better used to support the small country economically.

The idea of introducing chess to schools is now being considered in other countries such as Israel and it will be interesting to see if this will start a wave of countries adding the game to school curricula in the near future. If that is the case, other countries must be waiting to see if the program is successful in Armenia before adopting it themselves.

## UW Run for Mental Health

**ADAM DOBRI**  
NANOTECHNOLOGY 2011

The University of Waterloo Run for Mental Health took place on June 8<sup>th</sup> and saw what was arguably the deepest field ever assembled for a two-lap race around Ring Road. Within a few steps of the start, it was clear that the winner would be former Waterloo Warrior and 2009 Canadian Marathon Champion Stephen Drew. He immediately put a large gap between himself and the rest of the field on his way to covering the roughly 5.3 km course in 16'51". Charles Allan, a 2B Mechanical Engineering student, headed up the chase pack of Warrior Cross-Country athletes, crossing the line in 17'22". The top five was rounded out by Devon Briggs (17'57"), who outran 1B Environmental Engineering student Michael Stewart (18'06") and Lawrence Xie (19'42"). The first female finisher was Leslie Gray, a Masters Environmental Engineering student, who ran a 21'47" on injured legs. Everyone ran really well considering the conditions, which were

high heat and humidity. Even the volunteers handing out water easily broke a sweat.

This marked the sixth year of the annual run, which was started in 2006 and initially named the President David Johnston Run For Mental Health after the former president of the University. There were approximately forty runners and walkers who braved the heat and humidity to participate on this event. These individuals ran towards raising over \$1000 for the Waterloo Region Suicide Prevention Council and Suicide Prevention programs from Health Services at UW. Special thanks goes to the organizing committee of several Health Services and Athletics staff, as well as representatives from Psychology, Environment and Kinesiology. Sponsors for the event included Runner's Choice, the Centre for Mental Health Research, Health Services, Athletics, the President's Office, and the University of Waterloo Employee Assistance Program.

The event shows no signs of stopping and will likely continue next year, and you are all challenged to compete FTW!



**Approximately forty people get ready to start the 6<sup>th</sup> annual Run For Mental Health.**

Adam Dobri



## A Pin Drop from the Desk of the President



**TIM  
BANDURA**  
PRESIDENT

I hope all your midterms went smoothly! It's been really quiet the past two weeks because of midterms, so there is not a lot to report upon. Last Friday, the executive team met with Dean Sedra to discuss our current plans and ask him any questions we received from students. This was a fairly productive meeting as always. Dean Sedra is always interested in the student body and how we feel about the faculty.

On Saturday, June 17<sup>th</sup>, Alessia and I attended an awards luncheon for Spencer McEwan and Michael McCauley, winners of the Sandford Flemming Foundation's John Fisher and Roy Duxbury awards. These awards are for graduating students who have shown outstanding leadership on and off campus. Through Spencer's and Mike's work with the Engineering Society, their performance on co-op placements, and their efforts with the Engineering Student Societies Council of Ontario and the Professional Engineers of Ontario, the awards committee felt that these two best displayed the characteristics outlined in the award. For all 2012's, do you know someone who might fit the bill? Nominations are not due until Winter 2012, but check out SFF's website for more details. Also, on that Saturday, both the current A-Soc and the B-Soc executives met for an alignment meeting. We went over each goal our teams had and reviewed several motions which are now out for you to review prior to Joint Council on June 25<sup>th</sup>. If you have any questions, ask an executive!

Meeting #3 was, again, a smooth affair and happened to be one of our shorter meetings. Just a quick shout out to Mike Seliske for being a great Speaker and running a good meeting. Meeting #4 is on June 22<sup>nd</sup>, in which we'll cover donation proposals and clean up the confusion about the past meeting minutes from the spring term. I unfortunately won't be able to stay for the entire meeting due to a midterm, but I will be able to give my report at the start.

Upcoming items include the Faculty Undergraduate Studies Committee (FUGS) meeting on June 24<sup>th</sup>, MOT on June 24<sup>th</sup>, TalEng on June 28<sup>th</sup>, and Canada Day on July 1<sup>st</sup>. At FUGS, several housekeeping changes will be made to the undergraduate calendar, mainly updating old pre-requisites and removing obsolete ones. MOT (Middle-Of-Term) Party is set to take place in POETS from 8 pm to 10 pm. It's an all-ages event, so grab a group of your friends and join the fun! We're working on getting everything (food, music, movies, presentations) out on the patio to make the best use of our space and avoid lineups outside. Are you in Waterloo for Canada Day? Why not join Adriana Cameron, Eric Evenchick, Kristine Campbell and a bunch of other volunteers (including me!) to help run the Engineering portion of the festivities at Columbia Lake? Over 60 000 residents of the Waterloo Region attend this event, and kids love the Engineering Mini Olympics over a lot of the other faculty and vendor booths there. Plus, there is a free fireworks show to end the night!

Have a great second half of the term, and good luck to all candidates running for Vice President positions and WEEF Director. Read up on their platforms and make an informed vote.

## WEC, WIE and Charities Excitement!



**LEAH  
ALLEN**  
VP EXTERNAL

Hey Engineers!

Hope all of your midterms went well, and you're back into your normal routine of flash games and playing Frisbee outside. :)

First off, you should all know that JOINT COUNCIL is THIS WEEKEND! On Saturday, June 25<sup>th</sup>, come see both societies in action at the same time in CPH 3607 at 5 pm. Also there will be special food items in POETS after!

Registration for the Waterloo Engineering Competition (WEC) is now open! WEC encompasses three competition categories - Junior Team Design, Senior Team Design, and Consulting Engineering. Top-placing teams receive a designation on their university transcript, a cash prize from the Sandford Fleming Foundation, as well as the opportunity to advance to the Ontario Engineering Competition. For more information and to register, visit <http://wec.uwaterloo.ca>. Registration is limited... so act FAST!

The Women in Engineering Directors have been hard at work planning a special WIE event that will take place sometime closer to the end of the term. This event is geared to celebrating Women in Engineering (undergraduate, graduate, and faculty members) and also focused on educating the engineering student population about current issues centred around WIE. This event is going to be amazing, so get excited!!

Canada Day is coming fast!! The

EngSoc Canada Day directors have been hard at work planning Mini Olympic activities to contribute to UW's Canada Day Celebration. Come out to CIF on Canada Day to join in on the festivities or send them an email to volunteer.

Onto charity stuff!

- I will keep reminding you that pancake breakfasts happen every other Tuesday in the CPH foyer. Come out and get yummy pancakes AND help a cause. Your money will go towards EngSoc's goal to build a school in India through Free the Children.

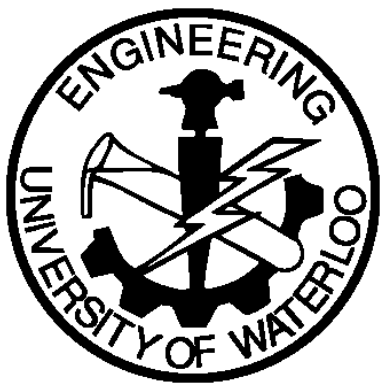
- Right now, there is an inter-faculty blood drive going on! It's basically a competition to see which faculty can donate the most blood during the 56 days. If you would like to participate, head over to the Waterloo Canadian Blood Services clinic at Weber and Bridgeport. If you get a group to go, you could get a free cab ride there and back!!

- Do you have empties just sitting around at home? Well keep them!! The charity directors are going to be having a bottle drive closer to the end of the term, and they will come pick the empties up, return them and donate the money to charity. There will also be competitions involving building something out of your empties.

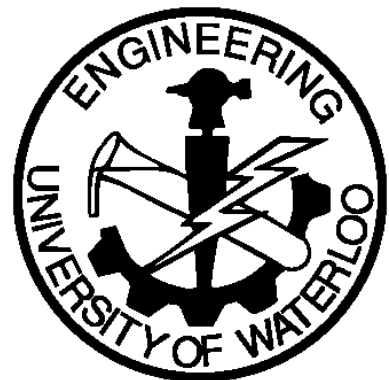
The charity directors are also trying to get a Purpling for Alzheimer's event together. Basically, you pay different amounts of money to get different parts of your body PURPLE! More details to come!

That's all I have for now for VP-External things. If you have any questions on anything I mentioned above, please email me at [asoc\\_vpext@uwaterloo.ca](mailto:asoc_vpext@uwaterloo.ca).

<3 Leah



# VOTE



## in the EngSoc VP/WEEF Director Election

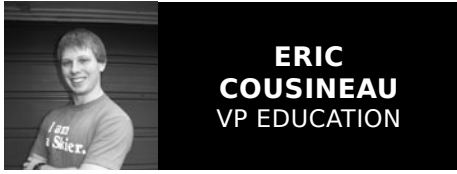
Saturday June 25<sup>th</sup> to Tuesday June 28<sup>th</sup> at 4:30

**You will receive an email with a voting link.**

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

If you have any questions or concerns about the elections email [cro@gmail.uwaterloo.ca](mailto:cro@gmail.uwaterloo.ca)

# Midterm Policy and Vision 2015 Plan



**ERIC  
COUSINEAU**  
VP EDUCATION

Hey Everyone! I hope your midterms went well and that your life is a little less stressful now. Things haven't been too busy since last issue due to midterms and all, but I have some interesting things to report on nonetheless.

I had a SUC meeting on June 14<sup>th</sup> where we discussed the expansion of the guidelines for "Other Tests and Examinations" which is code for midterm guidelines. Some additions of note include recommendations on how long material must be introduced before a midterm (two business days), how much notice must be given on the date of the midterm (two weeks), under what circumstances a

midterm date or time can be changed (only extreme ones with consent of the class), and, most notably, the ability for students to bring concerns regarding midterm issues to the Associate Dean of their Faculty. This is a huge win for students, and kudos goes to Alex Hogeveen Rutter for pursuing this. All that is left before this is implemented is for it to be approved at the next Senate meeting in September.

A few other items of note have happened since I wrote my last article. I found out May 26<sup>th</sup> at the WatPD CC Meeting that PDEng courses will not be offered this fall. This was announced at the EngSoc Meeting on June 8<sup>th</sup>. We had a beta tester introduction meeting for the new Alumni Mentorship Network site on June 9<sup>th</sup> and beta testing of the site is underway.

I also had an Undergraduate Planning Committee (UPC) Meeting on June 17<sup>th</sup> where we further discussed what exactly to

put into undergraduate portion of the Vision 2015 plan. So far, the undergrad plan is split into three sections: Teaching Quality, TA Quality, and Student Experience. For teaching quality, the main focuses are clarifying the expectations for professors, improving the quality of measurement, and to provide better support for professors that want to improve. For TA quality, the main focuses are to help instructors use TAs more effectively, review and find improvements to TA training, and to create a simpler system for how TAs are evaluated. For student experience, the main focuses are still being decided but so far the faculty have been extremely receptive to influences of the student experience. One thing that is looking certain is that there will be an annual student experience survey organized by the faculty, likely in conjunction with EngSoc.

We met with the Dean June 17<sup>th</sup> to up-

date him on what EngSoc has been up to and our future plans. I told him that WatPD Eng was well received by students and that the feedback thus far has been positive. I also brought up the issue of differential tuition and the Dean responded very positively, promising to bring up the issue with Geoff McBoyle, the Provost of the university. He asked me to draft up a letter summarizing the student opinion on the issue. I will seek input on this over the next week or two then draft up a letter.

There are quite a few things coming up in the next few weeks that I wanted to talk about. There is a course critique stuffing party on June 23<sup>rd</sup> starting at 4:30 pm in CPH 3607. Please come out and help run one of the most important factors that determine faculty salary increases! Joint Council is happening on June 25<sup>th</sup>; there are lots of motions going through so please make sure your class is represented. There will be a FUGS meeting next on June 24<sup>th</sup>, but at the time of writing I hadn't yet received the agenda. This is the committee all curriculum changes go through, so if I find any non-trivial issues in the agenda I'll be sure to seek input from class reps. There will be a CWG meeting on June 27<sup>th</sup>, where we will discuss the Vision 2015 plan for engineering co-op. I haven't received the agenda yet, but I will certainly be looking for input on this once I do.

Well that makes another exec report: I hope you found some of the topics discussed interesting and relevant to you. If you have any comments, questions, or concerns please email me at: [asoc\\_vpedu@engmail.uwaterloo.ca](mailto:asoc_vpedu@engmail.uwaterloo.ca). See you in the halls!

## JOINT COUNCIL IS THIS SATURDAY



**SEAN  
WALSH**  
VP INTERNAL

So I have decided to go about my article in reverse from my usual order. So we start with other news: JOINT COUNCIL IS SATURDAY @ 5 pm, same room as always. Hope to see you there. As this article was written before the weekend, I can't really comment on the meetings that we had recently, but I will do my best to recap at

the upcoming meetings.

Did you know there's a golf tournament coming up? It's true! On July 10<sup>th</sup>, there's a fun alumni/eng golf tournament. You don't have to be good at golf, just looking to have fun and meet some alum. P.S. there's going to be a lunch buffet! Sign up in the Orifice! Beach Day is on the way too. If you want to spend a day in the sand and sun, then get your ticket in the Orifice. Cardboard Boat Race; yes, it is exactly how it sounds. There is going to be a race, with cardboard boats, in the PAC pool, on July 7<sup>th</sup>. Sign up a team or come watch! TalEng is coming

up on June 28<sup>th</sup>. Perform or come watch, but be excited because election results will be announced!

Finally, the thanks and praises go out to all of those who were a part of one of the largest Coffee Houses I have ever seen on the 9<sup>th</sup>. There was a huge variety of performers. I can't wait for the next. 2014 Year Spirit had a great turn out for the taco lunch on the 10<sup>th</sup> and Laser Quest was rented out wayyy back on the 2<sup>nd</sup>. Many good PewPew's were had.

That's all for now! DON'T FORGET TO VOTE THIS WEEKEND!

## WEEF Participation Rates



**PRAVEEN  
ARICHANDRAN**  
WEEF DIRECTOR

Congratulations, Engineering! The results from finance are in and have been processed. Overall WEEF participation for the Spring 2011 term is an amazing 80%! See the attached chart for a breakdown by class. Your support goes a long way to ensure that WEEF can continue to make a meaningful impact on our students every term. Through our combined support of the foundation, we are able to fund many high-

impact projects today and ensure that a growing amount of resources will be available for UW Engineers for years to come. As we approach our \$10 million milestone, the effect of the contributions of students over the past twenty years is becoming increasingly visible. The future is looking brighter than ever!

Remember, WEEF is operated completely by students. \$60,000 in funding is available this term for allocation, and proposals are due June 22<sup>nd</sup>. Proposal presentations for Funding Council will take place on June 27<sup>th</sup> and 28<sup>th</sup> at 5:30 pm. This will be followed by a Funding Council meeting for allocation decisions on June 30<sup>th</sup>

at 5:30pm. The WEEF Board of Directors will then meet in July to finalize allocations.

With Funding Council meetings just around the corner, please ensure that your class is represented so that you have a say in how the \$60,000 is allocated. We will be making a lot of tough decisions, so your input is crucial.

### KEY DATES:

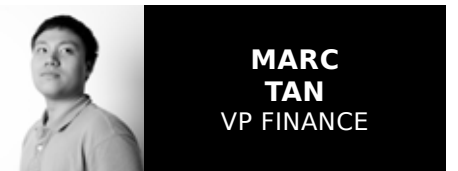
**June 22<sup>th</sup>:** Proposals due

**June 27<sup>th</sup>/28<sup>th</sup>:** Proposal presentations

**June 30<sup>th</sup>:** Funding Council makes decisions

Questions, comments or concerns are welcome at [weef@engmail.uwaterloo.ca](mailto:weef@engmail.uwaterloo.ca).

## Financial Decisions



**MARC  
TAN**  
VP FINANCE

HELLLLOOOOOO ENGSOC  
A couple of quick notes!

Come to the EngSoc Council meeting #4 for our donations meeting! It's tonight, June 22<sup>nd</sup>, at 5:30 pm in CPH 3607. You get to hear a bunch of great student teams and clubs talk about why they need money, and you could also get some free food!

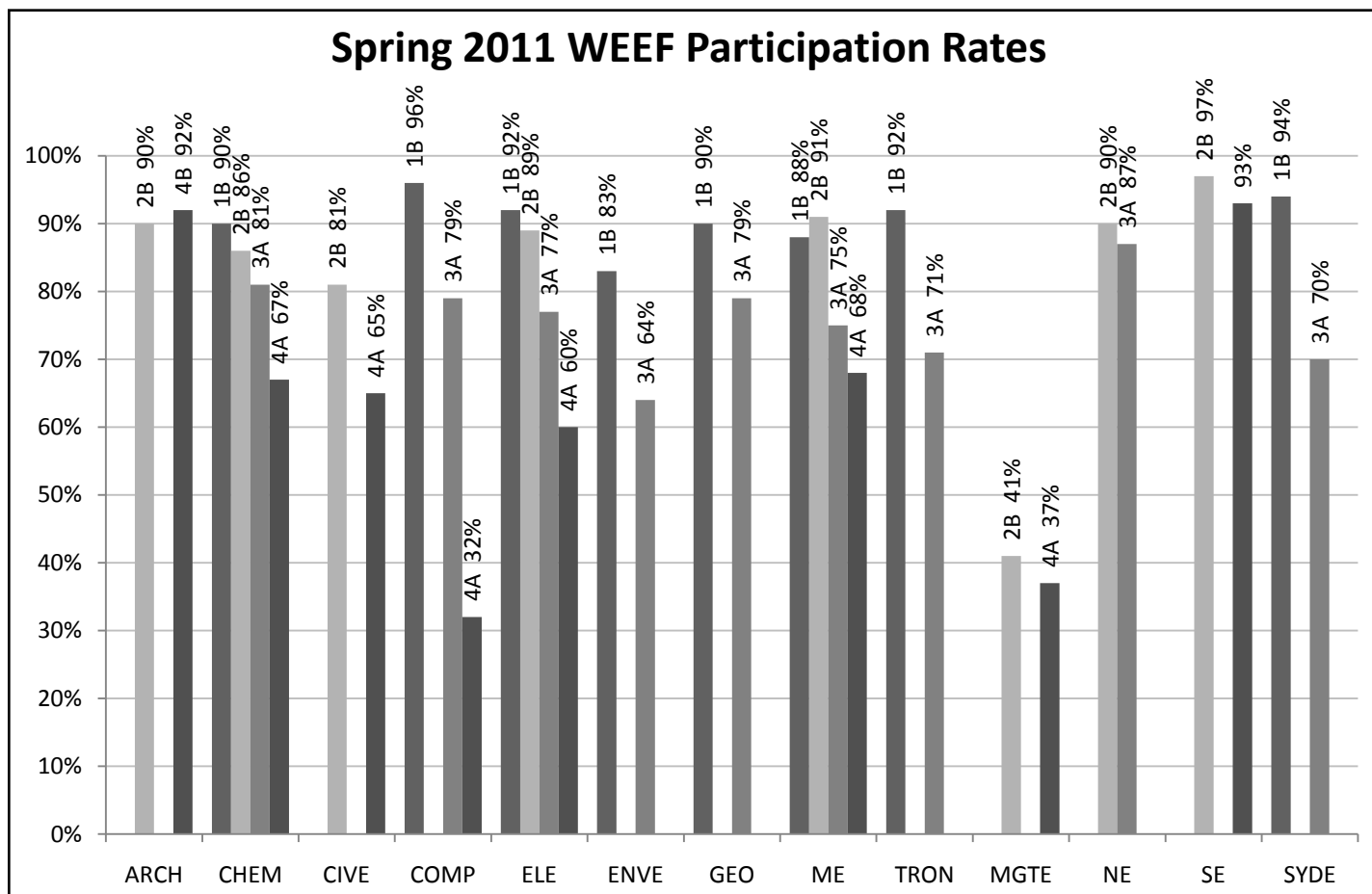
Also this Saturday, June 25<sup>th</sup> is JOINT JOINT COUNCILS WITH COUNCILS!!! There are a bunch of motions being passed involving constitution and policy manual changes at this meeting, but the one that pertains to my position the most is the capital expenditure committee motion. This is to finish-off my goal of forming a decision-making body to look over our capital expenditures and collect input from all members of the society to better represent its needs. It will make the system much more formal and will help with the long-term vision of the society from a spending standpoint. Come out on Saturday if you want to hear more about it and want to have a chance to be a part of the committee.

As I said before, Coverall Day will be coming soon. I just need to get out of midterms! Some preview highlights:

They will have the word "Engineering" written down the leg. The EngSoc logo will be printed on the back. And they can be CUSTOMIZED WITH WHATEVER ELSE YOU WANT TO WRITE

Finally, I'd like to congratulate our presidential candidates on a great campaign. And good luck to Leah, our newly elected EngSoc president, for the next 16 months.

GOOOOODDBYYYYY ENGSOC



# Point Vs. Counterpoint

## Should the Government Sponsor Safe Injection Sites?

POINT

COUNTERPOINT

**ANJALI GOPAL**  
2B NANOTECHNOLOGY

Substance abuse sucks. It's probably one of the worst ways to degrade and disrespect your body. But it's misleading to immediately connect "substance abuse" with "illegal drugs." Look at all the other forms of substance abuse around us: people get addicted to sleeping pills, painkillers (a Tylenol a day keeps the doctor away), and hey, how about those caffeine-crazed university students? The only difference is that the government has decided that it's okay to be addicted to these "harmless" drugs; therefore, providing safe ways to access and ingest these drugs is essential. However, the moment you turn to an illegal drug, you forfeit any chance of safety the government could offer.

Semantics aside, substance abuse is not a problem that will go away by banishing addicted users to the streets; such under-the-rug attitudes only exacerbate this critical issue. In Vancouver's Downtown Eastside, illegal drug abuse causes over 500 deaths per year. Downtown Eastside is trying to combat these problems with the start of Insite, a safe injection site.

Insite is a facility which allows drug users access to a safe environment to inject their drugs. Although Insite does not provide the drugs itself, it does provide drug users with a sterile drug-injection kit, including clean needles and water. Users also inject drugs under the supervision of a qualified nurse. Despite contravening federal law, Insite was granted an exemption in 2003 by Chretien's government because it served a "medical or scientific purpose or (that) is otherwise in the public interest." However, the exemption was not renewed in 2008.

Safe injection sites can decrease substance abuse problems and improve public well-being in a number of ways. First, it keeps drug users off the streets. With more safe injection sites, there would be fewer addicts congregating in back alleyways. As a result, a safe injection site also decreases the amount of infections and transmitted diseases

from drug abuse. The most desperate of the drug addicts have been reported to search for drugs off the ground, use filthy and contaminated water from drains, and recover used needles from the streets to inject drugs. Over a third of users in the Downtown Eastside area are HIV positive due to this type of unofficial needle-sharing. With Insite's sterile drug-injection kits, many of the associated problems with drug abuse can be drastically reduced.

Furthermore, studies have shown that Insite does, in fact, reduce the number of drug-related deaths in the Downtown Eastside area — the chance of overdosing on drugs is much less under the supervision of a nurse. In 2009, the site received over 702 visits per day and over 484 overdoses were treated before they became fatalities.

One of the main concerns about government-funded safe injection sites is the cost associated with such a facility. Many people are against the idea of the government spending public dollars to help out drug users who are clearly violating federal law. However, the cost of treating these drug users at a later time — when they are wounded or bleeding from unsafe drug practices — is much higher. For instance, the cost of running Insite is approximately \$2,000,000 a year. Benefits include a large decrease in the amount of overdose deaths, and a reduction in transmitted diseases such as HIV/AIDS or Hepatitis C. Drug users could also have wounds from unsanitary injections that can be left untreated for over a year. When these users eventually do seek treatment, they often have to receive skin grafts, a form of plastic surgery, to heal their wound. If the skin grafts don't work, the only remaining option is amputation. Considering Insite has been used by over 5,000 unique users per year, the combined cost of plastic and/or orthopaedic surgery for each user would be much higher than the \$2,000,000 needed to run the facility.

The government already funds other forms of assistance to drug users such as the successful needle-sharing program in Vancouver, BC. Thus, programs supporting drug users, like safe injection sites, are already preceded by other effective government initiatives. Although Insite is the first safe injection site in North America, many other sites exist around the world. There are over 17 safe injection sites in Switzerland, 21 in Germany, and 16 in the Netherlands — all of which have proven to be successful in reducing the frequency of drug abuse.

Insite also has many auxiliary benefits: Not only are these drug users spared from infectious diseases and death, they also have a greater chance of going into rehabilitation programs and recovering from substance abuse. Once drug users have finished their hit, they have the opportunity to go to a "chill out" room and talk to other users in a safe and welcoming environment. The facility also provides a number of counsellors and mental-health personnel who are willing to help users recover from their addiction.

However, at the end of the day, safe injection sites are not a matter of cost or increased economic benefits — they are a matter of life-and-death. "The reason people should care," says Dr. John Blatherwick of Vancouver Coastal Health, "is because people are dying. If people were dying in other parts of the ... province in as great numbers as they are concentrated in the Downtown Eastside, we would do something." If the government is spending billions of dollars on "tough-on-crime" programs that don't stop crime and don't prevent death, then it's time to look for a new option. "Universal" healthcare in Canada doesn't mean "universal for everyone but the drug users."

**SPENSER GOOD**  
1B MECHANICAL

Legal injection sites are a relatively modern concept that have been considered for widespread implementation in many of the world's most industrialized nations for the last decade. In basic terms, a legal injection site is a location where heroin addicts can bring their illegally-bought drugs to 'shoot up' under the supervision of nurses and clean medical equipment. The idea branches from the umbrella concept of 'heroin maintenance,' which is a concept employed in many of the world's more socialized states (like Switzerland, Belgium and the United Kingdom). Heroin maintenance is a process in which the state provides opiates to a drug addict who cannot seem to respond to drug treatment, in an effort to avoid the spread of disease through syringes and the crime associated with obtaining cash for narcotics. However, to be clear, a legal injection site does not involve the distribution of opiates to drug users, just a safe location for addicts to inject themselves.

In 2003, a legal injection site, labelled 'Insite', was opened in the Downtown Eastside district of Vancouver, an area notable for excess drug use and crime. Currently, a battle is occurring in the Supreme Court between the provincial and federal governments as to who controls the jurisdiction of this site. If the federal government regains jurisdiction from the province of British Columbia, they would likely shut down the site.

Both the legality and the ethics of Insite have been greatly argued since opening its doors in 2003. However, regardless of the legal implications, we, as Canadians, must first ask ourselves, is Insite the right or wrong thing to do? After consideration, the answer is that Insite is unambiguously wrong.

We are lucky to live in a country that prides itself on taking care of its own citizens. No matter what disability you may suffer from, the fiscal situation you may face or the background you come from, you can live knowing that the state will take (relatively good) care of you. However, do not let this image distort your perception of reality. Drugs, especially heroin, kill. The concept of Insite is to provide a 'safe' location for addicts to shoot up. My argument against this logic is that there is no 'safe' place to do drugs. Admittedly, the chances of overdose may be much lower at Insite, but whether you are doing drugs in a back alley with a dirty needle or in a doctor's office, heroin still kills. Long-term usage of heroin leads to liver, lung and heart disease as well as a weakened immune and nervous system. A person hardly needs to overdose on heroin to die; prolonged usage of lower doses will eventually kill you, even if it is long and indirect in doing so. Heroin use is, in many ways, suicidal, and by promoting legal injection sites, the state is effectively facilitating such behaviour. Heavy drug use for extended periods of time is nothing more than a prolonged death sentence, and the government should not, in any way, condone this behaviour. If we want to facilitate suicide, there are more humane ways to do it. I, for one, do not want to assist suicide; however, this is exactly what legal injection sites like Insite are essentially doing.

Furthermore, legal injection sites directly assist in the usage of drugs bought from drug dealers; men who are committing numerous federal crimes and destroying people's lives. Using taxpayer's money to support facilities that provide locations where one can use this destructive product, which is provided by a federal criminal and definite low life, is ludicrous. Paying nurses that are sorely needed in the public health system (which is already crowded with citizens who are sick through no fault of their own) to help with this process is even more sickening.

Many will argue against my points by claiming drug use is an 'unfortunate reality' we have to live with and that, if we cannot stop drug use, we must make it safer. It is very difficult to argue against this. There will always be drug use in our society, just as there always will be murder, suicide and rape. Some may call this comparison unfair but under close inspection, it is not. Just like murder, suicide and rape, drug use has a profound negative effect not only on the perpetrator, but on that person's loved ones, the surrounding community and society as a whole. Any doctor or scientist will tell you that drugs affect how you think and, therefore, how you act. It can make you more violent, more irrational, more dangerous and detached from your sober self. Drug use fuels addiction which, in turn, fuels crime to feed said addiction. Drug use fuels ill mental health which can then destroy relationships and rip families apart. Drug use is one of the saddest and most widespread tragedies society faces. Facilitating a habit with such destructive consequences is not the right thing to do.

It is also fair to ask if this is an ethical way to make use of taxpayer's money. Although a strong model for the rest of the world, the social services in this country still suffer from serious flaws that need to be addressed. In a tight fiscal environment, many citizens would be uncomfortable with the idea that their tax dollars are funding a site that facilitates drug use, despite the fact that sick people in the health care system still have to wait three months for a critical operation. By no means am I advocating for less money to be spent on drug treatment or prevention, but I am wholeheartedly arguing against funding for the facilitation of drug use.

This society can fight drug use. Thousands of people are cured from the sickness of drug addiction every year through government programs that are already lacking in funding and official support. By closing down Insite and pouring more money into these programs, we will be much more productive and socially ethical. Furthermore, it is time we address the root problems of drug use in general. Whether addicts come from broken homes, mental illness or desperation, these problems can be remedied. By admitting the 'inevitable reality' of drug use, Insite is losing sight of the real objective that is helping those that are addicted to narcotics. To clarify my point, if a man wants to kill himself, do you lend him a loaded gun or an open hand? These are the question we have to ask ourselves when we try to justify Insite. I hope that our nation has the common sense to take away the loaded gun and extend an open hand instead.

### Editor's Note:

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

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

# ENGINEERING SOCIETY 'A' ELECTION SPRING 2011

## The Engineering Society Executive Candidates



**Derek Thomson**

Vice President, Education  
*2B Mechanical Engineering*



**Michael Seliske, Lisa Belbeck**

Vice President, External

*3A Computer, 2B Nanotechnology Engineering*



**Cameron Winterink, Mina Labib**

Vice President, External

*3A Electrical, 3A Nanotechnology Engineering*



**David Birnbaum**

Vice President, Finance

*1B Mechatronics Engineering*



**John Catton**

Vice President, Finance

*1B Chemical Engineering*



**Harry Hall**

Vice President, Finance

*1B Mechanical Engineering*



**Elizabeth Celentano**

Vice President, Internal

*2B Chemical Engineering*



**Angela Stewart**

Vice President, Internal

*3A Chemical Engineering*



**Brock Kopp**

WEEF Director

*3A Mechatronics Engineering*



**Gareth Price**

WEEF Director

*1B Chemical Engineering*

### Information on How to Vote

### Make an Informed Decision!

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

**You have two options to vote:**

**Voting Online** - You will receive an email regarding how to vote online. When you receive your email, click on the link provided in the email and follow the instructions to cast your vote. If you do not receive an email from by Sunday, June 5th, please contact the CRO at [cro@engmail.uwaterloo.ca](mailto:cro@engmail.uwaterloo.ca) in order to resolve the situation. Voting online will be open from June 25th-28th. Please note that the email will be sent to the email address you have registered in QUEST.

**Voting in Person** - During the election, a voting booth will be set up near the Engineering CnD in the Carl Pollock Hall (CPH) Foyer. Show up at the booth on June 27<sup>th</sup> or 28<sup>th</sup> and you will be able to put in your credentials to vote!

If you want to find out more information regarding each candidate and their platform, read their candidate profile. If you would like more information, check out their website and posters and come out to the Election forum where each candidate will be answering questions from fellow engineering students like you. **The forum is taking place inside the CPH Foyer at 11:30 AM on Thursday, June 23<sup>rd</sup>, 2011.**

You will be voting for the Engineering Society Executive candidate positions for VP Education, VP External, VP Finance, VP Internal, and WEEF Director. Leah Allen has been elected President decided from the outcome of the President election earlier this month.

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

# CANDIDATE PROFILES

## Vice President, Education Candidate

### Derek Thomson

*2B Mechanical Engineering*



Academics. For many engineering students, the University of Waterloo was and is the premiere choice for learning the engineering practice. Waterloo is well known in Canada and even the world for its academic atmosphere. I, Derek Thompson, wish to uphold that view and assist in its progression through these next 16 months.

To accomplish this, I wish to represent you, the engineering student body, as your

next Vice President of Education. My experience is that of incredible depth. I have organized groups of more than one thousand people as a member of the Federation Orientation Committee. I have acted as both an Engineering Society and Academic representative. I take on challenges with a great desire to excel.

On my journey as your VP Ed, my goals will be to hold meetings with the academic

reps with the intent to determine where the student body stands on issues pertaining to their studies. Where possible, I will gather your thoughts on upcoming issues in order to become more informed about the student body. I will make it my number one priority to pursue resolutions to your academic concerns.

Vote for Derek as your next Vice President of Education this June 25<sup>th</sup> weekend.

## Vice President, External Candidates

### Michael Seliske / Lisa Belbeck

*3A Computer, 2B Nanotechnology Engineering*



Hello fellow engineering students! Our names are Michael Seliske and Lisa Belbeck and we are running together for the position of Vice President eXternal for the University of Waterloo Engineering Society 2011-2012. Mike is in 2013 Computer engineering and Lisa is in 2014 Nanotechnology engineering. Both of us have been greatly involved within the engineering society since our first year by being a part of

council, running directorships and representing Waterloo at external conferences for both ESSCO and CFES. Our platform is based on experience and outreach, and with 7 years of experience within Waterloo Engineering between the two of us, we hope to have gained valuable experience, which we will bring to the position. There are three major aspects of outreach that Mike and Lisa would like to accomplish, they include working with the

faculty to further develop their Engineering outreach initiatives, furthering community outreach and working with Dubai, to ensure their transition is as smooth as possible. To learn more about our campaign and to find out why we are running together, please visit our website at <http://Belbeck.Seliske.ca>, or our facebook group and once you have, consider voting for Mike Seliske and Lisa Belbeck for VP eXternal.

### Cameron Winterink / Mina Labib

*3A Electrical, 3A Nanotechnology Engineering*



Hello A-SOC, congratulations on being done midterms. We are Cameron Winterink and Mina Labib and we are running for Vice-President External of the Engineering Society. We are very excited about the opportunity to represent you, along with next year's executive, to other Engineering Societies, the PEO, external organizations and the community at large. We believe that our balance of experience and insight is ideal for the

position of Vice-President External. Mina is a former B-Society VP-Finance. Cameron is the current Vice-President Development of Engineering Student Societies' Council of Ontario (ESSCO).

Together with our directors, we will work towards creating an overall strategy for how EngSoc does **outreach**, attempting to promote synergy with other events the society runs. We will advocate for the charity's director to be

moved back under the VP External portfolio and attempt to promote our **charity initiatives** to a wider variety of students as well as other members of our community such as alumni. Finally, we will ensure that engineering students are getting **tangible benefits** from their membership to external organizations. We will guarantee that at least one new initiative or event be piloted as a result of knowledge gathered at conferences by the end of our term.

## Vice President, Finance Candidates

### David Birnbaum

*1B Mechatronics Engineering*



Hey Engineers,  
My name is David Birnbaum and I am running for VP Finance. I am running in this election because I'm very proud to be a UW Engineer, and want to put my knowledge and passion towards making the UW Engineering experience rewarding for everyone. I believe that my experience as a director, running clubs with payrolls of up to \$10,000, as well as tracking a

construction project with a budget of over \$1.25million will help me to achieve all of my goals. I plan on increasing the funds allotted to classes and for school spirit, and will work hard to increase student participation. It is your money; it should go back to you. I would like to continue work on a project the Executives are developing to allow any student to request funding, as I believe students should have a say in

where their money is going. I will also work with the directors to ensure all their needs are met, making the events better for you. For the rest of my platform and experience visit "David Birnbaum for VP Finance" on Facebook. I hope to receive your support in the election, because after all, it's YOUR money.

# VOTE ONLINE

# Vice President, Finance Candidates

## John Catton

1B Chemical Engineering

I am running for VP Finance and I am in 1B Chemical Engineering. In my first school term at the university, I was an academic representative, as well as Chief Feedback Officer. This term, I have taken a larger role in the society by becoming the Secretary of the Engineering Society, as well as the WEEF, Academic, and Engineering Society representative for my class. I am also the Marketing Director for the Chemical Engi-

neering Student Society.

The reason I am running for VP Finance is because I feel a great connection with the Engineering Society, and this connection is driving me to move the society forward by devoting my time and energy to improving and maintaining its structure and policies.

If elected as VP Finance, I will make it my priority to keep a strong communication line open between many of the different

sectors of the Engineering faculty and myself. These include student teams, directors, and communication to Mary Bland. Another major goal is to ensure transparency in regards to the finances and their allocation. It will be my priority to keep the society more up to date regarding how the finances are being spent and what amount is available.



1B Mechanical Engineering

## Harry Hall

Hey everyone! My name is Harry Hall, and I am running for the position of VP-Finance. I am currently in 1B Mechanical Engineering. I have two main goals for the position of VP-Finance: **Transparency/Communication** and **Flexibility**. As a vice president, I will present a clear and organized budget as well as regular updates. However, I also know that knowledge is imperative to making informed decisions;

the Engineering Society and the student body should be able to receive and understand information about our finances. As one of your VPs, I will strive to provide clarity in both the budget and in bi-weekly updates, so that you will be able to understand where money is being allocated and how it is being spent. In addition, I realize that the term budget is only a prediction of the term spending. Flexibility is key to

keeping the books balanced, and in the case of unexpected surplus allows the society to run events or support groups that may not be included in the budget. As part my goals, I pledge to be punctual and organized, providing regular updates and asking the opinion of the society on important issues.

Questions? Ask me! Harry - [harry.hall8@gmail.com](mailto:harry.hall8@gmail.com)



# Vice President, Internal Candidates

## Elizabeth Celentano

2B Chemical Engineering

Good day fellow engineering students! My name is Elizabeth Celentano and I would like to be your next Vice President Internal. I am the best candidate for the position because I am experienced, I am a leader and I am ready to serve you. My experience includes being a class rep since 1A, attending the First Year Integration Conference and holding 6 directorships.

My first major goal is to create a better

environment for our directors. It can be difficult to be a first-time director so I would like to create a director transition program to aid directors. I would also like to continue the director appreciation parties started by a previous VPI.

My second major goal is to develop events in E5 and E6 to ensure the inclusion of all students. I would do this by organizing lunch time events in these buildings

as well as continuing the advertising initiatives for these areas.

Other goals include developing the Secretary directorship to ensure society documents remain up-to-date and improving our relationship with Architecture and Software Engineering/MathSoc. I am an open person and would welcome feedback over coffee anytime. Vote for me, Elizabeth Celentano, on the weekend of June 25<sup>th</sup>.



3A Chemical Engineering

## Angela Stewart

Hello fellow engineering students! I'm Angela Stewart and I want to be your new VP Internal under a trial run for the new executive structure.

What's this trial run about, you ask?

Previously, the majority of the VP Internal's time was spent managing social events. Often the necessary (but less glamorous) duties of maintaining the internal workings of the Society were neglected. The overloaded Exec

had little time for projects that would lead to improvements of the society.

The new VP Internal position would be defined as one of representation and management of the operations of the Society. I would work as a representative of the Society to various groups around campus; maintain responsibility over all official documents and communications from the Society, and work to improve our student services such as the

exam bank and workshops.

I have considerable experience developing new, valuable student services. My largest initiative was the development of the Scholarship Bank. It's young, but there's almost \$900,000 worth of awards and bursaries up for grabs. This election it pays to get involved.

I have the drive, dedication and experience to provide real results. Vote Angela Stewart for VP Internal and be part of the change.



ALL CANDIDATES  
FORUM



Thursday June 23<sup>st</sup> @ 11:30 AM  
CPH Foyer

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

# JUNE 25<sup>th</sup> - 28<sup>th</sup>

# WEEF Director Candidates

## Brock Kopp

3A Mechatronics Engineering



I'm Brock Kopp and I want to be your WEEF Director. As great as WEEF is, there's room for improvement. I'm sure you have heard complaints about WEEF, or have some of your own, but I believe that these complaints are based on misunderstandings of what WEEF does. With better information on what WEEF can do and how to do it, I see a much better future for WEEF.

As WEEF Director I will hold at least one town hall meeting a term before funding proposals, for you to ask questions about what WEEF can do for you. This will also be an opportunity to learn how to submit and defend proposals to obtain funding for projects that will directly affect you. WEEF can be used for so much more than for student teams; it is for each and every engineering student. I will also look into

changing guidelines that govern how funding is spent. Currently funding is allocated for one purpose, but receipts are submitted for unrelated expenses that WEEF does not support. New guidelines will clearly guide recipients to how WEEF money can be spent and what to do if their needs change. Have a question? Email [brockkopp@gmail.com](mailto:brockkopp@gmail.com).

## Gareth Price

1B Chemical Engineering



During my first two terms in chemical engineering I didn't see what WEEF was doing for me, and I got the impression that other undergrads thought the same. That is something I want to change. Everyone should know just what WEEF is doing for them and how much it helps our school. As a WEEF director I will push for three goals to make WEEF serve you better: More equipment, better distribu-

tion and complete funding. I would see that new equipment be bought more often, for all the departments. This will improve the quality of our labs and would help keep Waterloo at the top when it comes to technology. When I talk to other undergrads there is an impression that funds are not shared evenly between the departments. I want to dispel this notion and ensure every department is treated equally. Lastly I

want to ensure clubs get all the funding they need. Partial funding of clubs does not help the smaller teams. I would have more teams get their full funding. If elected I will make WEEF work for you to make your program better. Thank you for your consideration and I hope to receive your support.

# VP and WEEF Director Election Update

### REBECCA CAMERON CHIEF-RETURNING-OFFICER

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

The presidential election finished two weeks ago and the new Engineering Society 'A' President is Leah Allen. Voter turnout was a record-breaking 35% - this is

the best turnout we have ever had in an EngSoc election! The vote breakdown is: Leah 46.5%, Sean 30.9%, Eric 18.2%, Declined 4.4%. Thanks to all three of the candidates - you were very professional and a pleasure to work with.

The second election for the VP Positions and WEEF Director started as soon as we knew the results of the first election. Nominations for VP Positions/WEEF Director closed on June 17<sup>th</sup> and we are in the midst of the campaigning period right now! Please read the election insert in this issue of The Iron Warrior to learn more about the candidates running for VP-Education, VP-External, VP-Internal, VP-Finance, and WEEF Director. Also, the all-candidates forum is TOMORROW (June 23<sup>rd</sup>) in the CPH foyer at 11:30. All of the candidates will be there to answer your questions. If you have a ques-

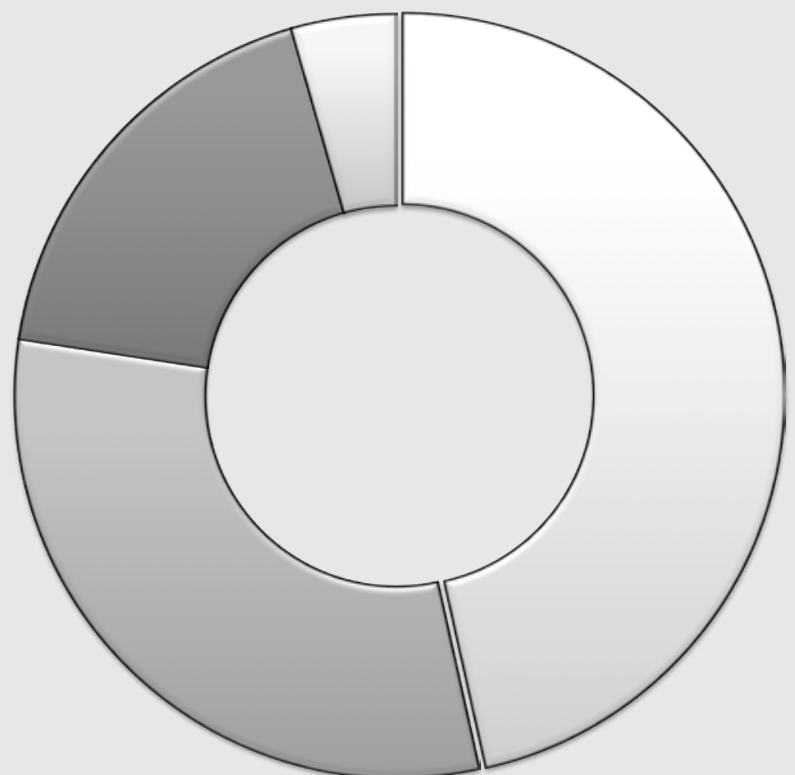
tion for the all-candidates forum, please send it to me at [cro@engmail.uwaterloo.ca](mailto:cro@engmail.uwaterloo.ca). Once campaigning ends on Friday, June 24<sup>th</sup> we will then begin voting. Voting will occur Saturday, June 25<sup>th</sup> to Tuesday, June 28<sup>th</sup>. You will receive an email with a voting link that will let you vote and direct you to a webpage where you can get more information about each of the candidates' platforms. We will have a voting station in the CPH foyer on the Monday and Tuesday of the voting period as well, so please be sure to vote! Like last election there will be donuts at the polling station! The results of the election will be announced at the next EngSoc meeting, on the EngSoc website, and in the next issue of The Iron Warrior.

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



WATERLOO ENGINEERING SOCIETY "A" PRESIDENT-ELECT

### Spring 2011 President Election Results



Leah Allen - 46.5% Sean Walsh - 30.9%  
Eric Evenchick - 18.2% Declined - 4.4%

## Vancouver Riots After Game Seven Loss



**CAILIN HILLIER**  
3T GEOLOGICAL

There are a few things that are obviously Canadian. We live in a large, mostly cold country. We make maple syrup. We have a tendency to apologize for everything. Oh, and we Canadians like our hockey, eh? So it's only natural to conclude that a city's favourite team losing at hockey results in unhappy Canadians. Especially in game seven of the Stanley Cup Finals. But since when do unhappy Canadians equal destruction and rioting? The Vancouver riots that occurred on Wednesday, June 15<sup>th</sup> were absolutely absurd, causing over 100 injuries and resulting in over 100 arrests. Damage estimates are now estimated at well over \$1 million for the property destruction to cars, store fronts and subsequent looting.

Thankfully, many people have been speaking out, agreeing that this is an absurdity and behaviour such as this is unacceptable. I cannot recall a time when I have been more ashamed of my fellow Canadians. This incident has made me begin to question basic human decency. Perhaps I look for the best in all people, and I have a naively optimistic outlook on the world. But how on Earth can adults act this way? The vandals, as well as the bystanders who acted as instigators and provided an audience for this behaviour, are at fault. No amount of alcohol consumption or drug ingestion is an excuse for this type of behaviour. How can people not think about what they are doing and proceed so recklessly? How can they harm one another and damage others' properties like that... and over a single sporting event? It really worries me that there are people out there who behave this way. There is a basic civility that all humans

should consider and abide by: to treat others (and their belongings) the way you wish to be treated. This concept was completely abandoned here, and it has left me feeling disgusted.

It also seems that people are not learning from their mistakes either. A similar riot erupted after a game seven loss in Vancouver in 1994 when the Canucks lost to the New York Rangers. That time, damages totalled \$1.1 million, with 200 reported injuries.

Although this should not have even been necessary, I think a higher police presence was required. It is very unfortunate that riots such as these need to be anticipated, but clearly they do. In almost all of the video footage I have seen from the riots, very few police were visible. Perhaps if the police presence was more pronounced, the rioting would not have escalated the way it did. Maybe in the future, people will be able to enjoy a hockey game in Vancouver without

worrying about their safety and the fallout of a potential loss.

The only solace I can take from this entire situation is what happened after the riots, as the sun began to rise the next day. Thousands of volunteers within Vancouver flocked to clean up and repair what they could in the wake of the destruction. Campaigns on various social media outlets are now attempting to identify the vandals who caused these atrocities to the City of Vancouver. Efforts are being made to make things right again. However, it still upsets me greatly that people could ever behave this way in the first place.

I hope that all people will one day be able to think about their actions and act with decency towards one another. I hope that people can be good losers and respect the accomplishments of others. In this case, the Boston Bruins simply played a superior hockey game and I extend congratulations to them.

## Acquiring and Maintaining Relevance in Today's World



**ALEXANDER HOGEVEEN RUTTER**  
4A ELECTRICAL

Last term, one of my professors remarked offhandedly, "When it comes to design, there is an artistic part and a mechanical part. MATLAB can do the mechanical part, and we don't teach the artistic part here (in undergrad)." It was probably no more than a casual joke, but it induced me to reflect on what role our education plays in our development, careers and contribution to the world.

With increasingly powerful simulation, analysis and even design software, it is easy to think that engineers are losing their relevance in today's world. Brute force calculation, memorization of formulae and figures and accuracy in complex calculation methodologies are no longer essential skills. Employees who matter are those capable of making a difference to society and serving some unmet need or want. Furthermore, hundreds of thousands of engineers are churned out each year in China and India (though the exact numbers can be disputed); simple ownership of an engineering degree will become less valuable in decades to come.

So what can we do to maintain our relevance in today's world? Surely having an engineering degree is not worthless, but it is no longer sufficient. We will need to prove our ability to provide unique value and differentiate ourselves from our peers; while there is no one magic bullet, there are a few factors that help contribute.

### Research and graduate studies

The most obvious path to increase your value is to take your technical skill to the next level. Krishna Iyer's article last issue expounds upon the benefits of undergraduate research, doing graduate-level work is the best way to become an expert and expose yourself to the knowledge and skills required for advancing in your field. While certain companies provide latitude for innovation, universities are still the centres for primary research and advancement of technology. Developing technical expertise and a thorough understanding of underlying theories is a key way to differentiate yourself.

### Student Teams and personal projects

Whenever I edit someone's resume,

one of the first questions I ask is, "Are you on any student teams?" followed by, "Have you ever built or designed anything cool?" Computers are becoming better and better at menial calculation and analysis; therefore, those who can design, create and imagine are becoming more valuable. Student teams can help expose you to this design mindset and teach you applied skills for real projects. However, don't underestimate the side projects you may be working on at home. One of my classmates brought a circuit he had designed in his own time into an interview; this can be far more impressive than credentials on a paper.

### Options, minors and additional degrees and courses

As the problems facing our society become more complex, they often require an interdisciplinary approach. Computers are well-suited for specialised tasks, but have much more trouble synthesizing disparate ideas, theorems and fields into one cohesive solution. Taking courses from a complementary or even a drastically different field enhances your ability for such synthesis by providing a greater breadth of tools to draw on. Understanding the environmental, economic, and/or political implications of technology can drastically

enhance your value to companies and society. As technical roles will continue to require a broader perspective, choosing the right options and electives can become invaluable.

### Exchange and unique experiences


Similar to cross-disciplinary perspectives, cross-cultural knowledge is equally valuable. As our globe becomes increasingly integrated, understanding the needs and skills of stakeholders from a variety of backgrounds becomes ever more important. Work placements, travel, and volunteer internships can all serve this need, though to varying degrees. For example, a friend of mine working with EWB in Africa may have been exposed to slightly less technical content, but learned a great deal about human systems and the impact of environmental, political and human factors in design. Furthermore, he was forced to confront how this design must be suited to the culture, climate, and other variables of his location. 'Engineering' as a profession is becoming less about the application of scientific principles and more about these skills.

### Leadership and volunteerism on- and off-campus

A final set of skills, now growing in importance, are professional skills.

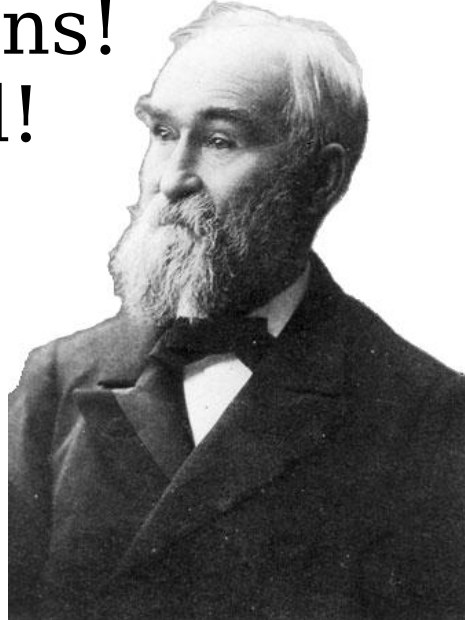
These skills include: the abilities to communicate, lead, solve conflicts and generally work effectively with teams, clients and other parts of your network. One of the best ways to garner understanding of bureaucratic or organizational functions is through volunteering or leading in various associations. While there are a number of positions within EngSoc that help develop such skills, do not limit yourself! Working with teams from a variety of disciplines now will help you collaborate with such teams in the future. Don't forget there is a world outside the university and plenty of not-for-profit, political, and other organizations which will be glad to avail themselves of your skills and offer you tremendous opportunities for growth.

Tomorrow's workers will need to go above and beyond what is taught at the undergraduate level. Whether we have specialized expertise, a proven ability to work as a well-rounded individual on diverse teams, a unique perspective or an understanding not just of theory but how it connects to the real world, there are many ways to differentiate and develop an edge. However, we must actively seek such opportunities as they will not simply fall into our laps. Good luck!



digital!  
busses!  
push!

analog!  
trains!  
pull!



July 6  
11:30am

## The Sandford Fleming Debates

Register: [drayside@uwaterloo.ca](mailto:drayside@uwaterloo.ca)



# CERN Stores Anti-Hydrogen for Over 15 Minutes



**DUSHANTH  
SEEVARATNAM**  
2B NANOTECHNOLOGY

On June 5<sup>th</sup>, 2011, the European Organization for Nuclear Research (CERN) issued a press release regarding a recently published paper in the journal, *Natural Physics*, claiming that the ALPHA experiment at CERN has managed to store anti-matter for over 15 minutes. CERN, as most people know, is one of the most respectable research centres around the world. It is also here that the Large Hadron Collider (LHC) is continually being used to advance our knowledge about the universe. The anti-hydrogen Laser Physics Apparatus (ALPHA) experiment is a part of a wide range of experiments at CERN involving anti-matter. The goal of this experiment is to study anti-hydrogen atoms and compare them to the most understood atomic system, the hydrogen atom. This will provide information on whether or not there are more differences between matter and anti-matter, other than charge. Some speculated differences between matter and anti-matter include gravitational effects, changes

in how the particles become excited as well as how they fall back to their ground state. In reference to quantum mechanics, there could even be some differences in the amount of energy antimatter can absorb compared to matter.

These differences are considered important since scientists say that during “the Big Bang,” there was an equal amount of anti-matter and matter produced in the explosion. However, the same scientists say that the current universe is composed of mainly matter. Though it is true that an anti-matter and matter particle collision would result in the annihilation of both particles, this does not explain why there is a vast amount of matter and almost none of antimatter presently in the universe. Therefore, by analyzing the difference between a hydrogen and anti-hydrogen system, scientists hope to reveal the key difference as to why there is so little anti-matter present in space. The concept seems fairly simple; find anti-matter, shoot lasers and microwaves at it and analyze. However, the problem is no one can just go out and collect anti-matter. For this reason, anti-matter needs to be artificially made. The problem with this is that the anti-particles are often too unstable and, as a result, decay

very quickly. Knowing how unstable artificially-made antimatter, this makes CERN’s accomplishment all the more impressive for the physics community. By using the intense power of the LHC, they were able to artificially create stable anti-matter through proton-on-proton collisions. With an increase in stability, the anti-particles would take a lot longer to decay, thus, allowing CERN to store the anti-matter for over 1000 seconds (which is plenty of time to perform tests on the specimens).

The scientists at CERN used a specially-designed ALPHA “trap” to hold the anti-hydrogen atoms for the record-breaking time of 16 minutes and 40 seconds. This “trap” uses multiple superconducting magnets, such as octupole and mirror magnets, to provide the proper magnetic fields in order to carefully hold the anti-matter. Another aspect of the “trap” is the three-layer Silicon detector which is used to detect any anti-proton or anti-hydrogen annihilation that may occur during storage. In laymen’s terms, the main apparatus that has two separate openings which will allow anti-proton and anti-electron plasma to enter from different sides. These plasmas are cooled down such that there is also a radial confinement

placed on the particles. The two plasmas, now confined in space, will interact with each other causing some anti-protons and positrons (anti-electrons) to merge into anti-hydrogen particles. This methodology used to form an anti-atom is the reason for the long storage time since the anti-hydrogen state is much more stable than either individual anti-protons or positrons. However, most of the anti-matter particles made are usually annihilated soon after being created as they collide with matter on the trap walls. With every round of antimatter creation, after the annihilation of most antiparticles against the walls, the remaining particles, left intact, usually amount to just over 300 properly stored anti-hydrogen atoms. Though 300 atoms does not seem like much of a sample, scientists still feel that it is enough to collect important data on these particles. The next step for the ALPHA project, however, is to start performing the tests on the trapped anti-hydrogen. This should begin later this year with the first experiment involving the observation of the difference between the anti-hydrogen and hydrogen absorption spectra. It will be exciting to see what secrets CERN will uncover about antimatter and the origin of the universe in the years to come.

## Tips for Pulling a Successful All-Nighter



**ANISH  
BHUTANI**  
4A CHEMICAL

It’s that time of term again. Midterm marks are being returned and if you are anything like me, it seems you are going to have to put in 110% to get that 60% average this term. It is this train of thought that may tempt you to pull an all-nighter, especially before a project is due or before one of your final exams.

If you choose to ignore the negative health effects from not getting enough sleep (which most scientific literature agree upon) and still decide to pull an all-nighter, below are some tips to make sure you do the best you possibly can on your project or exam.

1) **Know how your body reacts to pulling an all-nighter.** It is completely useless to stay up all night studying for an exam if your mind will shut down at 5:00 am and you cannot be productive until you sleep again. The best way to make sure this doesn’t hap-

pen is to experiment with all-nighters when you don’t have anything as important to prepare for in order to see how your brain functions. If your mind cannot function after an all-nighter, at least you won’t learn this prior to an important exam. Similarly, see how alert and work-efficient you are at later times, such as late afternoon or the evening, after pulling an all-nighter.

2) **Do more than just study.** I don’t know a single person who can effectively study for an exam from 9:00 am in the morning until 9:00 pm at night. Likewise, you shouldn’t expect yourself to be able to study from 9:00 pm until 9:00

am. Taking several breaks, including lunch- and dinner-like meals, will help make sure you are still fresh throughout the night. Farrah Foods, Campus Pizza, Pita Factory, and

many other places in the plaza are open late into the morning (or are open for 24hrs), so going there for a 2:00 am “lunch” can be what you need to nourish yourself. It can also trick your body (and you) into thinking that you are not stressing yourself by pulling an all-nighter.

3) **Avoid coffee and energy drinks.** While caffeine can give you the jolt you need to focus for an hour or two, they are not

good for you if you are trying to pull an all-nighter. Once the sugar or caffeine rush is over, you are, more likely than not, going to crash. If you are trying to finish an end-of-term project, this might not be too much of a problem, since, odds are, you will sleep as soon as the project is over. However, if you crashed right before or during your exam, you may end up doing worse than you would have had you not studied at all.

4) **Work with other people:** It is hard to stay up late at night when you are alone in a classroom. Pulling an all-nighter with a bunch of your classmates is not only a great class bonding activity, but can help keep you focused on the material that needs to be completed. One way to do this is to get together with 3 or 4 of your classmates, find an empty classroom (RCH is open 24/7, and from there you can get to nearly every building on campus), and just work in there as the night goes by. Along with taking breaks and eating food, working with others may make you, and your body, forget that it has been up for 30+ hours and allow you to avoid stress and fatigue during the entire night.

5) **Have a plan to get back to a normal sleep schedule:** One problem that may arise after pulling an all-nighter, whether it be for a project or exam, is that there is the tendency to want to go to sleep immediately afterward. This is not always the best idea. For starters, your body will want to sleep for a long time to make up for the loss - possibly even 10 or more hours of slumber. This will not only cause you to wake up in the wee hours of the morning, but mean you have lost the entire day you could have spent studying. Secondly, your body may adapt quickly to a new schedule of sleeping during the day and staying up at night. This would not be good if you have another afternoon exam. One method I have used is to semi-study (reading/summarizing notes) until 7:00 or 8:00 pm before going to sleep and then forcing myself to wake up at 8:00 am the next day. This way, you won’t permanently ruin your sleep schedule.

Hopefully, these tips can be used successfully if you need to pull an all-nighter, either this term or any other. As mentioned above, it is not always the best nor healthiest way to get studying done. However, if an all-nighter seems like the only option, hopefully these five tips will help make sure you don’t ruin your term as a result of said excursion.



Mikayla Micomonaco

An unsuccessful all-nighter

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## Cycle Time: The Getting There Edition



**CHRIS LETNICK**  
3A COMPUTER

Most people know what a bike, or bicycle, is. Whether a person knows how to ride one or not, he or she should not just dismiss a bike as just something those people on bikes ride. It is important to ask, "Why would a person choose two wheels over two feet?" Well, there are many reasons. Foremost, as a student, cycling is an excellent form of transportation.

Campus is big, and growing. Getting from one end of campus to the other takes more time than what is provided between back-to-back classes. Even making it from the bottom floor of RCH to MC can be cutting it close. However, cycling can cut at least three minutes from that time. This helps to avoid the awkward moments of walking into small lectures just after they begin.

Where a bike really shines is in the ride to and from campus. Whether you are coming from a residence or from off-campus, a bike can make the desired trip home for lunch a reality. Coming from MKV takes about 5 minutes, compared to about 15 minutes of walking. Most of the area between King Street, Northfield Drive, Fischer-Hallman Road, and Union Boulevard is within a 15 minute bike trip. This is compared to waiting for a bus, possibly missing the bus, the bus taking the worst possible route to campus, and finally having to take the 5 minute walk from the bus stop to class. Within this area, it is also faster to bike to campus than to drive. The process of getting a car

started, driving to campus, finding parking, and then walking from the parking lot often takes longer within this area.

Riding a bicycle also has other advantages than convenience and speed. As an engineering student, most people reading this article will find that they do not have enough time to get exercise in a day. Exercise has many health, mental, and social benefits that are beyond the scope of this article. The important note is that utilizing a bicycle can help a person get exercise during the time that this person would otherwise be sitting on a bus or in a car. Even a person living close to campus can benefit from this through his trips away from campus. The convenience of cycling will provide the opportunity to go more places and do more activities. Going to a grocery store on the way home to top up on groceries is no longer a complex question of when the best buses to take are coming. The places within a reasonable distance for lunch just went from the plaza to most of uptown and the many other food sources in the area.

Some buses come fast and often. A cyclist can also utilize this. Meeting friends for a movie at Conestoga mall requires getting to a bus stop, riding the bus, and then getting to the opposite side of the mall to the movie theatre. All Grand River

are either quiet or have bike lanes. Even better, there are many trails and paths near campus. It is possible to get from downtown Kitchener to the University of Waterloo while spending about two minutes on roads without bike lanes, and these are quiet roads. The time from such a long bike ride is also about as fast as the iXpress, which takes around 20 minutes, if one peddles hard. Even coming from MKV, paths other than the main one to campus exist. As a cyclist, taking the path beside REV which goes down Westmount Road and then through the Health Services parking lot can save time from not having to avoid large crowds. For details of cycling paths and lanes, the Grand

Transit buses have bike racks. Riding to the nearest iXpress stop, utilizing the express bus speed, and then riding around the mall can make this trip much faster than any alternative.

Riding on some roads can be scary during rush-hour, especially King Street or Northfield Drive near the highway. However, many of the roads near campus

River Transit bus system map doubles as a cycling map. The map is available for free online, viewable on the side of some bus stops, and for purchase at the Turnkey Desk.

Fear may be warranted, though. Roads can be scary. The best way to stay safe on a bike is to keep yourself protected. Wear a helmet. Even though wearing a helmet can look dorky, having a brain injury because you were too cool to wear a helmet is much dorkier looking. On the road, the best way to stay safe is to follow the rules of the road. Cyclists on public roads are required to follow the same rules as cars. This ranges from using the appropriate ordering at stop signs, using hand signals when appropriate, and not drinking and biking. A cyclist with a valid driver's license can be changed with a DUI against that license while on a bicycle. Whether all the rules are really valid, the reasoning behind the rules being the same for both is that it causes less confusion on the road.

Other than safety for the rider, it is also important to keep bikes safe and performing reasonably well. To keep your bike safe, ensure to get an appropriate lock for the desirability of the bike. If it is a nice bike, ensure to use a lock that can also secure the front wheel. Keeping a bike tuned up is a bit more complicated. A bit of oil every couple of weeks will keep everything running smoothly, but managing the gear shifting and breaking maintenance procedures can be complicated. Fortunately, there are often bike maintenance workshops on campus. A well tuned bike can stay tuned for a few seasons before adjustment may be desired. Although owning a bike can take a little bit of work, it provides many benefits to make up for it.



**Iron Horse Trail**

Chris Letnick

## NHL Comes to Winnipeg



**ANDREW MCMAHON**  
1B ENVIRONMENTAL

On May 31<sup>st</sup>, 2011, True North Sports and Entertainment announced they had signed a deal to move the Atlanta Thrashers to Winnipeg.

The sale of the team will not be official until the Board of Governors Meeting on June 21<sup>st</sup>, though True North has the support of the executive committee. Bill Daly, Deputy Commissioner of the league, has been quoted saying he believes the vote will be unanimous in favour of the move.

The former occupants of the MTS centre in downtown Winnipeg, the Manitoba Moose, are on the way to St. John's, Newfoundland. They will serve as the AHL affiliate for the NHL team in Winnipeg. The Moose were previously affiliated with the Vancouver Canucks, who will now likely opt for the Chicago Wolves-the farm team of the Atlanta Thrashers before the franchise relocation. There is talk that the team will have to change its name upon moving to Newfoundland due to the almost-daily news reports of moose injuring and killing people in the province.

Speaking of team names, True North will likely announce on June 24<sup>th</sup> what the team in Winnipeg will be called, though it will definitely not be the Thrashers. There is obvious support in Winnipeg to have the team renamed the Jets after the team that existed from 1979 to 1996. Another name suggested is the Falcons, in honour of the first Canadian team to win an Olympic gold medal, the Winnipeg Falcons.

Winnipeg will have the 7<sup>th</sup> overall pick in the NHL draft taking place in St. Paul Minnesota June 24<sup>th</sup> and 25<sup>th</sup>. The 7<sup>th</sup> ranked

player among North American skaters is Sven Baertschi of the Portland Pirates, according to Central Scouting Rankings.

Winnipeg has a few things left to check off of their to-do list, like hire a head coach, though Minnesota, New Jersey, Dallas and Ottawa are also on the hunt. There are many things for the new franchise to accomplish in this short offseason and the NHL is not going to wait for them. One of the names that have been brought up in the coaching discussion is TSN hockey analyst and former Edmonton Oilers Coach Craig MacTavish. Kevin Cheveldayoff, former senior director of hockey operations for the Chicago Blackhawks will be the GM for the team. True North informed Rick Dudley, the Atlanta general manager, that he would not be brought to Winnipeg. Cheveldayoff was chosen in the first round in 1988 by the New York Islanders, but injuries prevented him from ever reaching the NHL.

According to True North Sports group, hockey fans in Winnipeg managed to buy all 13,000 season tickets within 4 minutes of them becoming available for general sale. 7,158 tickets were sold to corporate advertising clients and former Manitoba Moose ticket holders during the pre-sale. The remaining 5,842 were purchased online the next day. In addition to this, an official waiting list of 8,000 was filled up just 90 minutes after the public sale began. This is an incredible display of support for the team in Winnipeg and evidence that a passion for hockey has existed in this city for quite some time.

Maybe with a seventh team, Canada will have a better chance of bringing home the cup. With the Canuck's heartbreaking 4-0 loss last Wednesday night Canada's cup drought continues since the 1992-93 Montreal Canadiens.

# ENGGOLF

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# A Slightly New Federal Budget



**MICHAEL  
LAANVERE**  
1B MECHANICAL

On June 6<sup>th</sup>, the Conservatives presented their new budget after securing a majority government in the recent election. The budget was passed by a vote of 167 to 131 on the 13<sup>th</sup> of June. The budget is almost identical to the budget presented in March except for two things: \$2.2 billion will go to Quebec for their harmonization of sales-tax to fulfill a conservative campaign promise, and the per-vote subsidy given to

parties will be phased out, finally making parties self-reliant and allowing a more sensible allocation of taxpayers' dollars. Other than those two items, the budget remains unchanged and still includes items such as:

- \$450 Firefighter Tax Credit
- Temporary Hiring Credits for Small Businesses
- Elimination of Mandatory Retirement Age
- Extension of EcoENERGY retrofit program
- \$600 Guaranteed Income Supplement increase for single seniors. \$840 for couples.
- Up to \$500 Children's Art Tax Credit

- Doctors in rural areas will get up to \$40,000 in student loans forgiven and nurses will get up to \$20,000 forgiven

- \$20 million to support young entrepreneurs

Also in the new budget that carried over from the previous one is the government's promise to get rid of the deficit by 2014-2015 by cutting costs and jobs of government offices.

The Conservatives showed that the budget they presented in March is truly what they want for Canada. They could have passed any budget, but they chose to keep the old one. The budget's main focus seemed to be to help hard working families by giving

them tax cuts, helping them save for retirement and to help seniors make ends meet.

Opposition Leader Jack Layton and the NDP proposed an amendment to have the budget include measures for jobs, doctors and seniors... which was stricken down. Good job, Jackieboy; you used the full extent of your influence in parliament!

Now that Canada's economy has improved substantially, the government is trying to get rid of the deficit spending that was needed during the recession and get us out of the red ink. And although the details of the reduced spending are not all known yet, the budget seems to be a good inclination of a prosperous year to come.

# Apple's iCloud Prominent at WWDC 2011



**JACOB  
TERRY**  
1T NANOTECHNOLOGY

As with every June, Apple's Worldwide Developers Conference (WWDC) has been one of the main sources of news stories this month in the technology world (along with E3, the big gaming conference). This is one of Apple's largest venues for announcing the major hardware and software news for the next year, and, as with other recent years, the event sold out in under a day. Most of the news gets announced at the keynote speech which, this year, focused heavily on OS X Lion, iOS 5 and iCloud.

OS X Lion is Apple's next revision to OS X, which, as you probably know, is Apple's desktop operating system. It seems Apple has peculiarly dropped the Mac part from the operating system, shifting the term from the entire computer to just the hardware that runs it. Many features for Lion were announced at an earlier event this year, but for those who missed it, Lion is mostly Apple's attempt to bring iOS features to the Mac. This is reflected in both how you interact with Lion and how it looks. Most of the features were announced earlier this year, so only new information is covered in this article.

Macs will have support for truly full-screen applications, starting with all the built-in apps on the computer, as announced earlier this year. Some applications look really nice in full-screen. However, one issue that has been raised by developers testing the preview version is that when a user has

more than one display, full-screen applications may dim the other displays. Hopefully, in the final version Apple will add support for multiple displays running multiple full-screen applications.

Auto Save, Resume, and Versions were explained in greater detail, and they all deal with preventing accidental data and productivity loss. Resume lets you restart the computer and have it remember what was open. Auto Save is a system-wide feature that can be turned on in individual applications. It is similar to what you get from Microsoft Word and the like, but is now integrated in Lion. Versions lets you look through all the old autosaves, Time Machine style, and pick elements that you want from old ones and put them in the new version.

Many elements in the system also now look like how they would on iOS; autocorrect has the same bubbly pop-ups, the scroll bars hide when not in use, and pages can scroll past their endpoint and snap back as they do on iOS. These are small little changes which make the system feel a little more snappy and updated, considering it seems to be moving slowly visually. There are many other features for Lion, and you can read all those on Apple's website if you feel inclined to do so, or wait until the summer when Lion is released. If what Apple said at the keynote is true, then you'll only be able to get Lion on the Mac App Store.

On the mobile front, Apple's yearly update to iOS will be coming out this fall. iOS 5 feels like a much needed feature catch-up version combined with fixes for things that made people angry about using iOS. One of the most awaited features, which is already

on operating systems such as Android, is Notification Center. Notification Center ends Apple's annoying "interrupt everything" notifications in favour of putting these notifications at the top of the screen in a more harmless manner.

To put up a better fight against RIM's BlackBerry, Apple is introducing iMessage, which connects iPads, iPhones and iPod touches in a very similar manner to BlackBerry Messenger (BBM), right down to read receipts and securely encrypted messages. While it does come off as a ripoff of sorts, I'm not sure how much could be improved on the rather successful BBM formula. Apple seems to be combining the convenience and functionality of the BBM with something that looks like it comes from this century (which is one of the things I'm glad RIM seems to be trying to do with its latest phones). It's about time Apple released a unified BBM-like service considering that the BBM has been one of the largest selling points for BlackBerry smartphones in the last few years.

The third feature I've been waiting on for a long time is Reminders, which is a first-party to-do app. I don't know why it's taken Apple so long to come out with one, but I'm glad they did. It does the usual to-do list functions that you'd find in other apps, as well as syncs with iCal, Outlook and iCloud. A feature in Reminders I personally think will be very useful is the location-based reminders. This would let me set a reminder so that, for example, when I approach my house, it would remind me to take out the garbage, or when I go to work, I can remember to ask my boss something I needed an answer to.

Bigger than all of these, though, is an emphasis on making iOS devices computer-free. Devices can be set up as soon as they're opened instead of having to be connected to iTunes. Core apps on the devices can have updates to enable things like photo management. Updates can also provide more control over email management and music management, which effectively kills most of the reason why people sync their devices in the first place. iOS devices can also be synced wirelessly to your computer, which finally gets rid of those painfully long synchronization sessions with iTunes. Instead, the device tries to sync when it recognizes it is plugged into a power source, such as when you plug it in at night. You can read more on the new functions of iOS on Apple's website or you can discover them on your own when it releases this fall.

Talk of wireless syncing and computer-free devices brings us to Apple's last and newest feature: iCloud. Using Apple's new massive data centres, Macs, iPods, iPads, PCs and iPhones can send new documents to iCloud, and iCloud can push these documents to other devices. Documents such as Pages are pushed to other devices as they are saved so you can continue editing them on other devices. Photos are published in a Photo Stream album which contains the last 1000 photos taken with an iOS device or added on a computer. iCloud also stores photos for up to 30 days to give users time to synchronize them between devices. Applications, iBooks and music purchased from the iTunes Store also synchronizes automatically across devices, so when a song is purchased on an iPad, it will appear on a person's iPhone and Mac without any user input. For a yearly subscription \$24.99, users can use iTunes Match, which matches music added to a user's iTunes library with what's available on iTunes and lets users download a higher quality version of the music file. There are obvious uses for this service from a piracy standpoint, as users who download sketchily recorded music on torrents can get an iTunes quality version for cheap if they match enough music. Users can also have automated backups for their iOS devices pushed to the iCloud which lets them restore from backup without having to connect to a computer. The Contacts, Calendar and Mail features from MobileMe will also be integrated into iCloud. Those are the main features in iCloud, and while it's less packed than iOS 5 or OS X Lion, it seems like a solid attempt by Apple to make one of their Internet services function properly, as neither MobileMe, Ping nor iWork.com are impressive products to come out of Apple's development teams. iCloud is slated to be released this fall for free.

In the end, it's up to you to decide whether you find these features compelling enough to join the Apple ecosystem, but from a long-time user, it's nice to see a set of updates from Apple that answers what users have been asking for directly.



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# Future of Gaming

## E3 2011 In Review



**JON  
MARTIN**  
OBIJON1138

Once again, E3 was the place to be for video game announcements this month with a new console announced, a new portable named and priced, and another company calmly printing more money. So here is my review of E3 2011, conveniently broken down into the big three manufacturers.

### Sony

The Sony Corporation swept the E3 show floor by finally announcing the name and pricing of the PSP 2, or the PSP NGP, or, as it is now officially known, the PlayStation Vita. Interestingly, the company is not directly using the PSP name, but it is undeniably a sequel. The system boasts just about every kind of technology in style right now, including imaging, touch, and motion. The Vita features a large format, HD-resolution front screen with built in multi-touch capability, so expect to leave fingerprints. The system has finally fixed the biggest problem I had with the PSP, and the one thing that stopped me from buying one: they have added another analog stick. The new system actually uses analog sticks more similar to those found on game pads as opposed to the flat sliding disks used in the PSP and the Nintendo 3DS. The new tech that is interesting everyone is the touch pad on the back of the system, which may require some PSP users to change how they hold the system to avoid triggering in-game actions accidentally. Finally, the handheld also features motion tracking similar to the PS3 Six-Axis controller.

Of course, the big thing that people were waiting for was the price – and they weren't disappointed. The system will debut in both Wi-Fi and Wi-Fi plus 3G models for \$250 and \$300 respectively (AT&T will be the service provider). This price can come as a surprise when you consider the amount of technology in the system and its graphical capabilities. Some of the demos show PS3-level graphics on the system, and some publishers are talking about linked games that you could be played on your PS3 and then continued on-the-go using the Vita. Hopefully, you wouldn't have to purchase two versions of the game, though. It remains to be seen how the hype for the new portable will build, as well as the differential release dates that Sony is famous for. In the meantime, Sony can bask in the glory of stealing the show at E3 – at least when it comes to portable gaming.

### Nintendo

The casual gaming giant finally announced the long rumoured sequel to the Wii, giving it the fabulously stupid name "Wii U." Interestingly, the new console

launch was mainly focused on the new controller rather than the console itself. Obviously, the controller is something very innovative, including a tablet LCD screen surrounded by traditional gamepad controls. The tablet controller (no one is really sure what to call it yet) also has motion tracking like the Wii remotes, allowing the console to track its movements and affect the game world. I mentioned the Wii remotes because they will make a return, as will all existing Wii accessories, to be used in games. Many of the tech demos showed the unique capabilities of the new controller through a team-hunting multiplayer game using the controller and 3 Wiimotes. The player with the controller watches their own screen while using motion and button controls to avoid the hunters. The other players use regular Wii remotes to chase the hunted, watching the split screen display on the main TV. The new controller has the ability to display different information to the one holding it, as well as doubling as a main screen if someone else just has to watch the NHL finals (as of writing this Boston, won about 10 minutes ago).



The New Playstation Vita

[gizmowatch.com](http://gizmowatch.com)

Some gaming sites jumped the gun and began speculating about the individual cost of the controller when you want to purchase another, but it seems that won't be an issue. It seems the system can only communicate with a single tablet controller, as well as 3 or 4 Wii remotes. Nintendo showed several more interesting tech demos, showcasing the amazing new technology in their new console. The system itself is reported to be more advanced than the Xbox 360 or the PS3, finally allowing Nintendo to enter the HD market. Embarrassingly, Nintendo did acknowledge that all of the videos of big-name games shown running on the system were actually footage from the Xbox 360 and PS3 versions and not from the actual system itself.

Personally, I am worried about the success of the Wii U, and many investors seem to feel the same way as Nintendo's stock dropped 5% to pre-Wii levels following the new console's announcement. The Wii

has seen such incredible success because it drew in millions of casual gamers who probably would never have thought to buy a console but thought it looked neat. How many of those casual gamers – especially the seniors playing Wii Bowling – are going to spend the money to upgrade? I know I have been saying for many articles now that Nintendo needed to do something new to reinvigorate sales, but now I'm wondering if their own success is going to doom them. They have sold so many Wii consoles that I seriously doubt people will upgrade to the new system, especially when HD graphics and triple-A titles are really only on the must have list for die-hard gamers. By the time people actually decide to upgrade their Wii and invest the money in the new system (pricing has not been announced yet), Microsoft and Sony will probably have released their own new systems, and Nintendo will be technologically left behind again. I really don't know what to expect with the Wii U, so it will be interesting to watch. Despite the uncertainty, it is clear that Nintendo won E3 – at least from a console perspective.

a good thing when you are trying to show off a new game.

Another Kinect game shown was Fable: The Journey, a new adventure in the Fable world using full-body motion control. Hand motions control specific spells, as well as aiming your weapons. Unfortunately, many people are currently against the game because of the appearance of the demo, which looked as though the game was entirely on rails. This sparked cries of outrage from gamers everywhere who saw this as a complete destruction of the freedom inherent in the Fable world. It also sparked anger in Peter Molyneux, creator of the Fable series, who admits that the demo shown was a bad choice. Molyneux has since shown gaming news groups that the game is not on rails but is actually the most open game in the whole series. Apparently, movement will be controlled using fine detail motion tracking – simply lean slightly in the direction you want to go as if you were an analog controller. Unfortunately, it hasn't been fully implemented yet and so could not be shown in the demo. I think Kinect has the potential to revolutionize hardcore gaming; it just needs more time and practice for developers to truly tap into its potential.

Microsoft announced the return of the Halo franchise, both new and old. Confirming long standing rumours, Microsoft officially announced the HD re-release of the original Halo: Combat Evolved, sporting entirely new HD visuals as well as the originals, and they can be switched on the fly. Microsoft also announced the return of Master Chief with Halo 4 coming in 2012, and the new Modern Warfare 3. So while the core gamer may not have been the main focus of the press conference, they do have some big-name games coming up.

Lots of gamers have agreed that Microsoft had the weakest showing at E3, but how can you really compete with a new handheld system and a brand new console? Interestingly, I found one opinion article arguing that Microsoft actually won E3. Look at it this way: they announced three huge games that are guaranteed to sell millions, as well as a new wave of games for the Kinect – the fastest selling peripheral of all time. So I have to agree, Microsoft won E3 from a monetary standpoint.

### Wrap-up

So obviously, each of the big three had their own time in the spotlight and their own big announcement to make. Some announcements were a little more high profile than others, while some were the more like strong business decisions that make sense in tough economic times. Check out each company's website for more info and videos of all the new stuff in action, and in the mean time, Keep on Gaming.

## Music Review: Codes and Keys

**DODGE YU**  
1B ENVIRONMENT

*Codes and Keys*, the new release from indie band Death Cab for Cuties, was released on May 31<sup>st</sup>. Upon hearing the release of this new album, I was very intrigued because I have not heard their songs since their platinum selling album, *Plans*, which was released in 2005.

Death Cab is mostly known for a signature, laid-back indie style music. This new album is no exception to that. It is, however, somewhat different in that "It's not a guitar-based record," as stated by lead singer Ben Gibbard. With this in mind, the majority of songs on the album

featured guitars in small roles; keyboards, pianos, synthesizers, strings and drums are the prominent instruments. An element of electronic music was also used in a way that is similar to Ben's other band, The Postal Service. In doing so, the album is still able to maintain that calm, peaceful style that the band's songs are known to have.

"Home is on fire," the album's opening track, features a prominent top-hat beat, single notes played by guitar, and a soft, hypnotic, distorted vocal line thereby creating a soft, peaceful yet distinguishable atmosphere. The following track, "Codes and Keys," incorporates a louder, more rhythmic approach with a more ampli-

fied, regular drum beat, a piano background, and a main melody that is played by strings. "Doors Unlocked and Open" would be one of the songs on the album that is of the standard guitar-oriented style, with a vocal line that reminisces Jack White of The White Stripes.

Lyrical, the album focuses on themes that are closely related to society, to the lyricist's personal life and his idealistic desires. "Some Boys" describes some of the modern teenage male stereotypical traits ("They don't ask for permission, they lack inhibitions...joylessly flinging with the girls that they're bringing to their rooms, and then leave them, they're through") but also points out that "Some boys don't

know how to love." The poetic and lyrical "Underneath The Sycamore" talks about finding one's soul mate, possibly referring to Ben's wife, as sycamores are a type of very large trees and is metaphorical for a strong, long relationship. As the title suggests, "Stay Young, Go Dancing" talks about how youth should always stay optimistic and not let things bring them down.

Overall, the album still retains the poetic lyrics, care-free sound and sophisticated song-writing while experimenting on a new sound that deviates away from the traditional and somewhat dull guitar-oriented sounds. Nevertheless, props to Death Cab for being innovative while still retaining their style and sound.

# TechnoSpeak: Energy Storage



**AMMAR MASUD  
KRISHNA IYER**  
2B NANOTECHNOLOGY

Don't you hate it when your laptop or cellphone runs out of power? One of the major areas of engineering research nowadays is rechargeable batteries and other energy storage systems. Some of the first batteries ever created date as far back as 250BC in Mesopotamia, but we'll focus on recent and future rechargeable energy storage options.

### Lead-Acid:

Believe it or not, your gasoline cars have a battery in them. They are used in starter motors and can be found in all non-electric vehicles. They aren't used in electric vehicles due to their poor energy-to-volume and energy-to-weight ratios. Invented in 1859, lead-acid batteries were the first rechargeable batteries and are mainly used due to their low cost and their great power-to-weight ratio which makes them useful in cars. They work using lead plates as the electrodes in a sulphuric acid bath. They are far from being environmentally-friendly but lead-acid based recycling programs are extremely successful with rates as high as 97% of all

batteries being recycled in the USA.

### Nickel-Cadmium:

Nickel-Cadmium batteries were the initial competitors to lead-acid batteries. Due to the lack of free flowing fluid in the cell, NiCd batteries were commonly used in household appliances. Up until the mid 1990s, NiCd batteries had an overwhelming majority of the market share for rechargeable batteries in consumer electronics. They suffer from the memory effect however which is the reason why it is recommended that you charge these batteries to at least 70% of their capacity before use. It is important to note that this effect is absent in other kinds of batteries.

### Nickel-Metal Hydride:

Due to toxicity concerns, there was lobbying to remove the cadmium from NiCd batteries. NiMH batteries proved to be a viable alternative. The anode material is similar to the the nickel oxide anode from NiCd batteries with the Cd cathode being replaced by a titanium compound. Due to their light weight and better performance, they provide three times the performance with the same dimensions as the NiCd.

### Li-ion, Li-Polymer, Li-Air:

The most popular type of rechargeable battery is found in almost all portable

electronics and current electric vehicles. Lithium-ion batteries work using lithium ions for energy storage due to their high energy density. Lithium-polymer batteries are essentially the same with a polymer used as the electrolyte and separator between the anode and cathode. Thanks to polymers, lab prototypes exist of bendable batteries and, with the recent announcements of bendable OLED factories, the future looks exponentially better. With advancements in anode, cathode, and electrolyte materials continuing to roll out from research and development initiatives, lithium-ion batteries won't be going anywhere anytime soon. The research is also picking up for Li-air batteries, which will have the potential of reaching 40 megajoules per kilogram (almost as much as the 44 megajoules per kilogram from gasoline). Lithium-air batteries work by using oxygen to form  $\text{Li}_2\text{O}_2$  at a porous carbon cathode.

### Hydrogen Fuel Cell:

Few people know that hydrogen fuel cells were invented a long time ago, back in 1838, by German-Swiss chemist Christian Friedrich Schönbein. However, due to their poor efficiency and performance issues, they weren't used commercially. That changed with the

invention of the polymer ion-exchange membrane. In 1955, an engineer invented sulphonated polymer membranes which enabled the use of hydrogen fuel cells as a viable method of energy storage. This technology was later adopted by NASA in the production of energy and drinking water for astronauts. Since then, fuel cells have been developed to be the most reliable mode of energy storage. Some fuel cells give about 1 minute of downtime for two years of straight usage. These nifty devices show great promise for an environmentally-friendly future.

### Ultracapacitors:

Ultracapacitors are a high energy density method of storing electrical power. They have the potential to store massive amounts of energy in a relatively compact form. Ultracapacitors, however, have a huge trade-off; they tend to lose energy to their surroundings and leak charge rapidly. Hybrid energy storage systems, combining batteries with ultracapacitors, exhibit the promise of charging up in seconds and still contain enough charge to run for extended periods of time. Thus, they have applications as energy storage devices for vehicles and for smaller applications like home solar energy systems where fast charging is a valuable feature.

## T'is the Season for Sniffing!



**FARZI  
YUSUFALI**  
2B NANOTECHNOLOGY

With the sun shining, the birds singing, the smell of green grass and the sound of eggs baking on the pavement, you can't help but say, "Summer is finally here!" With the appearance of all these wonderful things come the annoyances of runny noses, itchy eyes and violent sneezing. For all those who fall victim to allergies this time of year, I feel your pain. As I was incapacitated due to such symptoms a few weeks ago, the nerd in me wanted to find out why my body refuses to let me enjoy the beautiful weather outside.

Allergies result from a hypersensitive immune system response to a certain substance. The immune system misidentifies the substance as being

something more harmful than it is; therefore, when the immune system responds, it does so with greater intensity than required. The results of these responses can range from mild irritations to fatal reactions (which is ironic given the primary purpose of the immune system).

The B-lymphocytes (B-cells) and T-lymphocytes are responsible for your inability to walk outside in peace. These cells are present all over the body and act as security guards by checking the surface marker proteins (analogous to passports) of every cell in the vicinity. If they discover an invader, the B-cell will change into a plasma cell and produce antibodies to fight the invader. The type of antibody produced in these cases is called IgE. Although these IgEs are present in everyone, those with allergies have lymphocytes that are unable to distinguish between harmful and non-harmful substances. This is due

to a mutation on the gene which codes for these cells. As a result, the mutated B-cells will create massive amounts of antibodies that will attach themselves to "alerting" cells, called mast cells and basophils, all the same. It is important to note that all mast cells and basophils contain large stores of histamine.

What you may not know is that your first exposure to the allergen will not cause an allergic response; instead, your second brush with the molecule will result in the sniffing and itching. This is because it takes up to 10 days to build up a sufficient number of mast cells and basophils that are primed with the IgEs. Only after this period will symptoms appear. Whether it is a protein present on hay fever particles or a protein present on venoms, the response events are the same. When the particle enters the body, the IgE antibodies on the basophils and mast cells will recognize the allergen. Next, the antibodies will bind to it while still being

attached to the "alerting" cells, which "alerts" a special group of complement proteins that circulate in the bloodstream. The complement protein will bind to the site and alert the subsequent complement protein in the sequence. When the sequence of nine proteins responsible for allergic response is bound to the site, the cells within the site are destroyed. Since the only cells at the site are mast cells and basophils, large amounts of histamine get released. Now that histamine and other allergy mediators are released, the blood vessels dilate in the affected area and the surrounding cells fill with fluid. If the allergen is detected around the nasal cavity, the release of histamine will result in itching, sneezing, wheezing and inflammation in that area of the body.

What is not completely understood is the mechanism of cross reactivity, where allergy sufferers exhibit reactions when exposed to substances similar to the original irritant. For example, if you are allergic to honeybee venom, you may later become allergic to other types of bee venom. While allergies are still a result of genetic mutation, the best thing you could do to treat allergies is to simply avoid it or, for those who simply can't avoid going outside, take medication. All allergy medications contain generous amounts of antihistamines, along with ingredients targeted to treat particular symptoms. For example, Claritin uses loratadine, a second-generation antihistamine that specifically relieves nasal and eye discomfort. On the other hand, peanut allergy sufferers have to be treated with epinephrine to treat symptoms like dilating blood vessels and constricting airways.

With that being said, not only can you blame your parents for your suffering (with conviction), you can also be more thoughtful in selecting the best allergy medication to treat your particular ailment; this is especially important for those who have had bad reactions to previous medications. Now that you're a whole lot smarter after reading this, find the best allergy medication for you, take it, and skip down the street in celebration of being able to breathe again!



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Mechatronics Engineering,  
on winning the  
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# Advice on Keeping Your Computer Safe



**CHRIS LETNICK**  
3A COMPUTER

Living in the computer age, it is important to protect information. With all the recent data breaches in the news, here are a few items to keep in mind in order to secure your own information.

**Viruses and malware:** Two terms you're probably aware of by now, but this is no time to be complacent. Viruses and malware are produced, in a large part, by organized crime interested in making money in one of two ways. The first is by hiding in the background and watching. These programs will run in the background and collect information such as passwords and credit card information. They are very dangerous because they can lie undetected for a very long period of time. The second way is by utilizing the infected computer for attacks on larger targets. These programs can also sit in the background until they are activated for an attack. Computers infected by these programs are called bots, and groups of them are called bot-nets. The

best way to keep a computer protected from this threat is to keep an up-to-date anti-virus program installed and to keep the operating system up-to-date. Also, actually listening to the warnings produced by anti-virus software is important.

Friends can bare false gifts. It is important to be diligent when receiving files and links from friends. There are two possible security risks here: The first is that the communication channel being used has been compromised. If a friend's email account or instant messaging account has been compromised, the hacker may have enough history to know how to appear as the other individual. For instance, consider a scenario where a student asked their friend for some help with an assignment, and then this friend's account is compromised. At this point, the person who compromised the account could respond with a file that claims to be the solution. This may appear unlikely, but it is far from impossible. The second primary security risk is simply that the friend was not diligent, and the file they think is fine has been compromised. To stay protected from these threats, keep the operating system

and anti-virus up-to-date and do not ignore warnings.

Phishing is a similar problem to the one listed above. Phishing involves a website that baits a user by appearing to be a website it is not. An example would be PayPal's log-in page. When asked to donate money, a user may be forwarded to a PayPal log-in page that is not real, the user may proceed without realizing. At this point, the user will enter his credentials. These credentials are recorded by the fake website and used to take over the PayPal account in question. The moral of the story is that if the link was followed from a third-party site, then the link may not be real. Fortunately, there is a simple solution for identifying possible phishing sites. First, check to see if the page that was linked to is actually the correct domain. For example, a PayPal address should appear similar to <http://something.paypal.ca/something> and not <http://something.yourdad.org/something>. Secondly, most important log-in pages are secured using HTTPS. To check this, the first letters of the address should be "https" instead of "http." Furthermore, HTTPS requires an SSL (Secure Sockets Layer) certificate. Browsers should com-

plain about invalid certificates.

Although computer security is very much about securing the computer against malicious activities, file security is also important. Hard drive failures happen often enough to be considered inevitable. Backing up files is the best solution to avoiding losing information. The more complex option is to keep a full back-up of your entire computer. This allows for quick restoration of the computer using a new hard drive, but is much more comprehensive than most people require. The more practical approach is to keep a limited backup of important documents. This can be accomplished by using backup software to periodically backup files as set by the user, by periodically moving files to a different physical drive, or by simply uploading important files in a folder on the cloud. Keep in mind, though, that using third-party cloud software, such as DropBox, is an increased security risk for highly sensitive documents, so don't store company intellectual property with it. Overall, the best way to stay safe is to stay diligent. Although some of the above examples seem scary, common sense will most often prevail.

## St. Agatha Strawberry Festival



**ALISON LEE**  
2B NANOTECHNOLOGY

Foodies will be happy to know that Waterloo and its surrounding region hosts a wealth of food festivals all year round. Among them are the famous Maple Syrup Festival in March, Wellesley Apple Butter Festival in September, Oktoberfest in...October, and this 18<sup>th</sup> of June, the 10<sup>th</sup> Annual St. Agatha Strawberry Festival. Never heard of St. Agatha? It's a small town about 5 km west of Waterloo on Erb's Rd. and Highway 12. Their claim to fame is the Strawberry Festival, which is a gathering of family, friends, and food that benefits various organizations in the local community. It is put on every year by a volunteer committee with support from the St. Agatha Lions Club and strawberries provided by the local farm market Herrle's.

Typically, food festivals offer local vendors, contests and shows, and lots of opportunities to stuff your face. The St. Agatha Strawberry Festival was no exception with a charity breakfast and lunch, colouring contest, live music,



**Yum! Strawberry Desserts!**

Alison Lee

charity auction, crafts, and more. However, if you were planning on entering the colouring contest next year, I'm sorry, but you may be discouraged by its limited age categories. The petting zoo was not quite as diverse as the one in Waterloo Park, but the whirling strawberry amusement ride made up for it,

as did the free samples of pie and baked goods. New this year was a Quilt Block Challenge in which entrants create their best quilt squares to be sewn into a giant quilt to commemorate this year's festival. The Unique Wheels show was a chance for motor enthusiasts to show off their rides with a mix of old school

jalopies and souped-up vintage sports cars. The highlight of the day was meeting Aggie Berry in person, the official mascot of the festival. She was happy that the weather was so sunny and was all smiles on her big day.

Normally, mid to late June is the time when strawberries come into season, so this year's supply had to come from Simcoe County. Fortunately, strawberries from this region will appear in stores and farmers markets in a matter of weeks. Although delicious on their own, the festival offered strawberry pies, milkshakes, jams, and lots of desserts that were entered in a dessert competition. In total, volunteers made 125 pies the night before. Being less than a half hour bike ride out of the city, it made for a nice morning trip that was sweet and rewarding.

If you can't wait any longer to bite into a juicy, ripe, red strawberry, then head out to one of the farmers' markets or pick-your-own farms like Herrle's in St. Agatha and go nuts. There will also be weekly farmers' markets on-campus in the ENVI courtyard starting in June 23<sup>rd</sup>. Expect to see Ontario strawberries in stores by the end of the month, and have yourself a berry delicious summer!

## Fashion Files: Summer Fashion Basics



**AMANDA LEDUC**  
4A MANAGEMENT

The hot weather is definitely here to stay, so it's time to pack up the dark colours and heavy fabrics in favour of airy summer wear. There are a few key summer staples that every wardrobe should have.

The first thing every lady's wardrobe needs is a sundress. It's the simplest item with the biggest beauty impact. Seriously, what could be easier than putting on a one-piece outfit? With no need to coordinate tops and bottoms or having to bother with belts, it's the easiest way to get dressed in the morning while ensuring a fabulous outcome. The sundress

comes in all shapes and forms, from fitted, bright-coloured styles, to more loose and flowing pattern styles, so there is no reason for not finding the perfect sundress for every lady. For the more curvy ladies, particularly those with junk-in-the-trunk, I highly recommend an A-line cut sundress to flatter your figure. The A-line is my personal favourite because it disguises the bum and thighs and gives the illusion of a slimmer waistline. The sundress can also be dressed up with fancy accessories or be worn casually with flip-flops. And if that wasn't enough to convince you, even Barney Stinson lives for sundress season. He asked Ted, "What piece of women's attire most stokes a man's desire?" to which Ted correctly responded, "The sundress."

The second summer wardrobe must-have for every lady is a skirt. No, make

that multiple skirts. Like the sundress, the cut of a skirt can be very flattering. My personal favourite skirt is a knee-length A-line cut skirt. Longer flowing skirts with patterns make a great statement, as do bold coloured skirts with a sheer fabric overlay. If you want your skirt to be the focal point of your outfit, I recommend pairing it with a matching, solid-coloured, fitted V-neck t-shirt. This will really make your skirt "pop" and is a casual, comfortable look. To dress it up, just add coordinated dangling earrings and a necklace.

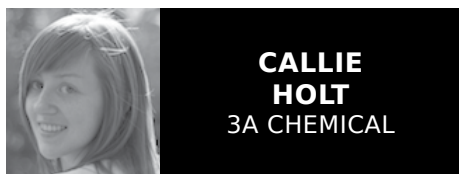
One major thing to watch for with both skirts and sundresses is that the length is flattering for your height. Those with shorter legs should aim for lengths that hit just above the knee. Choosing a length that hits just below the knee or mid-calf will make the leg look short and stumpy, and nobody wants a stumpy-looking leg.

For those blessed with long legs, don't be afraid to pull off a longer skirt. Yes, this will make your legs look a bit shorter, but you can afford it. The look of a long flowing skirt in summer can be breath-taking if pulled off correctly.

As for the men, I don't recommend skirts or dresses. Cargo shorts and light-coloured bottoms are best to keep cool and look summery. The one thing I ask you to avoid is the muscle shirt, also known as a "wife beater" shirt. Some would argue it is the male equivalent of the tank top, but no, it's sketchy and dirty looking. If your goal is to look like a construction worker or a dirtbag, then go ahead; otherwise, a plain white t-shirt is much more preferable.

Stay Classy,  
Amanda  
Chief Fashion Officer (CFO)

## Recipe: Cheesy Cauliflower Pasta



**CALLIE HOLT**  
3A CHEMICAL

No one actually likes eating vegetables, am I right? But what if you could get your required veggie intake without even tasting it?

Cauliflower is one of the vegetables out there that is great at disguising itself as something more delicious. Once you throw it into a dish with some cheese and bread-

crumbs, you basically forget that it's even there. By adding cauliflower to a traditional mac and cheese recipe and making a few other small tweaks like substituting greek yogurt for cream (lots of protein, bro), you can feel awesome enjoying a healthified version of everyone's childhood favourite. Or just eat double.

**Cheesy Cauliflower Pasta**  
Makes 4-6 servings

**Ingredients**

- 2 1/2 cups whole wheat penne
- 1/2 head cauliflower, broken up
- 1/2 onion, chopped

- 2 slices whole grain bread
- 1 1/2 cups cheddar cheese, grated
- 3/4 cup plain greek yogurt
- 1/4 cup milk
- 3 tbsp canola oil
- 1 tbsp dijon mustard
- salt + pepper

**Directions**

1. Preheat oven to 400°F.
2. Bring salted water to a boil on stove and cook pasta according to package directions. Add cauliflower for second half of cooking, and then drain over a colander when tender.

3. Add onions to a pot with 1 tbsp oil and fry over medium heat, until translucent.

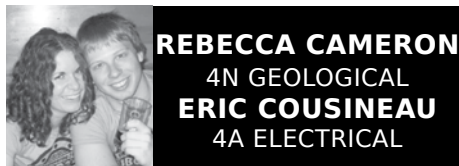
4. Toast bread slices and then combine with remaining oil and salt + pepper in food processor.

5. Add pasta and cauliflower mixture to pot with onions. Stir in greek yogurt, 1 1/4 cups cheese, milk, mustard and salt + pepper to taste.

6. Spread pasta mixture into a baking dish and top with breadcrumbs and remaining cheese.

7. Cook in oven for 12-15 minutes or until golden brown and bubbling.

## Beer Buzz: The Quest for Beer & How to Drink a Flower



**REBECCA CAMERON**  
4N GEOLOGICAL  
**ERIC COUSINEAU**  
4A ELECTRICAL

Hello readers! We hope that your mid-terms are finished, and in an effort to help make you forget the more traumatic mid-terms, this week's article is about where to find the best beer in the K-W area! We will also be reviewing Rosée d'Hibiscus by Montreal's Dieu du Ciel.

Our first stop is pretty close to home – it's the POETS pub in CPH Foyer. It is a proud engineering tradition to have our own bar (other faculties have been denied the chance to have their own pub), and every Alumni Day sees tons of grads back in POETS enjoying a brew. POETS only has bottle service and carries several beers – most notably POETS Warrior Lager, which is brewed specially for us by Gold Crown over at the Huether Hotel. It is a tradition recently brought back to POETS and was originally introduced to POETS in the mid-nineties. POETS has bottle service on Thursdays and Fridays from noon until 4 pm.

To continue our beer tour, we will go over to the University Plaza. There are many bars in this area, but they are mostly red herrings and are designed to part you from your money using inferior, overpriced beers. However, the capital of fine beer in Waterloo is located in the plaza in a small, somewhat dimly lit bar named Kickoff. From the outside, it looks like a sports bar, but as soon as you step through the soccer ball-embazoned door, you begin to see the insane number

of beer taps and a huge fridge full of exotic beers. Kickoff carries a large variety of both microbrew and imported beer. Only once in a while can you find something on the Beer Store's Top Ten on tap – common features on the tap lineup include Dead Elephant (reviewed last issue), Hacker-Pschorr Weisse, beers brewed by Flying Monkeys, Blackthorn Cider, beers from Big Rock, Cobblestone Stout, Hoegaarden and Fruli (strawberry wheat beer). You will never find the same exotic lineup two weeks in a row – all of Kickoff's 14 taps switch constantly (Dead Elephant usually only lasts a few days). Be sure to talk to the best bartender in the land – he has worked there over ten years and always has an excellent story to share! Next in the plaza is Molly Bloom's, a "traditional" Irish Pub. They have Guinness, Carlsberg and Strongbow on tap (among others). They pour a great Black and Tan (reviewed in the first issue) and Black Velvet. The food is tasty, too! Mongolian Grill is one of the only bars around with Sleeman's Original on tap, and Front Row is the only bar we have seen outside of BC that carries the tasty Okanagan Springs Pale Ale.

On the way to Uptown Waterloo, there are a few bars, but nothing really good until you stop at McMullan's and Huether. McMullan's has the most taps in one bar in town – they regularly carry a ton of Big Rock beers, along with every single beer of the "Big Ten" (not to our taste, but sure to please most people), a number of well-known imported beers (Heineken, Stella Artois and Kilkenny to name a few), and a good selection of bottles. The pizza is excellent, and the atmosphere is pretty sweet (go for the armchairs by the bar). Our next stop, The Huether,

is owned and operated by the Addly family and is the proud supplier of the delicious POETS Warrior Lager. The Huether brews beer on-site and then serves it at one of the three bars located within the building. The Huether is a proud tradition in Waterloo (Rebecca's dad was a regular there back when he went to UW!), and we encourage you to try their many unique beers (and some of the best food around).

We wanted to throw in a quick plug for West 50 Pourhouse & Grille in Mississauga. They have over 100 different beers on tap, most of which are imported. This includes our all-time favourite, O'Hara's Irish Stout, which costs around \$14 a pint (but totally worth it)! It's close to Square One, so check it out if you're in town. Toronto has its own beer scene, and we could fill another article describing it. So get out there and discover how diverse the world of beer can be!

This week, we chose a beer to demonstrate how diverse the world of beer really can be. It comes from one of our favourite breweries, Dieu du Ciel. The beer is called Rosée d'Hibiscus and is a wheat beer brewed with the hibiscus flower. Before we get into the beer itself, we wanted to talk a bit more about the brewery. They started as a small brewpub in Montreal with the goal of producing the best beer possible at any cost. They dreamed up crazy ideas and have created many unique masterpieces over the 13 years they've been in operation. The LCBO started carrying their beers in Ontario almost a year ago, so if you haven't tried one of their beers, make sure you do. You won't regret it!

Now that you know a bit about the brewery, we can review the beer. Rosée

d'Hibiscus is an extraordinarily different beer since it is brewed using the hibiscus flower. You can see the picture attached to this article to get an idea of what the bottle looks like and the type of glass used to pour the beer. Appearance: The first thing you notice when you begin the pour the beer into a tulip glass is its dark pink hue - a very unique characteristic among beers. It also has the cloudy appearance of a wheat beer, but has a noticeably short head retention, which is uncharacteristic of a wheat beer. Smell: The beer smells of spice and citrus, with a strong floral aroma (from the hibiscus flower). Taste: This beer has a very unique taste (as all beers from Dieu du Ciel do) that can be hard to place. Up front, the taste is sour and tart, but as the beer warms in the mouth, it transfers into the smoother taste of hibiscus while retaining some of its sour character in the aftertaste. Another way to describe beer is mouthfeel, which includes describing carbonation and the feeling of density (or body). Mouthfeel: This is a light bodied beer, but has a high level of carbonation that accents the sour character. Overall: This is a great beer from a great brewery, but we aren't too keen on how sour it is. The colour and aroma of the beer attracted us, but we still only drink this beer once in a while. Dieu du Ciel makes some amazing ales and stouts, and we can't resist buying them whenever they're in stock at the King St. LCBO.

Thanks for reading, we hope that this article will inspire you to get out there, try something new and get outside that comfort zone. Feel free to stop us in the halls and chat about beer, and, as always, FEAR NO BEER!



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# Getting Cut Short



**BROCKGRAEME  
SCOTT KOPP**  
1A JOURNALISM

Greetings to all of you once more. It's so nice to see all of your lovely faces once again (I can see you through my picture, like in Harry Potter, but don't try talking to me. I'm quite busy spelaeologying. I will likely not respond and you will just be talking to a newspaper... pretty preternatural if you ask me).

Now, I get asked a lot of questions every day; "What is your favourite flavour of banana?" "Which of these llamas would make the best hat?" "How many days until yesterday?" and the like. But most of all, I am asked one simple question: "Brockgraeme how is it that you are so good looking all the time?" Well let me tell you, noble reader, that there is but one answer to this question, and that answer is (drumrolllllllllll)... I consistently and without fail receive an excellent haircut.

Now you might say that is nothing to brag about, but it is. Getting a good haircut is not something that just happens; it is a skill, and a well honed one at that.

For many people, getting a haircut is a harrowing experience. Going in, you never know what the top of your head may look like when you come out (see Ben Selby). But if you follow Brockgraeme's Three Simple Steps to Haircut Receiving Excellence™, you will, consistently and without fail, receive good haircut.

1) Let your hairdresser/barber/horse (or whomever it is that cuts your hair) know who is in charge (which is you by the way). This can be done by first making direct, unblinking eye contact for 5 straight minutes upon meeting the haircutting person. This will assert your dominance and let them know once and for all who is in charge of whose hair (hint: you are in charge of your hair).

2) Every time your haircutter does something wrong or upsetting, throw something across the room. This will be unpleasant for the person cutting your hair and they

will want to try and avoid any further wrongdoing.

3) If you follow the above steps perfectly, you will need no further direction and will receive good haircuts all the time every time.

Following these three steps will not only give you a good haircut all the time, but make you more confident and personable.

But I digress. Stress levels are rising around the world as peoples' productivity is expected to be greater and greater in today's fast paced world (<http://tinyurl.com/stresssucks>). One of the biggest causes of stress is deadlines. I challenge anyone to contradict me in saying that without deadlines, there would be no stress. The world would simply be a more enjoyable place to live.

By placing a constraint on how much time a person has to complete a task, you are not only damaging the person's mental state, but also limiting the person's creativity. Imagine a world where you had as much time as you needed to finish a job. How often have you been writing a report

and thought, "This could be so much better if I only had a couple more hours?" Every term? That's what I thought. This idea applies to so much more than just school though. If the E5 architect had another few days, would there be water fountains? Would the toilets actually flush on the Systems floor? Would the concrete sidewalks work the first time? Would you be able to climb to the seventh floor without getting dizzy and out of breath? Would the windows line up? Would the chalk boards be taller than two feet each in room 3101? Would the whole building not be sinking because the weight of students was never taken into account? The possibilities are endless.

"But nothing would ever get done Brockgraeme!" you may exclaim. Well, "I am disinclined to subscribe to your expostulation," is what I would respond. A world without deadlines would be a much different world, but would it really be the chaos you postulate? Let me know what you think by electronically mailing me at [brockgraeme\[at\]gmaildotcom](mailto:brockgraeme[at]gmaildotcom).

# Topz: Showing Off Your Waterloo

**ANDREW HEPBURN AND  
GORDON L. JOSEPH**  
1B FRIENDSHIP

You bust your ass all day erryday such that that you may one day graduate with a piece of paper emblazoned with than glorious moniker "University of Waterloo." And that's all you need to make the entire ordeal worthwhile. In fact, you're so content with that, and that alone that you feel the need to share your contentment with your friends studying at other "universities." Problem is you don't want to sound like a dick (even though you totally aren't being one, just expressing your love for this wonderful institution). Luckily for you, below is our guide to slyly mention Waterloo's more bragable aspects:

**Co-op:** Travel the world and the seven seas, everybody's looking for employment. Next time someone brings up the current state of the job market try out one of these: "Oh yeah, the market's just terrible, if it wasn't for my university, the University of Waterloo, which has a world-renowned co-op program – which attracts the likes of Microsoft, Apple, Google, and Facebook – I'd be totally screwed!"

**Maclean's Magazine:** Every year,

thousands of Canadian high school seniors pick up a copy of acclaimed Maclean's magazine – but not just any issue – the infamous annual university rankings issue. So the next time you see a fair citizen reading this staple of Canadian journalism, sneakily ask, "Hey you, did you manage to read this year's university rankings? If I'm not mistaken, the University of Waterloo, the university which I currently attend, swept the rankings across the board. And now that I mention it, they did last year too. And the year before that! Or maybe I'm thinking of another university ... probably not though, I'm pretty sure it's the University of Waterloo."

**Notable Names:** Everyone at Waterloo knows a long list of notable people attached to our school, but not enough outsiders are aware of this essential knowledge. For instance, if someone pulls out a BlackBerry you can ask, "Did you know that Mike Lazardis, co-founder of Research in Motion, is from the University of Waterloo? In fact, a lot of my friends at the University of Waterloo are currently working there as a part of our renowned co-op program!" Or, for the more ambitious, if someone mentions a product from the pharmaceutical giant Johnson & John-

son you can subtly work in, "Oh, I thought you said Governor General David Johnston, former president of the University of Waterloo, my university, and current most politically powerful individual residing in Canada under our constitutional monarchy! Silly me!"

**Math Faculty:** Now this one is for you software engineers out there! If you're on a hot date and the conversation turns to mathematics (as they often do), you can seamlessly bring up "Boy oh boy, talk about math! Not only is the University of Waterloo (I may have mentioned already that I attend it) renowned for its stellar engineering program, but also for its Faculty of Mathematics which is internationally recognizable! In fact, a University of Waterloo graduate is currently the youngest ever professor at MIT! Who knows, maybe one day they'll be the American (near) equivalent to the University of Waterloo!"

**Facilities:** Let's say one day you're walking in downtown Toronto during construction time (i.e. not winter) and you're passing a site with some friends. You can easily-as-pi drop in "I sure do hate construction! There's always so much going on at my school, the University of Waterloo, due to its rapid expansion in response

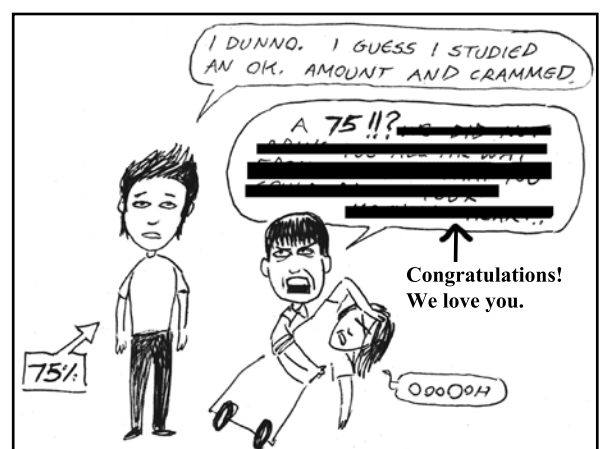
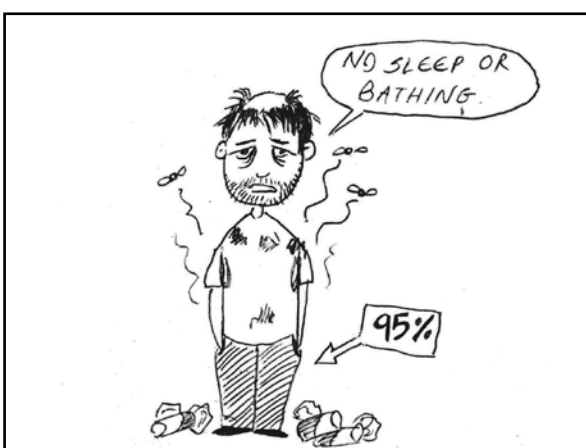
to increasing interest in its excellence! I mean, gosh-darn-it, the Quantum-Nano Center alone has been under construction for years! I suppose it's reasonable given that the facility will house one of the top quantum research centres in the world, the IQC, and conduct groundbreaking nanotechnology research. But what an inconvenience for us students at the University of Waterloo, eh?"

**Football:** As a Waterloo Man or Woman, you're a well-rounded malchick or pttisa! And as such, we're sure you love to throw around the old pigskin. So the next time you're talking about or playing football slide in a "Hey, did you guys know that my school, the University of Waterloo, is often referred to as the Silicon Valley of the North?! Crazy, eh? I mean I guess they have a point with the University of Waterloo being known as a leader in innovation and excellence and all! Fun fact!"

And there you have it, by following our instructions you will enlighten your friends to the greatness that is the University of Waterloo while not tarnishing your reputation of humility. No need to thank us, it is our pleasure as two undergraduates of the University of Waterloo to help our fellow future rulers of the world.

Midterms

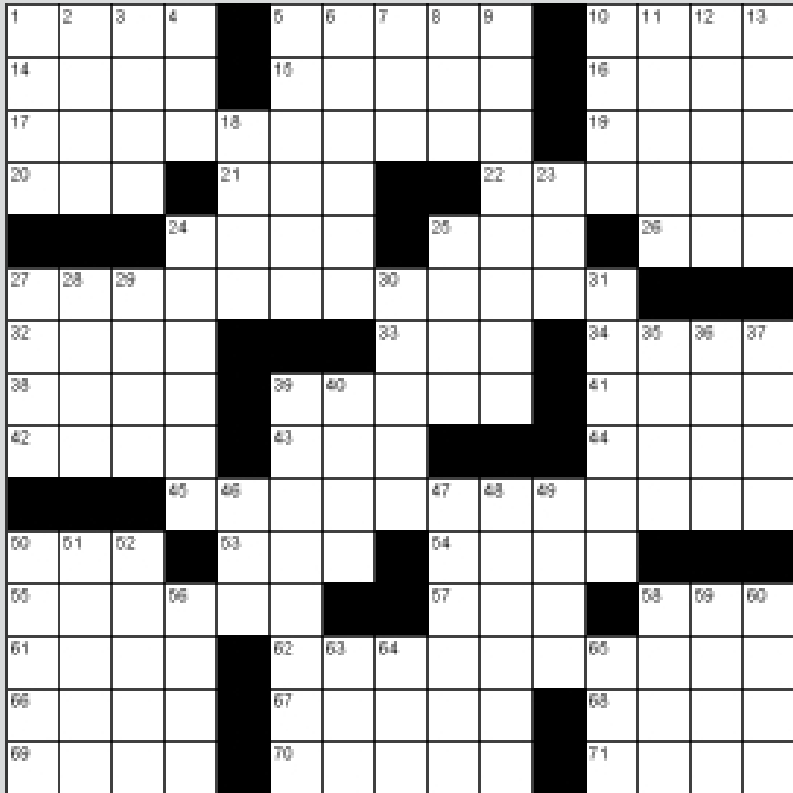
Michael New, 4A Civil





# Midterms

STUART LINLEY  
2B NANOTECHNOLOGY



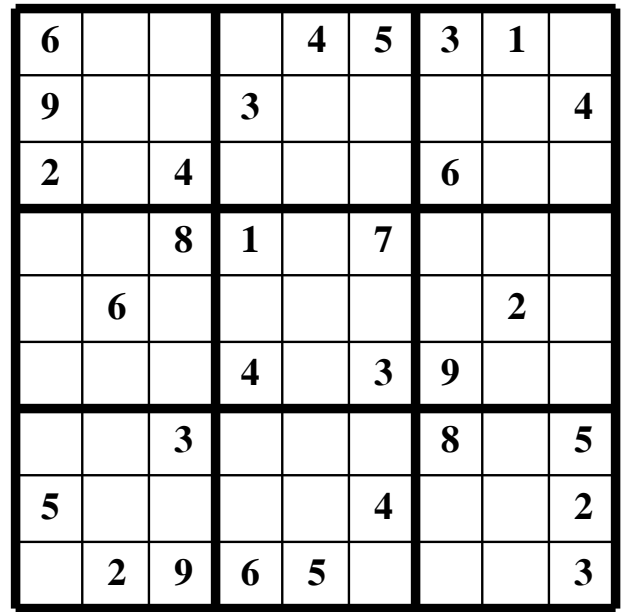
### DOWN

- 1) Plants, as seed
- 2) Happy animal
- 3) Hgts.
- 4) \_\_\_-Kwon Do
- 5) Samson and Delilah actress Hedy
- 6) Call to arms
- 7) Kill Bill mentor Mei
- 8) Aut or col go with
- 9) Greek version of Neptune
- 10) Engineering electives
- 11) Skateboard jump
- 12) Spies
- 13) Kieths or Coors
- 18) Speed competition
- 23) \_\_\_ carte
- 24) And others
- 25) The difference between radius and radii
- 27) Consumes
- 28) Sheltered
- 29) Shut forcefully
- 30) Live
- 31) They can't say no
- 35) \_\_\_ letter
- 36) Frankenstein's assistant
- 37) Rank below maj.
- 39) Carribean island
- 40) Very, to Yvonne
- 46) Air mover
- 47) Repeated phrase
- 48) People of Yemen
- 49) One who tills
- 50) Horrify
- 51) Art stand
- 52) Pooh-poohed
- 56) Crusoe's \_\_\_
- 58) Perilous
- 59) I'm \_\_\_
- 60) Chances
- 63) Year 1, on the Roman calendar
- 64) Boy, to his father
- 65) Bad

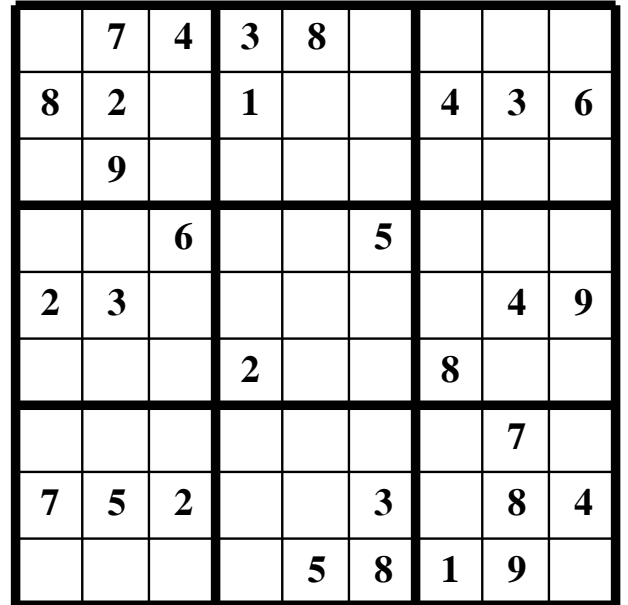
### ACROSS

- 1) Sing freestyle
- 5) Drink, as a cat
- 10) It has fine teeth
- 14) Queen of 1-Across
- 15) Davy Crockett's last stand
- 16) \_\_\_ gin
- 17) \*Modern aquaducts
- 19) She, to Pierre
- 20) Text
- 21) River through Bern
- 22) More simple
- 24) Tan
- 25) Cooking or motor go with
- 26) Double curve
- 27) \*The day after an egg hunt?
- 32) \_\_\_ breve
- 33) New
- 34) Narrative poem
- 38) Carribean colour
- 39) Mark
- 41) Sonic company
- 42) Half
- 43) 3-prefix
- 44) L followers
- 45) \*In love with me?
- 50) Group of a kind
- 53) Doctor sounds
- 54) Geological time
- 55) Dealer's house
- 57) Music mag.
- 58) Scooby-\_\_\_
- 61) Queries
- 62) \*Principal architect
- 66) Rod counterpart
- 67) Beautify
- 68) Hot and dry
- 69) German river
- 70) 10 Commandments mount
- 71) Allows

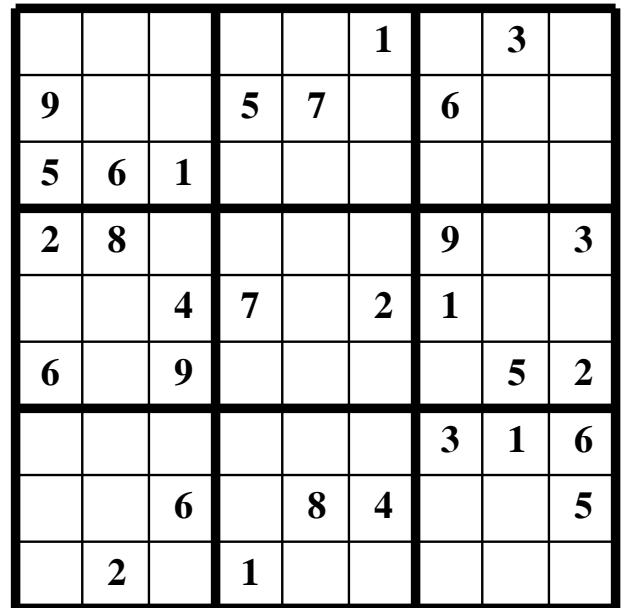
Easy



Medium



Hard



## "How do you plan on recovering from midterms?"



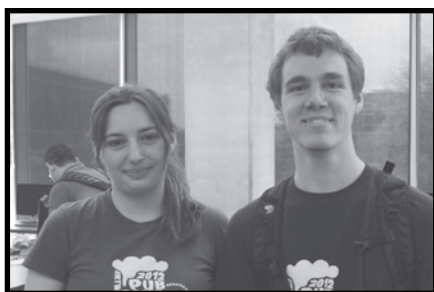
*"Eating chocolate ice-cream"*  
Dusan Sarenac, 2B Nanotechnology



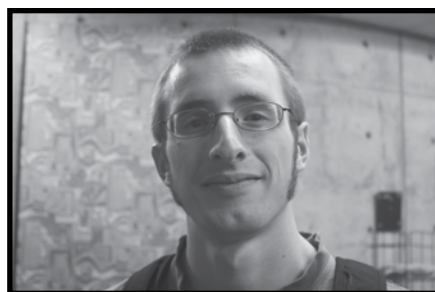
*"Ride a shark across the rainbow ocean while skeet shooting"*  
Sean O'Neill, Nanotechnology 2011



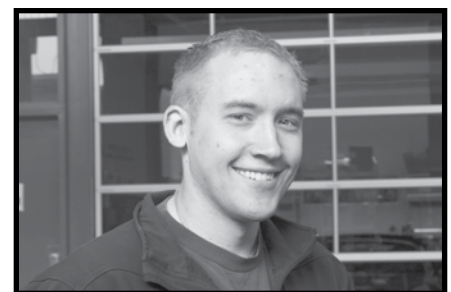
*"Some outdoor beach volleyball"*  
Nicole Cress, 2B Chemical



*"Pubcrawl!!!"*  
Vicki Olszewski & Matt Mitchell,  
2B Mechanical



*"I don't have to recover. My midterms were great"*  
Jacob Alexander, 3A Computers



*"Midterms are for suckers"*  
Cody Prodaniuk, 4A Mechanical