

Note: This document is hosted here for archival purposes only. It does not necessarily represent the values of the Iron Warrior or Waterloo Engineering Society in the present day.



facebook.com/TheIronWarrior

twitter.com/TheIronWarrior

iwarrior.uwaterloo.ca

Tesla Releases Patents to the Public

Bold Move Aims to Advance Market for Electric Vehicles



Steve Jurvetson

Tesla's patent wall has now been taken down after having released all their patents to the public.

MATT MCLEAN
4A MECHANICAL

In a nod to internet culture Tesla CEO Elon Musk announced that "All Our Patent Are Belong To You" in a recent blog post. In summary, Tesla would no longer be enforcing their patents.

Patents have been around for hundreds of years. Traditional thinking states that they provide incentive for an inventor to invent new technologies by granting them a period of exclusivity, and then releasing it to the public domain after 20 or so years.

Recently the value of patents has been degrading. Some companies such as Ballard Power Systems choose not to get patents at all. They believe that they can maintain enough secrecy around their innovations that they can hold onto a period of exclusivity for longer than the 20 years offered by a patent.

Other companies take a more open route to their innovations. For example, the open source movement recently relies

upon a community to improve on existing innovations (usually in programming), to further advancement of a technology.

Tesla has slightly different reasoning for choosing not to enforce patents. In his blog post, Musk states "Our true competition is not the small trickle of non-Tesla electric cars being produced, but rather the enormous flood of gasoline cars pouring out of the world's factories every day."

By providing electric car technologies to competitors, Musk sees no loss of exclusivity, and therefore no reason to enforce patents. At first glance it appears to be a company making an altruistic decision because they will not lose anything, and only gain public perception points. Upon further analysis, the move creates many advantages for Musk, Tesla owners, and Tesla cars.

Musk is currently planning to create the Gigafactory, the world's largest battery manufacturing facility. When complete, the Gigafactory will double the world's output of lithium-ion batteries. Musk's

plan is to reduce cost of batteries by 30%, primarily by increasing efficiencies through scale. The batteries will initially be used for a more economical Tesla electric car, and for solar energy storage through one of Musk's other companies, SolarCity.

But there are further opportunities for the world's largest battery manufacturer: if electric cars were to become more popular, Tesla (and their partner company Panasonic) would be in the best position of any company in the world to meet the demand for high capacity batteries. The potential for battery supply could be huge.

Tesla owners also stand to benefit from the release of Tesla's patents. Currently there are 97 supercharging stations across North America. While a typical 220V wall charger will charge the battery overnight, a supercharger uses DC power to charge a car in as little as 20 minutes. These superchargers have allowed Tesla owners to push past range limitations, and adventure into the world of long road

trips.

There are other options for fast charging provided by numerous companies external to Tesla. Each charging station has different standards for plugs. One Tesla owner I talked to said she had to carry around four different adapters to ensure she can recharge when needed. By releasing the patented charger port for Tesla, other companies can provide the Tesla adapter, and Tesla owners will have even more choices for regular and super charging wherever they may need to go.

Despite the release of its patents, Tesla still has a competitive advantage over any electric car maker. Patents disclose how to make individual components of the car, but there are no patents for how everything works together. Tesla's legendary attention for detail in the whole car experience has led it to receive numerous rankings of the best overall car of the year. Company culture and that ability to continually innovate will keep Tesla cars on the top of the market for the near future.

Week of Hell and Famous Trees



NINA FENG
EDITOR-IN-CHIEF

Goddamn what a week.

Congratulations dear readers, for surviving through Hell Week (sort of), arguably one of the worst weeks of the term.

And if you're like myself and didn't have an official hell week, props for surviving what is essentially still Hell Week, but there's still class, labs, assignments and reports. And the midterms don't end when Hell Week ends. There's pros and cons for both sides (see this issue's PCP), but I personally would have preferred having a Hell Week. Much less stressful just focusing on exams, rather than having all this other crap to deal with at the same time.

Hope you didn't bomb your exams like I did. If you did, hope you make it up at finals. You got this. We got this.

Rankings came out Friday. Hope you all had some luck with Jobmine, otherwise, hope you fare well in the continuous round! For those of you who wrote Work Term Reports, hope you passed (or will pass if you haven't gotten it back yet). If you got a Resubmit, godspeed on your editing. If my class's first work term report was anything to go off of, it's super common and usually not a big deal at all. Currently awaiting mine. Fingers crossed. Don't want to deal with that right now. At all.

Goddamn what a week.

Midterms hit everyone hard. It's the time where extra-curricular activities, our social lives, and the rest of life in general gets put on hold in order to focus on exams. This issue was a lot harder to put together than previous issues, due to a much higher number of late articles (I ain't effing around. I'm talking 89% here). Thank you so much to those who got their articles in on Friday.

To the rest of you...dishonour on you! Dishonour on your cow! You get a bit less dishonour if you gave me updates and heads-up e-mails though. Thank you for those, I really appreciate them.

It's very understandable though. There's so much that we as students have to do. On a term like this, I doubt even I would be getting my articles on time (if at all) if it weren't for the fact that I'm EIC. So don't worry. No actual dishonouring.

Thanks so much to Nancy Hui and Alex Lee who came and helped me with copy editing and last-minute content producing. I would be so screwed without you. Thanks also to Hank Shin for your moral support. Needed it more this week than before.

This issue includes quite a few things. A review of a whole bunch of E3 game announcements can be found inside, as well as some pieces about 3D printing

and the recent increase of fees for the University's 3D printer.

Most of our usual columns are back, so be sure to check them out!

Alex Toth's Album of the Week looks at Prince's Purple Rain, while Nancy Hui's Take Five takes on 'Buddy Cop' films. Elizabeth Salsberg's The Benchwarmer makes some FIFA World Cup predictions, and Brian Chan's EngLife Improvement shows us the importance of eating breakfast.

For this editorial, I'm tipping my hat to my old column that I've abandoned for this term (ain't nobody got time for that). Since I doubt the readership was very wide for that column, it was Leafy Thoughts, where I investigated environmental news or made stupid lists of eco-friendly things. There was one idea I'd played around with for a while, but I didn't think it would be suitable for an engineering newspaper...which is why I'm doing it here, in the depths of my editorial, where I can write anything I want, and nobody will dull my sparkle.

So here it is. I present to you: Notable Trees!

There are scores of famous and notable trees around the world, both living and historical. I could fill entire issues of newspapers with them all. I just picked an arbitrary number of them, with no specific reason for their choice. Trees are some of the most majestic, meaningful, and important plants.

The first tree I want to talk about is the Boab Prison Tree. It's located just south of Derby, a town in the Kimberley region of Western Australia. A boab tree with an especially bulbous trunk, it is hollow and therefore perfect for housing humans... which is exactly what it was used for. In the 1890s, Australian law enforcement would temporarily lock up prisoners in the tree, as they awaited sentencing in Derby. While I'm not sure exactly how things were staying in that tree, the idea of living in one sounds fun to me. Like camping out. As often happens with decommissioned prisons, it is now a tourist attraction. Actually, all the trees in this article are tourist attractions. Comes with the fame.

Another interesting tree is L'Arbre du Ténéré in northeast Niger, Africa. Unfortunately, this tree is no longer living, thanks to one dumbass 40 years ago. It was a lonely acacia that has stood for decades in the Sahara desert. It was especially remarkable because it was considered, at one point, to be the most isolated tree in the world. There was no other tree in a 400-kilometre radius. The tree was used as a landmark by travellers in the desert, and for that reason was one of the only trees to show up on maps. A drunk Libyan driver knocked it down one fateful day in 1973. The ONLY TREE for hundreds of kilometres and he crashed into it. So unfortunate. May s/he rest in peace. A

simple metal tree-like structure has since been erected as a replacement and memorial. The original tree has been moved to a museum.

Next, this article is going to take a bit of a darker turn, as this upcoming tree has a fairly morbid history. It is located in one of the Killing Fields in Cambodia, sites where millions of people were executed and buried, either for having committed crimes, or in genocidal murders for ethnic cleansing. The Chankiri Tree, also known as the Killing Tree, was a tree that was used to kill the infants or children of parents who were accused of crimes. These children were beaten and smashed against the tree, for fear that they would eventually avenge their parents if left alive. To make things worse, executioners and soldiers often laughed whilst executing these children. While some might have laughed out of actual twisted pleasure, the majority only did so in order to avoid punishment or a similar fate, in case their silence was taken as sympathy.

The next tree is famous for being the oldest individual clonal tree in the world. Clonal trees are trees that reproduce with vegetative cloning, which involves spreading and sprouting new individuals that are typically connected to the old ones by their underground root system. Clonal colonies are groups of such organisms that are genetically identical and interconnected. Entire forests might technically be one giant organism. This tree, called Old Tjikko, is about 9,550 years old, as determined by the carbon dating of its root system (as opposed to counting its rings). It is located on Fulufjället Mountain in Sweden.

The next tree is famous from literature as the shelter and main hangout for Robin Hood and his Merry Men. It is an actual tree in Sherwood Forest, Nottinghamshire, England. Named Major Oak, it is one of the most visited and celebrated trees in Britain. It's approximately 800-1000 years old, and has a girth (circumference) of about 10 metres. I wouldn't have minded living under that tree, or sleeping under it after a day of stealing from the rich and giving to the poor.

I find trees wildly fascinating, perhaps because they're some of the more obvious natural beings we get exposed to in the city. I don't know about other people, but when I think "nature" I picture a forest. Maybe with birds and stuff, sometimes a river. And rocks and soil of course. Either way, trees are pretty cool in general and I hope whoever read all this hogwash learned a little something about these particularly well-known specimens.

One of these days, I might try to write something insightful and meaningful for this thing, but probably not. It's summer term, there are slightly less readers, I have very little restriction for what I write, and I fully intend to abuse that power.

THE IRON WARRIOR

The Newspaper of the University of Waterloo Engineering Society

Editor-in-Chief

Nina Feng

Assistant Editor

Alex Lee

Layout Editors

Alex Lee

Krishna Iyer

Copy Editors

Alex Lee

Caitlin McLaren

Elizabeth Salsberg

Leah Kristufek

Nachiket Sherlekar

Nancy Hui

Advertising Manager

Alex Toth

Circulation Manager

Elizabeth Salsberg

Web Editor

TBA

Staff Writers

Alex Lee

Alex Toth

Brian Chan

Caitlin McLaren

Christy Fung

Elizabeth Salsberg

Jessica Keung

Matt McLean

Meagan Cardno

Nachiket Sherlekar

Nancy Hui

Sung Eun Kim

Vincent Magas

Zachary Gingras

Contributors

Allyson Francis

Filzah Nasir

Kristina Lee

Mathieu Tremblay

Melissa Ferguson

Permeg Kenth

Sarah-Rose Lancaster

ADVISORY BOARD

Off-Stream Editor-in-Chief

Leah Kristufek

Executive Members

Kevin McNamara

Mathieu Tremblay

Students-at-Large

Holly LeSauvage

Kelsey Waugh

Advertise With Us!

Want to reach a wide, intelligent audience which includes students, faculty and staff at the University?

We are the official newspaper of the University of Waterloo Engineering Society representing the entire undergraduate engineering student body of over 6000 students.

Our newspaper is distributed all across campus and is the perfect medium to advertise your event, employer information session, service, etc.

For more information, please visit iwarrior.uwaterloo.ca/advertising or contact us at iwarrior@uwaterloo.ca, 519-888-4567, Ext. 32693

Issue #3 Deadline: Friday, June 20 at 6:00 p.m. for publication on Wednesday, June 25, 2013

Send your submissions to iwarrior@uwaterloo.ca

Spring 2014 Publication Schedule: May 28, June 11, June 25, July 9, July 23

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

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

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

Mail should be addressed to *The Iron Warrior*, Engineering Society, E2 2347, University of Waterloo, Waterloo, Ontario, N2L 3G1. Our phone number is (519) 888-4567 x32693. E-mail can be sent to iwarrior@uwaterloo.ca

A Win for Wynne!



FILZAH NASIR
3A ENVIRONMENTAL

Elections results are in and for the fourth election in a row, Ontario has elected a Liberal government. This time it's a majority so we're election free for the next four years. Woohoo! Unless you're the kind of person who enjoys spending millions of tax dollars on the public spectacle that is elections, in which case, Boo! (Although there is a municipal election in October and the long-awaited federal election to look forward to in 2015 so you don't have to be too disappointed).

For anyone who was watching the polls closely (and really what else were you doing, writing midterms?) a majority government wasn't exactly the expected outcome of the election. And if you were following the multitude of liberal scandals (gas plant, Ornge, eHealth, gas plant!) you probably question the intelligence of Ontario voters.

So how did a government so mired in scandals that their leader was forced to step down get rewarded with a majority government? I think the answer lies in one Tim Hudak.

Hudak of the one million jobs. One million jobs. Ontario voters just voted against one million jobs. What's wrong with us? Oh wait...there aren't even a million unemployed people in Ontario. So who would actually doing these million jobs? Maybe we did make the right decision.

The consensus seems to be that the result of the Ontario elections represents not so much a belief in the Liberals but a rejection of Tim Hudak and the PC's. So congratulations Hudak! You're officially less preferable than the government

mired in scandal. A government who has held office for over a decade and continued to subjugate Ontario to one austerity measure after another.

Of course, the election of a majority government allows us to reopen the debate of whether a majority government is good or bad. Because of course there's a good side to giving one person the power to basically make any decision they want about our province right? I mean just look at the last time the Liberals had a majority government in Ontario... why shouldn't we trust them with another.

Even for someone who enjoys elections because they give me an excuse to talk about politics non-stop without annoying people too much, this election was dirtier than most, with far too much mud-slinging and one where you truly were forced to pick the lesser of the evils. It should be no surprise that the number of declined ballots in Ontario increased significantly this election. The total number of declined ballots rose to 31,339. This is the highest it's been since 1975. While the results of that can be partly attributed to an increased awareness of the ability to formally decline a ballot (such as through the Iron Warrior's last PCP), it also had quite a bit to do with the general lack of appeal for the choices at the poll.

The riding of Kitchener-Waterloo, one of only a few swing ridings in Ontario went against the majority and re-elected NDP MPP Catherine Fife.



The 2014 provincial election resulted in a Liberal majority.

Input with Impact!

CLARISSE SCHNEIDER
COURSE CRITIQUES DIRECTOR
& **GORDON STUBLEY**
ASSOCIATE DEAN, TEACHING

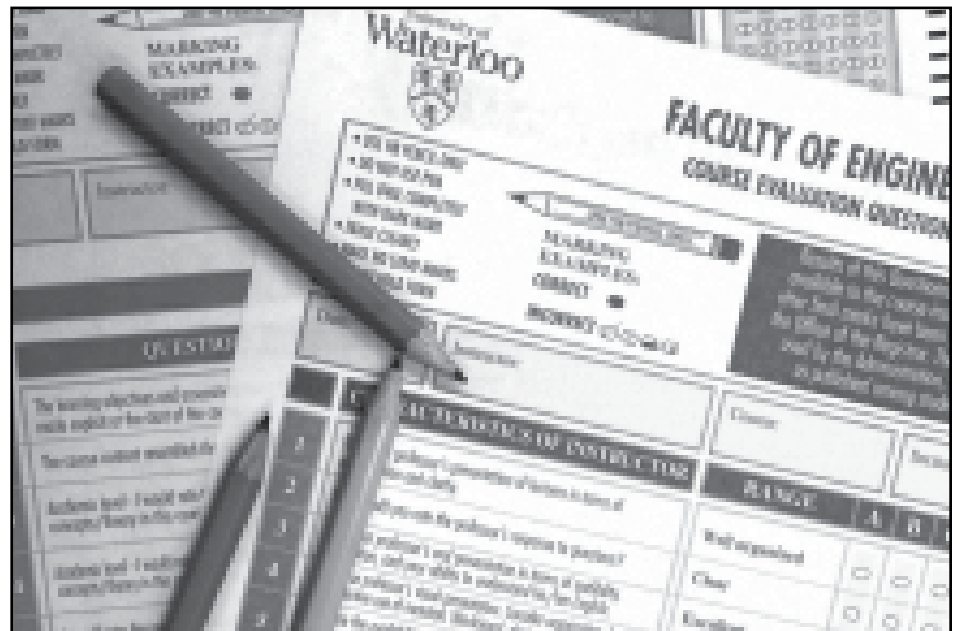
Course evaluation packages will soon go out to your professors and instructors, who have been asked to bring them to class between July 7 and 18, 2014. Student representatives will be called upon to distribute one questionnaire to each student in each class, collect them when they are completed, and deliver them to the EngSoc office. Your Course Critiques Director will work with student volunteers to prepare the packages for computerized scanning and processing. It's an involved process that has been repeated every semester for over 40 years, but it's one we believe is well worth the effort.

Your thoughtful and candid responses to course evaluation survey questions have a big impact.

On the day after grades are due, a package is mailed to each course instruc-

tor with a summary of the numerical data plus the original completed questionnaires so that they can read the comments you've written on the back. Instructors rely on your input to help improve their teaching. Department chairs receive summaries of course evaluation results, which they use to inform tenure and promotion decisions. And the Associate Dean, Teaching uses course evaluation results to inform course improvement efforts. Results are also posted online (see links at uwaterloo.ca/engineering/teaching-learning/course-evaluations) so that you and future students may review the results.

If you have any questions about the Course Critiques process, or if you'd like to help out with the spring 2014 evaluations, just email coursecritiques@eng-soc.uwaterloo.ca and we'll get back to you. Thank you for your time, your feedback, and, most importantly, for your continued support of this longstanding and valued process.



University of Waterloo



WATERLOO ENGINEERING

Accelerated Master's program

BECOME PART OF OUR WORLDWIDE REPUTATION FOR RESEARCH

The Accelerated Master's program offers exceptional undergrad students the opportunity to fast track a Master of Applied Science (MAsc) degree.

If unanswered questions motivate you and collaboration with brilliant colleagues inspires you the Accelerated Master's may offer you the ideal path forward, providing you the ability to access more than \$10,125 in research funding to start you on your way.

Find out more: uwaterloo.ca/engineering/graduate



New Governing Documents and More at Joint Council 2014!



ALLYSON FRANCIS
PRESIDENT

Hi UW Engineers! Glad to see you all made it out of hell week in one piece! The hard work is behind us for now, but we have lots going on to carry us to the end of the term. But first, in case you missed our Joint Council meeting this past Sunday, here is a summary of everything you need to know about what happened.

One major thing that was established is a board of directors for the society. Eight at-large students are to be elected to represent both A and B Society on this board along with both presidents and our society business manager, Mary, who will have a seat and make recommendations to the board but not vote on the student decisions. The B-Soc at-large director elections were tabled and are to be held on Wednesday July 9 at the EngSoc meeting. If you are interested in running for one of the four seats, please plan to attend the meeting or be able to be contacted at that time to accept your nomination. A Society will hold their elections for Board of Directors members at their first Fall meeting. Moving forward, the board will meet approximately three times per term beginning in September, and serve until the beginning of the next Fall term.

After this, elections for board members will continue to be held in June.

Another major thing that was established are general meetings, which are set to begin in September as well. Each on-term society will be required to hold a general meeting once per term, as well as a joint general meeting annually in the Spring term. General meetings allow all student members (not just class reps!) to vote at council meetings once per term. This is to increase accountability and bring bigger items to the attention of all students in a meaningful way.

The EngSoc fee has also increased by 23 cents due to the rate of inflation. This is standard procedure and happens every year in order for us to retain the same buying power for the society. This was also approved at Joint Council.

The Engineering Society also adopted a new policy regarding a Teaching Excellence Award, which would

recognize outstanding teaching in the Faculty of Engineering, whether that be by a professor, lecturer or lab instructor. In September, the first Teaching Excellence Award Committee will form, and will form again each term. The elections for the at-large student members to these committees will take place at the first EngSoc council meeting of each term. We also formed an Executive Review Committee that will objectively examine the portfolios of the current society exec and propose changes to the positions that will improve the way the society is run.

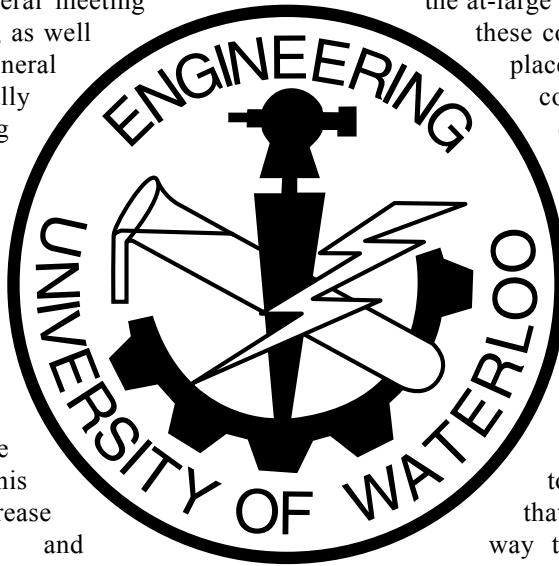
The committee members will meet regularly until next June. The elections for the Executive Review Committee seats were also tabled and will be held with the Board of Directors elections at the July 9 EngSoc meeting. Anyone is eligible to run for any of the positions listed in this article, so please ask me any questions you may have about the positions and I would be happy to answer you.

The society also adopted mission

and vision statements at the meeting. The mission of the Society reads "The University of Waterloo Engineering Society exists to promote a positive undergraduate experience among its members through representation of student opinion as well as support of academic, professional and social needs. The society will strive to provide means for its members to develop and succeed as undergraduate students, and in their future endeavors." The vision of the Society reads "The University of Waterloo Engineering Society will work to better facilitate representation of its students on all relevant matters. The Society will strive to grow and improve its academic, professional and social events and services to cater to the expanding diversity of its members."

Also at the meeting, updates were presented from all executives. Leila, the A-Society president, and I presented our joint initiatives for the next year. I will discuss these in more detail in the next Iron Warrior issue, so stay tuned!

All Joint Council motions mentioned in this executive report are available on the Society website at engsoc.uwaterloo.ca. If you have any questions, or have anything else you'd like to hear about or ask me, please shoot me an email at president.b@engsoc.uwaterloo.ca, or come by the orifice anytime! Talk to you soon B-Soc!



Midterms are over! Rankings are out!



PERMEG KENTH
VP EDUCATION

Hey Everyone,

Midterms are finally over for most of you! Hell week is out of the way! Since the last issue there hasn't been much going on in terms of academics. There is a new PD course coming up and that will be discussed in the next issue.

This week I want to talk about what students can do between midterms and finals. At times our midterm grades don't turn out to be as we expect (not

always a bad turnout, sometimes the bell curve really saves us). This is the time when students start calculating how much they need in the final to get the marks they want. So what happens now? Midterms are over and finals are two months away!

Once you get your midterm back, look at it! Don't just throw it in your bag and call it a day! If your grades aren't as good as you wanted them to be, make sure you work on improving them. It's not too late. Look at the mistakes you made and talk to your professor or TA. It is also helpful to look over your mistakes with classmates or an upper year student. Being able to identify your mistakes and

the reasons for those mistakes will help you prepare and perform better on your final exams. For those of you who scored a solid grade, keep up the good work and don't slack off. Good grades can lead to procrastination and aiming for "oh now I only need x marks to pass". Aim for a higher mark than your midterm and work just as hard.



For those going on co-op next term, rankings for the first round are now complete. Congratulations to all those who got an offer and are done with the job-hunting process. For students working out of province or out of the country, look in to travel plans (tickets are cheaper the earlier you purchase

them). Be sure to have accommodation sorted out.

For those of you going in to the second round of postings, take another look at your resume, and see if you want to correct anything or change sections specific to a job you really want. Writing cover letters may seem like a lot of work, but at times it's that extra effort that scores you the job you really want. EngSoc carries out resume and interview skills sessions. Check out the calendar to see the date for the next session. Don't panic, keep calm and do your best.

If you have any questions or concerns please feel free to send me an email on vpeducation.b@engsoc.uwaterloo.ca.

Upcoming Events Calendar

Wednesday June 25	Thursday June 26	Friday June 27	Saturday June 28	Sunday June 29	Monday June 30	Tuesday July 1	Check out up-to-the-day event postings on the EngSoc website at engsoc.uwaterloo.ca 
EngSoc Meeting #4 17:30 - 19:30 DWE 3522	Frosh Mentoring: Jeopardy 17:30 - 20:00 POETS Alumni Speaker: Lee Brooks, Director of Marketing at Sandvine 18:00 - 20:00 RCH 301	Freezie Friday 11:30 - 13:00 POETS	Elora Gorge with Architecture! 14:00 - 18:00	World Pride Toronto 2014	UNIVERSITY HOLIDAY	CANADA DAY	
Wednesday July 2	Thursday July 3	Friday July 4	Saturday July 5	Sunday July 6	Monday July 7	Tuesday July 9	
	Ice Ice Baby (Ice Cream Making Workshop) 15:00 - 17:00	WEC (Waterloo Engineering Competition) Freezie Friday 11:30 - 13:00 POETS Gradcomm Event	WEC (Waterloo Engineering Competition)		TalEng 20:00 - 23:00 Bomber	EngSoc Hockey 17:00 - 19:00 CIF AutoCAD Workshop 18:00 - 29:00 CPH 1346	

VP Winternal Update

World Pride and Other Events



**MATHIEU
TREMBLAY**
VP INTERNAL

Hello B-soc! I hope midterms weren't too bad. Now that they're over, it's time to get back into the swing of things! Coming up we've got a trip to Elora Gorge with Architecture on Saturday, followed by WORLD PRIDE PARADE ON SUNDAY! (more about that in a minute). Then there's a university-wide holiday on the Monday before Canada Day, as well Canada Day next Tuesday! On Thursday July 3 we're having an ice cream making workshop, on Monday July 7 is TalEng at the Bomber, and on the following Tuesday is both the

student vs teacher hockey game and the AutoCAD workshop!

Updates on the pride parade trip: we got both the t-shirts and the patches in, and they look sweet!

Tickets are still on sale in the EngSoc Office (CPH 1327) until it closes for the weekend on Friday at 4:30, so make sure you get your ticket before then and come out to show your support for LGBT rights! The ticket will get you all of the aforementioned swag items, as well as a bus ride to and from Toronto and a lunch before the parade. The plan is to arrive in Toronto around 11:00 a.m. and hang out in a park until we're queued up to join the parade, march in the parade until it ends, and then hang out in downtown Toronto for a while before taking the bus home!



Allyson Francis

**Pride parade swag came in!
Get your tickets at the EngSoc office!**

Upcoming Events:

Alumni Speaker, Canada Day and Waterloo Engineering Competition



**SARAH-ROSE
LANCASTER**
VP EXTERNAL

The middle of the summer term proves to be a busy time for events! Three major events coming up under my portfolio are an Alumni Speaker, the Canada Day event and the Waterloo Engineering Competition.

Lee Brooks, the Director of Product Marketing at Sandvine Networking Solutions will be presenting the first Alumni Speaker talk of the term. Lee is a former Computer Engineering student, and a dynamic and engaging speaker. He initially struggled during his time at Waterloo and had to work hard to figure things out. Lee touts himself as someone who has found a lot of success without having to be the founder of a company or start up. He represents the "silent majority" of students who will find success simply by working a "regular" job for one company or another. Lee's talk will be about how he has achieved personal happiness and professional success. The talk will take place in RCH 301 at 6 p.m. on Thursday, June 26. Free dinner will be provided during the event.

The Engineering Society will have a

booth at this year's University of Waterloo Canada Day Celebrations at Columbia Lake on July 1. The booth will feature games for children, the TOOL and free freezies! If you are attending the celebrations, be sure to stop by. If you are interested in volunteering at the booth, please email me at vpexternal.b@engsoc.uwaterloo.ca.

The Waterloo Engineering Competition will be taking place on Friday, July 4 and Saturday, July 5. The competition will feature three competition categories: Senior Design, Junior Design and Consulting. During the Junior and Senior design challenges, teams of four students are given a design problem to prototype a solution to in a limited amount of time with various different materials. The Consulting competition will give teams a theoretical mining problem to solve and present a solution to during the judging round of the competition. This year, the winners of the Consulting competition will also gain entry into the National Mining Competition, to be held in Fall 2014 in Saskatoon, Saskatchewan. If you are interested in competing this year, be sure to sign up at: bitly.com/WECspring14

If you have questions about any of the above events, feel free to email me at vpexternal.b@engsoc.uwaterloo.ca.

VP Finance Update

Design Contest and Novelties!



**MELISSA
FERGUSON**
VP FINANCE

Happy post-hell week everybody!

I hope midterms went well for all of you! There is only about a month left in the term, so make it count!

Coveralls have come in! Whoopie!! if you ordered coveralls at the beginning of term you can come to the orifice and pick them up.

The design contest has been extended

by a week! The new deadline will be JUNE 29 at 11:59:59 p.m. If you have a cool idea to submit, do it before then! :D Hard copy submissions can be dropped off in the arts mailbox in the orifice, and digital images can be emailed to vpfinance.b@engsoc.uwaterloo.ca.

In other Novelties related news I am pleased to say that there will be a firesale on July 17! There will be a price list available closer to the date, but I can say that if you spend \$5 or more you will get a free picture frame!!

That's all. Enjoy life :D



Lucas Hudson

Point Vs. Counterpoint

POINT

FILZAH NASIR
3A ENVIRONMENTAL

Let's face it – Hell week isn't fun. Three or four midterms in one week is really difficult and stressful. But having a week with no classes allows us to pause halfway during the term and try to understand everything we have learned so far. Without hell week midterms just become another added stress on top of everything else we have got going on and we're so busy trying to survive, actually learning anything during the week becomes impossible.

Did you know there's an accepted and acknowledged way to understand course concepts and do well in school? It's through reviewing lectures notes regularly - like, weekly. Not just twice a term for midterms and finals. I know we all do this. But you know what makes this impossible? Learning new material while writing midterms.

If I have to write exams – then hell week is the most efficient way to do it. Writing exams is hard. Writing exams while simultaneously attending classes, doing labs and trying to finish assignments? That's needlessly overburdening students for no reason.

Every term when I am studying for finals and my days are filled with memorizing equations, relearning integration once again and seriously questioning all my life decisions, any minute I expect a magical fairy to appear and tell me that none of this is actually real. For someone to tell me that the result of all my hard work over the past four months won't actually be determined by the amount of answers I can manage to come up with in a two-hour time slot. But alas, no fairy has yet

to appear and I am forced to walk to write finals on a term by term basis.

My point is – exams are bad. Not just because they're hard and studying isn't fun but because memorizing an entire course and regurgitating it for two hours should not be an acceptable form of testing our understanding.

Exams are also extremely stressful and as mental health of students increasingly becomes a concern on Canadian campuses, the validity of exams as a form of pedagogy becomes even more doubtful.

This entire debate of hell week or no hell week rests on the assumption that writing exams is a given. But I'd like to take this opportunity to challenge that assumption. Imagine an alternative form of pedagogy: one where the fate of an entire semester isn't dependent on a two hour block of time, and where instead of writing exams students are taught forms of experiential learning.

I am not saying that our education system is going to magically change tomorrow. But I think we're capable of changing it more than we'd like to believe. From changing individual courses through course reviews and by talking to professors to going through EngSoc's VP Education for larger changes to educational practices I think we need to start asking for the changes we want to see in our education system.

At this point midterms are mostly over and I hope most of us survived – whether they came in the form of hell week or not. But if your midterms went not so great, instead of simply trying to change the way midterms are held let's look at the bigger picture and re-imagine our entire educational experience.

Should Students Get a Hell Week?

SUNG EUN KIM

MASC, ELECTRICAL AND COMPUTER

Hell week begins. A mental countdown is set, and procrastination needs to be fought.

Most engineering students are familiar with hell week as we DO have it almost every term. You may have just gone through one last week. I guess it's convenient for the school to schedule it that way, with up to five midterms in a row, all in one week. Whether it is to avoid time conflict or to minimize the length of the painful journey, many of us would agree that this 'hell' is still quite challenging to survive. So why don't we relax this schedule and achieve our goal easier and also better?

It is difficult to prepare for five consecutive midterms by the Sunday of the night before. There are always those who are extremely gifted in managing their time (though I'm still not sure if it is a trait or skill) who would have handled this like carrying an umbrella after hearing a forecast for rain. But it is not always time management to blame.

A 'normal' week of school is already scheduled very tightly, with new materials covered for half of the day, in parallel to many due dates for reports and assignments. In addition to such inflexibility, interviews may be announced on Jobmine at any moment. This disrupts one's study plan and causes one to sacrifice the course work for interviews. If you happen to miss important lectures for a midterm, then it expounds the problem. Each day leading up to hell week, you have very few hours to review for the upcoming exams, assuming that you go to

COUNTERPOINT

lectures, sleep, eat, and attend interviews.

Furthermore, even if you were successful in getting yourself ready for hell week, there are still lots of other possible risks.

There is an unrealistic assumption that students will not become emotionally affected by their academic performance in previous exams. Morale goes down with poor performance, affecting one's ability to study efficiently. When there are exams every day, it is challenging to put the thoughts about your previous performance aside and focus on the remaining exams.

Also, if you're unfortunate enough to have illnesses lasting over a week, it would seriously damage your entire academic record for all courses that term. The consequence of deferring five midterms is not pleasing either, because it is likely that your final weighting will be inclusive of all the missed midterms.

You need luck and preparation to make it through hell week smoothly. It drains you physically and emotionally, making it harder towards the end.

The aftermath of hell week still carries the chaotic momentum as well. In lectures, as soon as the class covers the material up to midterm, it is likely for students to stop paying attention and focus on material that will be tested. Afterwards, there is a high possibility of finding yourself very behind in classes. From an overall perspective, hell week introduces a big interruption to the regular academic flow and prolongs the damage that is not perfectly recoverable.

If exams were more spread apart, maybe one or two exams per week, it would be more manageable to stay caught up in lectures. Doing well in exams requires time management skill, concentration, detailed planning, mind-control and willpower. But we learned that for hell week, there are uncontrollable factors such as interviews, illness and who knows what else.

Unfortunately, our normal school days are extremely heavy and inflexible. As a result, scheduling many exams back-to-back in the span of a week risks the exam preparation itself, staying caught-up in lectures, performance through the exam week and students' emotional and physical well-being.

Keeping a good academic record that shows your hard work is an important goal for undergrads. To give them a fair chance, students need to be tested on their knowledge after given enough time to prepare and rest before each exam.

Hell week schedule violates all these aspects in providing the adequate circumstances for assessment of knowledge and could eventually lead to flawed academic record.



Nina Feng

A sad student studying during Hell Week. Midterm exams can take their toll.

\$2 BUCK TUESDAYS
EVERY TUESDAY

\$10 PITCHERS
THURSDAYS BEFORE 11 PM

PABST ATTACK
\$4.50/TALL CAN
WEDNESDAY - ALL DAY
FRIDAY & SATURDAY - BEFORE 11 PM

DIRTY BURGER DAYS
\$2 BURGERS AND WINGS \$6.50/LB
TUESDAY, AND WEDNESDAY

BIGGIE-UP
ANY DAY ANY TIME

A BURGER AND A BEER FOR \$4 BUCKS!!

ADD FRIES FOR \$2
ADD WINGS FOR \$2

PRESENT THIS COUPON AT TIME OF ORDERING

LIMIT 1 COUPON PER PERSON. OFFER DOES NOT INCLUDE APPLICABLE TAXES. NOT VALID IF REPRODUCED, SOLD OR TRANSFERRED.

SAWDUST AND BEER AT 28 KING ST N, UPTOWN WATERLOO • (519) 954-8660 • LIKE US ON FACEBOOK • FOLLOW US ON TWITTER

3D Print Centre Fees Increased to Fund New 3D Printer

MATT MCLEAN
4A MECHANICAL

Effective June 2, the Sedra Student Design Centre raised the price for the 3D printer by 32% to \$9.00 per cubic inch of material used. The price increase will be used to pay for a loan to buy a second Fortus 360mc 3D printer for the Sedra Student Design Centre and reduce wait time.

The 3D Print Centre was opened in the Winter 2013 term with a 3D printer obtained through a grant from the Denso North America Foundation. The 3D Print Centre offers a unique opportunity for access to industrial fused deposition modeling technology that most Canadian university students do not have access to.

A select few Canadian universities have access to Makerbot 3D printers,

but they do not offer the versatility and capacities that the Fortus 360mc system offers. In addition, the 3D Print Centre hires a first year co-op every term, and they are trained in advanced 3D printing techniques, so they can assist any customer with design for effective 3D printing.

The first term that the 3D print centre opened, it served 80 customers. One year later it reached capacity at 220 print jobs. Wait times increased to 1-2 weeks during the busiest times when design projects were near deadlines. The decision to bring in another 3D printer was made to reduce wait times during these critical stages in design projects.

When the new 3D printer arrives around September, it will also be used in the Mechanical and Mechatronics concepts course to introduce first years to

3D printing, and bring more application to CAD lessons.

Before the price increase, costs to use the 3D printer only accounted for material and maintenance costs. The operator is paid through OSAP, and the space is provided by the Sedra Student Design Centre. The new price will cover the cost of the loan for the new 3D printer and material costs. Installation costs including modifications to the room for increased HVAC and power requirements will be funded by the Dean's office.

When asked about the possibility of WEEF funding for a new 3D printer, Peter Teertstra, Director of the Student Design Centre said that he did not want to take money away from student teams. With no money available from the Dean for capital equipment for the Student Design Centre, Teertstra believed an

interest free loan was the only option available. He said the Denso grant was a onetime opportunity, and they could not be approached again for further funding.

Teertstra recognized the limited funding available to most design projects and students teams, and the resulting financial constraints that are a result of the increased price. He noted that a similar print job in industry would cost upwards of \$30-50 per cubic inch.

Since its opening, the 3D Print Centre has allowed the Waterloo Engineering community to show its innovation in the design of plastic parts, and Teertstra hopes that the 3D print centre will be able to continue to serve students in a cost effective and timely manner. Teertstra thanks students for the huge success of the 3D print centre in its first years of operation.

3D Printing - A Soapbox



Human fascination with 3-D printing - extruding plastic, sintering metals, and layering custom wax moulds - continues onto the realms of food, ink, and stuff.

Strucut3D Printing in Kitchener hit its Kickstarter campaign goal of \$30k for a paste extrusion attachment (Discov3ry Extruder) for consumer desktop 3D printers. It allows users to print with soft materials, including wood filler, silicone, clay, and Nutella. It costs \$249 and will ship in September. Supposedly its advantages over the competition include a shorter clean-up time.

Meanwhile, an ink pen (Scribble) has been invented that, theoretically, would let you doodle in any colour in the world. It costs \$150 and is not available for sale yet. An RGB sensor on the pen works in conjunction with a five-color ink cartridge, allowing artists to color-match any real-life object. Hopefully it works better than the foundation matching cameras at Sephora and will still write in black after the yellow cartridge runs empty.

Have you ever noticed that few of these made-for-clickbait products are ever in the realm of civil, environmental, and geological engineering? It's tragic. What gets the most most exposure nowadays are toy-like gadgets gimmicky enough for Fox Morning News hosts to understand while staving off xanthine alkaloids withdrawal symptoms. Don't get me started with apps. Seems like there's an app for everything. My brickphone and I are practically Luddites nowadays.

I think the closest thing I've seen to C/E/G Engineering news lately is that couple who made an IndieGoGo campaign for roads paved with solar panels. So far, they've built a prototype parking lot with funding from the US Federal Highway Administration.

But looking at the investment that the University of Waterloo puts into its promotional materials, how often do civil engineers make the front page of UW promotional materials? How often are Civils mentioned on Macleans?

(Hint: we're not. Going solely by media exposure, Civils don't exist in the Silicon Valley of the North, except as potential janitors.)

Furthermore, when's the last time Civils got new buildings? The CEE offices are in the oldest and most poorly

climate controlled buildings on campus. The 4th year civil dungeons are reliably freezing. The second-floor civil lab vacillates between swampy and frigid.

Perhaps civil engineering is simply not considered a very marketable academic path? Civils get most of the dirtiest jobs. Civils at work are covered in dirt, cement bits, and are not sexy. In a recent GradComm calendar, the Civils were represented by two individuals wearing business casual shirts, pants, and hardhats. In contrast, ManEng was represented by four women in suits and dangerously low-cut tops. I am pretty sure that there were also some nice shirtless men for other programs (I believe there was also one representative from mechatronics, doing a kegstand, but I digress). Perhaps in the next GradComm calendar, Civils should take some inspiration from the Bloodhound Gang video for "Foxtrot Uniform Charlie Kilo" and wear hardhats, eye protection, and not much else (maybe also a safety vest, for modesty). Nonetheless, the point I'm making is that civil engineering is not as sexy as, say, nano, or the incoming UW darlings, biomedical. Yeah, I definitely foresee Biomed all over the next few years of promotional materials. Shiny lab coats and gleaming glass pipettes and stuff. Not dusty asphalt or polluted lakes.

(I am also pretty jealous of everyone who goes to work in California. When I graduate I am going to spend two weeks there as a hipster, and then return and scoff about how everything there is overrated.)

What's more is that civil engineering as a whole, does not have as innovative a reputation as, say, ECE or Nano. During my Jobmine search I found that maybe only three of the hundred-odd civil jobs in the GTA were research and development based. Which is not to say that requires no creativity - every civil engineering project is unique in its own way, presenting new challenges, new constraints, and a dizzying variety of potential solutions. But implementing these - experimentation costs money. With great money comes great bureaucracy. With great bureaucracy comes great discouragement. It is very sad.

Effectively pushing the frontiers of the field is more difficult in civil engineering. The solar panel paving project on IndieGoGo is the exception, not the rule. There are very, very few civil startups to cash in on what students might have developed under the shelter of an ivory tower. Angel investors would like to minimize capital investment and risk. But infrastructure projects are

magnitudes more expensive than, say, a smartwatch firm or a new app developer. As such, innovations are harder to sell to investors and clients. Who wants to risk lives on untested technology? And slapping a factor of safety of 10 on new, untested materials is probably not cost efficient either. Conversely, what kind of investor wants to fund such exhaustive testing, when there's a glut of software developers who might show a return on investment much more quickly?

I think only the likes of Elon Musk or Richard Branson might do so - and only for glamorous projects. Elon Musk proposed last year to implement a (flawed) Hyperloop high-speed transit system in California. I don't think he would be too into methods of nondestructive testing methods or construction site safety management. Neither would Fox News anchors. They'd rather fiddle with their color-mixing pens and 3-D icing extrusion. I'm not sure what Richard Branson is doing nowadays but it's probably more exciting than listening to a handful of nerds talk about concrete.

Indubitably, innovation is still present in civil engineering, although new techniques take longer to reach the industry due to longer development cycles. Long development cycles do have advantages. Long lead time means that civil engineering projects are unlikely to fail on the level of Windows ME or Google Plus. The infrastructure we design and construct will be around long after the last Nexus 5 has been sent to Wall-E for recycling.

It does take some seriously hard heads to persevere in civil engineering. The delay before gratification is far longer

than in any other engineering discipline. One often feels like they are a cog in a machine, or at the very least, an obsessive-compulsive spec-reading super robot. Later on in one's career, though, one may be able to hire a co-op student to do the manual work. Do you know what happens to older software engineers? The common opinion is that they peak early and are thus forcibly retired, because they can't fit into the youthful culture in SoCal. In comparison, old civil engineers stick around, get crusty, and tell war stories to wide-eyed co-ops. They also either become extremely well dressed or start wearing muumuus and track suits to work.

I didn't choose civil engineering to be innovative. I didn't choose it so I could be rich either, since I have no intention of going to Alberta and Google still has no intention of hiring me as a janitor and feeding me to the gills. I chose it because I felt that I would be doing something useful. I thought I'd rather be a small fish in a big pond than a big fish in a small pond. I thought that I might be able to contribute something permanent to the fabric of the world, and then gloat silently as it performed useful functions day in, day out. Muahahahaha. In contrast, 3-D printing food is cute but is unlikely to lead to the next green revolution. 3-D printing in general is aimed at hobbyists and custom dildo makers. And that colour-matching ink pen is one of the stupidest, most useless gimmicks I've ever seen. Also Google is totally going downhill ever since it ditched Reader. I feel better about my life choices already.

Stay strong. Fewer than 250 days til IRS.



Structur3D

Yet another widely-reported invention: a Kitchener company has developed an extruder to 3D print with soft materials. But where are all the Civil Eng inventions?

Highlights of E3: Game Reviews

NANCY HUI, BRIAN CHAN, ALEX LEE, & MEAGAN CARDNO

4A CIVIL & 2B NANOTECHNOLOGY

Dragon Age: Inquisition

It will feature the return of characters from previous Dragon Age installments, including Varric “Chest Hair” Tethras, Morrigan, and Leliana - some as playable party members! There will be 50 hours of play in the main storyline, plus side quests! Supposedly one level of DA:I will be the size as the entire map in DA:II. Be still, my revving hard drive.

I am somewhat skeptical to see resource management take precedence in what is first and foremost a medieval RPG with zombies. Training minions was my least favourite part of Assassin’s Creed Brotherhood and Revelations, so if I have to keep switching to a world view of this to micromanage Inquisition resources that would be really immersion-breaking.

Aside from that, I’m pretty stoked about the characters revealed so far. No longer will we be leading a ragtag bunch of misfits - this time, the companions are (for the most part) skilled and established warriors, mages, and rogues who join the Inquisition out of a sense of duty or ambition instead of desperation.

Conclusion: SO STOKED

Mass Effect 4

I love Mass Effect and was disappointed when the trailer consisted of misty eyed developers talking vaguely about how awesome ME4 is going to be, alongside some concept art of figures in N7 armor. Krogans also have horns now.

Of course the developers also say “I think that fans of the series are going to be surprised at just how far we’re going.” This doesn’t bode ill at all.

How will Bioware manage to work in the consequences of Mass Effect 3? Obviously it would be impossible to follow the Reaper invasion up directly - or even in the distant future, since each ending is radically different - despite what detractors might claim about the endings differing only in colour of explosions.

My personal theory is that Mass Effect 4 will address colonization of other galaxies following the abandoned allusions to “dark energy” in Mass Effect 2 and 3.

Conclusion: excited but afraid. Very, very afraid.

Middle-earth: Shadow of Mordor

Set between The Hobbit and The Fellowship of the Ring, Talion is a man who is possessed by a Wraith who rises from the dead to avenge the murders of his family. I’m not sure where in Tolkien’s universe this fits, or to what end: we already know that Sauron’s forces cannot be defeated until the end of The Return of the King.

Anyways, the devs really like to demonstrate the uniqueness of the enemies in Middle-earth: Shadow of Mordor. It uses a new Nemesis system which generates different traits (e.g. cowardly, immune to stealth) for each enemy, and couples them with player interactions. As a result, each orc has a personality, strengths, weaknesses, and a memory. An enemy will bear scars of their past encounters with the player, and may grow more powerful and learn new immunities.

In theory it sounds cool. In practice, I’d probably just button-smash my way through the hordes. Those poor, under-appreciated devs.

Conclusion: unimpressed.

Kingdom Hearts HD 2.5 ReMIX

Square Enix had an exhibition at E3 this year, like usual. Sadly, there was no

news on the highly anticipated Kingdom Hearts III or Final Fantasy XV. They did however come with up with Kingdom Hearts HD 2.5 ReMIX. After the first Kingdom Hearts compilation was so well received, Square decided to do the same thing with the remaining games: give them a visual upgrade and bundle them together. And, just to prove to people that, yes, they are still working on Kingdom Hearts III, they included a new trailer at the end of the announcement.

It’s nothing groundbreaking, but there’s also nothing wrong with rereleasing classic games. After all, they are games that have been proven good that are receiving an HD remastering, so they’ll still be good. This will no doubt please fans of the series and at least give them a distraction while they continue to wait for Kingdom Hearts III, which they’ve been doing for years.

Civilization: Beyond Earth

Firaxis announced Civilization: Beyond Earth, a spiritual successor to the much beloved Alpha Centauri at PAX East in April earlier this year. More information was revealed at E3, including a hands-off gameplay demo. In many ways, it seems like Beyond Earth is Civilization in space, but there are some interesting things they decided to do. First of all, civilizations are not preset. In Civilization V, you picked a civilization to play from the start. In Beyond Earth, you start as a generic default survivor civilization, and the techs you research and early moves determine what civilization you’ll play for the rest of the game. This brings me to the next big change, which is that the tech tree has been redesigned into a tech “web”. This gives the player more choices and more freedom while researching techs than previously. Also revealed were three new philosophies, or “affinities,” namely Purity, Supremacy, and Harmony. It seems that your affinity will have a large influence on how your civilization will play. Of course, there are usual sci-fi things as well, like aliens, dangerous vegetation, poison gas blobs, etc.

I’m pretty excited for Beyond Earth. It feels like it will take a more organic approach than Civilization V, which locks you into playing a certain style based on your civilization power, and special units and buildings. They seem to be sticking a bit too close to the Civilization formula than I’d like, but the changes that have already been announced seem great, and there’s still time for Firaxis and 2K Games to wow us further.

Super Smash Bros for Wii U and 3DS

Remember when you were a little kid and only the N64 was out (only our older generation even knows what this console is) and there would be only a small variety of games that we would play because they were just that much more appealing than the others? Among the various ones included this gem of a title known as Super Smash Brothers. This arcade fighting style game featuring characters from the various Nintendo

titles like Mario, Metroid etc. This game has evolved twice more over the years, and now, it is time for its next evolution. Super Smash Brothers for the Wii U and Nintendo 3DS are supposed to hit stores sometime this fall. Currently they retain many of the classic maps as well as adding a couple of new ones and also a whole bunch of new characters. They include the likes of Megaman, Charizard, Greninja and many other new characters. Probably the most interesting additions to the character pool are your Miis!! Yes those funky cool avatars you would create can now be used in deathmatches. Be stoked, be ready and empty your pockets because this is a game you don’t want to miss out on!!!

Pokémon Omega Ruby and Alpha Sapphire

“I choose you Pikachu!!!” Those iconic words from the first series of Pokémon.

Since then Pokémon has grown into a multibillion dollar franchise, and a new product to add to their list is the remake of Pokémon Ruby and Sapphire. This game showcases the third generation of Pokémon from the Hoenn Region, and there’s another new evolution type being released as well. From Pokémon X and Y, we were introduced to the mega evolution that only take place during battles, but this new evolution called “Primal Evolution” is to be for those legendary Pokémon that are showcased on the front of the original Ruby and Sapphire Box. Who knows, they might have it for other Pokémon as well, but for now, it is applied to only those two. More details to follow in the weeks to come.

Metal Gear Solid V: The Phantom Pain

Konami and Kojima Productions teased, yet again, with a lovely trailer for their massive new instalment in the Metal Gear saga. As gorgeous and exciting as the five-minute plot-based video was, it even left a die-hard Metal Gear fan like myself scratching my head in confusion at what on earth was going on. It is safe to say that, as many have already speculated, the game will be focusing on protagonist-turned-antagonist Big Boss’ descent into villainy, touching on what producer Hideo Kojima even admits to being very sensitive topics. The half-hour gameplay demo shown to attendees E3 was recently released online, showing the full applicability of the mechanics we saw in Ground Zeroes (released earlier this year) in The Phantom Pain’s open-world setting. While there is not yet a release date for the game, and the shown gameplay was presented on for the PS4 version, the game will likely also be coming to Xbox platforms, just like Ground Zeroes.

Fable Legends

For those familiar with the Fable franchise, Fable Legends might seem like a bit of a pace shift from previous titles. Typically, the games have driven much of their amusement by allowing the player

to heavily customize their protagonist in appearance and moral standing, with a large focus on roleplaying with NPCs within the game. The new Xbox One exclusive is taking a very different approach: it is a game intended for five-players to play with simultaneously online— four players taking the roles of one of the pre-designed heroes, while the fifth takes up the cloak and mask of the villain who plots and schemes to make the other four fail. The four heroes fall into their own classes: a rapier-wielding rogue, a crossbow archer, a gigantic sword-and-shield woman, and will-based magician. The villain role is quoted as having more of a top-down, real time strategy feel to it, placing traps and baddies through the use of Xbox’s SmartGlass capabilities. It is a very bold shift in genre for Lionhead Studios, and without a release date in sight for the game, it will be some time before we see if it a successful venture.

Legend of Zelda

Nintendo always has some of the best E3 presentations— and they don’t even have to do much. Just flash a photo of Mario on screen and people will lose their minds. Really, that isn’t that far off from what happened for the yet-unnamed WiiU Zelda title. The teaser showed the return of cell-shaded graphics (which I personally adore), a new spider enemy that shoots lasers like something right out of the Halo franchise, and a horseback Link in a beautiful but uncharacteristic blue tunic and ponytail— details which made many suspect that the protagonist was a female version of Link. While such speculations made the comments of any online article relating to the game rather... unpleasant... I will personally say that a female Zelda protagonist would be very cool and very refreshing. Just like a delicious iced cappuccino.

In less ambiguous projects, Hyrule Warriors, based on the hack-and-slash Dynasty Warrior series, has shown several minutes of gameplay, even teasing with Zelda, Midna, and Impa as playable characters, although interviews claim that Link will still be the character throughout the main ‘story mode’. Many Zelda fans have voiced clear concerns at the genre shift from the adventure and puzzle-based gameplay of most entries in The Legend of Zelda series, but creators claim there will still be some familiar tricks and easter eggs in there for the fans to enjoy. Besides, it is not as if it is the first time there has ever been a different genre Zelda spin-off. And I think the blue scarf looks cool.

Star Wars: Battlefront

While there are undoubtedly far more Star Wars video games in existence than necessary, very few people will deny the fun and success that is the Star Wars: Battlefront series. After nothing but a ten-second tease of a new entry at E3 2013, this year saw the reveal of much production footage... but still very little actual gameplay. What we have seen looks great, though, with some sneak peaks at both the Hoth and Endor maps. With the Disney acquisition of LucasFilm (and, consequentially, LucasArts), many had lost hope in a sequel to the previous titles. The new developer, EA Digital Illusions Creative Entertainment (DICE), has been careful in naming not as a sequel to Battlefront II, but more as a much-needed reboot of the series. The game is anticipated to release in late 2015, although no official date has yet been announced.



Pepper, The Emotion-Reading Robot



MEAGAN CARDNO
2B NANOTECHNOLOGY

It's a pretty sad day for me to admit that there is now a Japanese robot who can boast better skills in emotion-reading than me. Pepper, a household companion robot, is designed to recognize and respond to human emotions.

The emotional analysis process is explained as relying primarily on the user's facial expression and tone of voice in order to register what emotion is being expressed, using two cameras, four microphones and over a dozen touch- and laser-based sensors in order to collect its data.

After using presumably complex algorithms to conclude upon a specific

emotion, Pepper will learn to respond properly through monitoring the human reaction to its chosen response. It then compiles and compares the results with the data stores of other Peppers online. If these cute little robots are distributed as widely as SoftBank — the telecommunication company responsible for Pepper — hopes, the robots will have more than enough data to properly react to a given scenario in no time at all.

Of course, the obvious flaw of the logic that could break the idea is the assumption that the technology in Pepper that allows for emotional analysis is sufficient to make judgement calls. It is known that human emotions are extremely complex matters to be dealt with, and are sometimes not expressed in the most easily monitored places, such as when expression or tone of voice. It may take a close familiarity with an individual

to understand that they are feeling particularly happy or sad, noticing a small change in habits or mannerisms. Some people are also intrinsically more or less expressive than others, and yet there is no talk currently available in Pepper's abilities to detect happiness and sadness differently amongst different individuals— what if someone's tone of voice sounds more sullen just in normal speech? And what if Person A enjoys jokes when angry, while Person B only becomes angrier? It would be more logical for each individual Pepper device to have two separate sources of data—the massive compilation of resources collected from Peppers around the world, and a local cache of data for its specific user(s).

Regional or cultural differences in displays and exchanges of emotions would also be a huge factor to consider—

different countries, and different languages have their own nuances in the expression of emotion. Some entail more hand gestures for emphasis, while others place larger importance on word choice. I personally shudder to think about what technology Pepper would need to be capable of understanding sarcasm— there are individuals who I interact daily and I STILL can't tell when they are being sarcastic.

Complexities and complications aside, Pepper marks a clear step in the correct direction of the artificial intelligence and robotics field. If robots are ever to become fully integrated in our society as workers, analyzing situations regarding human interactions and their emotions will be absolutely imperative.

Pepper is scheduled to be made available for the public early next year, with a price range just above \$2000 USD.

Northern Gateway

Approved by Feds, Long Journey Ahead



ELIZABETH SALSBERG
2B NANOTECHNOLOGY

THE OIL CHANGE

On Tuesday of this week, as expected, Ottawa gave Enbridge the green light for construction of the Northern Gateway pipeline. The approval is subject to Enbridge meeting 209 conditions set out in a controversial report prepared by a Joint Review panel, consisting of representatives from the National Energy Board and the Canadian Environmental Assessment Agency. In addition, the government of British Columbia has named five of its own conditions, while B.C. First Nations and Environmental defence groups have pledged to use every means at their disposal to block Northern Gateway.

The Facts:

The Northern Gateway pipeline would stretch from Burdenheim, AB to Kitimat BC, a total distance of 1177 km across rugged, mountainous terrain and through the territory of several B.C. First Nations. It in fact consists of two pipes: The one most people think of is the one flowing west carrying crude oil from the oil sands to Kitimat on the B.C. coast. This pipe would be measure about 36" in diameter, with a capacity of up to 525,000 barrels per day. The second pipeline (20" diameter) would send condensate, a light hydrocarbon similar to pentane eastward at about 193,000 barrels per day. The condensate helps thin out viscous heavy crude for easier pipeline transport. On the land-use side of things, 70% of affected land is considered to be 'previously disturbed,' meaning that it has already experienced adverse environmental effects.

The Argument for Gateway:

The vast majority of Canadian crude oil exports are to the United States. Enbridge argues that this crude is being sold to the U.S. at discounted prices. There is also a very strong emerging energy market in Asian countries across the Pacific (also known as the Pacific Rim). Construction of the pipeline would have huge economic benefits for Canada and for B.C., of this there is no question. If we take today's crude oil price, about \$115 USD a barrel (Source Bloomberg,

com) and were to multiply that by the daily pipeline capacity and that by 365 days a year for about a 30 year lifetime... you get the idea. Add that to the hefty revenue from oil companies competing to purchase space if the pipeline does get built, and well Enbridge will be literally swollen with money (not that they aren't already).

The other big economic upside being pushed by supporters is the creation of jobs. Enbridge argues that construction of Gateway will create 3000 new construction jobs and 560 long-term jobs. Enbridge has also pledged \$3 million towards training programs for the construction industry. The hope would also be that services-related and other new jobs would be created in the small towns along the route.

The Argument Against Gateway:

Where to begin? As previously mentioned, the pipeline route runs through First Nations territory. These First Nations have legal rights to that land, and have made it pretty clear that none of them want to see this pipeline get built through their homes - and who can blame them? After the official

'apology' to aboriginals a while back for the turmoil of residential schools among other injustices that they suffered through, certainly Enbridge and the federal/provincial governments will lose even more credibility with these groups if a shovel gets in the ground on their territory. Chiefs have promised to challenge Gateway, in court and on the ground, until it is put to bed for good.

In terms of the environment, there are huge concerns for B.C.'s marine and land species, particularly those that are already considered to be at-risk, such as woodland caribou and the grizzly bear. Furthermore, there is of course risk of oil spills, on both land and in water at the Kitimat end of the pipeline, located at the head of the Douglas Channel. Reflecting back to the B.P. oil spill in the U.S. a few years ago, is this something we really want to risk in our own country? The spills are not only costly to wildlife and the environment; they are also costly (yes, in money), and at time impossible, to fully clean up.

The Verdict

Though the 209 conditions set out in the report do address these risks, researchers,

scientists, environmental groups and even the BC government remain against the project for the time being. Enbridge has a lot of work to do, including networking and educating affected BC communities and First Nations, getting up to speed on and implementing the best spill-control technology possible, making environmental risk management/assessment plans for each of the species at risk and the list goes on and on.

One of the more intriguing conditions on the project is that Enbridge must begin construction by December 31, 2016 in order to continue with the project unless otherwise directed by the National Energy Board. So yes, the green light from the federal government is a step forward for Enbridge but it will be a very lengthy road to construction, likely full of court battles, and they will probably be under a bit of a time crunch. It seems doubtful that they will be able to fulfill this condition, however it is perhaps also not unlikely that the National Energy Board would grant them an extension. Nevertheless, it will be quite a while before we see any shovels in the ground on this one.

KITCHENER WATERLOO
TRAVEL
Clinic



**Travel Vaccines
& Advice
by Appointment**

Health Canada Certified for Yellow Fever

519.570.4208

www.kwtravelclinic.ca

Physicians Certified in Travel Medicine

Prince - *Purple Rain*



ALEX TOTH
4A CHEMICAL

ALBUM OF THE WEEK

"Dearly beloved, we are gathered here today to get through this thing called life. Electric word life, it means forever and that's a mighty long time. But I'm here to tell you, there's something else: the afterworld." And so begins the spoken word intro of *Purple Rain*, Prince's sixth studio album, which was released on this day 30 years ago. So instead of writing about a new album this week I'm going to dedicate this space to commemorating this album, my favourite album of all time.

I'm not one to put "classic" music on a pedestal. Most of my favourite albums come from this millennium, though I've spent a lot of time with "classic" albums as well. I love a great deal of them and appreciate their huge influence on contemporary artists, but I also find many of them just sound dated: a product of their place and time. Which is what makes *Purple Rain* so fascinating. It is truly a timeless album. Each of the

tracks, from the melodramatic ballad "The Beautiful Ones" to the shimmering pop of "I Would Die 4 U," sound fresh and could have been easily released last year. It isn't so much ahead of its time as it is ahead of time, with its perfect fusion of rock, disco, RnB, new wave, and even metal. No album before or since has so deftly captured so many disparate elements and managed to meld them together into 9 immaculate tracks.

I could go on about the music for ages: how the bass-less "When Doves Cry" is still one of the funkier songs ever released, how the sprightly piano on "I Would Die 4 U" gives the track a jittery soul, how the extremely spare arrangement on "Purple Rain" still lends itself beautifully to broken resignation of the lyrics. But the most captivating part of this album isn't the music. Instead, it's the lyrics and the emotional intensity with which they're delivered.

The intro detailed at the beginning of the article sets the tone of the album, with Prince using real, earth-bound relationships to ground his metaphysical musings on love, death, devotion and loss. "When Doves Cry," possibly Prince's most famous song, spends its time shifting violently from unrequited

yearning to anger and desperation: "why do we scream at each other? / This is what it sounds like, when doves cry." The aforementioned "The Beautiful Ones" is one of the most visceral ballads ever written, with Prince begging his lover to choose between him and another man and spending the last portion of the song wailing "Do you want me / Or do you want him? / Because I want you." This could most definitely come across as melodramatic if not for the utter conviction with which Prince delivers the line. For someone coming into *Purple Rain* for the first time, the pained screaming which permeates much of the album can be unsettling, since Prince-as-soul-singer is how most people associate him. Even on the most pop-oriented songs, there is a notable sense of urgency: the desperation inherent on "Take Me With U" and the delusional self-aggrandizing on "Baby I'm a Star." In spite of all this, each song operates as a precise pop song and over half of the tracks had chart success, with "Let's Go Crazy" and "When Doves Cry" reaching #1 in the US and "Purple Rain," despite its eight-minute runtime, reaching #2.

From the genesis of his career, Prince knew how to shock and stretch

boundaries. He was booed offstage in 1981 while opening for the Rolling Stones for his outfit of underwear, boots, and a trench coat. Although a firmly entrenched act by the time of *Purple Rain*'s release, he nonetheless continued to shock. The sexually explicit lyrics of "Darling Nikki" earned *Purple Rain* the first ever Parental Advisory sticker, which is now ubiquitous. Themes of androgyny and sexual frustration were also explored fully on *Purple Rain*, on "Darling Nikki" most notably, but also on nearly all of the tracks in some capacity.

Purple Rain is a deeply weird record, something that cannot be fully appreciated only through its singles. And although, more than 20 years after his last truly great record, Prince is somewhat of a parody of his former self. *Purple Rain* still feels vital in a way that very few 30 year old records do. Even if you aren't a fan of the "classics" or RnB or pop, or don't think you would be a fan of Prince as an artist, you are doing yourself a disservice by not listening to *Purple Rain*. Many albums throughout Prince's illustrious career shone brightly, but none before or after shone as brightly as *Purple Rain*.

Please Don't Be Dead



MEAGAN CARDNO
2B NANOTECHNOLOGY

GOT CONSPIRACY THEORIES

In a series whose greatest reputation is mercilessly killing characters, some folks have a lot of time accepting the deaths of characters that we spend chapters learning to love and admire. Unfortunately, George R. R. Martin has also made a bad habit of killing characters 'off-screen', even listing over a dozen characters as "missing" or "thought dead" in his pages upon pages of house appendices at the end of his books, this making the acceptance of these supposed deaths even more difficult for fans. Thus, some of the most popular theories revolve around the vehement denial of the supposed 'deaths' of characters. This week, we shall be looking at theories surrounding three characters in particular. In order, spoilers will be surrounding book 1 and season 1, book 3 and season 4, then book 5 and season 4. Read onwards as far as you dare!

We begin with Arya Stark's beloved Dancing Master, Syrio Forel. The former First Sword of Braavos, hired by Arya's father to teach her the art of swordplay. After the Lannisters captured Eddard Stark upon accusations of treason against the throne, Ser Meryn Trant and five other Lannister swords were sent to 'fetch' Arya to assure that all three of the Starks within the city were kept under lock and key. Syrio, bless his soul, offers himself as a foe for all seven men while urging Arya to run. After disarming all of Trant's goonies — with a wooden practise sword, no less — Syrio finds himself down to a one-on-one battle with Trant. However, his wooden sword is shown as useless against the Kingsguard's plate armour, and is swiftly cut in two by Ser Meryn. Since Arya flees the scene before we discover the true outcome of the duel, many refuse to accept the swordmaster's implied death. While later chapters have Ser Meryn claim to have killed Syrio, it would be Meryn's personality to lie about losing to a disarmed foreigner after already failing to capture Arya.

Personally, I see this as a 50-50 possibility. Martin is a writer who pays particular attention to realism in his text (somewhat of a strange thing to say about a fantasy writer), always making sure to paint a world where death is a real consequence and threat to all — it comes easily to all, regardless of moral alignment. Syrio sacrificing himself for a brave little girl has a certain painful charm to it, and one that sits well for the rest of the cruel world. However, Martin may just have a grander plan in mind for the Braavosi swordsman.

Next up on the resurrection block is a new addition for you show watchers who watched last week's finale of season 4 — Sandor Clegane, most often called the Hound, left to die mercilessly and alone by Arya Stark after suffering from very grievous wounds. That poor girl brushes with death wherever she goes, it seems.

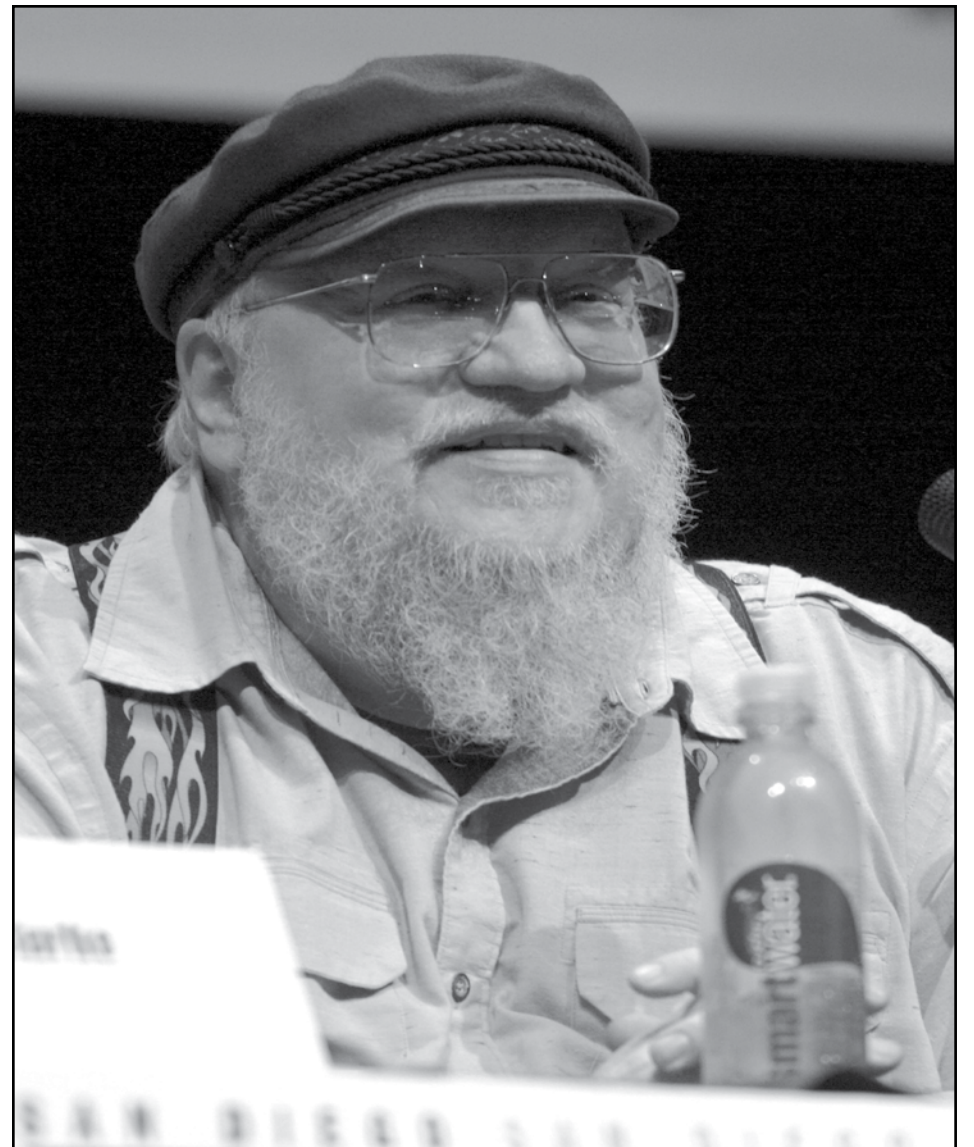
The favourite theory to deny our dear dog's death comes from a minor character in one of Brienne's chapters in *A Feast for Crows* (it is important for show-watchers to note that in the books, Brienne and The Hound never crossed paths as depicted in last week's season finale). While the Maid of Tarth and her entourage are visiting the Quiet Isle in search of Sansa Stark, they meet in passing a quiet gravedigger with a terrible lameness, fondness for dogs, and stature surpassing even the grande Brienne. Fan theory popularizes this poor soul as a poor Hound licking his wounds back to health, supplemented by several particular details in the mannerisms of the monks who claim to have witnessed the Hound's 'death'. I personally wish for this theory to be true — the Hound was too enjoyable to let die so early.

Our final mystery is also one of the earliest established — Benjen Stark, younger brother to Ned Stark and ranger for the Night's Watch, appears for a few chapters in the first book, quickly disappears while north of the Wall without so much as a hint of the fate that befell him. We know that the poor souls who die at or beyond the Wall find themselves re-animated as mindless wights, but have yet to find a confirmed Benjen-wight in our adventures in the North. Perhaps he's just buried under the snow somewhere.

Popular fan theory claims a slightly different fate — many claim him to be tied to the mysterious Coldhands, a character not included in the show, as of yet. In the books, it was he who helped Samwell and Gilly escape pursuit from White Walkers, and escorted Bran and company along in their quest to find the three-eyed raven. He's a rather nice fellow, all in all — so long as you look past the fact that he's pretty clearly dead. But he's different than the other wights — he can speak, dresses in the blacks and greys of the Night's Watch, even refers to Sam as 'brother'. Thus far, his motives appear to be good, and he is

strangely invested in the well-being of the Stark family... even without delving into the full theory of the magical hocus-pocus needed, it seems a reasonable hypothesis.

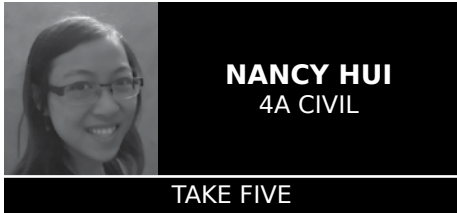
Dodging death is a big task in any novel, but we must remember that, without dropping any names, Martin has pulled this very same trick a number of times before — I, myself, believed one of my favourite characters to be dead for nearly three books. However, 'resurrection' is a bittersweet undertaking; often, the characters that Martin 'returns' from the dead find themselves quite changed in the process...



Gage Skidmore

Author George R. R. Martin is well-known for killing off beloved characters. But are some of them really dead?

Buddy Cops, Part 1



“Point Break or Bad Boys II?”
“Which one do you think I’ll prefer?”
“No, I mean which one do you wanna watch first?”
Thus Danny Butterball introduces Nicholas Angel to buddy cop movies in Hot Fuzz.

There are a lot of buddy cop movies, running the gamut from serious to parodic, but even the serious movies never shake the comedy that springs from dissimilarities between the deuteroganist buddy cops.

Here’s five movies about buddy cops that I haven’t reviewed already.

Bad Boys (1995)

Will Smith and Martin Lawrence protect a witness (Tea Leoni) while trying to recover the results of a huge heroin bust stolen from an evidence locker.

This is the WORST buddy cop movie I’ve EVER seen, and that includes the geriatric editions of Lethal Weapon. While Will Smith and Martin Lawrence clearly have exhibited innate comedic talents in the past, Michael Bay applies them to an unfunny script with the stupidest switcheroo plot this side of Freaky Friday. This could have been a perfectly serviceable cop movie like Rush Hour or Lethal Weapon if only Will Smith and Martin Lawrence played halfway competent or reasonable characters instead of insecure, pompous, half-assed stereotypes! No wonder Danny Butterball proposed showing Nicholas Angle Bad Boys II instead.

Rush Hour (1998)

Detectives Lee (Jackie Chan) and Carter (Chris Tucker) are paired up - not to solve the kidnapping case of the Chinese Consul’s daughter, as they might hope, but to keep each other out of trouble. Displeased at their assignments, they get on the case anyways.

This is the only Rush Hour movie in which Chris Tucker still feels the urge to act like a competent cop, instead of making himself out to be a racist fool reliant on Jackie Chan’s acrobatics. After this, Chris Tucker clearly started rolling in the dough and dialing down his acting efforts in favour of bulging-eyed racist tirades.

Luckily his performance is subdued enough to minimize the most outrageous facets of his character that would be revealed in sequels, and he provides a wisecracking ambient dialogue for the detective’s exploits. Jackie Chan plays himself again - in line with most of his Hollywood roles, he is the duty-bound, serious cop, though he also displays a paternal side when interacting the Consul’s daughter and inquiring as to whether or not she has been keeping up with her martial arts practice: “Have you been practicing your eye gouges?”

Altogether, Chris Tucker and Jackie Chan make up one of the best comedic duos of the last two decades, although their schtick is “one’s Chinese and one’s black.”

Point Break (1991)

Johnny Utah (Keanu Reeves) joins the FBI and is assigned to a case with old-timer Angelo Pappas (Gary Busey) to investigate a string of bank robberies by the “ex-presidents”, who are suspected to be surfers behind their rubber POTUS masks. Thus, Utah learns to surf so he can infiltrate the surfer scene with the charismatic Bodhi (Patrick Swayze).

This movie is deeper than an excuse to make Keanu Reeves stand on a surfboard or jump out of perfectly good aeroplanes. It is an unironic masterpiece exploring dissociation, cults of personality, and the relationship between existentialism and extreme sports.

There is also an iconic scene which Danny Butterball summarizes in Hot Fuzz as Utah “chasin’ him through peoples’ gardens, and then he goes to shoot [redacted] but he can’t because he loves him so much and he’s firin’ his gun up in the air and he’s like ‘AAGGGHHH.’” This action doesn’t just



Jackie Chan and Chris Tucker as two mismatched cops in Rush Hour. listall.com

lead to angst and another half hour of plot - it marks the point where Utah begins to distance himself away from his career in law enforcement.

Admittedly, Utah’s “buddy” Pappas has a fairly minor role in Point Break, but they work together - notably, their transitional period to accept each others’ quirks is far quicker than in other movies, where the conflict between cops remains a point of tension until the climax.

I actually loved this movie, from Utah’s induction into the ranks of the FBI in California to the final cathartic scene on a stormy Australian beach. It is the most powerful movie I’ve seen this year.

Bon Cop Bad Cop (2006)

A cop from Ontario (Colm Feore) and a cop from Quebec (Patrick Huard) are jointly assigned to solve a case when a body is found on the border between Ontario and Quebec.

Rare is a Canadian movie, and rarer still is a Canadian movie that gives both of its official languages roughly equal screentime. Also, the plot revolves around a thinly-disguised Toronto Maple Leafs knockoff, Rick Mercer plays fake-Don-Cherry, and the Quebecois cop moans “Vive le Quebec libre” during a sex scene.

Canadianisms aside, Bon Cop Bad Cop is probably the darkest film on this list. Colm Feore and Patrick Huard have sharp, smouldering chemistry. There are also some minor plot holes: what do the

symbols on the tattoos mean? Why was the first body dropped out of a helicopter? Why are hatchbacks more popular in southern Quebec than anywhere else in North America?

Find the answers yourself: Bon Cop Bad Cop is worth two hours of your attention and half-fledged French skills.


Osmosis Jones (2001)

A virus (Lawrence Fishburne) invades Frank’s body (surprise! A live-action Bill Murray). At the cellular level, animated white blood cell Osmosis Jones (Chris Rock) is a rule-flouting cop who teams up with cold medication Drix (David Hyde Pierce) to fight the virus.

Osmosis Jones is to The Magic School Bus what Indiana Jones and the Temple of Doom is to The History Channel. It is... unique. Great care has been taken in constructing the details of Frank’s body as a city populated by cells and microbes: the lawyers live in hemorrhoids.

Unfortunately one’s enjoyment of this movie is limited by one’s tolerance for scatological jokes, and my own tolerance is tragically low. The human body is a damp and nasty place - Frank’s body even more so. Some treat their bodies like temples, and others eat boiled eggs off the bottom of a monkey cage because the ten-second rule tells them so. Eugh.

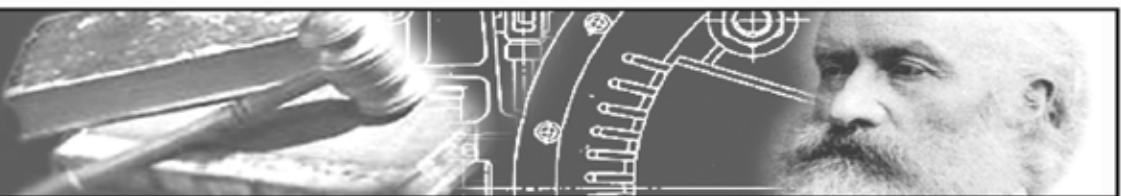
(Also highly recommended and reviewed previously: Hot Fuzz, Lethal Weapon, Die Hard)



SANDFORD FLEMING FOUNDATION

Professionalism.
Leadership.
Communication.

There’s more to an engineering education than engineering.



The John Fisher and Roy Duxbury Leadership awards are presented to two undergraduate engineering students who have demonstrated outstanding leadership throughout their academic careers. A certificate, citation, and \$2,000 award was presented at this year’s luncheon, held on Convocation Day.

Congratulations to

Christina (Lisa) Belbeck,

Nanotechnology Engineering,
on winning the
John Fisher Leadership Award

Congratulations to

Alexander (AJ) Rosewarne,

Electrical Engineering,
on winning the
Roy Duxbury Leadership Award

~ We wish you continued success upon your graduation ~

E2-3336, Extension 84008, sff@engmail.uwaterloo.ca,

www.eng.uwaterloo.ca/~sff

A Half-Hearted Critique on Democracy



DESMOND MILES
2B STABBY THINGS

On June 12, 2014, the Kathleen Wynne's Liberal Party was not only able to hold onto power, but was even able to secure a majority government. I don't want to talk about that. What I want to talk about is the natural evolution of government and democracy.

I attended the MPP candidate debate at the Great Hall in the SLC on May 28. While listening to the candidates talk about the issues, it occurred to me that in our current system, it didn't really matter what our MPP candidates thought, because they would almost always vote the way the party voted anyway. Today our parliaments are comprised of three to four parties with different, often very different ideas on how best to govern Canada. They are locked in an eternal, unwinnable battle to push their agendas through deadlock and bureaucracy. But when these parties are duking it out for the approval to govern all of Canada, the MPs and MPPs stop representing the people in favour of party loyalty.

Long before Europeans, or for that matter any Eurasians, set foot upon the shores of what we now call North America, the Aboriginals had their own way of government. Many of the First Nations tribes governed through consensus, where every person in the tribe had a say, and the decisions made ensured that everyone was satisfied. It was government through compromise. Our seventh Prime

Minister, Wilfrid Laurier, tried to govern through compromise, and all he got was the spite and anger of all the disparate groups he tried to please. Clearly at some population threshold, compromise starts to break down. When the group gets big enough you can't please everyone.

The ancient Greeks are even more famous than the First Nations for their direct democratic system, probably because they were located in Europe. In Athens, every adult male citizen of the city (which was actually only about 15% of the population) was allowed to vote on any decision. They did not have to vote for someone to represent them: they just represented themselves. Ignoring the fact that women, slaves, and foreigners were not allowed to vote, the system was good, and everyone (who mattered anyway) was happy, except for the rich oligarchs who wanted more say because they were rich. But again, this system also has a population threshold. Can you imagine trying to collect the vote of everyone who can vote in Canada for every decision made? Not only are there over 30 million of us, we're also scattered over almost ten million square kilometres. You might have been able to figure out that direct democracy in a country like Canada, or other countries like Russia, China, and the United States, would take way too long to even be able to make any decisions within a reasonable timeframe.

The next time democracy was tried in any reasonable extent was in the late 1700s, with the great democratic experiment that was the United States of America (OkfinetherewasEnglandbuttheydntcountbecausetheirskindasuckedinitially).

The USA was bicameral, with a house of representatives and a senate. Initially the system was like the Athenian system, except replacing citizenship with land ownership, and instead of direct democracy, people elected someone to represent their needs and interests in government. As time went on though, the system was expanded until women, African Americans, and even naturalized citizens could vote. The American system is the standard to which almost all other democracies in the world base themselves off of, with variations. For example, in Canada we only have one effective house.

And yet this system still has so many flaws. Initially representatives actually represented their area in different issues. Then parties were developed because people thought that it was easier to push your own interests through if other representatives supported them as well – and they were right. In my opinion the formation of parties is the natural evolution of a democratic system, and the idea of the party in many ways makes government more efficient and streamlined. But with the advent of the party system, other things were sacrificed, for example true representation which I've mentioned several times in the article. In addition, the evolution of parties has also severely reduced the merit and value of actual representatives. Often MPs can't or don't want to vote in favour of the interests of their area because they're worried about voting against the party. Being an MP was initially about representing your district, but now it's about representing your party. Another flaw of democracy is just how hard it is to get anything done

in one. Trying to do anything is very likely to upset someone or some group, and they will do all they can to stop you from doing something. Parties have actually helped to improve the situation, but it doesn't solve the problem, as deadlock can still happen. In Canada it happens because we have more than two parties, and in America it happens because you need two thirds of the vote to pass a bill; a simple majority is not enough to get anything through. You know what form of government doesn't suffer from deadlock? A dictatorship or an absolute monarchy. But we obviously can't have that due to all the potential for power abuse with no checks and balances there. No joke, dictatorships are bad news, kids.

Democracy ain't easy. I don't have the answers for solving the problems outlined (poorly) in this rant. That said, I think a (tentative) step in the right direction is to make parties less institutional. This would allow MPs to more freely move between parties and thus align him or herself with a party that represents her constituents. Of course, then there's the issue that it gets too easy to move away from a party, thus rendering them ineffective anyway, but I digress. Another thing that needs to happen is that people need to get off their asses and start caring more, if only by letting your MP know what your thoughts are.

That's some food for thought. I don't give answers, I just like asking questions. I'm not smart enough to answer these questions alone; I doubt any one person is. These issues need a lot of thinking and planning from many different minds; the first step is to start the discussion.

Electoral Reform:

Proportional Representation and Ranked Ballots



NANCY HUI
4A CIVIL

Canadian elections at the federal, provincial, and municipal levels are conducted with a first-past-the-post system. Put simply, the candidate with the most votes wins.

On June 12, 2014, Kathleen Wynne's Liberal Party of Ontario won a majority government with 38.7% of the popular vote. In contrast, Dalton McGuinty's Liberals had won a minority government on October 6, 2011, with 37.7% of the vote - nearly the same as in 2014, but with radically different results. And I'm sure you all remember May 2, 2011, when Steven Harper's Conservatives won the federal majority with 39.6% of the vote.

In both the 2014 Ontario elections and the 2011 federal elections, a minority of the population selected a majority government, i.e. over half of the votes were not cast for the winning party. In fact the only time in Canadian politics in which a majority government was selected by a popular majority (i.e. over 50% of ballots) was in 1984, in which Brian Mulroney's Tories won 75% of the seats in the House of Commons with 50.03% of the popular vote.

Meanwhile, Elizabeth May just scraped a seat for the Green Party in 2011 with 3.91% of the popular vote, and the Green Party hasn't won any seats in Ontario despite having candidates in every one of the 107 provincial ridings and 4.84% of the popular vote.

From these recent electoral results, the

following can be observed:

- Popular support does not translate into seats
- Similarly aligned parties often split the vote trying to out-populist each other
- Theoretically, a party only needs 17% of the vote in a three-party-system to win a majority government. This is unlikely but the fact this possibility exists is absurd.

The first-past-the-post system is elegant, but flawed. Thus there are currently two options being discussed at various levels of government to reform this.

The first option is proportional representation. At its simplest, proportional representation ensures that if 30% of ballots are cast for a party, then 30% of seats in an assembly are granted to that party. Variations include mixed member proportional representation (MMP) in which one vote is cast for a local candidate and one for a political party. The local member would be elected using the first-past-the-post system, and would represent the electoral district. However there would be a number of seats not assigned to any party at all, and the party vote would contribute towards assigning the list seats to each party to ensure roughly proportional representation in the assembly. Furthermore, a threshold of 3-8% may be incorporated to reduce the proliferation of fringe parties. Either way, the Green Party of Ontario may be able to enjoy representation in provincial parliament.

Sadly every single referendum for implementation of electoral reforms through proportional representation has been defeated (BC 2005, PEI 2005, ON 2007, NB 2008, QC 2004, BC 2009).

Another option is ranked ballots. The ranked ballot system is designed so that an elected representative will enjoy at least lukewarm support from a majority of voters, rather than adoration from a minority and outright hatred from the remainder (e.g. a la Rob Ford). With a ranked ballot, a voter numerically ranks each candidate according to preference. When tallying votes, it is first determined whether or not any candidate has over 50% of the vote. If not, then the candidate with the lowest number of votes is removed from the running, and all the ballots which selected the lowest ranking candidate as most preferred would be assigned to their next most preferred candidate. This process continues until one candidate has over 50% of the vote.

Ranked ballots are currently being endorsed provincially as an option for municipal elections.

The third and final option is for voters to throw in the towel, publicly disown the NDP or Liberals, and force Canada to use the two-party system existing in the States. This would almost eliminate vote splitting. Disadvantages unique to this system include decreased voter choice and increased pandering of parties to the majority. This is not desirable, since voter choice is clearly a good thing, and the purpose of a government is not only to serve the needs of a majority, but to protect the needs of a minority. We will not be discussing the two-party system as a viable alternative in this article.

Detractors from electoral reform (either ranked ballots or proportional representation) argue that methods of reform are too difficult for the average Joe or Jane to understand, that they would lead to increased political deadlock,

and that they'd allow for increased representation from fringe groups.

However, although I've spent over 250 words describing the mechanisms of each system, voting through ranked ballots is literally as easy as 1-2-3. And haven't you ever really liked a certain candidate but thought their party had strayed too far from their values in a certain election (e.g. NDP 2014)?

As for fringe groups, well, a single MPP from the Communist Party is not going to replace the Maple Leaf with a hammer-and-sickle. An MP from the National Family Party is not going to be able to expel homosexuals from Canada.

Political deadlock as a result of proportional representation is probably the greatest concern, but is no more concerning than that in a minority government. Finland has ten parties in parliament, but they've organized themselves into two perfectly functional coalitions. The difference between having many parties organized in a coalition and a party holding a minority government is that members in members in smaller parties are able to offer more diverse views on legislation than members in a few large parties, which must follow the direction of party whips. It would not be a bad thing for opinions in parliament to become less homogeneous, to better represent the variety of views and serve the needs of all Canadians.

In conclusion, the issue of electoral reform in Canada is not dead yet. Proportional representation may resurface in a referendum in a future referendum, and ranked ballots will surely soon be introduced in municipal elections. Keep these issues in mind for when they next reappear.

FIFA 2014 World Cup: Round of 16 Predictions



**ELIZABETH
SALSBERG**
2B NANOTECHNOLOGY

THE BENCHWARMER REPORT

Sports fans! World Cup Soccer is finally back—it's been exciting as ever. There may have been some slight stadium failures, but the football quality seems to have more than made up for any issues there! As we near the end of the end of the group stage, here are the Benchwarmers' predictions for who will advance from each group to the round of 16.

Group A: 1) Brazil 2) Mexico

Brazil is not only absolutely stacked, they are also the hosting country. With a convincing, come-from-behind 3-1 win over Croatia in their opener and solid play in their draw against adversary Mexico, if they stay on their game they should not have a problem getting 3 points against Cameroon in their final group-stage game to possibly win the group. Mexico is currently tied with Brazil atop the group with 4 points apiece. Again, they will need to win their final game against Croatia in order to advance, which will certainly be trickier than edging out Cameroon 1-0. Nevertheless, Mexico is strong and will likely finish second in this group.

Group B: 1) Netherlands 2) Chile

It's already certain that these two will emerge from this group after Spain managed to vanish. The only thing that remains to be determined is the finishing order. These two teams face off in the next Group B match and the winner wins the group. Expect the more experienced Netherlands to come out on top, though Chile will likely give them quite a run

for their money (after all they did beat defending Champions Spain 2-0).

Group C: 1) Columbia 2) Ivory Coast

Columbia has won both of their matches thus far and will likely conquer struggling Japan to secure the lead in this group. Ivory Coast faces the worse-struggling Greece in their final group match and will likely be able to win that one bar any huge surprises. However Greece and Japan are not out of it yet. They each have a point as it stands so if the Ivory Coast manages to lose against Greece, Greece could still go through. Regardless of the outcome against Japan, Columbia will finish second in this group at worst.

Group D: 1) Costa Rica 2) Uruguay

Costa Rica has been the North American surprise of the tournament, pulling out victories against two very strong soccer nations in Italy and Uruguay. Their final match against a disappointing English side should be easy if they stay on top of their game. What remains to be seen is who will emerge between South American powerhouse Uruguay and infamous yet always dangerous European Italy. Italy struggled mightily against Costa Rica,

and up to that point, had never lost a soccer match to a North American team. The Italians' ego may be their undoing: If they do not play as desperately as Uruguay in their final group match, they will be eliminated. Uruguay a bit of a home advantage, not being too far from Brazil, and will be extra motivated to beat the Italians, particularly after a convincing win over England. Expect them to come out hungry in their final match.

Group E: 1) France 2) Switzerland

After two solid victories, France will advance for certain. If they continue to keep up their solid play, beating Ecuador in their final match should not be too much of an issue, allowing them to come out on top in this group. As it stands, Ecuador and Switzerland are tied in second with 3 points each. Switzerland faces off against Honduras in their final match. Though Honduras has been known to surprise, they will not advance regardless of the outcome of this match, so if Switzerland can put together a good performance, they have a much greater likelihood of advancing than Ecuador who will need to beat group leader France to advance.

Group F: 1) Argentina 2) Nigeria
Argentina has already secured a spot in the round of 16 and will likely beat

Nigeria in their final match to win the group. Not much excitement in this one. Unless Iran manages to score two or more goals in their final match against Bosnia, and Nigeria scores none against Argentina, their chances of advancing are slim.

Group G: 1) Germany 2) Ghana

Ghana gave Germany a fantastic run for their money in their second match, a thrilling 2-2 draw that they arguably could have won. Though Ghana did lose to the United States, it was a bit of a heartbreaker for them and really that one could have gone either way. If Ghana can repeat their performance against Germany in their final match against Portugal, they will likely go through to the round of 16. Powerhouse, locked and loaded Germany should win this group if they fuel off their energy at the end of their second match against Ghana to beat the United States. However, this group could look quite different if Ronaldo and the rest of the Portuguese squad decide to make things interesting by winning their next match against the United States. Keep an eye on this group; it's going to be a close one.

Group H: 1) Belgium 2) Korea Republic

Belgium has already punched their ticket to the round of 16 with a last-minute 1-0 win over Russia in what was mostly a snore of a game. The rest of this group is more or less up in the air, with the Korea Republic, Russia and Algeria still in the mix. Nevertheless, Russia will have to win their final match against Algeria in order to advance, whereas Korea Republic can probably gain at least a draw against Belgium and potentially beat Nigeria, and are hence more likely to advance than the Russians.



Eat Breakfast, Be Happy

What Happens When you Skip the Most Important Meal of the Day



BRIAN CHAN
2B NANOTECHNOLOGY

ENGLIFE IMPROVEMENT

So I was having this talk with my friend the other morning, and I asked, "Did you eat breakfast?"

Mind you this was at 10 in the morning and a couple hours before exams and he said, "I don't eat anything until after my exams."

I thought, "That's horrible, to starve yourself." And after the exam he said, "I don't even eat breakfast on a daily basis" and I was shocked. Then I thought about it.

It's not hard to imagine why he skipped breakfast. On average, we engineers sleep at such late hours and wake up just minutes before class starts, so breakfast is a lost cause. There is just no time to prepare anything, or even line up at those long lines in front of Tim Horton's each day. We have to get to those classes on time or else we will miss out on some hours of lectures and possibly not know enough to pass those bloody hard exams the professors like to unload upon us. Think of this though, if you are in class on an empty stomach, can you even pay attention in class?

There's a reason why breakfast is

called the most important meal of the day. If you're in class on an empty stomach, it starts to grumble and groan and you get those pains annoy you every couple seconds begging for you to eat something so your stomach can be put to good work. Then you actually think more about that empty stomach than paying attention in class. Next thing you know you know during your first break you are rushing to the closest C&D buying a sandwiches, a cup of coffee maybe a couple of cookies because you are starving. Ten minutes after buying this scrumptious food you have satisfied your stomach and you are content for the next couple hours. However, because lunch is in two hours and in reality you are not hungry but you are an adherent to the 3-meals-a-day philosophy, you decide to eat a nice big lunch as well. Several hours after this, snacks and perhaps dinner follow, and during all that time we are sitting on our behinds studying or completing assignments.

By the end of the term you have acquired a Freshman 15. This all stemming from the fact that you skipped breakfast and overcompensated later on. It's a bad thing and probably the root cause of all those extra pounds. So bottom line is, eat breakfast, eat less during the day, pass on the extra pounds and be happy :D.



Breakfast. Eat it or it could lead to very bad things.

Robert Banh

Dog Sledding in Yukon



KRISTINA LEE
3A ENVIRONMENTAL

Once upon a time, back in grade 8 I went to Quebec on a class trip and went dog sledding. Fast-forward 6 years and now I dog handle for dog sledding teams? A bit of a big difference but just as fun. Following the past trend of my articles, this one is about the Yukon!

Dog sledding is an undertaking, to say the least. There is the commercial side of dog sledding that most tourists get involved with when on vacation. There is a whole other side to dog sledding though that we here in Ontario do not normally get to see: the dog sledding races. Up North there are a plethora of races that occur every winter, some small and some large.

While I was in Whitehorse, the Yukon Quest was taking place. This is one of

the larger dog sledding races with two categories: the 300 miles ride and the 1000 mile ride. People who participate in the Yukon Quest are not amateurs by any means. Teams spend the whole year preparing for the race and need to complete pre-race checks to ensure all participants, mushers and dogs, are healthy enough to race. I was fortunate enough to be given the opportunity to volunteer for the Yukon Quest and was able to meet two of the teams participating.

I helped out with vet checks, I'm the one ducking down reading the scale. One thing I learned is that there are different types of racing dogs and most people don't use Siberian Huskies. Racing dogs tend to be smaller and leaner than I had originally expected. There were dogs of different sizes and I soon learned that a snowier trail favoured the larger dogs and a snow-free trail would favour the smaller dogs. It makes sense, smaller dogs would need to use more energy to make it through the deeper snow.

Photo link (whitehorsestar.com/media/photos/Vet-Check_-2014-6591-200.jpg)

Quest aside, many Yukoners participate in smaller, more local dog sledding races. I had the opportunity to become a dog handler for a lady my roommate worked with at the Yukon Government. We spent the weekend at a cabin about an hour away from Whitehorse with 12 dogs. Keeping 12 dogs isn't an easy task. Race dogs are extremely high energy and are, for the most part, kept outdoors in large kennels. Here's a night time photo, there are about 3 dogs per kennel and they're let out every day to run around. They're a bundle of joy and a ton of fun. This set of racing dogs likes to cuddle.

During race day, the dogs were taken to Kluane National Park and we started setting up. It's hectic before a race. All the dogs are in one area and are tied along trucks before being harnessed to the sled. Thankfully no one lived nearby because the dogs just feed off each other and never stop barking. For my team, it was their first

race and they were so quiet. They barely said a word as we fed and gave them water waiting for the race to start.

It's interesting to watch the start of a dog sled race, it's like the dogs know exactly what is about to happen. You can feel the energy radiating from the dogs. For the larger teams, a snowmobile was used to stop the team from starting early. A snowmobile was the only thing that could hold the sled still in one case, the rope attaching the sled to the snowmobile had to be cut because the team was pulling it so tightly.

Once my team had pulled away from the start line it became a waiting game but I'll tell you, there's nothing like seeing your team come towards the finish line! Even though my team finished last, they received an award, the red lantern. A classic last place team prize. After the race all the teams enjoyed a nice hot, homemade meal, courtesy of the race organizers. Being a dog handler was an exciting adventure. :)



Waiting at trucks for their race to start.



Team being escorted to the start via snowmobile.



Two of my pups, waiting quietly for their turn.



My pups crossing the finish line!

WORK REPORTS

WANTED for Case Studies!!

- Get **PUBLISHED**, let us do the work!
- **Accepting Work Reports and Project Papers**
- **Used by professors in class**
- **Add to your RESUME**

**WATERLOO
CASES IN DESIGN
ENGINEERING**

Upload your work reports to:
uwaterloo.ca/engineering-cases/

'%\$#@ WHY NO (female) BATHROOMS ANYWHERE?!



**EARTHLING OBSERVER
OF THE FEMALE
PERSUASION**

A long time ago in a galaxy far, far away the first ever toilet was invented #miracle #awesome #bestinventionEVAR. Of course most of you ungrateful, witless earthlings have no idea of the impact of this invention. It changed the course of history forever. Furthermore, the toilet is the reason that the bumbling, babbling, blabbing, bothersome, babyish band of earthling baboons (I order you to say that twenty times fast earthling!), a well and truly pathetic excuse for a species of the Universe, continue to trod along in their ever-so selfish and meaningless lives today.

The toilet would continue on to be the centerpiece of every modern bathroom in the Universe. Other bells and whistles

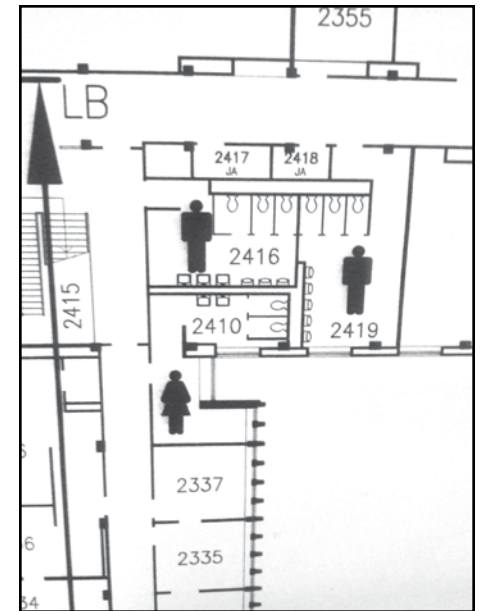
were added as the bathroom, such as sinks (after the Earthling race was ever-so-nearly extinct but then one of them miraculously figured out that cleaning themselves seemed to reduce the risk of death, disease and turmoil), showers (see reason above), bathtubs (for super-rich, extra selfish, water-wasting Earthlings who have far too much spare time on their hands), mirrors (for those who love to waste away their days admiring themselves) and the list goes on. In addition, to waste even more water and toilet/bathroom building resources, Earthlings even insist on segregating their washrooms by gender.

So if Earthlings seem to enjoy these bathrooms so much, what in the Universe is going on at Waterloo Engineering where there seems to be a *gasp* lack of bathrooms?! That's right female Earthlings: As you step out of the Iron Warrior office in E2 desperately in search

of a bathroom because you've been too hellbent on circulating these bloody papers to make it to the bathroom in one of those buildings that might actually have one, and you are looking for a bathroom of the female variety, you have to walk either down the stairs *gasp* or over to the next building (E3/Physics/CPH) to find one.

Here are few ways to help you deal with this ungodly situation:

- 1) Draw a female-bathroom symbol on a piece of paper and stick it on the door of one of the so-called male washrooms and then take it with you when you leave. This way you can basically go to whichever washroom is convenient.
- 2) Use the staff washrooms which are always more conveniently located.
- 3) If the most convenient washroom is being cleaned, move the cleaning equipment out of it and use that one as they usually say 'closed for cleaning.'

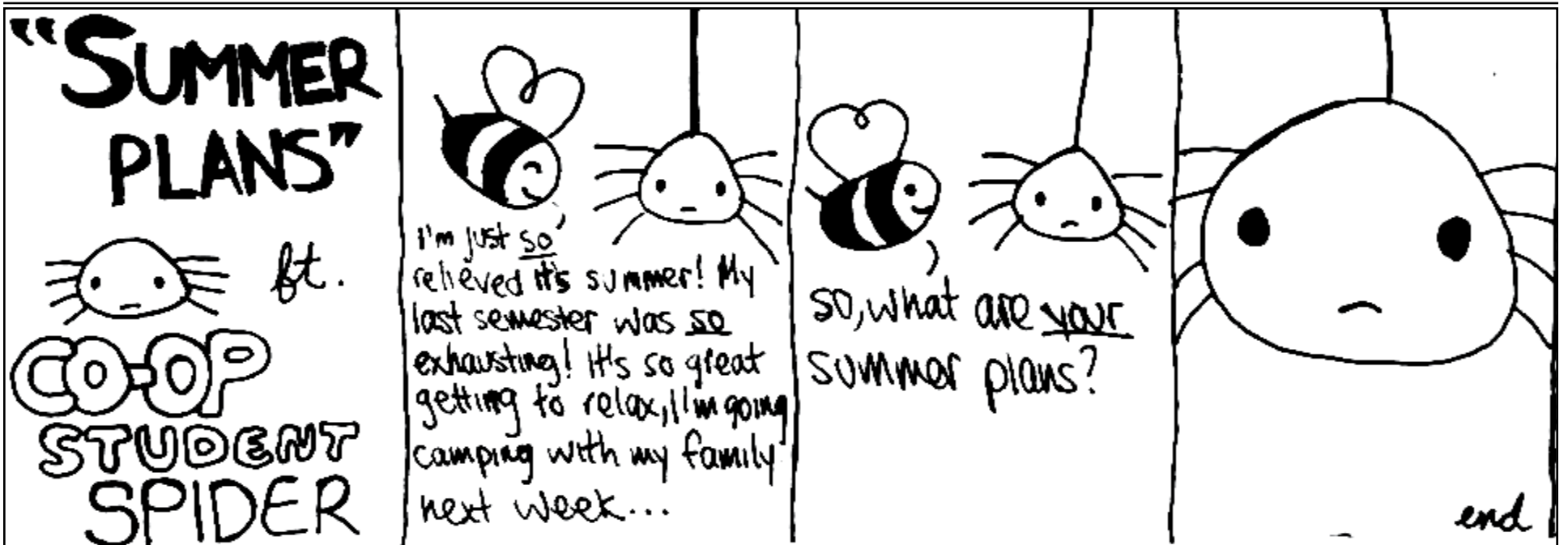


Nina Feng

Male bathrooms tend to outnumber female ones around here...

Comics

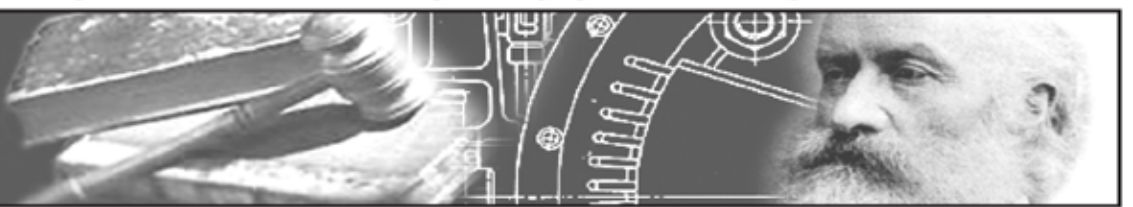
XIONG ZOOMY
2T SLIPPIN'



SANDFORD FLEMING FOUNDATION

Professionalism.
Leadership.
Communication.

There's more to an engineering education than engineering.



Congratulations to our Convocation award winners!

Academic Excellence

Ji Ho Park, Chemical
Nathan Julius Grishkewich, Chemical
Matthew Sjaarda, Civil
Aman Muthreja, Computer
Ryan Simon Van der Elst, Electrical
Alexander Ga-Wei Leung, Electrical
Christine Wickens, Environmental
Paul Gary Menkveld, Geological
Yang Wu, Management
Michael James Lucien Benoit, Mechanical
Matthew James Meakin Brymer, Mechanical
Kornel Niedziela, Mechatronics
Ioana Craiciu, Nanotechnology
Christopher Peter Kleynhans, Software
Chieh-An Andy Lee, Systems Design

Co-operative Proficiency

Kevin Raymond, Chemical
Catherine Heymans, Chemical
Caitlyn Elizabeth Cartwright, Civil
Eric Philippe Bouchard, Computer
Duncan Cheuk Kan Ma, Electrical
Soo-Jin Moon, Electrical
Bryanne Lynn Wouters, Environmental
Michael Mitat Yetisir, Geological
Gregory Scott Walton, Management
Manvir Dulai, Mechanical
John Francis Waenink, Mechatronics
Krishna Iyer, Nanotechnology
David Yichen Hu, Software
Joanne Sau Ling Leong, Systems Design

The Iron Crossword

Mild Spoilers for the GoT Season 4 Finale

NANCY HUI
4A CIVIL

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					

- 70 Brownish
71 Stinky
DOWN
1 Desktop plague
2 Message
3 VP's boss
4 Island
5 The Holy ____
6 2005 Will Smith romcom
7 He's said to know nothing Last seen not looking at a fire
8 e.g. 32 across, 38-across
9 Hair spiker
10 Fabric nips to tailor clothing
11 GRRM's wife's favourite character. Last seen on a boat
12 Close
13 Pull
22 Afflict
23 Thus it was written
24 An organized group of cats, as written by Erin Hunter
25 Gives clues
26 Where nuns be chilling
27 Facility for making Oathkeeper and Widow's Wail
28 Parodic online news-source
29 Layers of toilet paper
30 Flatulence
31 An event in which one shotguns season 3 in one day and then cries
32 Handled
33 Covered with lichens
34 Small map placed over a large map
36 Bad place for adventurers to be shot
38 An age
40 Pretensions
41 Warg journeying beyond the Wall to find the three-eyed raven
42 Possesses
43 Anger
44 Father of 14-across and 64-across
45 What legends eventually become
46 Toebox on a sexy shoe
47 In Spain, a joint commitment to payment of a debt
48 Home improvement depot
49 Kirk's home state
50 Shallowest Great Lake
51 Glacial sediment
52 Christmas
53 Toy Story boy
54 Set one against an opponent
55 Sweet tater

- ACROSS**
1 Like 64-across?
7 Pitchers
10 Nickname for The Unburnt, Queen of Meereen, Queen of the Andals, the Rhoynar and the First Men, Khaleesi of the Great Grass Sea, Breaker of Chains, and Mother of Dragons, who is currently playing Judge Judy in a pyramid
14 Last seen desecrating a table with Jaime
15 "At least I'd have ____ happy memory!"
16 Consists of planar lamina
17 Eggs folded around a filling
18 Nothing at all!
19 The private saved
20 Voldemort hardly has one
21 Make a light or shadow visible
23 House of 11-down and 45-down
24 It may be cleft
25 Not hers
26 Into conflict
30 Nonfallacious reasoning
32 Tempo measure
35 Miniature tree
37 Pallid

- 38 K in the NATO phoenetic alphabet
39 Last seen wandering the countryside, looking for Sansa
41 The Mannis! Last seen looking competent and kingly
43 Prides
44 Cry
46 Military engagements at King's Landing, Meereen, Riverrun, etc
47 Japanese currency
48 Physicist Becquerel, who discovered radioactivity
49 Like an oboe
51 Ink
52 Slang for mean, at least in East York
54 "The Spider." Last seen on a boat.
57 Like squid in the darkness?
58 Italian volcano
62 Assert openly
63 Currently the squire of 39-across
64 Last seen on a boat, in a box
66 Beauty treatment for the hands
67 ____ Jima
68 Flagged
69 Strategy

Sudoku

NINA FENG
3A ENVIRONMENTAL

Easy

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

Medium

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

Hard

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

Issue 3 Deadline:
Friday, June 20 at 6:00 p.m.
Send your submissions to:
iwarrior@uwaterloo.ca

THE IRON INQUISITION
Jessica Keung, 2B Civil

"What was your biggest Word Cup upset?"



"Netherlands vs. Spain. At least the Dutch were nice enough to score a goal for Spain!"
Benson, 4A Civil



"Iran losing."
Mostafa El Sadek, Mahdad Rafat,
Talal Antar, 4A Civil



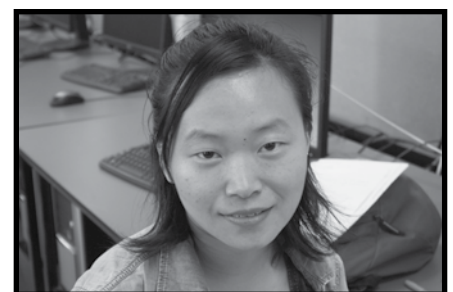
"Definitely Netherlands defeating Spain!"
Ishan, 4A Civil



"Spain losing."
Brian Kester, 4A Civil



"Brooklyn beating the Raptors."
Stan Fong, 4A Civil



"England losing."
Shi Hui Guo, 4A Civil