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THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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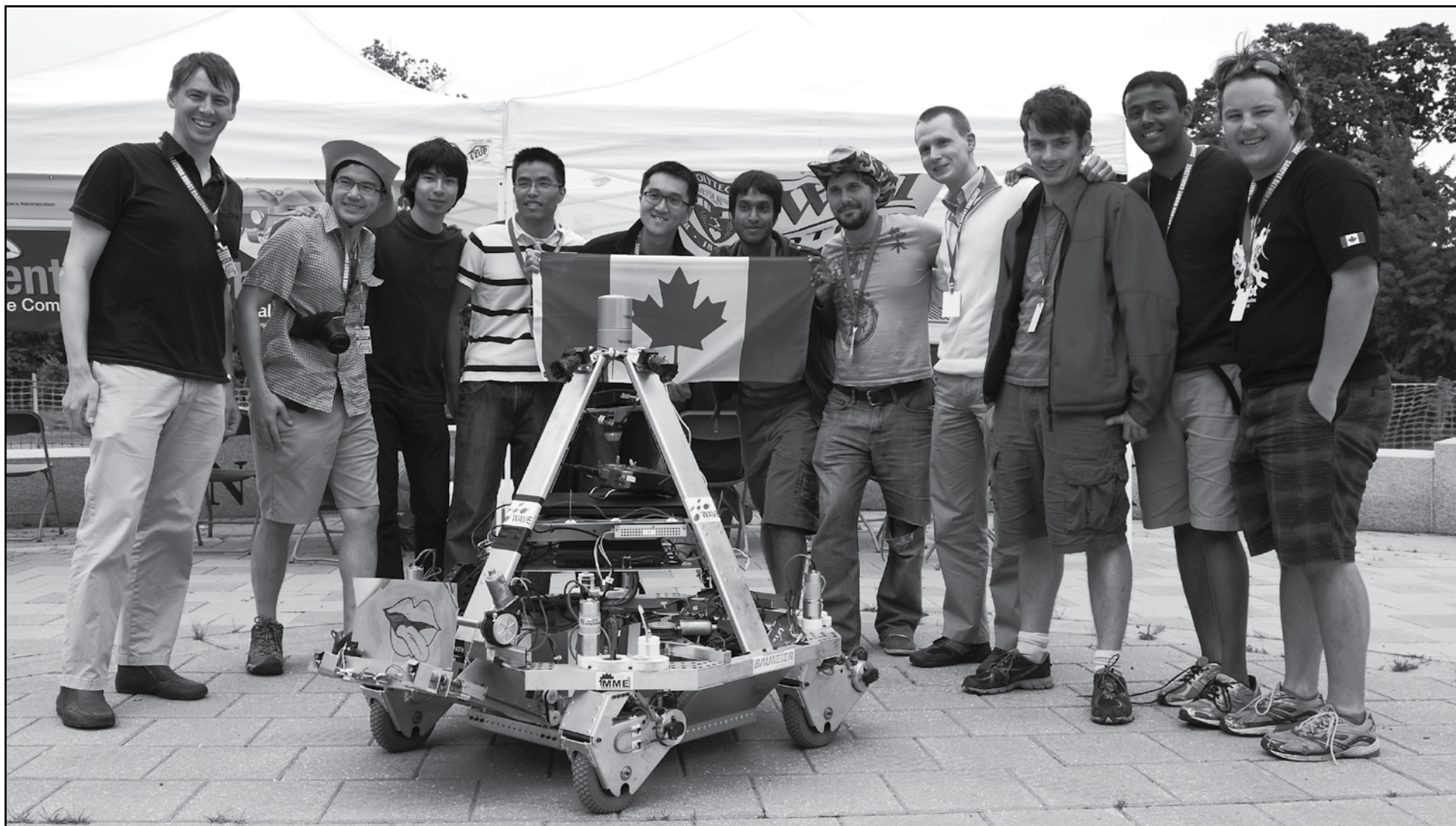
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UW Robotics Team Takes on NASA



NASA / Bill Ingalls

Right after the competition at WPI. In the picture Left to Right: Prof. Steven Waslander, Michael Diu, Ryan Turner, Steven Lao, Andy Wong, Arun Das, Frank Imeson, Christian Scharfenberger, James Servos, Neil Mathew, AJ Rosewarne

ARUN DAS & NEIL MATTHEW UW ROBOTICS TEAM MEMBERS

The UW Robotics team is at it again. It's not like we haven't seen them consumed by robot-fever before. We've seen them build robots that float, fly, race, and fight each other, but this time... they're taking it to Mars.

It was two years ago that the team decided to compete in the NASA Sample Return Robot Challenge, held each year at Worcester Polytechnic Institute in Massachusetts. The challenge involves

building an autonomous robot to search and collect a variety of objects over an uneven, obstacle-ridden terrain without human intervention of any kind and then bring them back to home base within two hours.

As it turns out, this is a pretty complex problem to solve. The terrain is unknown, uneven, and filled with obstacles. The lighting varies, affecting the robot's ability to "see," and finding its own way back home in an 80 000 m² area is not an easy proposition. Add to that a handicap of not using any earth-bound sensors like a GPS

or a compass and you have yourself an incredibly challenging task.

The University of Waterloo Robotics Team has participated in the contest two years running and, this year, their robot, affectionately named "Professor Marslander", in honour of their faculty advisor Professor Steven Waslander, director of the Waterloo Autonomous Vehicle Laboratory, was ready to show the world what it was really capable of.

After a less-than-perfect performance at the competition last year, the team was more motivated than ever to deliver

this time around. Fuelled by buckets of determination and coffee, the team spent months designing and building the four-wheeled robotic rover that was capable of collecting samples autonomously. Using a Velodyne laser scanner similar to the one used by Google's self driving car, an array of high definition cameras, and enough lines of code to make even the most seasoned hacker's stomach churn, the team put together their most capable and sophisticated robot to date.

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Proud of Diversity

LEAH KRISTUFEK 2B CHEMICAL

'Superqueer' is the slogan of Toronto's Pride Parade, which takes place in Ontario's capital June 21 to June 30 this year. Every year, people of all genders, races, and sexual orientations flock to Toronto to celebrate Pride. Celebrations center around the members of our society who don't subscribe to the traditional heterosexual definition of intimacy or the concept that sex defines gender. Lesbian, gay, bisexual and transgendered (LGBT) people are embraced here in Canada and legally enjoy the same rights and freedoms as their non-LGBT counterparts, a fact that became of-

ficial nationally in 2005.

Sadly, controversy over what exactly the rights of LGBT individuals should be is reverberating through many countries in the form of legislation aiding or diminishing the LGBT cause. In France, protests erupted after a bill allowing same sex marriage and adoption was signed into law on May 18, an election initiative on the part of newly-elected president, Francois Hollande. Most recent of these protests interrupted the French Open. This reaction is not particularly surprising when looked at the context of social freedoms in this country. For instance, the French government's strict adherence to maintaining a secular state has resulted in stringent rules about

wearing 'conspicuous' religious symbols like a head scarf in schools. Although many French citizens are opposed to same sex marriage on religious grounds, it seems that quite a few are simply struggling with adjusting to a new worldview, particularly the idea of same sex couples and their potential children. For instance, in the town of Matha in southwestern France, the mayor will consider marrying a lesbian couple but not two males because 'they can have children.' Adoption by same sex couples is also strongly contended on the part of the 'rights of the child.' In France, many protesters seem more focused on the definition of a family rather than a couples' right to be involved romantically, whether same

gender or opposite, although religious beliefs undoubtedly play a strong role.

While the first-ever Russian float makes its debut at the New York Gay Pride Parade, violence is increasing for LGBT Russians in their home country. Recently, Russia's lower house of parliament unanimously voted to pass a law forbidding the "propagation of non-traditional sexual relations" thereby making it illegal to even confirm that homosexual relationships exist if talking to someone under the age of 18. The aim, it would seem, is to discredit all sexual relations which cannot be used for procreation.

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Letter From the Editor

Let's Get Un-lost and Make Worlds Together



LUCAS HUDSON
EDITOR-IN-CHIEF

GOOD NEWS EVERYONE! Hell Week has passed and the third issue of *The Iron Warrior* is in your hands. What could be better? I want to extend a big thanks to everyone who contributed to this issue; to both my staff writers as well as all our miscellaneous contributors. THANK YOU!

Before I get onto the meat and potatoes of this letter, I would like to correct some of the mistakes from last article. I was happy to see that there weren't as many blunders as last time but two things need to be corrected. Firstly, Keven McNamara's article entitled "Sponsorship and Capital Improvements" has a misprinted date. Sponsorships applications are due June 28, not July 28. Good news is, you still have two more days to get those in, so not all is lost! Second, in Nachiket Sherlekar's article entitled "Entitled Web Series, Book Club, Space Janitors", I forgot to fix two typos that slipped their way into his article, which he specifically pointed out to me. The second last paragraph should read "web series" not "we series" and the last paragraph should read "That's a tasty chicken shawarma." With all the headlines and bylines correct this issue, my goal for this issue is to make sure all the corrections sent into me are implemented. Perfection may be a long ways off but there's always little things you can improve on that will make newspaper better.

With decoupling off the Engineering Societies' agenda and no more birthdays coming up, I was at a bit of a loss on what to write about. I would like for each of these articles to have some sense of meaning, a message, something the reader can take away with them and reflect on. Maybe that's a bit too ambitious for me, since I don't think I am a very skilled writer and I don't think I explain myself through text very well. In an attempt to write something meaningful this week, I decided to talk about something that I am very passionate about: online video and its ability to educate and build communities.

I am sure we have all heard of websites like Khan Academy, a lovely corner of the Internet dedicated to delivering free, word-class education to anyone with web access. Khan Academy and sites like it are a great way to reinforce concepts you are learning in class but also explore other topics you may not have the opportunity to learn in a traditional classroom setting. With continued efforts of educational websites, the concept of a 'traditional classroom' might change altogether. Right now, our education system is, for a lack of a better word, broken. From grade school right up to undergraduate university, any course you take is typically taught to the lowest common denominator. Those who are struggling must find a way to grasp the concepts lest they be left behind while those who are comfortable with the class turn to doodling

on scrap pieces of paper while the lecture takes place.

Where can we find a common ground where both extremes can benefit? One solution comes from, you guessed it, online video. Students, rather than being assigned homework, would be assigned videos to watch at home. Traditional homework problems would then be worked through in class, allowing the teacher to assist anyone with questions about the assignment. The role of the teachers transforms from that of a lecturer to more of a tutor by supplying guidance to those who need it most. I don't think that every lesson lends itself to being taught through video, I have watched enough online education content to believe that it could replace a significant portion of what is taught in school today.

How does this address my previous question: how does this help those we are struggling and stop the doodling of those who are bored? In the best case scenario, those who are struggling to grasp a concept can re-watch lessons and answer some sample questions online to reinforce concepts. Student discussion forums could be put in place to encourage students to ask questions online, allowing fellow classmates to answer said questions. Students that are comfortable with the subject matter can work ahead of the lesson plan, watching videos ahead of time and completing assigned problems at their own pace. Testing can become an issue when students have the opportunity to learn material ahead of time. Do teachers have a single test for each subject or do they write up two or three tests per subject, allowing those working ahead to test their knowledge at an earlier date? These are questions I don't really know how to answer but are a big concern when considering such a drastic change in the way we learn. It may be a pipe dream, but I really do think that the future of learning (at least at the grade school level) lies somewhere online.

While online video can be used to educate our youth, I am much more interested in how it can bring people together and build communities. While sites like Reddit can bring people of common interests together via subreddits, interactions feel very abstract with most conversations happening through text. I'd much rather listen to someone's opinion then read it; that's why I enjoy things like TEDtalks and YouTube over Reddit. I am particularly fond of a YouTuber that goes by the name of Ze Frank. Just over a year ago, Ze started producing YouTube videos for a how he called "a show", a play on the name of his previous video collection call "The Show". Videos range from things like faux documentary-style video explaining fabricated facts about random animals to him sitting in front of a camera talking about his options and view points on a particular subject. The latter videos are my favourites, some of which I have watch multiple times on multiple different occasions. Listening to people talk about their experiences, what troubles them, how they deal with both success and failure, helps revitalize my faith in humanity, something

that can be pretty beaten up after spending too much time on the internet. Listening to people like Ze puts life into perspective, helps me ground my thoughts and reminds me that other people experience the same things I do. The thing I like most about Ze's videos is his attitude towards answering questions. He doesn't pretend to know everything. Ze always seems to empathize with his viewers, taking a point of view that is realistic and critical of assumptions that we might have.

In one of Ze Frank's recent videos, entitled "On Starting College", he responds to a grade 12 student anxious about going to college. It seemed like a fairly generic question, a student moving from a small town to Seattle in search of a higher education, nervous about "the end of [him] and the beginning of who [he] will be." Even before he tries to answer, Ze comes out and says "... I'll try, but I don't know if a lot of this is advice, more like confusion." Ze also goes on to talk about fear and how it casts a strange light on life, manipulating our perspective and warping our reality. The fantasy that university is the "best time of our life is just that, a fairytale that people tell to quench our fears. The truth is that we create our own worlds in university, we are 'world makers'. We create how we interact with other, what our interests are and what we do. We create the world around us and what the world sees of us." Right now, we all time to create a world that fits with the things we are interested in and the kind of relationships we want in our lives. Does that not sound exciting? Surely more exciting than trying to fit into a world that has a bunch of rules that you try to bend to fit into.

Eventually, Ze does come out with some clear advice: "Be generous, be kind. Tell people when you like something about them. Get to know a lot of people... I would do things with your body. Exercise-y things and sporty things. It's a good time to do things with your body." Simple advice, I'm sure you've heard something like this before, but it's also very simple, something that can apply to everyone. These are things that are not insurmountable, things that you can work on everyone. The best advice he gave, at least for me, was to not ask too much from new relationships. We are all trying to fill voids in our lives, but not everyone is going to fill them. That is something that I have struggled with throughout university, trying to find relationships to make me feel 'whole', when really I should be trying to find what I can do to make myself feel whole, not searching for others to complete me.

I find many of Ze's videos aren't meant to outright answer our questions but, instead, force us to reevaluate our perspective and put new questions into our minds. Some of you, like myself, might seem swimmingly lost, but I am sure we will become un-lost. There are people out there that say the right words at the right time, but they are lost too, and they are just better at hiding it. Let's create our own world and get un-lost together. DTFBA.

THE IRON WARRIOR

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

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

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Take Part in Making Engineering Courses Better

Participate in Course Critiques!

GORDON STUBLEY
ASSOCIATE DEAN, TEACHING

Course evaluation packages will soon be sent to your professors and instructors who will bring them to class between July 8-19, 2013. Student representatives will be called upon to distribute one questionnaire to each student in each class, collect them when they are completed, and deliver them to the EngSoc office. Your Course Critiques Directors will

work with student volunteers to prepare the packages for computerized scanning and processing. It's a process that has been repeated every semester for over 40 years.

And yes, it's quite a big undertaking, but it's one we believe is well worth it.

On the day after grades are due, a package is mailed to each course instructor with a summary of the numerical data as well as the original completed questionnaires so that they can

read the feedback you've written on the back. The numerical data is also used to prepare summaries for department chairs, and finally uploaded into a database that the Associate Dean, Teaching uses to inform course improvement efforts. The data is also uploaded to the online Course Critiques site (www.eng.uwaterloo.ca/critiques/) so that you and future students may review the results.

Your thoughtful and candid responses to course evaluation survey questions

have a big impact. Your instructors rely on your feedback to help improve their teaching. Your faculty and department use your feedback to make tenure and promotion decisions. Your feedback also helps the Associate Dean, Teaching, to gauge how effectively our teaching supports our students.

Thank you for your time, your feedback, and, most importantly, for your continued support of this longstanding and valued process.

Senate Report

May – June



ALLYSON FRANCIS
ENGINEERING SENATOR

Hello my fellow engineering undergraduates! It is my pleasure to present to you all the first Senate report of the term. There has been much going on since I was elected so here is a summary of the main issues that were addressed over the past two meetings.

The first item of interest was the university's 2013-2014 operating expense budget. Geoff McBoyle of the Finance Committee presented the budget and explained some of the challenges encountered during preparation (one of which was the ongoing changes to the tuition framework). Senate considered some points that were made during a short discussion and then heard a motion to endorse the budget to the Board of Governors. The motion carried. At the June 4 Board of Governors meeting, the budget was approved. Details of the budget can be seen on page 48 of the agenda package for the May 21 Senate meeting.

It should be noted that this budget was prepared and presented with the acknowledgement that additional fees would need to be charged to student accounts during the term in accordance with the new tuition framework. As the representative to the undergraduate engineering students, I voted for the motion to recommend this budget. Being a student who takes an active interest in university activity and policy, I was aware that the university was waiting for the Provincial Government's approval of the new tuition framework so that they could collect the rest of this term's fees. I didn't see a problem with this, as it would result in lower fees overall compared to what the old framework would have advised. However, I was disappointed in how the university handled the situation in regards to communication with students. A large number of the undergraduate representatives at Senate, including myself, collectively issued a statement at the most recent Senate meeting to voice our concerns.

Our main concern was regarding the damage that was done to the relationship between the students and the institution, something that we as a group consider fundamental to the university's image and success. Going forward, we stated that we would like to see a review of practices in such communications with students as well as student involvement in these reviews, the publication of the revised practices, and a plan to avoid mid-term fee adjustments in the future. Our opinions and requests were met with agreement at the meeting, and I look forward to seeing where this takes us after the summer break.

Moving on, another major item that was addressed was the University Strategic Plan. As the plan had been revised shortly

before the May 21 meeting of Senate, the latest version had not yet been circulated to the members. An electronic vote was held later in the week to allow all senators to read the material. The motion to recommend the strategic plan to the Board of Governors carried, however it was not approved at the June 4 meeting. The Board of Governors felt that the plan had too many proposed areas of improvement with no clear priorities as well as no process to quantitatively measure success in achieving objectives outlined in the plan. They requested that the plan be adapted to suit their recommendations, after which they would hold a special meeting of the board to approve the changes.

The university is now faced with making delicate choices. A strategic plan with a few high impact items is very strong and can be used to differentiate the University of Waterloo from its rivals. Items that would foster this differentiation include focus on entrepreneurship as well as experiential learning (ie. co-op). However, refining the plan would also disenfranchise certain groups of people, and cause the university to lose its strong connection to many of its key stakeholders (for example, students who are not in the co-operative education program). It was decided, however, that the student experience is of the utmost importance and that one thing that should continue to be focused on is the student environment. As the strategic plan is modified and re-presented, I will keep the student body notified to the best of my ability.

As far as admissions go, senate was informed at the June 17 meeting that admissions this year had yielded a higher amount of confirmations than had been anticipated, meaning that, this Fall term, there will be many more first years than the university has seen in the past. Roughly 6500 students are expected to attend UW in the fall whereas the university's goal was only 6000 (+ 8.5% overall – interestingly enough, engineering admissions actually fell 4%, making it the only faculty that didn't show an increase). This could pose a problem in regards to residence space, lab time slots, and co-op competition. These issues are to be addressed in the coming months, and are already underway with the opening of the new Waterloo Central Place residence.

The IT department also presented their five-year strategic plan to Senate mentioning specific changes that included improved cellphone/tablet capabilities, higher email security, and better access to teaching aids.

All of the Senate material can be found posted at uwaterloo.ca/secretariat/governance/senate. Senate does not meet in July or August, but if anyone has anything they would like to discuss with me, please don't hesitate to contact me at allyson.francis@uwaterloo.ca.

Engineering Exchange

New Application Deadlines

PETER ROE
DIRECTOR OF ENGINEERING
EXCHANGE PROGRAMS

There has always been a long lead time in applying to go for one or more exchange terms at one of our world-wide partners, but with new rules in place, it may take even longer. The application process has now been unified across all faculties. This includes the establishment of two deadline dates which must be met if you want to be assured your first choice of exchange location.

The most important deadline for engineers now on campus is January 22, 2014. If you are contemplating exchange in the Fall 2014 or Winter 2015 terms, you have to get your application complete with approval signatures from your department, CECA, the Engineering Exchange office, and the Associate Dean by that date.

January 22, 2014 may seem a long time away, but it is only in the second week of the Winter term. You will be busy getting accustomed to your living space and getting started on all the term's activities, the people who have to approve your application will be busy with their new year's work and teaching responsibilities, and even my office in Exchange will be busy with a new influx of foreign students on exchange. Therefore it's highly advisable to get the exchange application done before you leave campus THIS TERM!!

You may not yet have fully made up your mind about this glorious opportunity.

Don't let it slip by. Exchange is generally available for your 3A and/or 3B terms but this varies from department to department. You only get to do them once, so if you miss it, you miss something exceptional.

My advice is, as soon as midterms are over, get started on the application process. We welcome applications well in advance. Your parents will feel reassured after you give them plenty of notice that you'll be on another continent for four or more months. You will have lots of time to get advance knowledge of your destination.

Don't know enough about exchange? Drop in to the Exchange office, CPH 1320 and see Cindy Howe, who knows which of our 70+ partners is suitable for you and where there are still openings.

You need to plan. You need to make sure there is a space for you. The sooner you get your name on the list, the better. Again, see Cindy, who keeps the lists. Also, some of our partners teach in a foreign language. You will need to have time to sharpen your language skills for exchange in countries like France, Germany, and Japan.

Exchange is something that benefits everyone who does it. Those who go and come back rave about their experience. It's fun. It broadens your outlook on the world. It gives you new lifelong friends. It makes you more marketable as an engineer. In short, it's a great supplement to your education and creates in you a modern renaissance citizen of the world. Don't miss out!

Feds To Face Biggest Changes Yet



JESSE MCGINNIS
4A COMPUTER SCIENCE

Over the last three years, it has become clear to me that the Federation of Students (Feds) has done a poor job of capturing the Engineering opinion. This summer, I hope to change this by redefining the membership of the Board of Directors and altering the reporting structure of the Feds executive.

This past year, the by-laws of Feds have undergone much needed revisions. My changes are meant to modernize the outdated governance model to allow for more student engagement, more transparency, and make Feds a truly student-run organization.

While some changes have been welcomed easily, those that affect the executive and Board of Directors have been met with resistance by a select few of these

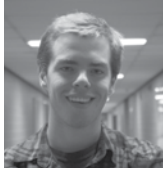
members. My changes, based off a review completed by past president, Andrew Noble, include faculty seats on an 11 person, student-run Board, and a new organizational structure which would see the Vice-Presidents reporting to the President. For those of you who don't know, currently the President has no authority over the Vice-Presidents, and the Board consists of 5 Feds Councillors and the 4 Feds executive.

In the coming weeks, I will be conducting consultations to ensure my changes align with what the students of Waterloo truly want Feds to look like. I'll be making an effort to work with your EngSoc executive to properly capture the Engineering opinion. However, feel free to contact me directly with any of your questions (jesse.c.mcginis@uwaterloo.ca).

I will be introducing these changes through a private members' motion at the July 16 general meeting. This is your opportunity to enact change and voice your Engineering opinion.

I look forward to seeing you there.

The Challenges of Distributing Alberta Oil



SPENSER GOOD
3A MECHANICAL

Shortly after the *Deepwater Horizon* oil spill in the Gulf of Mexico, which sent approximately 300 000 US gallons of oil gushing into the Atlantic Ocean, Republican Congressman John Culberson stated that oil spills of that magnitude is like an "anomaly—like an airplane falling from the clear blue sky." He was much derided for this comment and it was considered one of the greatest gaffes by any politician after the tragic spill. Yet, his statement held some truth. In a recent statement from the Conservative government, in an effort to promote oil sands pipeline projects, they bragged that 99.999% of Canadian oil shipped via pipeline throughout this country or to the United States gets to its destination safely without any environmental impact whatsoever. Unfortunately, for Alberta Premier Alison Redford's Conservative government, it is the .001% of oil that does not get to its destination safely, along with other historical spills in the industry, that creates a public relations nightmare that have made promoting pipeline projects next to impossible.

As demand for oil goes up, and prices rise, major oil sands players continue to look for

ways to pipe their product to upgraders, refineries or ports in the continent so that when they increase their production their commodities have somewhere to go. As of now, there have been three potential pipeline projects that have gained substantial publicity in the Canadian press. The most notable of these three is the Keystone XL project, which would move Albertan bitumen through Baker, Montana where it would mix with American oil from that region of the country before eventually reaching Steele City, Nebraska, where it would join an existing pipeline shipping oil to production facilities in Illinois. The second of these pipelines, the Enbridge Northern Gateway project, would ship oil sands product from Bruderheim, Alberta to Kitimat, British Columbia. The last and only unnamed one of these publicized projects would be a pipeline that would send oil to a refinery in Saint John, New Brunswick. All of these projects have gained a fair amount of publicity and generated much debate amongst supporters and opponents.

The Keystone XL project has by far generated the most publicity amongst the three potential projects. President Obama has seemingly flip flopped several times on the issue, at first being apprehensive due to a damning EPA report saying that not enough assessment had been done detailing how a large scale spill would be dealt with. Beyond this, the proposed routing of the piping indicated it

would cross over Nebraska's environmentally sensitive Sandhills region and the Ogallala Aquifer. The aquifer provides 30 percent of all irrigated water used in agriculture for the United States as well as drinking water for 2.3 million people. In response, TransCanada has suggested an alternative route that would avoid these sensitive areas. Since then, Nebraska Governor Dave Heineman has begun to vocally support the project. However, final approval from Obama is still in the waiting. However, the pipeline project also faces issues in Canada where many believe that the bitumen piped to the US should instead be refined domestically, thereby creating further jobs in Canada. However, with the strong backing of both Redford and Stephen Harper's government, any political hindrance in Canada remains unlikely.

Just over a week ago, the final hearing took place for the Enbridge Northern Gateway project, which is still awaiting approval from Christy Clark's Liberal government. The project would be a huge boon for the oil sands industry since it would open up the oil sands market to Asia and allow for more competitive pricing, since current product has to be sold at \$8 less per barrel to the US. Environmental concerns have made the project deeply unpopular in British Columbia where many residents believe that if they are to assume the risk of piping the material to the coast they are entitled to royalties on the

product. This is a compromise Redford refuses to meet. Beyond this, ardent opposition from native groups, particularly the Haida tribe, as well as Enbridge's disastrous spill into the Kalamazoo River in Michigan in July 2010 continue to stoke a public relations nightmare for the company. Like Keystone, it remains to be seen if this project will go ahead.

The third proposed project has really only been in the public eye because of recent voices of support from New Brunswick Premier David Alward, who proposes a pipeline be built from the oil sands to a refinery in Saint John, New Brunswick. This project would not only provide an Atlantic route for Alberta oil, but would also provide thousands of jobs at the refinery in Saint John as it would require a large upgrade. Yet, even in its earliest stages, it looks as if the project could face much opposition as Premiers of Saskatchewan, Manitoba, Ontario, and Quebec would have to be convinced if it is worthwhile for them politically to allow a pipeline to cross through their territory. For supporters of big oil in Alberta, the problem is not the ever growing demand of the global economy, but instead the politics of moving its product across the globe. However, Alward's steadfast support sets his proposal apart from Keystone or Enbridge; perhaps it is time that Redford turn her back on the South and West and instead look East to friendlier partners.

Detroit "Pet Coke" Pile



ANDREW MCMAHON
3A ENVIRONMENTAL

Concerns are mounting about the growing petroleum coke (pet coke) piles along the Detroit River waterfront which now takes up an area equivalent to a city block, and rises three stories high. Although some of the pet coke is being sold as fuel, the amount being removed from the site daily does not equal how much is being trucked there from the refinery, and so the piles continue to grow.

Pet coke is a by-product of the refining heavy crude piped from the oil sands in Alberta and is being used by a Detroit refinery, Marathon Petroleum. It can be used as a low-cost fuel if the proper measures are put in place to control the release of sulfur it produces, although a number of developing

countries use it since it is cheaper than coal. The black grainy material is high in carbon and also contains heavy metals like vanadium, selenium, and chromium.

The property upon which the piles sits is owned by a company called Detroit Bulk Storage, who is storing the pet coke for Koch Carbon. The companies storing the piles did not even apply for an open air storage permit for bulk materials, which is required even for harmless materials like gravel or sand; they are only now in the process of applying for those permits. Part of the delay in obtaining permits for the piles has arisen from the disconnect between the owner of the pet coke, the company Koch Carbon, and the storage facility, both parties claiming that the piles are the others' responsibility.

The pet coke is trucked daily to the storage site where some of it is then transported by ship to Nova Scotia where it is being used as a cheaper alternative to natural gas fuel. An

electrical power plant owned by Nova Scotia Power, is buying the pet coke from Koch Carbon. The province produces natural gas from offshore fields and burns the cleaner fuel in some of its plants, but last year Nova Scotia Power produced 59% of its power from coal and petroleum coke. The company's executive vice president for operations has stated that the use of the pet coke was a decision motivated by the low price of the material and the savings that it could pass along to its customers.

Pet coke started to be produced in greater amounts at Marathon petroleum after they underwent a \$2 billion upgrade last fall which allowed them to process heavy Canadian crude for the first time.

A number of concerns have been raised about storm water runoff when rain comes into contact with these huge piles, but it has been reported that the yard where the piles sit is asphalted to create an impermeable surface

and slopes away from the river so that accumulated runoff will gather in one location so that it may be treated. That being said, there still remains the concerns regarding the black film that is now forming on nearby balconies and driveways: it is a nuisance that nearby residents are being forced to deal with.

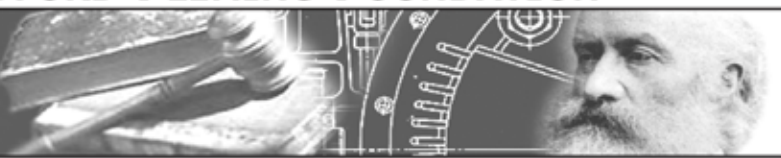
Millions of dollars have been spent from private and public funding to clean up the Detroit River Front in recent years now, and now one of the first things that people see when they travel along the river front is these enormous black piles that are essentially waste. Every barrel of crude that comes out of the Alberta sands throws off between 60 and 130 pounds of pet-coke. With the growing reliance of the United States on Canadian oil, projects like other refineries are going to be refining this heavy crude. The Marathon refinery is still not at capacity at present, in fact they could handle two to three times more petroleum processing.



SANDFORD FLEMING FOUNDATION

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Congratulations to our Convocation award winners!

Academic Excellence

Zachary Robert Gowanlock, Chemical
Yue Anna Shen, Chemical
Musa Chung, Civil
Steven Derek Yang, Computer
Ankush Dhar, Electrical
Dominic Kai-Yin Cheng, Electrical
Regine Marthe Wan Fook Cheung, Environmental
Derek Taschereau Badner, Geological
Jennifer Jaclyn Yip, Management
Donghyun Kim, Mechanical
Mathew Robert Biskup, Mechanical
Mohammad Ali Jangda, Mechatronics
Carmen Nguyen, Nanotechnology
Renaud Bourassa-Denis, Software
Jason Pye, Systems Design

Co-operative Proficiency

Alison Jean Scott, Chemical
Christopher Paul McGuire, Chemical
Musa Chung, Civil
Xinheng Li, Computer
Mark Andrew Cachia, Electrical
Jesse Ephraim Haber-Kucharsky, Electrical
Guan Cheng Curtis Fang, Environmental/Geological
Oladayo Ayobami Olawo, Management
Brandon James Van Asseldonk, Mechanical
Christopher Allan Gilson, Mechanical
Parthipan Thayanithy, Mechatronics
Sarah Ann LeBlanc, Nanotechnology
Shaylan Keshav Govind, Software
Ethan Oblak, Systems Design

Conventional and Creative Ways of Managing Stress



ANJALI GOPAL
3T NANOTECHNOLOGY

ENGINEERING WELLNESS

Now that midterms are (mostly) over, it's time to relax, recuperate, and, mostly importantly, review: you've experienced one of the two most stressful weeks of the semester. What were some of the most challenging aspects of tackling your midterms this term and how can you pull through the next six weeks to ace those finals while maintaining your sanity?

Stress management is an important skill that every student should master. Stress doesn't just put you in a bad mood: over time, it can actually make you physically ill. Now, most students have already had some kind of crash course on Stress 101, so I'll only briefly mention the tried-and-true methods here: the most effective way of dealing with your stress would be to eat a balanced diet, exercise, and get enough sleep. However, if these aren't working for you, there are some additional methods you can use to lower your cortisol levels and keep your life, well, manageable.

Keep a Worry Journal: Worried you might fail a course? Going nuts about not finding a co-op job? Are romantic problems keeping you awake at night? You might be dealing with problems that don't have immediate solutions, but if you find yourself

dealing with worrisome thoughts that keep spiraling in your mind, try keeping a *worry journal*. (Note: a worry blog is also acceptable.) After writing down your thoughts, tell yourself that you'll return to dealing with it later — like in two hours, after you've finished that calc assignment. Many counselors agree that writing down problems do actually relieve tension and improve one's mood. Plus, focusing on "worrying" for only a certain amount of time will teach you to compartmentalize your day. Writing your problems down doesn't mean that they're *gone*, but it'll be a way to get these problems off your chest so that they don't overwhelm your immediate task.

Take Omega-3 Supplements: Obviously, taking all your other vitamins and minerals are important as well, but there's a reason to focus on omega-3s specifically. Omega-3 fatty acids are a type of fatty acid that can't be synthesized by your body. They're found in foods such as fish and flax seed oil. First, most people eating a typical North American diet do not get enough omega-3s, though people do get a lot of omega-6s, which are found in many meats, salad dressings, and cooking oils. While both are an important part of a healthy diet, the difference between omega-3s and omega-6s is that omega-3s are *anti-inflammatory* whereas omega-6s are *inflammatory*. Some studies have shown that certain mental illnesses, such as depression and anxiety, are actually caused due to "inflammation of the brain". Note that

omega-3 supplements are *not* the same as anti-depressants or anti-anxiety medication (so you shouldn't stop taking these if that's what you've been prescribed). However, consuming additional omega-3 rich foods is an example of a healthy dietary supplement that can reduce stress and anxiety levels. Omega-3s are also available as convenient capsules at your local drug or grocery store.

Schedule "Nothing" Time: Time management is a skill that everyone can always improve. However, if you find yourself crammed with too many commitments, deadlines, and other tasks, then look at your weekly schedule and schedule a few hours of "Nothing!" time. Nothing time is time that you can use to do... well, whatever you want. Even if you tell yourself that this is the time you're going to use to catch up with a friend, or finally clean your room, don't schedule it in your calendar as such. That way, when nothing time comes around, you can use it to your advantage and do whatever you wish to do guilt-free. If you still feel like it, you *can* catch up with that friend... but if you find that you're too exhausted by then, no worries, you can take a nap or watch a movie sans guilt. The best solution to having too many commitments is to take some time where you have *no* commitments. So go ahead, use "Nothing" time to do whatever you want — and if you were productive, great! If not, NBD.

Listen to (or Make!) Music: This one is straight forward and simple. Yes, listening to

music helps relieve stress. Music has shown to be effective in helping a wide variety of people, from disabled and distressed children, to improving the quality of life in and mood in cancer patients. So go ahead, make some time to add those sweet new tunes to your phone. Even listening to music on the go can take you far.

Increase Flow Experiences: A "flow" experience is when you're so engrossed in an activity that you're not really aware of your surroundings, your mood, and even your pressing worries. Time seems to fly by. Your flow experience depends entirely on you. For some people, this might be sports: focusing on the goal and the teamwork might make you forget your worries and focus strictly on the game. For others, it could be reading, dancing, writing, meditation, or even gaming. Once the activity is over, you're left with a feeling of peace and joy. However, be careful that you're not getting *addicted* to the flow experience — if it's causing you additional stress, it's time to let go of that particular activity and move on to a new one. Nevertheless, a flow hobby is an important part of a healthy life. Make time to find and pursue one.

As always, if stress gets too unmanageable in your life, remember to reach out and talk to a friend, a counselor, or a doctor. There are plenty of methods you can try, and plenty of resources for support — but the first step is in realizing that managing stress isn't just a luxury: it's a necessity.

Euthanasia Legislation Proposed in Québec



MEAGAN CARDNO
1T NANOTECHNOLOGY

In Section 214 of The Criminal Code of Canada, it is stated that anyone who counsels, aids or otherwise assists someone to commit suicide is liable of a criminal offense and can be sentenced up to 14 years in prison. Despite this, a new legislative document proposed in Québec by a panel of legal experts could bypass the law through the jurisdiction they hold over their provincial health-care services. Hearings on the matter are already scheduled for this fall, with strong arguments and beliefs existing for both sides of the issue.

Currently, patients with terminal illnesses are supported by whatever palliative care is accessible to them. Professional and public opinion about presently available palliative care, however, is far from high. The closest

thing available to assisted suicide is a form of 'passive' euthanasia. This consists of a physician withholding life-supporting care, be it necessary respirators, medication, or simply nourishment (effectively starving the patient to death). The physicians who submit to this passive euthanasia are not charged with a criminal offense, and so it has become common practice in hospitals across Canada when a patient expresses a coherent and clear desire to die, or if the patient is incapable, when the next-of-kin deems it acceptable physicians will remove their patient from what is generally deemed as 'life support'. Many Canadians find this current state of affairs unacceptable and undignified, wishing for a quicker, better way to end the suffering of a terminally ill patient than waiting for their bodies to die 'naturally'.

In 2010, a federal vote showed that the vast majority of Canadian politicians were against changing the current federal laws about assisted suicide. Much of the controversy of implementing an active form of

euthanasia comes with the idea that medical professionals would begin to abuse the option of assisted suicide — after all, it is far less expensive and timely to hasten the death of a terminally ill patient. Others propose that with such an open option available, patients might opt to terminate their life earlier than physicians think appropriate, especially given the current state of palliative care. Many in opposition also argue that the use of euthanasia might surpass use in terminal illness cases exclusively. Patients living with extreme disabilities, severe mental ailments, or painful but not life-threatening chronic illnesses, may begin to request such actions.

In order to combat these worries, the legislation outlines very specific conditions that would have to be met in order for active, legal euthanasia to be performed. It would require a patient to be over the age of 18, afflicted by an inevitably terminal disease, and suffering from a significant amount of mental or physical discomfort that cannot be eased or treated in a tolerable manner.

The patient would then have to express the desire to end their life in writing, as well as the approval of two appropriate medical professionals before the procedure could be conducted.

One of the biggest pushes for the legalization of euthanasia comes from the quiet truth that many physicians actively and illegally perform the process anyways to ease the pain of dying patients. By doing so, not only are there many potential dangers and mistakes that could arise from undocumented and unofficial procedures, but the lack of regulation on the cases could cause grievous infringements of human rights. Legalization is seen as the best way to implement and enforce strict guidelines and procedures when assisted suicide is requested to avoid these unfortunate occurrences.

With such controversy and conflicting opinions on such a delicate subject, it is likely that discussions will be long and tedious before any final conclusions and decisions are made.

Summer 2013 – Not Too Hot



NANCY HUI
3N CIVIL

Welcome to summer.

This year, southern Ontario will experience a slightly cooler summer than 2012, thanks to a supply of quick-moving fronts, which are also the cause of precipitation. Also, western Canada has recently been hit by a string of floods. It started on June 13, 2013, when the mayor of the Regional Municipality of Wood Buffalo declared Fort McMurray under a state of emergency on due to flooding of the Hangingstone River, and potential flooding of the Clearwater River due to heavy rainfall. A 69-unit trailer park, 60 campers, and a 400-resident subdivision in the south of Fort McMurray were evacuated.

An RCMP unit was called in to staff road-

blocks and prevent looting during the flood. Sandbags were used to line the eroding Hangingstone River to prevent sloughing of the banks into the river. Residents of Fort McMurray were allowed to return home the following Saturday. Yet exactly a week later, on the morning of Thursday, June 20, Calgary and over two dozen other nearby communities declared a state of emergency after torrential rains caused the Bow and Elbow rivers to swell 5 to 10 times their normal flow rate, and fill the streets with muddy water. The RCMP and Canadian Armed Forces were called in to help sandbag the rivers and evacuate people by helicopter. Over 100 000 people were evacuated until the waters recede. The Calgary Zoo was also closed. In flooded hospitals, patients and staff have had to retreat to higher floors. Meanwhile, the water rose beyond the 10th row of seats at the Scotiabank Saddledome stadium both where the Calgary Flames play and where much of the world famous Calgary Stam-

pede occurs — incidentally, the Stampede is on July 5. Like Fort McMurray residents, Calgary residents have stated that this is the worst flood they'd ever seen. West of Calgary in Canmore, entire homes have been washed away as Cougar Creek eroded its banks. The County of Lethbridge, which is located in the Oldman River Basin, also experienced flooding, which caused the Lethbridge sewage plant to dump raw sewage into the Oldman river. Residents have been evacuated.

Meanwhile, Medicine Hat in south Alberta, British Columbia and Saskatchewan have been bracing for spillover. Edmonton, located in the North Saskatchewan Basin, expects river levels to rise by at least 3m. The flooding was caused by a large high pressure system held in place by the jetstream. Normally it would have caused just a simple spring storm west of Calgary, but it pulled moisture from Saskatchewan, the United States, and the Gulf of Mexico as it moved east from the

Pacific, causing many areas to get as much rain in 18 hours as they normally might receive during the entire summer. In the winter, some of that moisture might be released as snow in over the Rocky Mountains, but the warm weather caused the precipitation to manifest as rain, increasing the flow in the rivers with tributaries in the mountains.

While some readers might shiver at the thought of going to western Canada, many co-op students have or formerly held positions in Fort McMurray, while others hail from Wild Rose Country. For the rest of us, it may come as a surprise that most cities have an emergency management plan in case of large-scale emergencies, including regional evacuations, mass fatalities, and natural disasters. That includes the Region of Waterloo, whose emergency protocol can be accessed at wrem.ca.

Anyways it's unlikely that the Grand River will flood this summer. Enjoy the warm weather!

Joint Council, Student Awards and Student Discounts (For You!)



DAVID BIRNBAUM
PRESIDENT

How the time has flown!

Cheers to being done midterms (for most of you); I hope they weren't any more painful than mine.

First, PRIDE. EngSoc is going to Pride in Toronto this SUNDAY! Tickets can be bought in the EngSoc office for \$15 for a bus there and back, t-shirt, swag items, AND lunch! Also, there may or may not be a very super special guest coming to Pride too! You do NOT want to miss out!

Before I get to the title stories; I attended a meeting with all of the Department Chairs last week to talk about increasing the amount of engagement the Society has with them. All of the Chairs were very receptive and I have already begun having one-on-one meetings to talk about how we

can work together to serve students. I am very excited, and pleased, that the Chairs are all on board. You should all be quite proud of our Faculty here! If you have items you would like me to bring up and talk about with the Chairs, please let me know.

Joint Council took place this past Saturday. It is a meeting of both A-Society and B-Society where we vote on increasing the Engineering Society Fee, as well as any other motions that come up. At Joint Council, we passed a motion to increase the fee by the Consumer Price Index, to account for inflation, from \$15.01 to \$15.22. As well, we approved a change in our election procedures; both Societies will now be using a ranked voting system. In all future elections, you will rank the candidates in order of preference, and the winner will be determined by that. The full explanation of how the new system works can be found in the Policy Manual on the Engineering Society website.

For the student awards, I am meeting with Associate Dean Loucks today in the hope of getting the Policy finalized. So, by the Fall term, we will be offering a \$1000 student award each term!

With regard to STUDENT DEALS, I would like to start by giving a huge thank you to my directors Aryn Cain and Tiffany Mah. They have been working with me since before the term started to get this program established, and it is finally here! We have partnered with a few local restaurants to provide Engineering Society members with discounts! That means that unless you got your Engineering Society Fee refunded this term, you can use them! The program has not launched yet, but you will DEFINITELY be getting informed when it does within the next couple of weeks. You will simply need to come by the Society Office

to get your student deals sticker and then show it at the restaurants to reap the rewards. What you can look forward to; 15% off all food at Molly Bloom's, 10% of all food and drink at Sweat Dreams Teashop, 10% off food at Vegetarian and Fast Food Restaurant, and a deal at Kickoff!

Again, we will MAKE SURE TO LET YOU ALL KNOW as soon as this is officially launched, but GET EXCITED!

Other than that, the surveys, textbook library, and everything else is still making good progress, and you will probably be hearing more about it soon.

As always, if anyone has any questions or concerns, please email me at president.a@engsoc.uwaterloo.ca. I look forward to hearing from you, and be sure to stop by Ice Tea Mondays; free ice tea every Monday from 3:00 PM - 5:00 PM on POETS Patio!

P**5 Update & Events



ANNAMARIA REDA
BRENDAN O'HANLON
VPS INTERNAL

Hello everybody! If you've suffered through a tough midterm week like me, then you also probably joined the Pajama Party at MOT. The Middle of Term party was fun for all, featuring glow sticks, pizza, and engineering students dressed for bedtime. Why pajamas? Why not! The party also featured a visit from the TOOL, and the re-birth of the P**5 banner! The P**5 directors created a new banner to display the P**5 points of each class. Currently, 2B Mech is in the lead, followed by 3A Nano. A big thanks goes to the P**5 directors for reinstating this tradition!

Looking ahead, there are a number of events lined up now that midterms are over. Cardboard Boat Racing is set for Friday - yep, they let us use the PAC again. Be sure to bring a bathing suit unless you believe you have god-like boat designing abilities. Still, Cardboard Boat Racing is tons of fun and I will be going for sure! As well, on Tuesday, July 2, EngSoc will be hosting a Microsoft

Excel workshop, to help you improve your efficiency in Excel. Laser Tag is scheduled for Wednesday, July 3 and the Math vs. Engineering soccer tournament is Friday, July 5. Come out and enjoy some pickup soccer and prove that Engineers can teach Math something about soccer. Finally, Semi-Formal is on Saturday, July 6. The theme is The Great Gatsby, so sport your best 1920's attire!

Events aside, have you ever explored the EngSoc website to see everything that EngSoc has to offer? Under the "Services" section, you can find the exam bank, scholarship bank, and work term report bank. If you submit your work, you will be awarded P**5 points too. I will be sending out a call for outstanding work term reports in the near future to try to keep the database up to date.

Lastly, I'd like to remind everyone that if you have an event idea or something you'd like to see happen, contact me at vpinternal.a@engsoc.uwaterloo.ca and I'll see if EngSoc can help you make it happen. We're always open to new events that can help engineering students either academically or socially. Getting involved is fun and rewarding - you help others while developing management skills, among others.

Have fun in the second half of the term!



LEILA MEEMA-COLEMAN
VP EXTERNAL

Oh hai there fellow engineers! We are over halfway through the term and let me tell you that just makes me sad! You know why? Because I love engineering and especially being a Waterloo Engineer! What's that you say? You do too? Well then I am here to tell you about all the exciting external events coming up that lets you showcase that Waterloo Eng Pride!

1) Engineers March in the Toronto Pride Parade!

If you haven't heard yet, EngSoc is going with FedS to march in the Toronto Pride Parade this year on June 30! This is a chance to show our support for the LG-BTTIQ2SA (Lesbian, Gay, Bisexual, Transsexual, Intersex, Queer, Questioning, 2 Spirited, Allies) communities and show that although we are a male-dominated profession, we are still a welcoming and accepting community! We are still selling tickets and they will be available in the Orifice for \$15 (gets you transportation, sweet swag, and a lunch!) until Friday or online at fedspride2013.eventbrite.ca. Get 'em before they're gone!

2) Engineering in Action!!

How cool is engineering? But actually... it's pretty freakin' awesome and it's up to us to inspire the next set of engineers and showcase the amazing things that engineers do! That's why, on July 13, we are heading over to The Museum in Kitchener for a day of fun engineering experiments with kids of all ages! There will be everything from paper airplane contests to making slime to constructing rocket cars! We need lots of volunteers for the two to three hour shifts between 9:00 AM - 3:00 PM so if you are interested, please e-mail me at vpexternal.a@engsoc.uwaterloo.ca

3) PURPLEPALOOZA!!!

If you had fun purpling during frosh week or if missed your chance and regret it, don't worry we have an amazing PURPLEPALOOZA event brought to you by our fabulous charity directors! On July 11 in CPH Courtyard from 2:00 PM to 5:00 PM, come on out to purple yourself for charity, take a picture with The Tool, jam out to some sweet music, and show some Engineering pride! Remember that all proceeds this year are going to buy goats (Free the Children Adopt a Village program) so come on out and give baaaaah(ck). With that awful pun, I will say goodbye and hope that you have a great day!

Upcoming Events Calendar

| Wednesday June 26 | Thursday June 27 | Friday June 28 | Saturday June 29 | Sunday June 30 | Monday July 1 | Tuesday July 2 | Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca |
|--|---|---|--|--|--|---|--|
| EngSoc Meeting #4 17:30 - 19:00, CPH 3602 | Photography Contest Charity Pancakes 08:30 - 10:30, CPH Foyer Coverall Day 11:30 - 13:30, CPH Foyer Exchange Potluck 17:30 - 19:30 Running Club 19:00 - 20:00 2015 Bonfire 20:00 - 01:00, CIF Fire Pits | Tau Day Engenuity Design Competition | | EngSoc Goes to Pride 08:00 - 20:00, Toronto | Canada Day 16:00 - 22:00, CIF Fields | Colouring Contest Microsoft Excel Workshop 16:30 - 18:30, WEEF Lab Iron Warrior Meeting 18:30 - 19:30, E2 2347 Running Club 19:00 - 20:00 | |
| Wednesday July 3 | Thursday July 4 | Friday July 5 | Saturday July 6 | Sunday July 7 | Monday July 8 | Tuesday July 9 |   |
| | Charity Pancakes 08:30 - 10:30, CPH Foyer Running Club 19:00 - 20:00 | GradComm Event #4 12:00 - 02:00 Math vs Eng Soccer 15:00 - 17:00 Pickup Ultimate 15:00 - 17:00, V1 Green WEC 18:00 - 01:00 | WEC 18:00 - 01:00 Semi Formal 20:00 - 01:00 | Charity Bottle Drive Wheelchair Basketball 14:00 - 16:00 | Directorship Applications Open Ice Tea Monday 15:00 - 17:00, POETS Patio Glow + Engineering 16:30 - 19:30, POETS Alumni Talk - John S. 17:30 - 19:00, E5-3052 Running Club 19:00 - 20:00 | BYOBQB 18:00 - 21:00 Iron Warrior Meeting 18:30 - 19:30, E2 2347 Running Club 19:00 - 20:00 | |

Budgets, Money and Much More



KEVIN MCNAMARA
VP FINANCE

Cha-ching! Hope everyone's midterms went awesomely! Luckily I got to do mine a week before most people so I spent the past little while getting some EngSoc work done. First thing to talk about is the Spring 2013 Term Budget! As of EngSoc Meeting #3, we have passed our finalized (final) budget for the term, as shown on this page, which outlines where we will be spending your Engineering Society student fees for the term. The budget is split up into a number of sections, with each line showing how much each Directorship/Event/Service will be spending this term, along with other things such as the allocations for the Engineering Capital Improvements fund and EngSoc Sponsorship.

On the topic of sponsorship, proposals are due this Friday, June 28, at 4:30 PM and can be sent to me via e-mail or dropped off in the Orifice (CPH1327). All of the details for what the package must contain were outlined in the last Iron Warrior Issue, sent out to the mailing list, and sent to all on-term student team leads. Get them in soon!

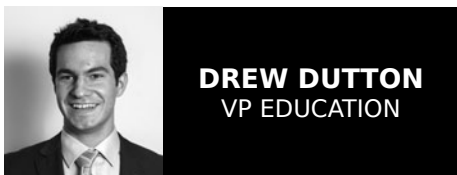
Do you like to cover? Do you like to cover ALL? Do you like to COVER ALL

DAY? Well, you're in luck then! Cover-all Day is happening on Thursday, June 27 (that's tomorrow!), from 11:30-1:30 in CPH Foyer outside of POETS! Coveralls will be available for anyone who is interested in purchasing them for \$40, with the purchase of seven patches. This means that for \$75, you will have your very own pair of awesome covies, and seven sweet patches to sew on them! For an extra \$5, you can get some cool words embroidered on the arm, saying your name and program, or whatever else you would like. Show off your engineering spirit and #swag with a sweet pair of coveralls! Maybe, one day, we will even get goat patches to show our support for the awesome initiatives being put forward by the Charities directors this term!

Speaking of goats and charity, who likes movies? The Orifice has a vast selection of DVDs all of which are getting covered in dust since this new digital age thing started. To help support Free the Children, which is the charity to which EngSoc is donating to this term, we will be selling all of the DVDs for \$2 a piece, with all of the money raised going to charity. It's a great way to get some of your favourites to have forever while supporting an awesome charity.

As always, if you have any questions, feel free to send me an email at vpfinance.a@engsoc.uwaterloo.ca or drop by the EngSoc Office!

JobMine's Impending Replacement



DREW DUTTON
VP EDUCATION

Happy end to Hell Week! I hope midterms went well for everyone and that your hunt for a job next term is well under way. With jobs in mind, I've got some information for you regarding the new platform that will eventually be replacing JobMine.

If you've been following the updates online or via the mailing list, CECA has recently signed a contract with Orbis Communications Inc. to develop a platform that will replace JobMine. Orbis is a local company based out of Dundas. They have over 10 years of experience with co-op and career-related software on campuses across Canada. That being said, Waterloo co-op can be considered as the "grand prize" of co-op programs, being the oldest and largest. Orbis will be able to point to the efficiency and effectiveness of their software at a world class institution in future bids and, as such, they are extremely invested in creating a seamless package for us.

In fact, the new software will be more than just a replacement of JobMine. The goal is to ultimately integrate the various standalone applications within CECA that support co-op and career activities and processes for students and employers. WaterlooWorks is the confirmed name for the new platform. This name quickly identifies to employers what the system is for and that they are recruiting the University of Waterloo's students.

The software itself, while new to Waterloo, will not be a completely new package. It will be based off of an off-the-shelf package that Orbis uses for other institutions. That being said,

Waterloo will be working extensively with Orbis to modify the package to cater specifically to our needs.

Some of the specific upgrades will include enhanced job search capabilities to help students find the jobs that they are looking for. On the flip side, they will also be aiming to create a more efficient screening process to assist employers in finding their ideal candidates.

Get excited! Many of you will experience the new platform during your education at Waterloo. CECA plans to implement the software in 3 stages: with a pilot group in Spring 2014, with a 2nd pilot in Fall 2014, and, finally, with full implementation to all students in Winter 2015. Additionally, while not strictly finalized, some sort of prototype demo will be available this coming Fall term. I should stress that the demo will be mostly of the existing off-the-shelf product. I am told that Orbis' software has more functionality than JobMine for the most part which will give students a sneak peak of the system, its capabilities, and its potential here at Waterloo. I should also point out that students have and will continue to be consulted during the development to help CECA prioritize customizations. Student engagement tactics include student panels, website poll questions, and meetings with the six student VPs of Education and their respective student societies. For more information, please visit www.uwaterloo.ca/co-operative-education-career-action-systems where you will find all of the information currently available regarding the project. Be sure to keep an eye peeled for emails about current polls, as your input is needed to develop a program that works for you! If you have any questions please don't hesitate to stop by the EngSoc Office to speak with me.

| Directorship | Budget |
|---|--------------------|
| Estimated Income | |
| Student Fees | \$38,000.00 |
| Orifice Sales | \$500.00 |
| Total Income | \$38,500.00 |
| Fixed Costs | |
| Bank Charges, Payroll, Utilities, Office | \$21,000.00 |
| ECIF (5%) | \$1,900.00 |
| Sponsorship (15%) | \$5,000.00 |
| Contingency (4%) | \$1,520.00 |
| Iron Warrior (1%) | \$380.00 |
| Total Fixed Costs | \$29,800.00 |
| Expenses | |
| Exec | \$500.00 |
| President | \$500.00 |
| VP Finance | \$100.00 |
| VP Education | \$50.00 |
| VP External | \$50.00 |
| VP Internal | \$50.00 |
| Total Expenses | \$1,250.00 |
| Directorships | |
| Prez | |
| Advertising | \$0.00 |
| Historian | \$50.00 |
| Food Director | \$1,500.00 |
| Prez Subtotal | \$1,550.00 |
| External | |
| Canada Day | \$500.00 |
| Charities | \$0.00 |
| Environmental | \$80.00 |
| Outreach - Engineering In Action | \$31.00 |
| WIE | \$200.00 |
| WEC | \$1,865.00 |
| External Subtotal | \$2,676.00 |
| Student Services | |
| Interview Skills | \$108.34 |
| Mental Health Awareness - Puppies | \$120.00 |
| Mental Health Awareness | \$236.00 |
| POETS Managers | \$350.00 |
| Resume Critiques | \$287.00 |
| Student Services Subtotal | \$1,101.34 |
| Student Life | |
| Alumni Golf Tournament | \$204.00 |
| Arts | \$165.00 |
| Beach Day | \$45.00 |
| BYOBBQ | \$35.00 |
| Cardboard Boat Racing | \$240.00 |
| Crossword Competition | \$25.00 |
| Enginuity | \$100.00 |
| Eng Play | \$795.00 |
| Exchange | \$67.69 |
| Genius Bowl | \$378.00 |
| Jazz Band | \$325.00 |
| Laser Tag | \$0.00 |
| Music | \$148.00 |
| P**5 | \$850.00 |
| Running Club | \$0.00 |
| Semi Formal | \$700.00 |
| TalEng | \$40.42 |
| Tau Day | \$147.00 |
| TSN | \$230.00 |
| Water Fight | \$143.25 |
| Wheelchair Basketball | \$92.00 |
| Canada's Wonderland | \$200.00 |
| Year Spirit 2014 | \$150.00 |
| Year Spirit 2015 | \$150.00 |
| Year Spirit 2016 | \$150.00 |
| Year Spirit 2017 | \$150.00 |
| Student Life Total | \$5,530.36 |
| Directorships Total | \$10,857.70 |
| Net | -\$3,407.70 |

Point Vs. Counterpoint

POINT

SPENSER GOOD
3A MECHANICAL

There are currently two leading contributing causes of premature death in the Western world: smoking and obesity. The parallels of the threats presented by a smoking lifestyle and by an obese lifestyle are very clear if one chooses to examine them. I choose to use the word lifestyle with apprehension because I believe that the word 'lifestyle' indicates choice. A human can rightfully choose whether or not to buy a pack of cigarettes at a local store, as can he or she choose to purchase a sugar-loaded soft drink or a bag of trans fat-laden potato chips. It is a choice and a multitude of these choices does lead to a lifestyle. However, the difference is that when a person chooses to buy a pack of cigarettes, they must first overcome a host of government induced barriers to make that choice. Yet when a person buys a bag of chips or a soft drink it comes at no great financial or ethical cost. In some ways, junk food is just as poisonous as cigarettes, and an obese lifestyle is just as dangerous as one of smoking. The government should remove their veil of ignorance, recognize these parallels and take greater steps to protect its population.

Everyone knows that smoking greatly increases the likelihood of cancer, heart disease, emphysema, stroke and asthma. Yet for every deadly disease caused by smoking there is a malady caused by junk food. Obesity, like smoking, leads to a host of cardiovascular issues and is linked to increased rates of cancer, muscle and joint issues and diabetes. Fortunately, even schoolchildren are aware of the risks of choosing either an obese or smoking lifestyle. Still, the government has a much less in-your-face attitude towards preventing obesity than towards preventing smoking despite health effects that are similar in severity. One can simply compare the act of purchasing a bag of chips against a package of cigarettes to see this blatant disparity. To buy a pack of cigarettes a consumer has to request the store clerk to obtain them from an enclosed cabinet, this very act reminding the consumer that what they are doing is detrimental to their own health. Next, the consumer has to pay the prohibitive cost for cigarettes, which consists of 56.6% taxes. After having asked the store clerk for the product and paying the prohibitive cost, the consumer has to look at a gruesome photo depicting a blackened lung, yellowed teeth, a crippled heart or some other equally unappealing ailment caused by the consumption of the product they just bought. On top of all this, the consumer must be at least 19 to buy the product.

Conversely, a child can walk into a store with no intention of buying harmful junk food, walk by a rack full of attractively labelled bags of potato chips or chocolate bars and suddenly decide that he or she could use a snack. They can then buy the product at a reasonably, equally taxed price. For less than five dollars anybody of any age can easily consume more than their daily value of fat, sugar or sodium along with a host of other dangerous preservatives without being reminded of the adverse effects on their health. Despite the similarities between the dangers provided by the consumption of either product, it is far cheaper and less guilt-inducing to choose to eat poorly than to smoke. This needs to change.

The health effects of obesity also place a huge burden on our already-overloaded healthcare system. A recent study revealed two eye-opening pieces of data. Firstly, if obesity were no longer a factor, 10% of all visits to doctors in Canada would be erased.

Should Obesity be the Government's Business?

This factor also does not incorporate the number of visits associated with Type II diabetes which is linked to obesity. The research also yielded that out of 60 000 patient visits, more of them were associated with problems linked to obesity than issues tied to smoking. Also a recent article published in Forbes magazine revealed that more money is spent on obesity related health issues than on those related to smoking in the US today, a country with obesity rates similar to Canada's. Despite the fact that smoking places a larger burden on our vulnerable health care system than smoking, government has done little to ease the consumption of the products responsible for obesity, at least compared to the approach taken towards cigarettes.

Perhaps the most inhibiting factor preventing the government from going after products causing obesity is an inherent complexity in tackling the issue. Imposing a market wide tax on 'junk food' would be incredibly complicated. Defining what qualifies as junk food versus what does not qualify as junk food would be very difficult. However, small steps could first be taken. These could include subsidizing healthier foods, such as fruits, vegetables, fish and poultry. The government could also take steps to limit the amount of advertising done by soft drink, candy and chip companies on children's television. Steps such as banning junk food in school vending machines have been a step in the right direction, and could be taken further through banning the sale of such items in more public buildings. Impactful public service messaging, akin to that presented on television indicating the dangers of second hand smoke, could also be more broadly promoted.

I am not advocating that a child should not be able to buy a bag of potato chips or a soft drink, or a market-wide "fat tax" is necessary, but I do strongly believe that obesity is just as dangerous as smoking and that the government needs to recognize this. I have presented a few small steps that could go a long way in preventing obesity, and I believe that perhaps these could kick start a more widespread anti-obesity movement on all levels of government. It is true that people are responsible for their choices, but when those choices present danger to the consumer, they need to be made aware of the risk. It is this philosophy that saved much of my generation from the smoking induced maladies seen by the generations before us, and it is this attitude that can save the next from the devastating effects caused by obesity.

MICHAEL LAANVERE
3A MECHANICAL

When people talk about the government getting involved in their day-to-day lives the term "nanny state" often comes to mind. And while making the government responsible for obesity might sound like a good idea, it is definitely a slippery slope.

One of the fundamentals of a free society is independence and self-ownership. If the government intends to encroach on our self-ownership and independence they do so only after proving that it is for the benefit of the majority. That is how our court system works. People are considered free and innocent until the government (through the courts) proves that they are guilty. Once they are proved guilty they are sentenced, and their independence is limited for the benefit of the public. Society accepts this as they know it is done to keep us safe.

Society has only accepted things such as public smoking bans, speed limits, and airport security because they are assumed to be for the benefit of the public, despite limiting some of our independence. Eating differs from these things as obesity harms no one other than the individual. So why should the government needlessly get involved in my life if I am not doing anything to harm others?

Eating is a trickier thing for the government to tackle than an issue like smoking. The fact of the matter is everyone eats. The government can tackle smoking by taxing cigarettes because everyone who smokes has to buy cigarettes. It's a little different for obesity. Obviously, not everyone who eats is obese so by applying a food tax you're not just affecting obese people, you're affecting everyone. And even if the food tax was applied to only junk foods or fast foods, I'm willing to bet that most healthy people like to occasionally treat themselves to a burger, or a piece of cake, or some sort of unhealthy food. It is not really for the benefit of the public, so why should the majority be punished for the mistakes of a few?

The health-care costs of obesity is one reason I could see the government using for making obesity their responsibility. Obesity health costs are more important for us in Canada than in the US. In the US they have a private health-care system, so obese people pay more health insurance premiums so others aren't paying for their increased costs. In Canada, it's a little different. We have a public health-care system (which I love!) so everyone pays into the health-care system and everyone has free (for the most part) medical

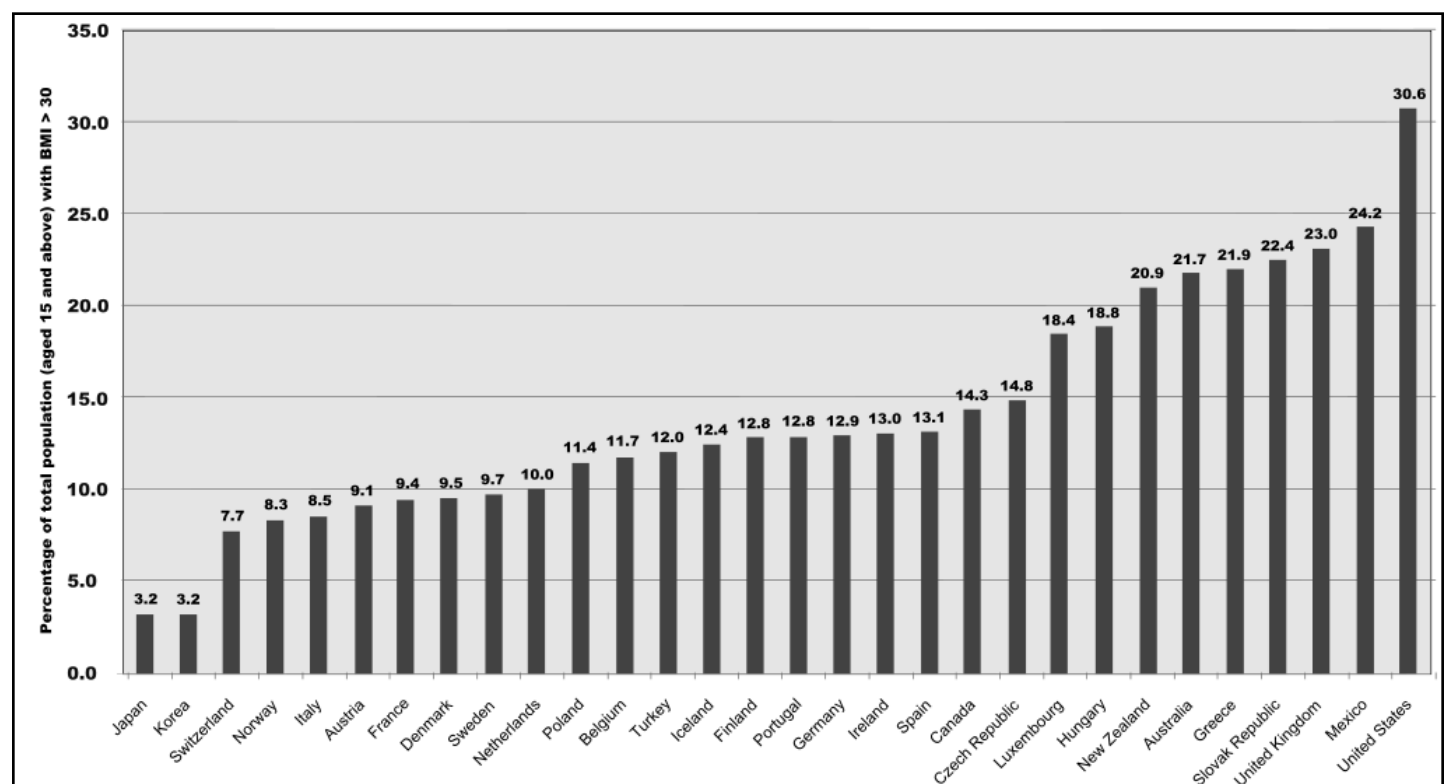
COUNTERPOINT

care whenever they need it. That being said, obese people have a higher average yearly medical cost than a healthy weight person. That's where the government comes in. They claim that since they are paying more money yearly to treat obese people, that they have a vested interest in stopping obesity and should therefore take responsibility for combating it. It's almost like the government is making some sort of claim on obese people, saying that since they payed for their higher-than-average health costs they now own you and are going to force you to repay your debt.

That might be a little bit of an extreme statement but there is a ring of truth to it. Just look at smokers. The healthcare costs of a smoker are more on average per year than a healthy, non-smoker, so the government uses that to justify putting a hefty tax on cigarettes. Here's the thing though: most healthy people cost more to the health-care system over their lifetime than smokers or obese people.

The horrible fact is that the government in a way almost benefits financially from smokers and the obese. Obese people have a much lower life expectancy than healthy people. This means that a healthy normal weight person could live anywhere between 2-10 years more than an obese person. These extra 2-10 years of medical costs are typically more than the extra yearly costs an obese person accrues through his lifetime. That basically means that a healthy person will cost more than an obese person over his lifetime, which kind of negates the argument that the government needs to intervene to save money. Also, as horrible as it sounds, the government probably saves a lot of Canadian Pension Plan money from obese people dying early, further trivializing their claim that they need the money.

The key to reducing obesity is promoting self-responsibility through education. Sure, it might seem easy to make the government responsible for obesity because then it would be their problem and we wouldn't have to worry about it. We could even blame the government if obesity rates didn't go down! But that's not going to change anything. The only people who can stop obesity are the obese themselves. They need to take responsibility for their own health, not take the responsibility off themselves and put it on the government. If an obese person doesn't want to change then no sort of tax or intervention will stop that. They will always get the burger, or pop that they want even if they have to pay a little more for it. Instead of wasting money and time on legislation the government should instead educate people and let them be responsible for themselves.



Apple's New Design Language and the E3 Aftermath



As expected, Apple used their annual Worldwide Developers Conference (WWDC) earlier this month to show off the next version of OS X and iOS, along with some refreshed MacBooks and a glimpse at the future of the Mac Pro, their high-end desktop. Many who had been paying attention to the conference were most eager to get a look at iOS 7, which had been correctly rumoured to be undergoing a major facelift.

Assuming that upon release it is similar to the beta version presented at the conference, someone upgrading from iOS 6 to iOS 7 would first notice the bright colour infusion in the operating system. Gone are the colour palettes rooted in realism, instead replaced with bright blues and primary colours that evoke those associated with the psychedelic subculture. Applications take up more screen space and, in general, look much flatter than before. Many applications take on a white colour scheme (with a few in black) and have text and visual elements in a colour chosen for that app. Many have praised the overall design, and are pleased that it has removed the leather stitching and green felt backing that previously adorned their applications. However, considering the scale of a project with this scope in such a short time period, there are some expected oversights that will likely be ironed out in the final version or subsequent ones, but have been noticed by those who took interest in iOS 7.

The biggest source of criticism were the home screen icons used for default applications, which looked inconsistent and unpleasant. While this may seem like a small point to pay attention to, these icons are the first thing anyone sees upon turning their phone on, so much like an ugly cover to a book, having something that initially gives a user a negative impression could be bad for a product of any sort. The icons displayed inconsistency in design, with some using bottom-to-top gradients as were the norm previously, others using top-to-bottom gradients, and then ones that chose for a flat white or black background and a simple symbol. The icons fill up

much of the allocated rounded rectangles as well, to the point where they almost touch the borders, which looks visually uncomfortable. Luckily for Apple, the part that received the most praise were the system applications that people spend most of their time in, so if they are able to apply the same care to their home screen that they were able to apply to their applications, more people will be less timid about upgrading their iPhones and iPads.

Concurrently with WWDC was the Electronic Entertainment Expo (E3), where Nintendo, Microsoft and Sony announce what's coming for the next year for their platforms, along with the third-party developers with which they work. Nintendo eschewed their traditional presentation for a web-based broadcast, where they introduced new games for the Wii U, including a *Xenoblade*-like game called *X* and a new entry in *Super Smash Bros.* for Wii U and Nintendo 3DS, which so far introduces new characters Mega Man, the trainer from *Wii Fit*, and the villager from *Animal Crossing*. Unfortunately, much of what Nintendo had to show is coming out in 2014, but gamers will be able to play *The Legend of Zelda: A Link Between Worlds*, *Pikmin 3* and the Wii U remake of *The Legend of Zelda: The Wind Waker* this year. Triforce-protecting players like myself are going to have a pretty fun holiday season, but for those who don't play *Zelda*, there are a few other non-exclusive games to play as well, like *Assassin's Creed IV*. The system is still struggling to bring in more games, but the selection on 3DS has been getting more robust.

It's nice to see at least one of the portable consoles doing really well, since the game quality difference between the ones on 3DS and PlayStation Vita versus the ones on iOS and Android is still rather perceptible. While a segment of people seem to be happy with the quality of games you can play on iOS, there are still people who look for an experience like that in *Fire Emblem: Awakening* or *Shin Megami Tensei: Persona 4* that hasn't yet translated well to mobile phones. Interestingly, one of the things Apple announced silently at WWDC this year was support for Made-for-iOS game controllers, using a standard published in their developer documents that shows support for controllers using the traditional ABXY and d-pad layout, as well as another with support for analog

sticks. This could help iOS pull in more games that just play better using buttons and control pads, particularly those that were ported from other devices first, like *Final Fantasy* or *Sonic the Hedgehog*, which currently use virtual sticks that provide no feedback. Not everyone would have a third-party controller to stick in their iPhone though, and you likely wouldn't always have it on person, so it's curious how this will pan out for Apple and whether it will convert more traditional handheld gamers.

For Sony and Microsoft, the focus was on the PlayStation 4 and Xbox One, both of which are expected to come out later this year. Most of the details on these consoles were announced previously, including the DRM policies of the Xbox One that introduced restrictions on used game sales and the rights to ownership over a player's games. Sony received a standing ovation for announcing that their used game policy wasn't changing, which Nintendo has also stood by, putting Microsoft in an awkward spot for most of the conference. The price for each of the consoles was announced as well, with the PlayStation 4 getting a launch price of

\$399 and the Xbox One getting a price of \$499. One of the games coming out for the PlayStation 4 and Xbox One that has been in development since the start of the last generation of consoles is *Final Fantasy XV*, which most might recognize as *Final Fantasy Versus XIII*, a game that was supposed to be set in the universe of *Final Fantasy XIII*, but has diverged enough from the initial vision that it has merited its own numbered release. *Kingdom Hearts III* was also announced for both consoles, after many years of wondering about its future. With this and *Diablo III*'s release last year, perhaps *Half Life 3* is just around the corner?

After the conference, Microsoft pulled back on their whole cloud-based vision, announcing that there would be a day-one update for the console to reverse their initial decision that restricted used game sales and required daily online checks with Microsoft's servers to prevent games from locking down on the console. While there will undoubtedly be attempts in the future to implement more restrictions for the sake of other game features, for now it appears that video game players will not face any new rules.



'Superqueer'

Continued from PROUD on Page 1

Peaceful protests on the part of LGBT supporters turned violent when their fellow citizens attacked them. This new legislation aims to wield ignorance in aid of intolerance.

It is difficult to quantify human sexuality at this point in our society. Some scientific studies tie sexual orientation to levels of

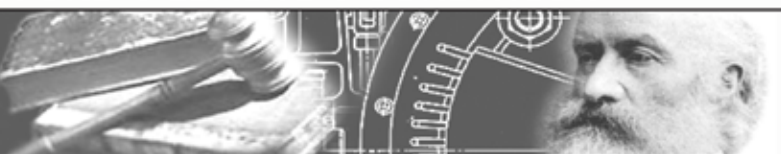
certain chemicals present at birth, making it a characteristic as definite as skin colour or hair texture. Religious and societal views continue to cloud our ability to look objectively at this issue. However, know this: in the end we are all awesome human beings and love is what makes you happy, even if you happen to be asexual. Be happy with who you are, no matter whom or how you love.



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Congratulations to

Sarah H. Sleiman,

Management Engineering,
on winning the
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Engineered Virus Can Restore Sight



NANCY HUI
3N CIVIL

Researchers at the Berkeley Stem Cell Centre at the University of California Berkeley, led by David Schaffer, have developed a virus that restores sight by inserting genes into hard-to-reach cells in the retina. The retina is the tissue inside the back of the eye that consists of photosensitive cells that can identify light and colours.

The researchers believe that this type of gene therapy could be used to restore vision to a variety of diseases affecting the retina, including hereditary defects and illnesses brought on by old age, such as macular

degeneration. In either case, the virus would deliver a correct copy of the gene to the retinal cells and replace the defective genes, whether they were defective at birth or became defective through excessive cellular reproduction with age.

It's not an entirely new development – in 2007, researchers successfully restored some sight to over a dozen people with Leber's congenital amaurosis, a hereditary disease causing major loss of vision in early adulthood, by attaching the gene into benign respiratory adeno-associated viruses and injecting them directly into the retina. However, the virus could not reach all the cells via retinal injection. Furthermore, the needle can cause retinal detachment, which incidentally cannot be cured with gene therapy and must be resolved physically through surgery.

It should be noted that gene therapy also will not restore sight to eyes that are completely blind and have dead retinal cells since those dead cells cannot be revived to produce the proper proteins after fixing the genes.

The new technique requires injection of the virus into the liquid vitreous humour of the eye in a fifteen minute procedure. So far, it has been shown to be much more effective than injecting the virus into the retina of rodents and monkeys. Although the virus penetrates spottily across the retina, penetration in the fine-vision area called the fovea has been far more successful than current viral injection techniques so far, which do not significantly penetrate the foveal cells at all. The researchers are currently collaborating with physicians to determine which patients would best

benefit from the gene delivery technique before identifying candidates for clinical trials.

This is the culmination of over 14 years of work, starting from the refining of the adeno-associated viruses to penetrate tissues in a specific way and modified so that they would not attack tissues or reproduce. Over 100 million variants of viruses were developed, each with slightly different proteins on its surface, some more suitable for penetrating livers and others for retinas. The researchers then selected the viruses best suited for delivery to the retinal cells.

There remains a risk that patients may be allergic to the adeno-associated virus but the new viral delivery method makes gene therapy more viable as a future treatment for blindness with genetic causes.

Textiles – the Indian Flag to Dreamliners



KRISHNA IYER
3T NANOTECHNOLOGY

WHAT THE ACTUAL FRIDGE?

The chances that you are wearing one of these marvellous inventions are rather high. Textiles are everywhere and you don't just wear them. Defined as a woven material consisting of a network of fibers, textiles have a multitude of uses. Today, I am going to take you on a journey through the world of textiles.

The history of textiles goes as far back as 34 000 BC according to some scientists. Textiles have been ubiquitous in human history for a very long time. They have provided shelter and protection from the harsh environments for millennia. When humans started migrating away from equatorial Africa, the climate obviously became colder. Furs gradually were replaced by the more breathable variety of protection in the form of textile sewn together from fibers such as flax or hemp.

The exotic silk fiber was first woven into useful fabric in China. Silk still stands as a symbol of luxury with a soft sheen and breathability after over five millennia in use. Silk was an important contributing factor in the spread of international trade and sparked to beginning of friendly relations between

nations for mutual benefit. The Silk Route was a large network of paths connecting the landmasses of Africa, Europe, and Asia (as far east as Nanjing in China). Silk was found along with mummies in the tombs from Ancient Egypt which is testimony to the importance of the fabric as a part of larger motion that eventually enabled the rapid communication and spreading of humans, goods, and ideas.

Some historians claim that cotton gin invented by Eli Whitney was responsible for the rapid proliferation of the cotton textile industry around the world. A cotton gin rapidly separates the fibers from the seeds thus allowing for higher productivity than enabled by manual techniques. However, this innocuous little invention was also responsible for the proliferation of slavery and its rapid growth. Although the cotton gin hastened the slowest part of making cotton fabrics, during that period of rapid growth, there was not enough labour available for picking the cotton from the plants. This led to the rather unfortunate growth of human trafficking for slavery purposes in North America.

After the removal of seeds from the fiber, the cotton was fed to the spinning jenny (which was invented prior to the cotton gin) which allowed for the drawing of the fibers into more useful yarn. This seemingly unobjectionable item is the reason for that circle in the center of the Indian national flag. That

circle with spokes is supposed to be a traditional Indian hand drawn spinning wheel known as the charkha. The reason it is of national significance is because of the Indian struggle for independence from the British rule and Mahatma Gandhi's "Swadeshi Movement." Swadeshi translates roughly to indigenous and it was a movement that strived to stimulate production of goods within India (including the rural areas). Gandhi had the bright idea of stimulating the economy of rural India instead of relying on expensive imported fabrics from the British. This fabric made was of relatively lower quality (thus called khadi meaning rough) and was symbolic of the Indian struggle for independence. To this day, flags of India are to be made of khadi material to appreciate the struggles of the efforts for an independent India.

The twentieth century era of textiles was signified by a large variety of purpose-built artificial fabrics. The early origins of artificial fibers can be traced back to the origins of rayon which was purposely engineered to be a fabric that could be dyed more easily. Rayon is what is called a semi-synthetic fabric because it originates from cellulose fibers such as cotton through chemical modifications. The first truly synthetic fabric was nylon (which was in fact, contrary to popular beliefs, NOT NAMED SO because it was discovered simultaneously in New York and London). The invention of

nylon by Dr. Wallace Carothers was one of great significance during the Second World War because it enabled the manufacture of parachutes within the United States without having to rely on risky shipments of silk. Unfortunately, Dr. Carothers' struggle with depression meant he never got to see his discovery be seen as the massive game changer that it was.

Modern textiles are pushing the boundaries of engineering and science. Such textiles are known as technical textiles and have huge ramifications outside of the garment industry. A large fraction of these technical textiles are used due to their superior mechanical properties. Fiberglass is one of these technical textiles which allows a rather sturdy structure for a low cost and most importantly, for a low weight. Kevlar is another such example which allows for bulletproof apparel. One of the more recent inventions, carbon fiber, is used widely in areas such as aerospace engineering due to its excellent mechanical properties and extremely low weight. Another hot area of development is nanotechnology-based fabrics. Some clothiers have adopted fabrics enhanced by nanotechnology due to their superior properties such as hydrophobicity. We know for a fact that textiles aren't going anywhere for a long time. I am actually truly excited to observe the societal impact of textiles for years to come.

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Why Does it (Dark) Matter

IOANA CRAICIU
3T NANOTECHNOLOGY

According to the data collected by the Planck mission that was released this March, the universe is composed of approximately 26.8% dark matter, 68.3% dark energy, and only 4.9% regular matter. The Planck mission observes the cosmic microwave background emissions from all directions in the universe and uses this information to estimate the six parameters of the standard model of cosmology, called the lambda-CDM model. This is the simplest model currently used by astronomers to explain what we see in the universe. The six parameters include things such as baryon (regular matter) density, dark matter density, and dark energy density. The microwaves detected by the instruments on the Planck satellite is the data and a regression on this data using the Lambda-CDM model gives the six parameters. The parameters can then be used to come up with estimates for things like the percentage of dark matter in the universe, the age of the universe (13.798 +/- 0.037 billion years), or the number of kinds of neutrinos that exist (3.30 +/- 0.27).

The term dark, when applied to dark matter, means that the matter does not interact with electromagnetic fields (i.e. light). Light does not appear to be either absorbed nor reflected by dark matter

which invites the question of why scientists don't refer to it as invisible matter instead. Dark matter was hypothesized to exist because stars within galaxies rotate in a way that cannot be explained by what we visually observe them to contain. Our observations tell us that galaxies must be heavier than they look. Since all "regular" matter – the stuff atoms are made of – interacts with electromagnetic fields, there has to be some sort of non-regular matter that has mass but doesn't interact with light. This is what astronomers call dark matter and it seems the universe has five times more of dark matter than regular matter. (In fact, there is a kind of "regular" particle that doesn't interact electromagnetically (the neutrino) but cosmic microwave background and other data rules out the idea that dark matter is made of neutrinos because they are too low in mass.)

Dark matter has never been detected in

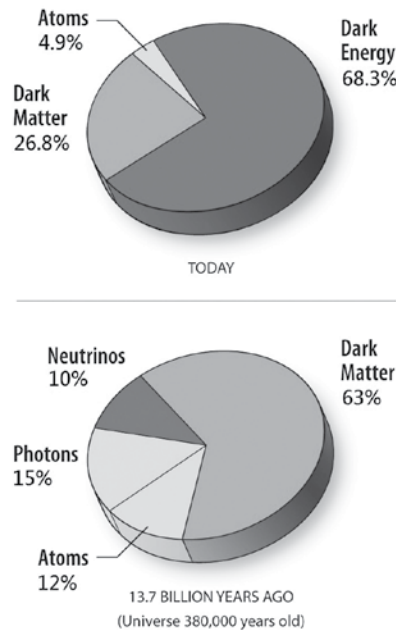
a collider on earth. There are various theories for what dark matter could be. One of these is supersymmetry which says that every fundamental regular particle has a supersymmetric buddy. This buddy differs in two ways from its regular counterpart: in its intrinsic spin and its mass. Physicists, renowned for their quarky sense of humour, call the buddy particles SUSY particles (short for supersymmetric). Supersymmetry, if it happens to be correct, would also help unify the four fundamental forces; therefore, it was pretty popular among physicists. Experiments at the Large Hadron Collider at CERN and the Tevatron Collider at Fermilab

looked for SUSY particles but didn't find any. In general, these experiments collide particles at a given energy and see if any particles are created with masses corresponding to that energy (remember, $E=mc^2$). Since supersymmetry theories place bounds on the possible masses of

SUSY particles and many of these mass ranges have already been probed, doubts are growing over the SUSY theory. One of the main goals of the LHC, when it comes back online in 2015, will be to probe the remaining mass ranges and prove or disprove supersymmetry theory.

Recently, another theory has been proposed for the identity of dark matter. Chiu Man Ho and Robert Scherrer from Vanderbilt University published an article last month proposing that dark matter may interact with electromagnetic fields after all. They propose that dark matter is composed of a certain kind of particle called a Majorana particle which can only have anapole moments. Unlike regular particles, which can have electromagnetic monopoles (as in a point charge), dipoles, quadrupoles, and so on, Majorana particles can only have anapoles. This means their electromagnetic interactions are different than those of regular matter thereby explaining why dark matter is "dark". They claim that these particles would be able to electromagnetically interact with regular matter, and suggest that the theory can be tested on Earth in another Dark Matter Experiment called XENON100.

In the near future, highly energetic collisions, observed by sentient carbon-based lifeforms using very complex experimental setups will prove one of these complicated theories to be true or disprove both. What an exciting time to be alive.



"Myriad Can't Patent Gene Sequences" Says US Supreme Court



NANCY HUI
3N CIVIL

One June 13, 2013, the Supreme Court of the United States (SCOTUS) ruled in favour of the American Civil Liberties Union and the Public Patent Foundation as well as invalidated Myriad Genetics' patent claims to the genes BRCA-1 and BRCA-2. Carriers of malformed versions of these genes have a 90% chance to develop breast cancer in their lifetimes.

Originally, lower courts had ruled that Myriad's patent was valid since isolated DNA segments did not exist in nature and

had to be processed before they could be useful for scientific use, therefore fulfilling the requirement that the patent be "non-obvious." In the past, similar logic had been applied to other human-derived products such as adrenaline and insulin.

The immediate effects of this ruling would allow patients at high risk for breast cancer to get genetic testing done at a lower cost since Myriad would no longer have a monopoly on testing for BRCA-1 and BRCA-2. Patients would also be able to get second opinions done.

Beyond BRCA-1 and BRCA-2, the ruling against Myriad is a landmark case in motivations and innovations. Were Myriad's case upheld, companies would continue to have their discoveries and

technologies protected by patents, encouraging scientific innovation. Myriad itself benefitted greatly from its patent, growing from a startup in 1994 to a publicly traded company in 2012 with an annual revenue of \$500 million. A great many discoveries today would not have been had their owners not been guaranteed intellectual protection through the patent system; genetic innovations are no different. Furthermore, disallowing patents on just gene material will encourage researchers to keep their discoveries secret for as long as possible rather than patenting the genes and licensing them for the use of other researchers.

However, opponents of gene patents maintain that the patents stifle innovation

by requiring scientists to jump through hoops to license genes and techniques for research and restrict patient options with regards to genetic diagnostic services.

It is important to note that the Supreme Court issued a number of caveats in their ruling. The court agreed that naturally occurring DNA segments were ineligible for patents as they were products of nature and simply separating from the surrounding genetic material using common scientific techniques was not innovative enough. Furthermore, they determined that Myriad had not developed a particularly innovative method of manipulating genes while searching for BRCA-1 and BRCA-2 gene mutations and, instead, used well-understood methods that would have been employed by any scientist searching for the gene. They note that Myriad was still in a position to patent new applications on the knowledge about the BRCA-1 and BRCA-2 genes or an innovative method to find such genes.

I had previously written that I believed that Myriad held a valid patent on the genes BRCA-1 and BRCA-2 on the basis that thousands of other segments of the human genome have been patented and that disallowing the patent might prove disastrous to Myriad's business practices. What I didn't take into account was the commonality of the techniques required to isolate genes and identify flaws therein or the possibility that Myriad could still have patented special applications and novel diagnostic techniques to BRCA-1 and BRCA-2, if such existed. Thus, if Myriad's business practice relies on their soon-to-expire patent on a few specific genes, they might have succeeded by monopolizing something besides the genes themselves.

All in all, this is a great step forwards in easing the legalities of the process of scientific discovery and providing patients with a choice as to their testing facilities.

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KRISTINA LEE
2T ENVIRONMENTAL

The last thing I expected to be doing on my co-op term in Vancouver was biking 240 km in two days. As it turns out, I should know to expect the unexpected. This past Father's Day weekend, I biked from Vancouver, BC to Seattle, Washington as part of the BC Ride to Conquer Cancer. I did this to raise money and awareness for the BC Cancer Foundation. For those of you that don't know, the Ride to Conquer Cancer is a yearly event that takes place across Canada. It's a two-day journey that thousands of cyclists and volunteers partake in to help raise money for cancer research.

My journey started at the beginning of May when I registered for the Ride. It was my second day of work when my supervisor approached me and asked a seemingly harmless question: "Do you ride a bike?" As it turns out, my answer, "yes", turned into a whirlwind adventure called the Ride to Conquer Cancer.

I joined over 2500 riders from across BC and Alberta on this epic journey. It was a phenomenal ride and I'm glad to have accomplished it with the Brainiacs! The Brainiacs raised \$570,000 and, in to-

tal, the Ride raised over \$10.4 million. All of this money will now go to support the research of various cancers that take lives every year.

In order to participate in the Ride, each participant must raise a minimum of \$2500; not a simple task to complete in under a month. However daunting that task seemed to my supervisor, I was more worried about being physically fit enough to complete the Ride. By the looks of the map and elevation chart, there were going to be some serious climbs involved in my journey to Seattle. Before the Ride, I had never completed a bike ride longer than 12 km, which works out to be 0.05% of the Ride to Conquer Cancer. Not a number I liked.

About a week later, and lots of convincing from my supervisor, I signed up with the team: the Brainiacs. I had a lot of catching up to do, with both donations and training. I started on the fundraising by selling raffle tickets for draws and getting my roommates to attend a pub night. That brought in about \$300, only \$2200 more to go! Now, it was time to advertise; Facebook and emails became my new best friend. As fundraising got underway it was time to complete task two: finding a bike.

It took me nearly two weeks to find and start riding a bike. The bike I ended up with was definitely not a road bike but hey,

I wasn't doing this to fit in and race, I was here to support and enjoy my ride. I biked to and from work each day for the next two weeks. Biking to work turned out in my favour as it was entirely downhill. Unfortunately, that meant that getting home would be an entirely different story.

I started riding with a group of ladies self-named the "Scardiacs" as it was all our first time riding. I have to say, without these three ladies, I would not have been able to complete the Ride. They supported me throughout and helped me on my first 90 km bike ride. They emphasized that I was not participating in a race but, rather, a ride.'

The pictures I have of cows and mountains is testament to being unafraid to stop during the ride and enjoy what we were doing. That is one thing training for the Ride made me realize; biking gives you a whole new perspective on where you're going and what you see.

When I showed up to the opening ceremonies, I was welcomed with by a sea of yellow jerseys and smiling faces. Before I knew it, we were off biking towards the border and entering the United States. Before lunch, I enjoyed a view of the beautiful Mount Baker which still had snow-covered peaks. After lunch, I endured a grueling ascent that never seemed to end. After arriving at camp that night, I got to enjoy the company of my teammates and

co-workers.

Starting Day Two I was a little sore, but, mostly, I just wanted to start biking. The first section of the day was completely flat but the second half was a continuous battle of hills. Just as I thought I was finished six hills, I was welcomed by a seventh and final hill. Naturally, this was also the steepest hill of the day. Needless to say, I was happy when I entered the last 5 km and followed a sea of jerseys to the finish line.

Words cannot describe how amazing it was to participate in the Ride to Conquer Cancer. I can tell you that almost everybody I know is already signed up for the Ride to Conquer Cancer 2014, myself included. I will be joining and be joined by a few of my friends on a journey from Toronto to Niagara next June. I am beyond excited and I'm trying to start a team of my own. If you're interested in signing up for the Ride 2014, give me a shout! My email is k84lee@uwaterloo.ca. Don't worry about being able to bike; it's true what my supervisor told me - the toughest part is the fundraising. I hope that by having a team we can create unity, go on training rides together, and help each other raise funds for a good cause.

I now love cycling. I wouldn't pick a different way to get around Vancouver or even Waterloo for that matter. It's a great way to exercise and enjoy yourself. I hope you consider cycling in the future!

A Highly Variable Trifle Recipe



CAITLIN MCLAREN
1T CHEMICAL

A HIGHLY VARIABLE X RECIPE

Your exams are done, yes? Never mind how they went — you are finished and that is a good enough reason to celebrate. But you are exhausted! You need some time to recover! There is no way you are going shopping for whatever outlandish ingredients I recommend this time.

Fear not! Trifle is sweet, easy, and perfectly designed for students. You need, in fact, three basic things: creamy stuff, cookie stuff, and fruit.

For creamy stuff, whipped cream or pudding is most commonly used. You can use anything even remotely resembling

those two — a bunch of little pudding cups, dessert whip, pudding made from a powder. Just make sure what you use isn't pure liquid (non-Newtonian fluids are fine). If you choose whipped cream, you should probably still mix it with some kind of pudding, because whipped cream on its own is likely to be too soft to support the layers on top. I don't recommend sweetening the cream; that will probably be too much.

Fruit you say? What is that, you ask? Fruit grows on trees, is good for you, and I insist that you use it. It is available at many places

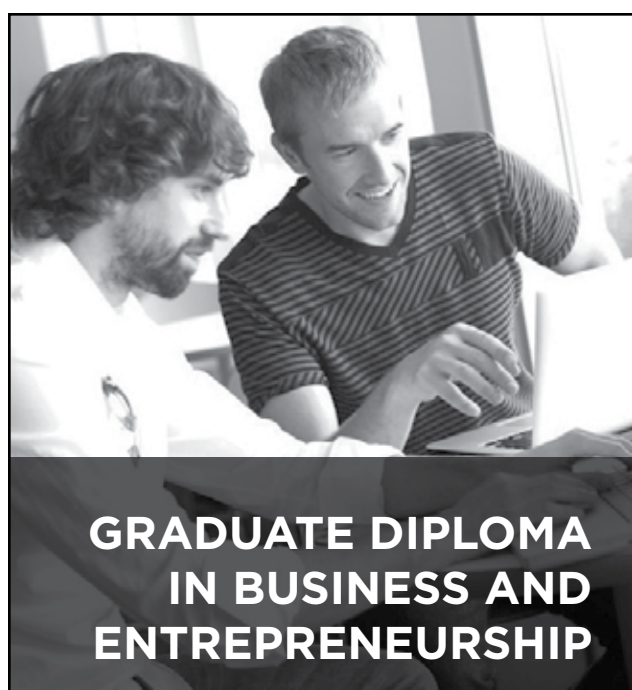
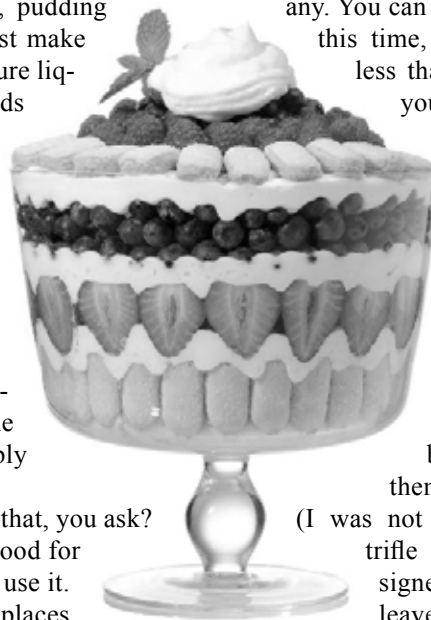
on or around campus. Any fruit will do, any. You can even use watermelon this time, though it would be less than ideal. It is best if you make the fruits into some kind of syrup or at least mix them with some kind of syrup.

The cookie stuff can be cake, brownies, lady fingers, or even Oreos. They should be fairly dry at the beginning. Sprinkle them with some alcohol (I was not joking when I said trifle was practically designed for students) and leave them for a while to

become soft and tasty.

Make the cookie, fruit, and cream into layers in a bowl. The bottom should be cookie, and the top should be cream. You can and should put a sprinkling of candy, peanuts, or chocolate in between the layers to add a little crunch. Then, you should chill our trifle for some time — it is best quite cold. When it is ready, spoon it out and serve! Since it is simple, tasty, and alcoholic, it is perfect for a party — make a very large bowlful. If you don't have too many people to feed, try to be careful with the amount — it is good the second day, but doesn't last long after that.

Of course, if you only plan to make one bowlful for yourself as you sit crying over the remnants of your grades, that is perfectly acceptable. It should help you to cheer up. Do cheer up, though. You did fine!



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Tube into The Guild, VGHS, COPS: Skyrim



**NACHIKET
SHERLEKAR**
2B NANOTECHNOLOGY

TUBE IN TO THIS

Hey peeps! Hope you've had a great couple of weeks, filled with rainbows and butterflies. Probably not, what with midterms and stuff, but as Adele says, who wants to be right as rain? Moving on, last week, I promised to review the Duck Song and related variations. I shall do so now in twelve words: It is super-freaking annoying and serves as a good offensive weapon. Well, that's it for this week! No? What? You want your money back? You're not even paying us, though! Ok, I'll compensate by reviewing some fancier YouTube shizz, just for you.

The Guild

A lot of pop-culture nowadays is based on video games and the culture of gaming. This includes a large number of gaming-related YouTube shows. One of the most successful web series based on gaming culture is Felicia Day's *The Guild*, which follows a random group of people who collectively play a fantasy MMORPG as part of a guild known as the Knights of Good, and have their dreary existences turned upside-down when they decide to meet face-to-face rather than maintain anonymity behind their online avatars. Cyd Sherman (Felicia Day), aka Codex, is the protagonist and serves as the narrator for the series, in the style of a vlog. While she grapples with her gaming addiction, she also has to deal with the strange (although at times stereotypical) personalities of her fellow guildies which include an insecure momma's boy, a neglectful mom, a broke

bachelor, a manipulative, obnoxious girl, and a narcissistic pervert. Each of these characters lends a different comedic element to the show, from slapstick to dark humour. *The Guild* recently completed its sixth season and the production quality has seen a progressive rise over time, with significant character development and engaging plots. *The Guild* encompasses a variety of references to geek and gaming culture and successfully demonstrates the perils of tech addiction.

Video Game High School

Freddie Wong along with his partner Brandon Laatsch have earned a reputation as VFX wizards through their YouTube channel, with their videos gathering millions of views each. A lot of their videos relate to gaming, especially first-person shooters. *Video Game High School* is a creative web-series that aired on the *freddiew* YouTube channel last summer. Brian Doheny, aka BrianD (Josh Blaylock) is an ordinary high school student who earns the opportunity to attend the elite Video Game High School (VGHS) after fragging a high ranked player known as 'The Law' in an FPS. Once he gets there, however, he realizes that The Law attends VGHS as well and is bent on humiliating him at every turn. Brian quickly makes friends with fellow newbies Ted and Ki, and is also attracted to sophomore Jenny Matrix, who specializes in FPS and also happens to be The Law's girlfriend. Along the way, he has to deal with intense competition from fellow students, regular visits to the principal, and constant fear of being expelled due to a falling rank. The best parts of *VGHS* are the game scenes, where the actors play their respective avatars in the game, making it highly engaging and fun, all the more because of the excellent

VFX. Besides FPS, the show has characters playing racing, rhythm, and dance-pad games. Season two of the show was recently funded by a Kickstarter and is now in production, and if it's anything like season one, then it definitely should be something to watch out for.

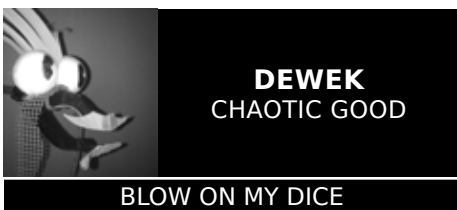
COPS: Skyrim

The *Nerdist* is a popular podcast as well as TV series on BBC America, and they also have a YouTube channel with a bunch of cool content. *COPS: Skyrim* is among some of the funniest shows produced by them. Officer Jenkins and his men patrol the fabled land of Skyrim and go about implementing the law of the land and dispensing justice, though using questionable methods to do so. Situations involving everything from dragon invasions and hostage situations to domestic disputes and orc attacks are caricatured. Each episode is divided into multiple shorts that each depicts a different situation. The references to *Skyrim* are of course abundant and the dry, sarcastic humour makes for a great watch. The officers are mostly well meaning, but are unfortunately not very competent and, as a result, hilarity ensues (possibly along with blood and death). Two seasons of the show are complete and the *Nerdist* channel is now showing other *Skyrim* spin-offs produced by the same group of people. Hopefully *COPS: Skyrim* returns to the *Nerdist* channel soon.

Thanks for reading this week's edition of *Tube in to This*. I will be vacationing in Hawaii for the next couple of weeks, so I am not too sure if I can write a review for the next edition. If I don't get enough time, I shall be reviewing the *Forndog-Noms* channel, where one man elegantly consumes various kinds of foods. Until then, Mahalo and Stay Tubed!



Small Worlds – Risk Meets Settlers of Catan



**DEWEK
CHAOTIC GOOD**

BLOW ON MY DICE

Welcome to Blow on my Dice, the article where we discuss board games and maybe, occasionally, the effect of a dice roll on the state of the world (or even the universe as we know it). Today, however, we're playing Small World, a game with only a single die to blow on.

Our players today are former EngSoc president Tim, Joe (a guy who doesn't like feet), and Derek (that's me!). Small World is a game for 2 to 5 players (odd number, right?), with a different board for every number of players. The base

game comes with two double-sided boards. Each number of players plays on a specially-sized board to make the small world sufficiently small for any given number of players. Ingenious.

Small World plays like a combination of Risk and Settlers of Catan with the exception that you won't be hearing "GOT WOOD, NEED SHEEP" every turn. Instead, your resources are your units, much like your battalions in Risk. You use the units (or tokens) to conquer territories. Every time you conquer a territory, you get a victory point. Like in Catan, victory points lead to you winning the game. A big difference between Small World and Risk is the lack of "luck" required to win a new territory; if you have enough units, you win, no questions asked.

One of the fun aspects of this game is the whimsical nature of the "playable races" that appear. Races range from "Berserking Orks" to "Flying Sorcerers" to "Commando Amazons." These races are randomly created by combining a modifier card and a race card of which there are copious numbers of each. The game begins with the determination of who has the pointiest ears...not even joking on that one; definitely written in the rule book. Each player begins their first turn by choosing a race which they use until it stops being useful. At this point, they put the race into decline and choose a new one. The act of placing a race "into decline" is one of the most important aspects of this board game as a strategic decline move could provide an exceptionally strong race combination or

an especially lucrative turn in the future.

The end goal of all these crazy shenanigans is to collect the victory coins which requires utilizing each race's special powers and conquering your (apparent) friends. As with any board game, once you win you get instant bragging rights. It's really quite fun.

All in all, this game is well worth a play or five. We did have a bit of an issue when Tim got excited and spilled his red wine all over the carpet and couch though. Remember kids: blotting works better than scrubbing, and white wine removes red wine! (This I didn't know – I was utterly confused when Joe started dabbing at the red wine with a white wine soaked paper towel...the more you know, I guess). Small World rolls a 4 and a 6. 10 out of 12. Definitely check it out.

UW Robotics Takes on NASA

Continued from UW on Page 1

The tension was high when the UW robot took the field for level one of the competition, where the robot must collect a single sample and return it to home base within 30 minutes. If that task was completed successfully, the bot would move on to level two, where up to ten samples would have be collected within a two hour time limit. After a nerve-racking 20 minutes, where the robot found, collected, and returned the sampled to the home base, the team cheered triumphantly. Unfortunately, the sample from the robot was a few centimetres off from the correct position

on the home platform, so it did not qualify to continue to Level 2. However, the robot won the People's Choice award for most popular robot design, and the Technical Achievement award for sample detection and collection during Level 1.

The team is composed of 25 members, including undergraduate students in MME, ECE, SYDE, and graduate students from the Waterloo Autonomous Vehicles Lab (WAVELab), the Vision and Image Processing Lab (VIP Lab), and the Pattern Analysis and Machine Intelligence (PAMI) group. The team wishes to thank the Faculty of Engineering, the Department of Mechanical and Mechatronics

Engineering, WEEF, the Dean of Engineering, and Clearpath Robotics for their amazing support.

Now that the competition is done, no one has any intentions of retiring. The team plans to continue working on the rover platform to make it their flagship competition robot as well as a platform for mobile robotics research. They believe they're just getting started. As always, the UW Robotics

team is looking for volunteers, so if you love tinkering with robots, hop on by to the team's bay in the E5 Student Design Center to check them out.

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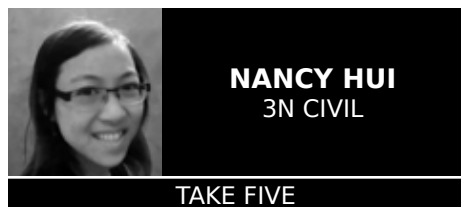
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Surveillance and Paranoia



According to Edward Snowden, the NSA has been collecting phone metadata and broadly mining internet communications. This is worrying to me, since surveillance can be used either for or against people in many contradictory ways. On one hand, it helps promote security. On another, it's sort of creepy: "I know what you did last summer" hardly touches the surface.

In the spirit of paranoia, here's five films about how NSA surveillance could have been applied, but probably wasn't.

The Informant! (2009)

Based on a true story, Mark Whitacre (Matt Damon) is the president of Archer Daniels Midland, an agricultural corporation. Southern gentleman he is, he tells the FBI to report that his company has been engaged in price fixing to collectively raise the cost of lysine and wears a wire to collect information on ADM's clandestine meetings with competitors. Unfortunately, the stress of coordinating surveillance for the FBI takes a toll on Whitacre's already-scattered thoughts.

Matt Damon as Mark Whitacre is the best narrator ever. He told me about butterflies in South America that have enough poison in their wings to stop a man's heart. He told me that the German word for saucer is "undertasse" – the undercup. He told me that the state bird of Hawaii is the nene.

Clearly, the substance of Whitacre's surveillance efforts are not as important to the film as the style and the protagonist's deteriorating mental state since the film is leisurely in pace and scored with bright circus

music.

Minority Report (2002)

In 2054, John Anderton (Tom Cruise) is an officer in the Precrime Division: a preventative measure that relies on the efforts of three future-seeing precognitives to catch murderers before the act. As a result of the precrime act, the murder rate has nearly flatlined. However, the precognitives' next vision predicts that Anderton himself will soon murder a man he's never met, forcing him to flee from his own officers and search for a way to prevent the murder.

Steven Spielberg did a great job integrating the plot with the realities of a mostly benign but still pretty creepy surveillance state. *Minority Report* is rife with features like eye-scanners as ubiquitous as PRESTO machines, and holograms resembling online ads tailored to one's individual shopping experience: "John Anderton! You could use a Guinness right about now." Thus, the festive fight scene music did not fit in with the GUIs that look like they were designed by Tony Stark. But none of the gizmos or gadgets ever distract from the core of the story, which blends the philosophies of predetermination and a classic mystery yarn featuring a disgraced sleuth with a heavy heart and a mysterious woman with a bone to pick.

Special kudos to Lois Smith as Dr. Hineman for an amazing performance as a biologist and Peter Stormare as Dr. Solomon the shady, possibly Swedish, eye surgeon. They were the cherry-on-top of an ingenious movie.

The Cabin in the Woods (2011)

Five genre-saavy friends pile into a van take a weekend trip to a backwoods cabin. Unbeknownst to them, a team of watchful scientists manipulate them into fulfilling horror movie archetypes using hallucinogenic gases and a "zombie redneck torture family."

The teenagers lose their minds and start making foolish decisions like "let's split up into groups!" and run straight into the rotting arms of their hosts.

The first two thirds of *The Cabin in the Woods* are pretty good – better, if you're into zombie redneck torture families. The scenes of zombies stalking hapless teens are juxtaposed with humorous vignettes depicting the scientists supervising the project from above. At one point, the labcoat-clad staff bring up the office pool on which disaster will befall the nubile youngsters. Will they be attacked by the mermen or Lars Trier's Angry Molesting Tree? Will the teenagers cotton on to their omniscient watchers? Will the scientists succeed in killing everyone? That really isn't the point.

Sure, there are some scares, and I love me a good zombie redneck torture family movie. But this is a story bigger than the scientists and the teenagers and the zombies: it's a love letter to horror films and the unfortunate beings that inhabit them. Definitely worth a watch.

Rear Window (1954)

L.B. "Jeff" Jeffries (Jimmy Stewart) breaks his leg on a photography assignment and is confined to his apartment during a summer heat wave. With nobody but his nurse (Thelma Ritter) and fiancée Lisa (Grace Kelly) to visit, he spends his days peeping on the neighbours across the courtyard. Rather than being drawn to the dancer who warms up in her underwear every morning, he notices the odd behaviour of a neighbor and becomes convinced that he has murdered his wife. The mysterious deliverymen, machetes in the sink, and the nosy dog found dead, fuel his paranoia.

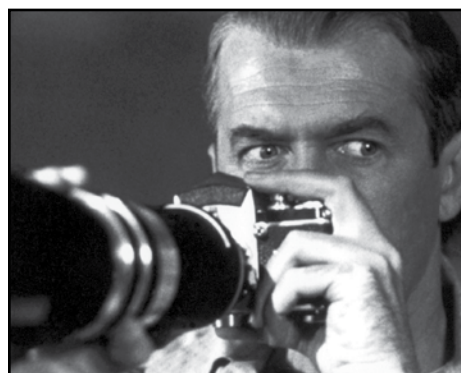
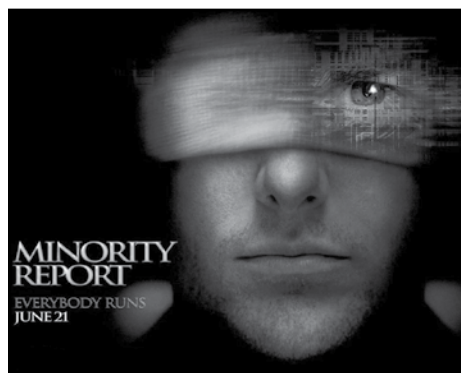
The pacing of *Rear Window* is slow, which makes sense, since Jeff is stuck in a wheelchair during the entire movie. As strongly as I

yearned for Jeff to get off his ass and get a better look in his neighbour's apartment, he physically couldn't. So I was stuck peering through the windows with him, trying to get a glimpse that would reveal what happened with the neighbor and his wife. We piece the story together just as Jeff does. We see only what Jeff sees. It is very frustrating until the final payoff. And in that way, the director Alfred Hitchcock carefully and realistically builds tension without reverting to the idiot ball that burdens many modern action heroes or being horribly boring.

Eagle Eye (2008)

Jerry Shaw (Shia LaBeouf) works at Copy Cabana while his twin is a recently deceased Marine. Soon after the funeral, suspicious amounts of money are funneled into his bank account and terrorist paraphernalia is delivered to his apartment. Meanwhile, a voice on the phone (Julianne Moore) tells him he's been "activated" and instructs him on how to evade captivity like Morpheus to Neo in *The Matrix*. Jerry, like Neo, has no choice but to follow. Elsewhere, a woman named Rachel (Michelle Monaghan) is threatened by the voice to help Jerry or risk her son's safety. The duo find that overhead cranes and synchronized traffic signals seem to aid their flight from federal agents and wonder what person has the power to rearrange their lives... and to what ends?

If you found the machinations of *Ocean's Eleven* too simple for your liking, then *Eagle Eye* kicks up the contrived timing and complex maneuvers at the loss of Danny Ocean and the stylish slickness of his schemes. Not that you'd notice, given the frantic pace and frequency of chase scenes in *Eagle Eye*. I mean, I do enjoy a Rube Goldberg machine style plot, but not with pawns too frightened to resist the chessmaster.



Clockwise from top-left: Cabin in the woods, The Informant!, Rear Window and Minority Report.

Geri's Game



Hello readers and welcome back to the Short Short Review! Just as a refresher, in this column I attempt to review a short film or story in a really short number of words. This week, in honour of Pixar releasing *Monsters University*, I'll be reviewing the Oscar-winning Pixar short, *Geri's Game*, in 295 words because I feel like it.

Geri's Game tells the story of an elderly man, Geri, playing chess against himself in a fairly empty park. However, each colour of pieces in the game represents a different personality that he displays. The game continues until it looks like white is about to get mated. Then something happens that I won't spoil, but is quite funny.

As previously mentioned, the story is

simple, but has deep insight into the personality of Geri. As with most other Pixar shorts, there is no actual dialogue as the various "aha"s, grunts and laughs portray Geri's emotions beautifully. On the topic of sound, the sound team at Pixar strikes again with a solid set of sound effects and a soundtrack that fits the slightly awkward but adorable vibe that Geri gives off.

On the topic of beautiful, even though this film was created in 1997, the animation is top notch and is comparable to some of the most recent 3D animated films. Special mention goes to the facial expressions of Geri, which along with the aforementioned sounds, give tons of information on what is going on in the film.

To wrap up things up for the week, *Geri's Game* is another adorable short film by Pixar that really shows why Pixar is the best at what they do. I am going to give this film, 5 adorable old men out of 5. Next week, I'll be reviewing something totally different. Stay Tuned!

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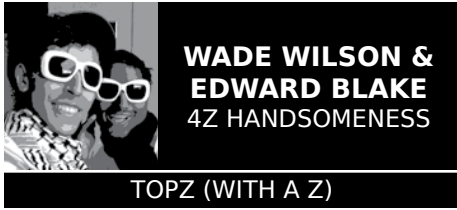
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Top Alternative Study Methods



With the dread of midterms finally ending, the dread of getting back marks is now upon us. Inevitably, you will be asking yourself “Where did I go wrong? How can I do better on finals? What’s currently trending on Oprah’s network?” The answer to all three is alternative study methods. Like us, we’re sure you’re sick to death of white-male study principles dominated by Western-centrism. There are several alternative methods which do not follow the cold-hard reductionist views of “practicality”, “realism” and “scientific evidence.” This week, we at Topz (With a Z) are taking a look at the best alternative study methods which will get you an “A” faster than you can say “placebo”!

Do not V your brain:

Our first method is really more of a rejection of a very common and very dangerous Western study method. “Vaccination” (and this is the only time we will use this filthy, smegma-encrusted, word) refers to the ludicrous principle in which a student is impaled with the very poison they are trying to avoid. The subject is given “sample problems” for their mind to “practise on” so that when they encounter the real deal on exam day, their mind has been “prepared”. Oh sure, the “professors” (government skills) will say that the sample is benign because they’re neutered by an “answer key”, but if you ask us, it sounds more like an autism key! Take it from us, or C-list celebrity Jenny McCarthy, that it simply isn’t worth the risk. Duh!

Reiki:

Reiki is a non-invasive method of channeling natural knowledge energy through the hands of an internet-trained practition-

er. The ki of the reiki master is passed into you, healing you of all your ignorances. Now, unfortunately, most TAs are pawns of the educational-industrial complex (duh!) and want you to waste years and bank on “conventional” learning and are therefore unwilling to practise reiki. But luckily for you, the principle applies in reverse too. You can absorb the ki of textbooks and papers through your skin. So next time you have an exam, just sleep on it.

Homeopathy:

Homeopathy is almost like V-word, but without the autism. Sometimes less is more, but sometimes is most of the time when it comes to homeopathy: the power of memory dilution. Why read 50 pages of your textbook when you can read 1 page, then go through 49 comic strips of Oglaf. You should only do that in extreme cases, as in expecting to bomb a final, as to be very careful, too much dilution can over amplify the effect and may result in failure if your professor gets jealous of your vast knowledge. Try one magnitude less of dilution for midterms (i.e. read 12 pages and 38 comic strips), and even less for tests. Dr. Werner (Asian optometrist but still a doctor, so it counts), makes it very clear in her thorough explanation involving the cosmos being able to fit in a singularity, which obviously results in mass = 1 (duh!). But why not let her explain in her own elegant prose? “So if you take that formula, $E=mc^2$, you can almost cross out mass. So the formula ends up being ‘energy = the speed of light.’” Where is her Nobel? It gets better when she incorporates string theory and the cytoplasm of cells. Even we at Topz (With a Z) were not able to decrypt this science, so we asked some of our nano friends and they were left speechless, which speaks for itself. Nanos might not have job prospects, but they sure have brains. Studying hard and studying smart are two different things, so make sure you make the right choice, then please tell us

which it is.

Chiropractic Studying:

Chiropractic founder Daniel Palmer discovered that all disease, from cancer the cold, are the result of subluxations in the spine, a conclusion he came to by common sense and intuition -- duh! Since then, this principle has been extended to deficiencies of the mind. After all, what does the spine connect to? The brain, dumb-dumb. This also explains why sufferers of scoliosis are so stupid. By cracking the spine in key places, people can be taught any subject whatsoever, without the use of “chemicals”. Although there is no clear definition on what exactly a subluxation is, what is clear is that their havoc on the spine causes PHYS 115 failures just as surely as kidney failures.

Ion Bracelet:

Physics midterm got you down? Yes? You failed? HAHA! Next time you’ll know to use the electromagnetic power of the ion. How can ions help you concentrate? Well, this explains why you failed. Different types of ions act differently, duh! (i.e. Lithium ions power electronics, duh!) So ensure the bracelet you order is encrusted with ions from volcanic ash, the best kind of ions. Grasping your ion bracelet for the first time will be the equivalent of holding a volcanic eruption in the palm of your hand, something you can’t truly explain without experiencing. Now imagine doing it a few times in the day, and not just privately in the comfort of your home. A salesman whose cousin helped write the physics textbook for the Peel region school board told us so at a mall kiosk in Conestoga, and would someone with such prideful credentials lie to us? Probably, but not this time.

Quantum Physics:

As Dinesh D’Souza puts it, for centuries, scientists have slowly scaled the mountain of knowledge only to find the yogis and theologians on the peak that had been there

all along. That last conquered ledge is what we know as “quantum physics.” For you see, in quantum physics there is a principle known as the “uncertainty principle” which means that everything is uncertain and so really “deterministic sciencism” is a bunch of bunk. Oh sure, there are some Heisendorks who would lead you to believe that this refers only to the uncertainty of measurements, but then why isn’t it called the “uncertainty of measurements principle”? Clearly, they should stick to meth. This principle means that at any given moment literally anything is possible, and we can shape that uncertainty using “the observer effect.” Once again, we can understand this principle by just reading the name, as taught to us by Deepak Chopra. Yes, the observer effect refers to the effect that observation has on physical systems at the quantum level. Make no mistake, this doesn’t have to do with interference from instrumentation; observers sound like people therefore this has to do with The Secret that consciousness affects physical reality and you can will the universe by thought: kind of like magic or psychic powers ... but physics (which is an anagram of psychics, without the ‘c’ (because that’s for you to see!) Coincidence? Not likely! Duh!). So let the Newtonians waste their time “reading” and “learning” the deterministic truths in textbooks. You can use the powers of quantum theory to will the world to the answers you quantum tunnel from your mind. Albert Einstein metaphysics superposition waveform entangled states Albert Einstein.

So there you have it: non-invasive and holistic liberation from the patriarchal hegemony of Western study methods. Some people may claim that the very definition of alternative studying is study methods which have not been shown to work. These people are racists, sexists, and homophobes who probably use weird flavours of toothpaste. #checkyourprivilege.



From left to right: Vaccination, Chiropractic studying, Ion Bracelet and Quantum physics at work.

St. Peters With a Side of Bitter-Sweet LibDub



Well hello there reader(s?). So nice of you to drop by. We’re writing the intro to this article having already written the rest of this article (what a twist!) and our mystery beverage is approximately half way finished, making us all approximately toasted. Allow us to introduce you to this mystery beverage in the following paragraph.

Psych! It’s the next paragraph.

This week, we’re taking on a mini-keg. These five litre vessels of beer can be found at your local LCBO and are fun to share. Once upon a time, people used to race through drinking these in the back rows of certain meetings. Oh, those were the days.

Most people are familiar with the Heineken mini-kegs. The keg we chose for tonight’s escapades is St Peter’s Summer Ale. It’s five litres of 6.5% ABV beer.

It’s important to remember that mini-kegs don’t keep well once opened. This means Graeme, Eric, and Derek have to drink it all tonight.

First, we open the keg. Derek turned the vent valve on the top, and the keg became a beer fountain. Some might say that it blew prematurely. This was detrimental to Graeme’s laptop, but he’s probably had his fair share of fluids on it before, so whatever. I now regret using Graeme’s laptop to write this article.

So how is this beer? Graeme starts off with the smell. He says it’s “like someone made a beer soap.” He also says that “my nose is stuffed up so don’t listen to me.”

Ok, beer break time! Lets review the newly released UW LipDub!

For those of you that are too young, or just don’t give a damn, in Fall 2011 students tried to organize a LipDub. They recorded one, but since the rights to the songs are expensive, they decided to use short clips of many songs. This would allow them to claim the songs were used under a “Fair Use” clause. Unfortunately, Canada doesn’t have this clause. For that reason, the University wouldn’t allow

them to release it unless they could get the rights. Seeing as they used so many songs, that wouldn’t be possible.

But, last week, someone leaked the video. They claimed that they “found this corrupted edition in the recycling bin on a library computer a year ago and fixed it.” That’s probably BS, but thanks to whoever leaked it, we can finally see Waterloo’s version of that thing that was popular on the internet two years ago.

In an unsurprising fashion, Waterloo didn’t quite get it. Typically, LipDubs involve LipDubbing, which Wikipedia defines as: “lip synching and audio dubbing to make a music video.” There’s only a few parts of Waterloo’s video that are actually dubbed, and the timing for them is way off. The video is over eight minutes long, which seems unnecessary since most of it is just people jumping around. Speaking of jumping, there’s a bunch of jump cuts. That’s interesting stylistic choice, since most one shot videos have... no jump cuts. Some people show off by doing flips and stuff, and Feridun (the Great Successor to David Johnston) makes a cameo to look out of place and smile creepily. On the

plus side, there’s a cool aerial shot with a quadcopter, but it just shows the top of one of the campus’ most ugly buildings (hint: it looks like a sugar cube).

We give the LipDub One Pair of Puckered Lips out of a Brothel. We won’t specify which pair of lips. Since it took two years to make this eight minute waste of your time, you might as well Google it. That’s enough about LipDub, let get back to beer! Tim arrived so we can all drink less!

The St. Peters has a pretty agreeable taste. It’s a bit sweet with a malty taste. It has a light carbonation. It’s not exceptional, but definitely a drinkable beer. Drinkable is a good quality if you’re buying five litres of beer.

Remember kids: sharing is caring. So get yourself a caring-can (ie, mini-keg) of beer and some friends. This caring-can is the best one we’ve had, but the beer itself is above average at best. We give it 3.69696969/5 Surly Bartenders.

Next time, we’ll have a half minute interview with the our President. He promises it will be satisfying, but brief. We’ll get you the cut version.

The Iron Crossword

Leftovers

STUART LINLEY
3T NANOTECHNOLOGY

Submit your completed crossword to the crossword submission box in the Orifice (CPH 1327) before next Wednesday to compete in the bi-weekly Crossword Competition!

| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | | 5 | 6 | 7 | 8 | 9 | | 10 | 11 | 12 | 13 |
| 14 | | | | | 15 | | | | | | 16 | | | |
| 17 | | | | | 18 | | | | | | 19 | | | |
| 20 | | | | | 21 | | | | | | 22 | | | |
| 23 | | | | | | | | 24 | | | | | | |
| | | | 25 | | 26 | 27 | 28 | | 29 | | 30 | 31 | 32 | 33 |
| 34 | 35 | 36 | | | 37 | | | 38 | | 39 | | | | |
| 40 | | | 41 | 42 | | | | | 43 | | | | | |
| 44 | | | | | | 45 | | | | | | 46 | | |
| 47 | | | | | 48 | | 49 | | | 50 | 51 | | | |
| | | | | 52 | | 53 | | | | 54 | | 55 | 56 | 57 |
| 58 | 59 | 60 | 61 | | | | 62 | 63 | 64 | | | | | |
| 65 | | | | | | 66 | | | | | 67 | | | |
| 68 | | | | | | 69 | | | | | 70 | | | |
| 71 | | | | | | 72 | | | | | 73 | | | |

DOWN

- 1 Chaos
- 2 _____ Garden
- 3 Judge's tool
- 4 Eyes contemptively
- 5 Cathedral feature
- 6 Cooking _____
- 7 One who gives inputs
- 8 Held off
- 9 Deserved
- 10 Electronics
- 11 117 series
- 12 Operates
- 13 Skilled
- 21 Show respect
- 22 Shimmer
- 26 Finale
- 27 _____ vu
- 28 Praise
- 30 Brew
- 31 Tap
- 32 Suspect
- 33 Home
- 34 Itty bit
- 35 Rep. card
- 36 Obligation
- 38 Russian ruler
- 41 Caviar
- 42 (He)artery
- 43 Rugby goal
- 48 Sudden rushes
- 50 Droop
- 51 Shyamalan features
- 53 Pizzazz
- 55 Love
- 56 Ward off
- 57 Artist's support
- 58 Gem
- 59 Flower locale
- 60 Flat
- 61 Write partner
- 62 Detest
- 63 Thought
- 64 Engineer, eg.

ACROSS

- 1 Choppers
- 5 Entertain
- 10 Dull noise
- 14 Actor Rickman
- 15 Italian dish
- 16 Simplicity
- 17 (long) live!
- 18 Stain
- 19 Bass or treble go with
- 20 One who can't let the guests relax
- 23 Low string
- 24 _____ tha Funkee Homosapien
- 25 Uppsala resident
- 29 Correct
- 34 Terror implement, often
- 37 Following
- 39 Skirt type
- 40 Changes that are a little too much
- 44 Improper
- 45 Banned crop regulator
- 46 Obtained
- 47 Changes
- 49 Affair
- 52 Mon follower
- 54 Attentive
- 58 The theme that ties it together
- 65 Tar
- 66 Clearing
- 67 Absorbs
- 68 Sailing
- 69 Muncher
- 70 Apple or Cherry
- 71 Provide, temporarily
- 72 Home or in go with
- 73 Wall St. activity

Sudoku

#2013-08

LUCAS HUDSON
3A MECHATRONICS

Easy

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

Medium

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

Hard

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

Solutions for previous crosswords can be found on *The Iron Warrior's* website at iwarrior.uwaterloo.ca/distractions.

THE IRON INQUISITION
Lucas Hudson, 3A Mechatronics

"What is in your browser history?"



"stairporn.org; a really cool website about architectural stairs"
Daniel Abad, 2B Architecture



"Habbo Hotel... Penthouse? =)"
Brandi Ziegler, 3N Electrical



"Questionable fanfiction."
Joe Kinsella, 3A Mechatronics



"Google searches of really simple math"
Austin Cousineau, 2B Electrical



"Neopets... I'm a neo-millionaire."
Stuart Linley, 3T Nanotechnology



"I always use private tabs... Always."
Ryan Mahler, 4A Computer