

# THE IRON WARRIOR

THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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## Cape Town Approaches Day Zero



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### A Reservoir in a Residential Cape Town Neighbourhood from 2014



Day Zero—the day when the water taps run dry—is racing towards Cape Town, South Africa. Expected to be some time in mid-April, this dire condition is the product of a record three-year long drought that has left the second most populous city in South Africa and the seat of its national parliament struggling to cope.

The possibility of a major metropolis of three million people simply not having the water to sustain its population might have seemed unimaginable a decade ago, but the changing climate, overdevelopment, and an exploding population have made such a scenario far more likely in cities and towns all over the world.

Cape Town seems to have met this fate far sooner than expected. The city is prepping some 200 emergency water stations outside supermarkets and other common gathering spots. Each one of these centers will have to serve almost 20,000 people. City officials have made

plans to store emergency water supplies at military installations, protected by armed guards. It is now illegal in the city to use water taps for non-essential activities like filling pools and washing cars. Some companies have taken advantage of the dire situation and driven the price of bottled water sky high.

When the state of the water supply first became evident, the city began to urge its citizens to consume less water. Months later, fewer than half of the population had followed the advice laid out by city officials to consume less than 50 liters a day (about a sixth of what the average American consumes). At Day Zero, the city will be forced to enforce a strict ration on the amount of water available for individual consumption at just 25 liters—less than what is typically used up after four minutes of showering.

There are a great many lessons to be learned from the path Cape Town followed to reach its current point, the most important of which is to not expect the past to be a consistent indicator of the future. Like much of Southern California, most of South Africa is dry and arid. Yet in Cape Town, the presence of its most recognizable feature, the

Table Mountains, has meant that it receives rains from trapped offshore breezes coming off warm ocean waters. These rains power the rivers and aquifers the city relies on for its water.

Over the last 20 years, the city realized the threats facing its water supply and took action. It made strides in reducing the water consumption from its six major reservoirs, fixing leaks and charging major consumers more—even attempting to publicly shame over-users. Cape Town, as result, won several international water management awards.

In the end, even those measures were hardly enough; the danger came suddenly. In 2014 all six major dams were full, but then came three years of drought. Now the reservoirs stand at just 26 % of capacity. When they reach 13.5% capacity, the city will have no choice but to shut down the taps and conserve the water it has for the bare necessities of human life.

As the climate changes, more extreme weather patterns like the three years of drought in Cape Town become more likely and common. There are several major metropolis that are already facing the increasing pressure of a changing

planet. This includes cities like Mexico City, Mexico, whose 21 million people are forced to make due with half a day of water each day. Water managers in Melbourne, Australia predict that the city could run out of water within the decade. Much like Cape Town, Sao Paulo, Brazil was down to just 20 days of water when some last minute rain prevented authorities from having to shut down the taps completely.

As the climate changes, water becomes scarcer and scarcer for more and more of the world's population. Cities that could traditionally rely on consistent sources of water must now innovate and seek new solutions. In Cape Town, construction is underway to create a desalination plant to tap into the as-of-yet untapped ocean of water at its door step. The city even has proposals to extract water directly from the clouds trapped above the Table Mountains, although this idea still remains a pipe dream as no concrete steps have been taken to make it a reality.

Ultimately if we are to face the water crises of the future, we will need to innovate and be creative. Only then will the taps in the cities around the world keep flowing.

# Letter From the Editor

## Slow Down and Look Around



**CAMERON SOLTYS**  
EDITOR-IN-CHIEF

Miss me? It's good to be back in the captain's chair. I didn't think I'd ever have the opportunity to write another editorial after my first term as EIC, so I was keeping all my opinions and rants pent up inside myself, as is good and healthy. Now they're giving me a soap box again, after I've had five issues of training on how to use it? Ho ho ho! The lack of foresight is astounding, amazing, unbelievable! Anyway, I'll be using my supreme power this week to talk about a tiny piece of metal and come to the unique, never-before-considered conclusion that school is stressful. I guess I'll put my dastardly plans to work in issue 4 after I have time to assemble them.

As always, this paper is only my doing in small part; it is mostly the work of the small army of people you see on the right. Thank you all so much for all of your articles and hard work. I know you were all busy with Hell Week and then recuperating with Slack Week, so I appreciate your efforts all the more.

First, I'd like to thank Stone, who really got into the trenches for Iron Inquisition. First he took time out of his pre-exam studying blitz to pick up the camera. Then he did real, on-the-scene journalism by interviewing his classmates and other students about just how poorly their exams went. I'd also like to thank Raesa for covering for me during the upcoming staff meeting and making sure that the papers get delivered in my absence, and for writing an article for me on Sunday afternoon. Finally, a big shout-out to Donovan for offering up an old article he had written but never published when we had an awkward gap of empty space left.

This issue has a ton of great content to browse through. Hasan has some great Olympics coverage on page 3, especially for those of you who, like me, have found ourselves drowning in projects as opposed to patriotism. In case you've missed the announcement, on page 8 EngSoc President Abdullah has the list of new Executives who will replace him and his team come next term. While you're there, check out page 9 for an update on the imminent arrival of Course Critiques. Finally, Janny tells the tale of a long-lost fish-eating Viking horde in Britain, also on page 3.

Three weeks ago, the graduating class of 2018 participating in the Ritual of the Calling of the Engineer, more frequently known as the Iron Ring Ceremony or IRC (Engineers sure do love their acronyms; just ask the S.S.E. and J.S.Es, or anyone at a BOT.) Congratulations to

all my friends and peers that I haven't yet managed to fist-bump. We've almost made it. All that's left to do is finish FYDP and cram for our bird courses the night before the final. There sure is a bunch of stuff that they don't tell you, like what "giving knowledge" means (it means knocking un-obliged students on the head with your ring), or what really happens at IRS (I'll let you all relive my experience of confusion and excitement when your time comes).

I have been having a great time with my Iron Ring. I've barely taken it off since I got it. There was a little scare when I woke up on Sunday morning with my ring stuck below my knuckle, but that hasn't happened again. Since then, I've been parading around campus, knocking my pinky finger into every surface I can lay my hands on. It's been a long journey so we celebrate in the most annoying ways we can: with revelry and by obnoxiously hitting lower-years on the temples with one-fourth of a knuckleduster.

I've had a 1616 day wait, by my count. In fact, it's been even more. I've wanted to be an engineer for as long as I can remember and I've known, to some extent, that engineers could be identified by the "Iron Rings" they wore for much of that time. When I got my acceptance from Waterloo, one of my first acts was to read the Wikipedia page on the Iron Ring, to figure out what I had really gotten myself into. (That research was well-worth it since I dominated EdCOM's trivia quiz a few months later.) The Iron Ring was a huge focus for me, a sign of my accomplishment. I couldn't wait for my induction into a private, special society populated by like-thinking men and women who had gone through the same rigorous and exhausting academic education.

Until this term. This term has been so busy that the whole business snuck up on me. I knew that it was coming: there were emails about ring fittings and introductory talks, and Facebook posts about DUSTED and Laser Tag. It snuck up on me emotionally and mentally. I never took time to bask in my glory. I never took time to think and reflect on the meaning of the ceremony and on the intention behind the Iron Ring—about the commitment to good craftsmanship and safety that wearing the ring stands for. For half of Disorientation week, I wasn't even excited about the pranks we were planning; they were just another item in my agenda, another thing to deal with that had a tight deadline, another commitment that I was happy to take on but had no emotional investment in.

Fortunately, I caught myself. I realized that I was letting something that I had been anticipating for, possibly, half my life pass me by. I relaxed about the pranks, started thinking about them as an exciting event as opposed to an extra-

curricular commitment. I scheduled time out of my day to reflect on what my obligation means. I'm so happy that I managed to take the time to relax and enjoy. I'm also so frustrated with myself that it took me until the last minute to do so.

It's easy to get too focused on one thing and let other, more important, things slip by. It can happen in your personal life: spending too much time studying, not enough relaxing. It can happen in your academic life: cramming for an exam even though you know that going to sleep and showing up refreshed would do you more good. It can happen in your professional life: focusing on the one bad manager or coworker, as opposed to the many colleagues who want to help you out or give you more challenging tasks. Obviously, it isn't productive to spend your whole time worrying about if you're doing the best thing, the most productive thing, or the most fun thing every moment of your life. However, there is a balance that can be struck, some level of introspection that is beneficial.

Despite what it may seem, this editorial is meant to be empowering. I believe that for many problems people face, the most empowering step is information. If you enter a new work environment, you get safety training to tell you about the most significant and unique dangers in your environment. I suggest that a lot of grief and stress is needlessly produced because people get too focused on what they are doing versus what they should do. So consider this safety training that transcends any one stage of life or industry: introspection helps with stress. Of course, this isn't true for all sources of stress and grief, but the only people who offer one-stop solutions to all that ails you are snake oil salesmen and homeopaths.

It doesn't matter if you're in first year or fourth, going onto grad school or seeking your second co-op. Please learn from my words, not from repeating my experience. There are a lot of things clamouring for your attention right now, but don't forget about yourself. Hopefully you're here because you want to be, and because it suits your goals. There is a risk that the things that excite you, the reasons you work hard every day, will fall into the background. They don't have to! Keep them in mind, and be willing to sacrifice a few marks or hours of WaterlooWorks to get the most out of your university experience.

And take an easy load in fourth year; FYDP is worth two or three classes by itself. Plus, you don't want to be spending all (or any) of your time working on homework. You want to spend it hanging out with friends, crossing the last few items off your bucket list, and finding your perfect full-time job.

### THE IRON WARRIOR

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

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# Viking Grave Found in Britain

**JANNY WANG**  
1B NANOTECHNOLOGY

The Great Heathen Army was a mass of probably fastidiously-washed barbarians, allegedly led by the sons of Ragnar Lodbrok—better known as “that guy from Vikings”—who attacked England in 865 AD. The term “Great Army” is something of a misnomer; anybody who has been imagining endless legions in the style of Napoleon or Alexander is bound to be somewhat disappointed by the thousand so scruffy Scandinavians that history presents us. Nonetheless, these scruffy Scandinavians were on British soil for several years and eventually settled there; it may be assumed that such a mass of men marching, eating, breeding, defecating, and dying for such a considerable period of time would leave a suitably impressive archaeological trove.

Lamentably, archaeologists were deprived of any sterling Viking skeletons until the 1980s, when some unfortunate Anglican vicar had the good luck to stumble upon the earthly remains of three hundred unsaved heathen souls. One may well imagine the joy and alcohol this news brought to the historical community, but any celebrations would have been

untimely cut short by a stern lab-coated scientist proclaiming, clipboard in hand, that these were not the corpses you are looking for.

Radioactive dating showed that the remains were too old to belong to the illustrious Heathen Army, but now the molecules have evidently recanted their statement. A new study proposes that the burial site dates the 9th century, meaning that the inhabitants of the grave were very probably part of the Great Heathen Army.

The original dating error occurred because the Vikings ate too much fish. According to lead archaeologist Cat Jarman, “When we eat fish or other marine foods, we incorporate carbon into our bones that is much older than in terrestrial foods.” This error was rectified by estimating for how much seafood the corpses once ate.

The majority of the corpses belonged to young men. Many of the corpses showed traumatic injuries consistent with battle or an exceptionally vigorous bar brawl; to further corroborate the Heathen Army theory, Viking weaponry was found near the site of the burial.

Two other graves were found nearby; one boasted four youths, between the ages of eight and eighteen, who are be-

lieved to have been ritual sacrifices intended to accompany the warriors in the afterlife. (The Vikings were surprisingly fond of human sacrifice.)

The other grave contained two men, who may have been leaders in the Great Heathen Army. One of the men had a boar’s tusk placed between his legs—possibly “to replace what he had lost and prepare him for the afterlife”.

Viking raiders and settlers played a respectably large, if not precisely respectable, role in early British history. A Viking king—the unfortunately named Cnut—even ruled England at one point in time. The majority of these escapades have been lost to time or the recesses of some university library, because, as one knows, English history only really began after they were conquered by the French.



Martin Biddle via National Geographic under Fair Use

Body Found in 1986 Excavation of the Site

# PyeongChang 2018 Olympics Recap



*Disclaimer: This was last modified on 22nd of Feb 2018. I suggest catching up on the last few days of the Olympics after this. There are still important events going on.*

The Winter Olympics are one of the cornerstones of Canadian athleticism. We always do well, and we are continuing to do well this year. As of the time of writing, we have 24 medals: 9 gold medals, 7 silver, and 8 bronze. This puts us at third with Germany (25) and Norway (35) ahead in total medal count, and third as well in gold medal count (Germany-Norway are tied at 13). Some interesting things are happening in the meanwhile: clean Russian athletes following the doping scandal are playing under the OAR (Olympic Athletes of Russia), and the joint women’s hockey team of North and South Korea are playing, the two countries having entered the opening ceremony under one flag. But let’s focus on Canada; we’ve been doing really well, so here’s a recap.

Our Olympic medal haul began on the 11th of February, where Justine Dufour-Lapointe took silver in Freestyle Skiing for the Ladies’ Moguls event with a score of 78.56, just 0.09 points behind the French champion Perrine Laffont. We did very well that day, also earning a silver and bronze from Max Parrot and Mark McMorris in the Snowboarding Men’s Slopestyle, and another silver medal in the Men’s Speed Skating 5000m. Ted-Jan Bloemen was just short of the first place finisher Sven Kramer from the Netherlands, but still raced very well.

On the next day, millions of Canadian fans’ hearts were won as the figure skating team took home the gold medal. The event team was composed of Patrick Chan, Gabrielle Daleman, Kaetlyn Osmond, Meagan Duhamel, Eric Radford, Tessa Virtue, and Scott Moir. Mikael Kingsbury also received a well-deserved gold medal in the Men’s Moguls, and Laurie Blouin of the Ladies’ Slopestyle snowboarding team brought another silver medal for our country’s total medal count. The following day was business as usual. We won the mixed doubles curling event thanks to Kaitlyn Lawes and John Morris, and also claimed two bronze medals, one from Alex

Gough from luge women’s singles, and Kim Boutin of short track speed skating 500m. A few days later on the 15th, Meagan Duhamel and Eric Radford took bronze in the figure skating pair skating event, our luge team took silver in the team relay, and the highlight of the day was Ted-Jan Bloemen’s 10000m figure skating Olympic record, earning another gold medal for Canada.

As the Olympics were reaching their halfway point, we took home some more medals. On February 17, Kim Boutin secured yet another medal after finishing third in the ladies’ 1500m short track speed skating event, and Samuel Girard took the gold in the men’s 1000m rendition of the event. The next day, the men’s ski slopestyle bronze medal was won by Alex Beaulieu-Marchand, barely behind the competition. Something interesting happened the following day in the men’s 2-man bobsled. The German and Canadian team actually TIED for first place, down to the hundredth of a second! We did this back in 1998 with the Italian team, and I’m all for sportsmanship and good competition. Plus, it kept us in the race with them for medal count. The next day, our hearts were won yet again by the dream team of Tessa Virtue and Scott Moir. The Canadian duo claimed gold in the free ice dance event. Fun fact: they began their training right here in Kitchener! We claimed yet another gold medal on this day: Cassie Sharpe in the ladies’ ski halfpipe, edging out the competition by more than three points.

As the Olympics flowed into its final week, we claimed two more medals on the 21st. The women’s bobsled team got third just behind USA and Germany, and Brady Leman won gold in the men’s ski cross. On the 22nd, Kim Boutin once again proved how good she is by taking silver in the ladies’ 1000m short track speed skating event. The men also took bronze in the 5000m relay in the same sport. Unfortunately we did have some heartbreak on this day. In a nail-biting shootout, we were just short of winning the women’s hockey gold medal. We were dominating for so long; in fact, the last time the Americans won was 1998, where they beat us.

Well that’s the recap; hopefully my medal count is right. Be sure to tune in to the rest of the Olympics. USA is out of men’s hockey so maybe we have a repeat gold situation set up. Congratulations to all the athletes; you make me really proud to be Canadian.

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## PC Intrigue: A Timeline



**RAFIQ HABIB**  
1B MANAGEMENT

The last five weeks for the Progressive Conservative Party of Ontario (PC Party) have been full of twists, turns, and more drama than most believed possible. With just over four months to go before a general provincial election in June, the airwaves have been dominated with scandal, accusations, and rumours galore. In case you've been living under a rock these last weeks, or have been buried under too many textbooks to catch the news, here's a full timeline of the most important events that have happened:

**Jan 24:** Two anonymous women accuse Patrick Brown of sexual misconduct. Among the claims is that Brown gave one of the women drinks while she was a minor and then asked her to perform sexual acts on him. Patrick Brown holds

a last-minute press conference to deny these claims outright, and vows to stay on as leader of the PC Party. During the press conference, Brown's chief of staff, campaign manager, advertising chief, and press secretary all tweet their resignations.

**Jan 25:** At 1:25 am, after a conference call with the PC caucus, it is announced that Brown will step down as leader of the PC Party.

**Jan 26:** Vic Fideli, the PC finance critic and MPP for Nipissing, is elected interim leader by the Progressive Conservative Caucus. The PC Executive Committee announces that a leadership contest will take place to determine a new permanent leader that will lead the party into the election.

**Jan 27:** PC Party President Rick Dykstra announces his resignation following sexual assault allegations dating back to 2014.

**Jan 29:** Doug Ford, former Toronto city councilor and the brother of late Toronto Mayor Rob Ford, announces his can-



DrRandomFactor via Wikimedia under CC BY-SA 4.0

didacy for the PC leadership from his mother's basement. He vows to fight the political elite and get rid of inefficiencies in the provincial government if elected.

**Jan 30:** Vic Fideli announces that he will not seek the permanent leadership, saying that he needs to dedicate all his time to "root out the rot" in the party so that the PC Party is the readiest to win the election and govern.

**Feb 1:** Christine Elliott, the former MPP for Whitby-Oshawa and current Patient Ombudsman for Ontario, announces her candidacy for the PC leadership. She believes that her prior experience as a MPP for ten years, two prior leadership campaigns, and time as a Healthcare Ombudsman make her all the more prepared to hit the ground running and be ready for the June election.

**Feb 3:** Vic Fideli announces that the PC Party has just 133 000 members, 67 000 less than Patrick Brown had claimed in 2017.

**Feb 4:** Caroline Mulrone, a high-ranking business executive and the daughter of former Prime Minister Brian Mulrone, announces her candidacy for the leadership of the party. She believes that her business experience and freshness to politics is what voters are looking for, instead of long-time politicians.

**Feb 5:** Tanya Granic Allen, the president

of lobbying group Parents as First Educators, announces her intention to join the PC leadership race. She believes that power must be brought back to grassroots volunteers and that the current sex-ed curriculum is unacceptable and must be revised to incorporate more parental control in education.

**Feb 7:** The first PC leadership debate is held. All candidates agree that a carbon tax should not be implemented and that the minimum wage must increase more slowly to avoid causing adverse impacts on small businesses. Granic Allen fiercely attacks Patrick Brown's actions during his time as leader, proclaiming that he consolidated power in his office and did not listen to the opinions of the grassroots volunteers in the party.

**Feb 14:** In a TV interview, Patrick Brown denies the sexual misconduct allegations, and continues by taking accusers to task on Facebook. He also suggests that he did not actually agree to the resignation, and that the resignation memo that was released was sent out by a staffer without his knowledge.

**Feb 16:** An audio tape of Patrick Brown agreeing to resign during his caucus conference call on January 25th is leaked to the media. Patrick Brown announces that he will file papers to join the new leadership election and reclaim his position to clear his name and win the election.



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Ex-PC Leader Patrick Brown is Seeking to Reclaim his Position



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Nominations for the Memorial Leadership Award can originate from student groups, faculty members, or other individuals. A Letter of Nomination and Letters of Support from colleagues, faculty, and others familiar with the nominee's accomplishments are extremely important and form the major basis upon which the Executive Committee of the Sandford Fleming Foundation will form its decision. Nominations must be submitted to the Foundation by August 31, 2018 and/or before the last day of the student's 3A term.

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# Point Vs. Counterpoint

## Should the University of Waterloo Continue to Give Out Your Class Rank?

POINT

COUNTERPOINT



**STONE HE**  
1B MECHANICAL

*Disclaimer: this does not reflect what I truly think about class rankings.*

Every end of the term, class rankings come out and students are given a chance to look at how well they did in comparison to their classmates. Now it is completely optional to look at your class rankings due to the amount of stress it places on the students when they find out that they did not place well in their classes. However, the class rankings should still be kept for several reasons. The class ranking can be combined with the graded mark on how well a student did during a term. Having a good standing means that some opportunities for exchange and graduate school may be opened. And to achieve these opportunities, a student needs to see the rankings to see whether they need to work on it or not. The Engineering department should continue giving out class rankings as it could give students an indicator of how they did compared to their classmates, which can be used for other opportunities and to help improve the study habits of students.

First of all, the class rankings give a clear indication of how a student does compared to their respective program. The class ranking is the only way for students to see how well they are doing in comparison to their peers in the program. Even if you did get a high average, it does not indicate what that average means in comparison to your class. In addition, most students come from different schools with completely different marking schemes. This means that an 80 in university is completely different from high school, and a ranking needs to be implemented to explain the full context of the mark. Even in other universities the marking scheme is different, which means that just a mark is not enough. Therefore, a number itself doesn't mean anything unless it is compared with another number.

Knowing your class rank can help indicate whether you get additional opportunities or awards or not. The class ranking is also important for international exchanges, as some exchange universities require students to have a certain ranking or percentile to do the exchange. In addition, it is possible that if a student is going into graduate school, a faculty member who is writing a recommendation

letter will have to access the rank and give an interpretation of it. There are some students who would want to pursue a graduate degree or international exchange but, without their rankings, they will not know fully if they are qualified to do so. The rankings can give a reassurance to students applying for these opportunities and can help students know what they need to do to meet their own goals. This also leads into my next point on how the rankings might improve the student's ranking in the next term, such that the student may get selected for exchanges and graduate school.

Class ranking can be reassuring to some students. Students who scored on the lower end of the spectrum or got lower than they desired can take this as a learning lesson and possibly improve on their study skills for the next term. Most students that come into Waterloo Engineering are some of the best in their classes. However, there are many high schools which inflate the student's grade, which sometimes places less importance on studying efficiently and more on getting the highest grades to get into university. Being on the bottom half of the class can be quite a shock, but it should be able to motivate some students to improve their study skills for the next term. In addition, even if you did or didn't meet your desired ranking, it could be a good thing to know how well you did in relation to your peers so you don't have to worry on which end of the ranking spectrum you place, because you will have the answer.

Even though the class ranking is a fairly controversial thing to be talked about, it is still necessary to keep this going. A student's mark usually doesn't indicate how the student is actually doing in terms of their school work. Some opportunities such as exchanges and graduate schools may require students to show their rankings. In addition, the rankings can help some students focus on improving their study skills if they wish to improve their standings in their class. Sometimes, it could be a relief to be able to see how well you did in comparison to your class. In conclusion, the class rank should be kept and be accessible to students at their choice. It is a choice to look at your rankings and this choice should still be available.



**HASAN AHMED**  
2N NANOTECHNOLOGY

Ah rankings, what I believe are one of the most toxic parts of an academic system. They serve very little purpose, and I don't believe we should even have them to be honest (at least, not publicly). Never had them in high school and that wasn't an issue. Especially now in Waterloo, there's no reason for a ranking to imply that you're "better" than another person. Try telling your next interviewer that you made Dean's Honours List (DHL); it won't impress them as much as saying you have research experience or programming co-ops at Facebook or whatever. Why do we still have them? It's not even as big deal as it seems to be. Let me preface this PCP by saying hey, if you've got good marks and made DHL or whatever, be proud of what you've done. But I'm also saying don't use it as your solo indicator and belittle others or feel overconfident. Besides, your actual marks are probably a better indicator. A 90 average is pretty impressive, but between terms, that could correspond to a #1 rank or a #12 rank.

I'll get the obvious stuff out of the way as to why I think we should abolish the ranking system. Your ranking doesn't determine how smart you are, and frankly, neither does your grade. It's good to keep up your grades for a variety of reasons (eg. grad school, scholarships, personal achievement, etc.) but that just means that your rank is a by-product of your marks. It's hard to shoot for #1 in the class or to make DHL; everything you do from the point of the semester's beginning will impact the result, adding enormous pressure on the student. That's why my advice is to just focus on your grades and do the best you can. Your rank will be a by-product of your marks.

Speaking of pressure, Waterloo's reputation for this isn't exactly unknown, especially when it comes to mental

health. We have tons of responsibilities: work for your next co-op, get good grades/side projects so you can nail the interview, then for co-op you have to search for a sublet, work term reports, the list goes on. I can only imagine someone dealing with all this stress finding out that they're close to the bottom of the class. There's a difference between "I got a 60% average" and "I got a 60% average and I'm ranked 80/100." It inputs the thought of 79 people being better than you. On the opposite side; if someone's high up they can build an ego. LUCKILY, I've never experienced this personally, but just a heads up you're not better than anyone because you made DHL. Good for you, now move on. We already get a bad enough rep for being cocky engineers. On a less salty note, you might be trying to graduate on DHL, which means at least two terms on DHL in your last six terms, adding pressure to make it to that top echelon of your class yet again. But hey, on the plus side, if you're #1 you get \$400. So you know, go for that if that's your game.

Besides, I think without standard deviations for the class average, the whole ranking system is thrown off. People with 1% average differences might be 10 spots apart, so the grade's obviously a better indicator of how they did. Again, at a school where people pretty much carve their own paths, a 10-rank difference literally means nothing. If you have an 80 average and are ranked 50/100, let's say, but the standard deviation is puny, and the person 10 spots above you has an 80.9, then you know it's not a big deal. It's comforting to know that it was a tight ranking. I did an experiment; I emailed all the profs after marks were made official and asked for some standard deviations and class averages. Of the responses that I got, the class averages were pretty decent, and the standard deviations were fairly small. I used this data to extrapolate these course averages to the class average, and by purely just "looking at it and drawing a conclusion", the class standard deviation isn't that big. So care about your marks, not the rank (something I'm going to preach until the end of time).

But still, I don't think they should be released at all. I think the people who made DHL should be privately contacted and the person who made the 1st place rank should also be rewarded the money privately. It makes more sense to me. 4th year rankings aren't released at the request of the departments, so why is it any different for the lower years? Probably the only reason we would need them at the 4th year point would be for graduate school applications. Via the UWaterloo website, "A faculty member completing a recommendation letter has access to the rank through the undergraduate office in that department. The faculty member can provide the interpretation of a fourth-year rank." They don't need to be available to the individual

I'd like to stress again that you should care about your marks. Whether it be you wanting to just pass or do really well, take care of them and be passionate about what you want. Live your life or something, you know how to do it better than me. However, I'm pretty openly anti-rank as you can tell, so don't be so harsh on yourself if it isn't what you want. Just do your best.

**Editor's Note:**

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

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Engineering Society since 1980



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# My Experiences at the Career Fair



**STONE HE**  
1B MECHANICAL

The P4E (Partners for Employment) Career fair was held in RIM Park, Waterloo on February 7, with more than 200 different companies participating. The organizations claim that the career fair was the largest of its kind in Canada, conveniently located right next to Waterloo's doorstep.

As a first year, I decided to go to the job fair just to check it out. This is just in case if I might have to find a job during continuous round and for future references. There were also students from Laurier, Guelph, and Conestoga, and

jobs from all fields such as engineering, business, science, and social services.

Since it was my first time going to this job fair (or any job fair at this level), I thought it was a good idea to bring a clip-board and wear something formal, mainly because the people in the picture of the fair from last year wore them. In addition, I would also have wanted to give an impression that I was not an awkward first year (I still gave that impression sadly).

On my way there, I have met a few people who were also going to the career fair with different purposes. One was almost graduating and needed to get a job for after graduation, while another first-year was also just checking out what a job fair is about. Whatever the reason, students and graduates go to the career

fair en masse.

Once I got there, I went inside the main building, where I was fascinated by the amount of students and employers inside. For most of the time, I was looking for any companies within my interests and who were hiring engineering co-op students at that time. I went and talked to several employers from different companies and learned quite a lot from each of them. During that time, I first heard that some engineering jobs were not the regular 9-5 jobs, but were more like contract jobs that require employees to travel across the world with short notice to do the job.

Along with the job booths, there was also a booth set up by the career services of the four universities and colleges sponsoring this fair. Since this was my first time going, I decided to visit the

career services to see what I could have done the next time that I come to a career fair (to be fair, I should have gone there first). I went to the Laurier booth (since all other booth was full) and gained more tips and advice for my next career fairs. I would recommend first-timers to get advice from your respective career services on how to act in a career fair environment.

It was a great learning experience for me, as it opened up my views on what I could do after graduation (if I stick with my program and degree). I would recommend people to go the next time this happens, which will be held on September 26 in the fall. In the meantime, good luck to all students who are currently looking for a job for next term.

## Til Death Do Us Blart



**DONOVAN MAUDSLEY**  
4B MECHANICAL

It's amazing to me how many podcasts are born out of necessity. One of my favourite casts, My Brother, My Brother and Me began as a way for three brothers to keep in touch more. Their thought process was pretty sound; do a weekly hour long skype call in which we try to make some jokes in the form of advice then post it to the 'net. They didn't think anyone would listen, but they were totally wrong. The three McElroy brothers have been doing MBMBAM for over seven years now and have spawned more podcasts than I want to talk about here.

Along the way the McElroy's made friends with the New Zealand comedy duo Tim Batt and Guy Montgomery who host the show the Worst Idea of All Time. This idea was to watch and review a bad movie every week for a whole year. They've done Grown Ups 2 and Sex and the City 2 and have moved on to We Are Your Friends.

In order to keep in touch with these new friends, a new podcast was born, Til Death Do Us Blart. The core conceit is that on American Thanksgiving annually until their death the 5 hosts will watch and review Paul Blart Mall Cop 2. Upon the death of a host a replacement will be sworn in, so that the show will continue infinitely.

This is sentence in which I tell you to go and read the plot summary for PBMC2 if you aren't familiar with the plot. Which you shouldn't be unless you're already a TDDUB fan because it's a bad movie. American Thanksgiving this year came with the third episode of TDDUB and it was a really good one. I started listening to the podcast last year, and decided to

watch PBMC2 before I got into the cast and watched it again a few days before episode 3 launched, in order to get the full experience.

This episode was really, really, good. It was a turning point in the series where the reviewers actually enjoyed the movie for the first time. This opinion is likely based on how they felt after their second episode, where they still reviled the movie. Some interesting things popped out. They thought that the jokes in the movie that land well really do stand up, and also knew where the weak points were. Some of the plot's failings were also addressed in on this third watch, such as how Maya Blart ends up in the heist's headquarters and the enormous amount of Chekov's guns throughout the first act.

In previous episodes of TDDUB there have been many "fan" theories thrown around. These include that there is a mysterious figure, dubbed the Shadow Man, who is trying to dismantle Paul Blart's life one piece at a time, and also that not a single frame of the Blart-centric comedy was cut from the movie while a ton of the heist plot was cut. There has also been a lot of commentary on the CGI in the film, which includes an extended shot of a laptop folding out into a ridiculous 5 screened monstrosity.

This episode brings some of these gags back with some more laughs. Trivia on the film's IMDB page now includes reference to both the Shadow Man and to another film which shows the heist in detail and features Blart only as a supporting character. My favourite part of this though was an email that the hosts' received about the CGI from an anonymous member of the CGI team. Apparently the original heist intro scene had called for a small laptop folding out into a larger multi-screened machine. The CGI team told executives

that this seemed a little ridiculous, and the executives responded by making the CGI order even more ridiculous. Gotta love management eh?

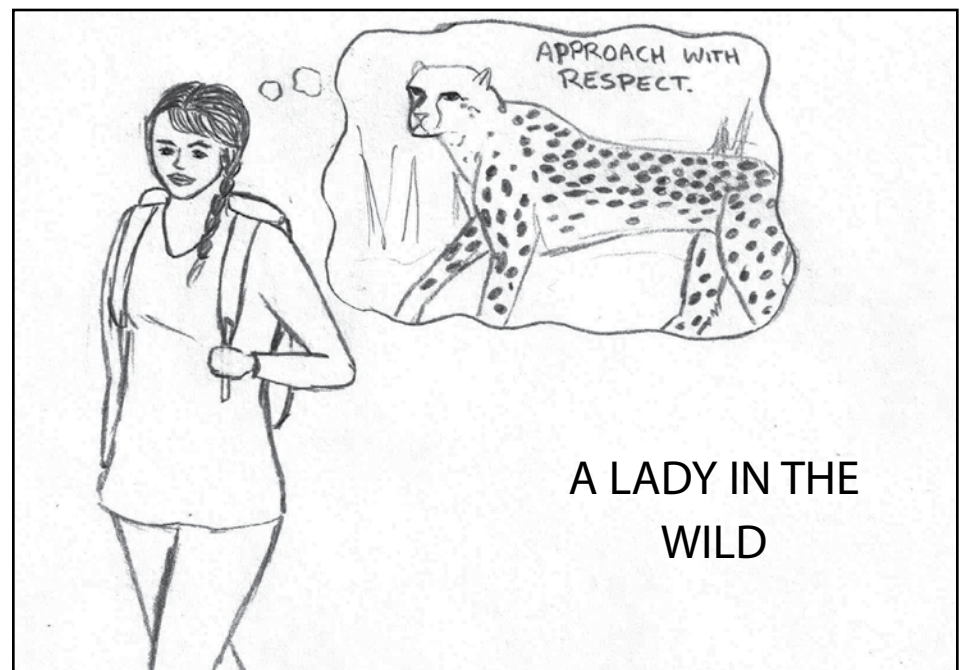
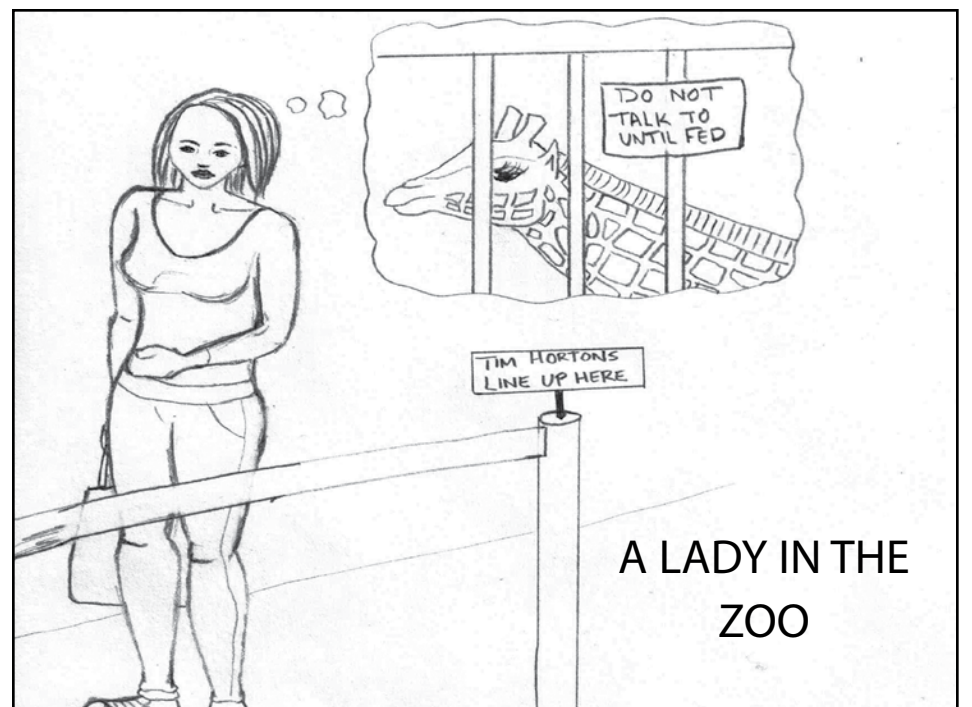
The highlight of this year's episode though was definitely the discovery of Blart Side of the Moon, which is when PBMC2 is synced to Pink Floyd's iconic Dark Side of the Moon. Griffin McElroy, the host who decided to try this, described it as a religious experience. Running with PBMC2 at 15% volume with subtitles on and just blasting Dark Side of the Moon in a dark room, almost an isolation chamber,

Griffin enjoyed the movie for the first time. Apparently the movies two acts are each exactly as long as one play through of the Dark Side of the Moon. Amazingly there are two scenes, one in each act, where Paul Blart visits a showroom of security equipment, and each of these scenes overlaps with Pink Floyd's Money.

I know that you get new podcast recommendations from everyone and every day, but I think you should be checking out TDDUB. I mean there's only one episode a year so don't tell me that you don't have time.

## So You Want To Ask Her Out?

The opposite sex is like animals in the zoo. If you don't know how they will respond give them space and only approach when the flight rather than fight mechanism is triggered. We call this the LADY ZOO.



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# Gun Control Discussion Arises After Florida Shooting



We are back once again with “Damnit Donald”, chronicling the absurdities and scrapes which have characterised every day of Donald Trump’s presidency.

## Gun Control

A devastating shooting at a Florida high school on February 14 killed seventeen people, reviving the heated discussion regarding gun control in the United States. Suspect Nikolas Cruz, age 19, has appeared in court for charges of premeditated murder.

Deputy Scott Peterson is the school’s resource officer; after investigation, it was determined that Peterson was on school premises, but stood outside the building during the attack. He has resigned, and it is unclear whether he will face charges. Speaking to reporters outside the White House later that week, President Trump called the officer a “coward”.

Florida’s governor is calling for law enforcement officers to be placed in every public school in the state.

Trump had a better idea: with characteristic logic, he suggested arming teachers as an alternative to gun control.

The National Rifle Association (NRA) gun lobby has long endorsed this as a solution, although it is a divisive topic (with good reason). According to a 2013 poll by the National Education Association, only 22% of teachers approved of this idea, while 68% were opposed. Furthermore, 72% said that they would not carry a gun even if the law allowed it.

In response to the criticism which inevitably followed this proposition, Trump took to Twitter, calling out “Fake News” outlets CNN and NBC, and qualifying his comments: “What I said was to look at the possibility of giving concealed guns to gun-adept teachers with military or special training experience... Highly trained teachers would also serve as a deterrent to the cowards that do this.”

On Wednesday the 21st, Trump held a White House event with forty students, teachers, and families of the victims to hear their ideas for gun reform. He also promised to look “very strongly” at the calls to arm teachers.

In other gun-related news, Trump signed an order on Tuesday the 20th to ban gun

bump stock devices. These accessories render a semi-automatic rifle as efficient as a machine gun, capable of shooting hundreds of rounds per minute. They can be purchased for as little as \$100, without requiring a criminal record check. They were used in the Las Vegas concert shooting last October.

The White House is willing to discuss the age limit for purchasing a gun, which is currently eighteen, according to spokeswoman Sarah Sanders.

Another topic of discussion is requiring more stringent background checks on potential buyers. Republican Senator John Cornyn and Democratic Senator Chris Murphy introduced a bipartisan bill after the Texas church shooting as a fix to the “nationwide, systematic problem”, which would increase the responsibility of federal agencies to thoroughly report background information on buyers and offer incentives for states to do the same. This bill was never passed onto Congress, but Trump is now willing to discuss it.

Despite Trump’s multitude of gun control reform claims, he was still touting the Second Amendment last Friday, exclaiming his love for gun rights which mark him as a true Conservative.

## North Korea

The US is imposing new sanctions on North Korea, bringing the apparent Winter Olympics truce to an end. The sanctions target “56 vessels, shipping companies, and trade businesses that are assisting North Korea in evading sanctions.” The majority of these are based in North Korea, although there are some in China, Taiwan, and other countries.

North Korea is already under sanctions from the US and other countries over its development of nuclear technology, which has not deterred them from testing missiles. Last year, they tested a long-range ballistic missile capable of reaching Washington, although it is unclear whether their nuclear weapons can be miniaturized to fit on a warhead.

Trump is calling these new sanctions the “largest ever”. In a news conference on Friday the 23rd, he threatened, “If the sanctions don’t work we’ll have to go to phase two—and phase two may be a very rough thing, may be very, very unfortunate for the world.” He did not, however, expand on what “phase two” may entail.

Most recently, the US imposed sanctions last November on North Korean shipping operations and Chinese companies which trade with them. The UN introduced meas-

ures to cut North Korean petroleum imports by up to 90%.

## CPAC

The Conservative Political Action Conference (CPAC) was held on Friday the 23rd in Maryland. Trump’s address was characteristically Trump.

He quickly decided to go off script, ignoring the teleprompter because the prepared message was “a little boring”, and delivered a speech reminiscent of the campaign days.

The inevitable mention of Hillary Clinton drew chants from the crowd of “lock her up”.

He bragged that his administration “has had the most successful first year in the history of the presidency”, touting tax cuts and decreased US participation in the Paris Climate Agreement and the Iran nuclear deal.

He engaged in some self-deprecating humour, catching a glimpse of himself in the screen and admitting, “I try like hell to hide that bald spot folks, I work hard at it.”

He pushed his newest gun reform idea, saying that an armed teacher would have “shot the hell” out of the attacker at the Florida high school.

He promised to protect gun ownership rights, despite the pledges he had made during the week, warning that the Democrats will “take away your Second Amendment, which we will never allow to happen.”

He also called the Democrats “totally unresponsive” for failing to reach an agreement over the DACA (Deferred Action for Childhood Arrivals) policy. He also mentioned The Wall, expressing the dangers of letting outsiders into the country via a metaphor. “The Snake” is a song about a woman who takes in a sick snake, giving it milk, honey, and a silk blanket, only to be killed by its poisonous bite. “You have to think of this in terms of immigration,” Trump urged as he pulled the lyrics from his pocket.

He adamantly called himself a Conservative: “Remember when I first started running...and people said you sure he’s a Conservative? I think now we can say I’m a Conservative. We have put more great Conservative ideas into use than perhaps ever before in American history.”

The North Korea sanctions were supposed to be a large focus of the speech. However, he did not mention them until the tail end of his 75-minute speech, when he decided to briefly return to the prepared comments.

If anyone felt the lack of Trumpisms in

their life, this address definitely filled that void.

## Mueller’s Special Counsel

Robert Mueller’s special counsel is investigating alleged Russian meddling in the 2016 election. Nineteen people have been indicted so far, four of whom are former Trump advisers.

On Friday the 23rd, Rick Gates, former campaign aide, became the third person to take a plea deal in Mueller’s investigation, joining Michael Flynn and George Papadopoulos. He pled guilty to conspiracy against the US and making false statements, admitting to lying to the FBI about discussing Ukraine in a March 2013 meeting in Washington. He had previously been indicted on more serious offences, including bank fraud and money laundering. He is accused of hiding more than \$3M of income and using it for “personal expenses, including his mortgage, children’s tuition,” and redecorating his Virginia home.

Gates says he will cooperate in “any and all matters” with the US special counsel inquiry. Mueller could petition the court for Gates’s sentence to be reduced in return for his full cooperation.

Paul Manafort, Trump’s ex-campaign manager, and Gates were indicted on multiple counts of tax and bank fraud. As Trump pointed out, neither of these were in relation to collusion with Russia, but that hardly improves the situation. The charges were concealment of more than \$30M of income from US tax officials; this money flowed through a \$75M offshore account. They are also charged with filing incorrect tax returns from 2010-2014.

The pair was first indicted in October for conspiracy to launder \$75M through an offshore account and illegally lobbying for Ukraine without first registering with the US government. At the time, both pled not guilty. Manafort continues to maintain his innocence, saying in a statement, “I had hoped and expected my business colleague would have had the strength to continue the battle to prove our innocence.”

Manafort resigned as Trump’s campaign manager in August 2016, after questions arose regarding his business dealings with pro-Russian politicians in Ukraine, although he maintains his innocence. Mueller hit him with a third indictment on Thursday the 22nd for secretly hiring former senior European politicians to lobby in the US for positions favourable to Ukraine. Earlier that day, the court denied Manafort’s request to modify the terms of his house arrest.



Carolyn Kaster via Politico under Fair Use

Trump hosts White House event in State Dining Room to discuss gun violence with students, teachers, and parents

# A New Team's Been Elected, But We Aren't Done Yet!



**ABDULLAH  
BARAKAT**  
PRESIDENT

Hey friends! I hope you all had a wonderful reading week; it was definitely a well deserved and much needed break. With reading week and midterms all over the place, I have not been able to get as much done as I would have liked, but here are my updates since the last time we chatted:

With the help of Mary Robinson, I have generated a report with recommendations of better ways to utilize some of the unused space within Engineering Buildings. Once we get recommendations from the Faculty Space Manager (Karen Dubois), these recommendations will be presented to the EngSoc Council for further feedback. Once that is done and we confirm what we'd like to see in each of these spaces, Mary and I will work on a plan for how we will obtain funding for these new purchases.

One thing that has been put on hold is

the plan for implementing an ramp on the entrances to the second floor of RCH. Plant Operations have not approved this as of yet, but are working with Karen Dubois and myself to see how we can make it a reality. In other news, the results of the faculty survey that was sent are in and we had 1275 responses, four times more than the previous survey had garnered. All of this information will go a long way in showing how our Faculty will focus their efforts moving forward, so thank you to everyone for completing the survey. Once the results become pub-

lic, they will hopefully be shared with all of you.

Lastly, I would like to congratulate the new Engineering Society 'A' Executive Team of Mariko Shimoda (President), Thomas Dedinsky (VP Academic), Andrew Dawson (VP Communications), Michelle Teplitski (VP Finance) and Emma Swarney (VP Student Life). The Society is in great hands, and I look forward to hearing about all of the great things that you will do!

That's all for this issue folks, thanks for sticking around. Til next time ;)

# Blood Drive and Wrapping up a Year of Conferences!



**CÉLINE O'NEIL**  
VP COMMUNICATIONS

A Waterloo delegation of eight first-years and three upper-years attended the First-year Integration Conference hosted by Lakehead University early in February. The conference connected first-year engineering students from across Ontario, and the weekend was packed with sessions on leadership, ranging from

professional engineering to inclusivity to involvement in student government. Even with the packed schedule, we were able to experience the unique Thunder Bay pairing of curling and Chinese food and tried to get a glimpse of the Northern Lights. Keep an eye out for updates and blog posts from the delegates about their experiences.

If this sounds interesting to you, but you weren't able to attend in your first year (or maybe you were and you just miss it!), the Engineering Student Societies' Council of Ontario (ESSCO) is look-

ing for hosts for upcoming conferences. If you're interested in chairing an Ontario engineering conference in 2019, such as the Annual General Meeting in June, the combined President's Meeting and Professional Engineers Ontario Student Conference in September, or the First-year Integration Conference in November, please reach out to me! We're looking for someone to put together a bid on behalf of Waterloo.

This year, ESSCO is organizing a blood drive competition between Ontario engineering schools. Donations between Feb-

ruary 17th and April 17th will count towards our total. Email a photo of yourself donating to [vpcomm.a@engsoc.uwaterloo.ca](mailto:vpcomm.a@engsoc.uwaterloo.ca), and let me know whether you're on study or co-op term. If you cannot participate, or if you'd like to do more, there is also a patch design contest for the event; contact me for more information!

On a parting note, good luck to Jack Anderson, Skylar Bone, Olsi Goxhaj, and Kien Tran, who will be representing Waterloo in Innovative Design at the Canadian Engineering Competition at Ryerson University from March 8th through 11th!

# Sponsorships and ECIF and More?



**MICHAEL  
BAUCHEMIN**  
VP FINANCE

Hey there folks! It's almost time for me to say goodbye as your VP Finance here on A-Society. Pretty soon you will be receiving your updates on all things dollaree-doo from Michelle Teplitski. I'm in the process of transitioning Michelle into her new role as VP Finance, and I know she's going to do a great job. We're all lucky to have such a vibrant, driven individual in the role moving forward. One day soon, she will replace me entirely.

But this is not that day!

The sponsorship application deadline

will have passed by the time this issue hits shelves, but the Sponsorship Committee will be meeting this Saturday to discuss funding allocations. Once this is done, I will be sure to update you all, both here and at council, on the results. Most terms we get funding applications only from Student Design Teams, but that shouldn't stop you from inquiring or applying in the future.

The Engineering Capital Improvements Fund (ECIF) is used to support lasting capital improvements to student space and services in the Engineering Society. This term, there is approximately \$10 000 of funding available to be allocated on March 20th at the final Board of Directors meeting of the term. In the past, ECIF has funded a number of purchases, such as furniture for the

POETS patio, a new projector for POETS, a drum kit, speakers and lighting equipment, and a bike repair stand. The ECIF funds are allocated by the Board of Directors and any student is able to submit a proposal for the fund, at any time. Applications for the ECIF can be submitted at [bit.ly/ECIFProposals](http://bit.ly/ECIFProposals). The deadline for applications for Winter 2018 is March 18th at 11:59PM. If you are interested in learning more about ECIF, please email me at [vpfinance.a@engsoc.uwaterloo.ca](mailto:vpfinance.a@engsoc.uwaterloo.ca).

I will also be submitting a proposal to the Federation of Students' own Student Life Endowment Fund (SLEF) for new furniture for POETS in the coming few weeks. As you may know, Katie Arnold, BSoc's VP Finance-fit-President, first initiated this last year when she re-

quested and received 3 new couches for POETS. (They're the nice ones in there with a different design.) SLEF applications are accepted once per year and Katie developed a plan to bring all new furniture to POETS, replacing the worn, old furniture we have in there currently. She also donated the old furniture to Engineering Student groups on campus, and I (or more likely Michelle) will be doing the same, so keep an eye out for POETS furniture donation applications within the year (once we receive the new furniture).

Finally may you recover speedily from the horrors of midterms. You can find me in the EngSoc Office in CPH 1327 Wednesday mornings or at [vpfinance.a@engsoc.uwaterloo.ca](mailto:vpfinance.a@engsoc.uwaterloo.ca). Thanks for sticking with me this far. Until next time!

# Final Stretch and Other Updates



**PAT DUONG**  
VP ACADEMIC

Hi all! I hope your reading week went well. Over the next month and a bit I'll be wrapping up my role as VP Academic and transitioning over to my successor Thomas Dedinsky, the VP Academic-Elect. It'll be an interesting time to transition as there is so much change happening on campus.

## Resume Rescue

Can you believe Resume Rescue is turning 2 years old? As such, it is time to re-evaluate and get feedback on the services. Please reach out with any feedback and/or suggestions on what you've liked and not liked about the system, and what we should continue or should look into trying! We're always looking out for ways to best help our students. Shout out to Megan Town who's been running it this term.

## Exam Bank

Exam Bank is a grey area with re-

spect to university policies and it's usage. We're working on brainstorming a new system, which is pretty open ended. We're looking to work with the faculty, students, and Engineering Computing. So, please let me know if you have ideas or suggestions!

## Co-op Fee

CECA (now called CEE), is continuing to look into the co-op fee and its structure so, hopefully, we'll hear more about what changes may happen and an increase in student engagement on the issue. Let me know if you have concerns about it.

## Teaching Awards Due March 9th!

[www.engsoc.uwaterloo.ca/about/awards/waterloo-engineering-society-teaching-excellence-award/](http://www.engsoc.uwaterloo.ca/about/awards/waterloo-engineering-society-teaching-excellence-award/)

Nominate great instructors (professors, lecturers or laboratory instructors) for the Engineering Society Teaching Excellence Award! We award professors based on a mixture of quantity and quality of submissions. Support your teachers!!! Especially if they have: 1. Employed non-conventional teaching techniques, 2. Allowed opportunities for

experiential learning, 3. Showed a commitment and dedication towards ensuring academic success for our students.

Note that instructors must be part of the Engineering Faculty (This does not include most MATH or PHYS instructors).

Any additional questions should be forwarded to the Teaching Award Committee at [teachingaward@engsoc.uwaterloo.ca](mailto:teachingaward@engsoc.uwaterloo.ca).

## OSAP & Minimum Wage

Co-op has looked into the effect of minimum wage increase. They actually reported an increase in employed students in the short term, but stay slated for any updates. OSAP is also looking to see how the minimum wage impacts parental income and OSAP allocations. Let me know if you're interested in hearing more.

## Engineering Change Lab

[www.engineeringchangelab.ca/en/home/](http://www.engineeringchangelab.ca/en/home/)

I recently have gotten involved with an evolving movement called Engineering Change Lab about furthering the engineering profession beyond traditional

problem solving. One of the initiatives under the ECL is around post-secondary engineering education, how to make it more applicable to industry, and more aware of technological stewardship and responsibility. If you know any educational initiatives that your department or the faculty are doing, feel free to pop me a message.

Have thoughts/opinions/concerns on the topics above? Or anything academic/co-op related? My office hours are Fridays 11:30 am - 1:20 pm in the Orifice or drop me an email at [vpacademic.a@engsoc.uwaterloo.ca](mailto:vpacademic.a@engsoc.uwaterloo.ca). Cheers!





# HAHAHA You Thought You Could Get Rid of Me



**MARIKO SHIMODA**  
VP STUDENT LIFE

Guess what?? You thought I was leaving didn't you.... WRONG. I am here to stay so watch out world. The terror I inflicted as VP Ludent Stife is nothing compared to the TORNADO I WILL BRING AS PRESIDENT. From now on, you must exclusively refer to me as

Madam President.

Jk, tbh I am very excited to have been elected as President for the next A-soc exec terms. I'm nervous I'm going to mess everything up and accidentally destroy the society single-handedly, but I have my new fantastic team to save me.

I am looking forward to new adventures, new changes, and new improvements as your President. However, if you feel I am doing an absolutely reprehensible job feel free to use the #NotMyPresident to harass me.

In other news as your Ludent Stife, I want to first of wish Abdullah, our fearless leader, a very happy 24th birthday (old, right?). It's a good thing he keeps his hair in a tight buzz cut, or we'd start to see his grays coming in.

Some rad things to look forward to on campus: PAINT NIGHT w BEVER-ages!!!! Coming up soon, you can paint away your stress and relax with some alcohol (this is a licensed event).

EngPlay and Semi-formal are also rapidly approaching so make sure you

keep an eye out for tickets!!

Also congrats to the January directors of the month: Peter Dye (he made an amazing UNIX workshop which had a FANTASTIC TURNOUT) and Mathan (single handedly put together an amazing Tubing Trip).

Keep up the great work everyone. I hope everyone's having a good term. I'm really stressed about everything and life in general, so if you relate and need someone to talk to, reach out to me! I'm always down for new friends.

## Coming Next Week to a Classroom Near You...

**CLAIRE HAMILTON**  
**PAT DUONG**  
**GORDON STUBLEY**  
COURSE CRITIQUE TEAM

Hey engineers, it's that time of the term again! With Course Critiques just around the corner, here are some things to get you up to date. Engineering will again be using UW's course evaluation platform, Evaluate (evaluate.uwaterloo.ca), for the majority of your course evaluations. Of the 22,415 questionnaires being generated this term, less than 600 are paper; that's over twenty-one thousand sheets of paper that we don't have to consume, and that's amazing! There

is another very good reason for moving to electronic evaluations besides just saving paper. It's the first step toward a new comprehensive evaluation system that will provide instructors of varied course components—labs, projects, seminars, lectures, team-taught, online, and other types of courses—with meaningful student feedback. But without reliable student participation, progress toward this new system is at risk; if response rates drop, results lose meaning and everyone will lose trust in the process.

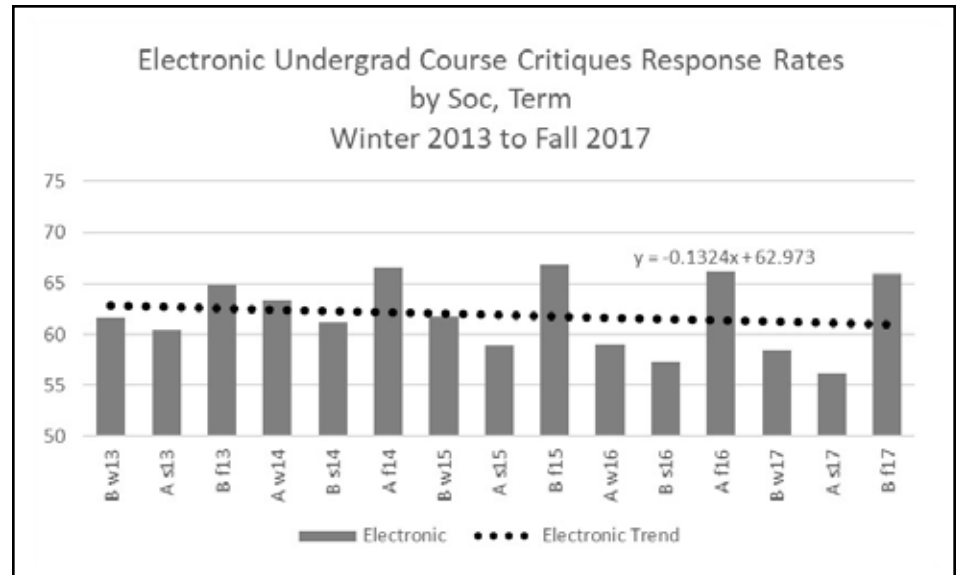
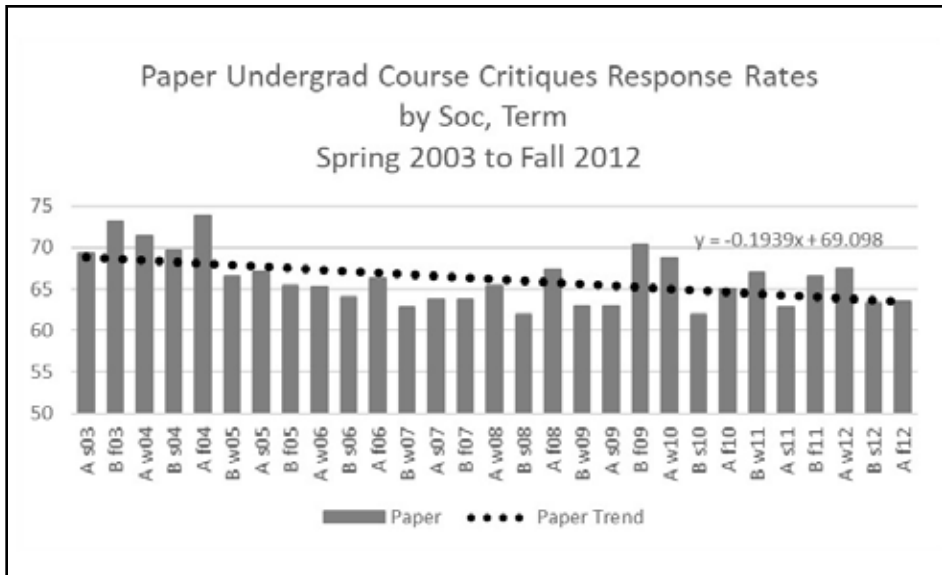
Below are a couple of nifty charts to show you how our response rates have changed in both the paper and electronic

delivery methods. It's a fact that student feedback is critical to teaching development. Your input is very much needed and appreciated by your instructors, your department, and your faculty, and especially by future Engineering students. With both paper and electronic delivery, we see a clear downward trend in response rates; for some reason, over time students have felt less inclined to complete their Course Critiques. The last time A-Soc was on campus, we had our lowest response rate EVER at 56%—we hope that this term sees more participation.

Overall the average response rates for paper and electronic delivery aren't that

different: with paper delivery it was 66% (N=29) and in electronic so far we're at 62% (N=15). So the system isn't broken, but we definitely need your help to keep making progress toward a comprehensive electronic evaluation system!

Between March 5 and 16, your professors & instructors should give you class time to complete Course Critiques electronically. Make sure you find out from them when you'll be given class time so that you can bring your web-enabled phone, tablet, or laptop to class and complete your Course Critiques. And please, be sure to complete all of your Course Critiques—future engineers are counting on you!



Upcoming Events Calendar							
<b>Wednesday Feb 28</b> EngSoc Council 3 5:30 - 7:30 PM E5-3101	<b>Thursday Mar 1</b> Hot Chocolate by EWB 11:30 AM - 1:30 PM CPH Foyer  Beginner Photography Workshop 6 - 7:30 PM	<b>Friday Mar 2</b> Genius Bowl 5:30 - 8:30 PM POETS  Lan Party 6:30 - 11 PM QNC 1502  Rock Star Karaoke 9 PM - 1 AM The Bombshelter Pub	<b>Saturday Mar 3</b> Rock Climbing Trip 10:30 AM - 1:30 PM	<b>Sunday Mar 4</b> Dungeons and Dragons 1 - 4 pm POETS	<b>Monday Mar 5</b> Charity Grilled Cheese 11 AM - 2 PM CPH Foyer  EngiQueers 6 - 9 PM POETS	<b>Tuesday Mar 6</b> Board Game Bonanza 4 - 6:30 PM POETS	Check out up-to-the-day event postings on the EngSoc website at <a href="http://engsoc.uwaterloo.ca/event-calendar/">engsoc.uwaterloo.ca/event-calendar/</a>
<b>Wednesday Mar 7</b> Career Fair 10 AM - 1 PM SSDC  EngProv 7:30 - 9 PM POETS	<b>Thursday Mar 8</b> Hot Chocolate by EWB 11:30 AM - 1:30 PM CPH Foyer	<b>Friday Mar 9</b> Free Purple Pankcakes 10 AM - 12 PM CPH Foyer  Technical Skills Workshop 1 - 4 PM  Euchre Tournament 6 - 9 PM POETS		<b>Sunday Mar 11</b>	<b>Monday Mar 12</b> Charity Grilled Cheese 11 AM - 12 PM CPH Foyer  EngiQueers 6 - 9 PM POETS	<b>Tuesday Mar 13</b> Board Game Bonanza 4 - 6:30 PM POETS  Healthy Coping Mechanisms 5 - 8 PM POETS	

# Falcon Heavy Launch Massive Success



**CAMERON SOLTYS**  
4B MECHANICAL

SPACE CAM

On Tuesday, February 6, SpaceX's new heavy-lift rocket, the Falcon Heavy, took off for the first time. The event reached international headlines, especially because of its unique payload: SpaceX and Tesla CEO Elon Musk's red Tesla Roadster.

## The Roadster

The payload on the Falcon Heavy is one of the biggest talking points of the recent launch. Looking at the photos of the car, complete with its "Starman" mannequin and a distorted reflection of Earth off the vehicle's door panel, is a little bit reminiscent of the moon landings: a photo that spreads across the world, hopefully inspiring countless youth to pursue careers in engineering or astronomy. Surely that is a noble result worth celebrating.

There has been a large amount of cynicism with the stunt Musk has pulled with this first launch. Obviously putting a Tesla on the first Falcon Heavy is a massive advertising boon for both SpaceX and Tesla. It is probably a huge boost to Musk's ego. (Although, so is having your name being synonymous with two of the most well-known and well-received companies in the world.) It is also probably true that SpaceX could have choked the rocket full of scientific instruments and CubeSats at steeply-discounted rates. However, there are good reasons to not do any of those things.

There is a precedent for not launching any important payloads on the first launch of a new rocket system. One of the Falcon Heavy's biggest competitors, the Delta IV Heavy, had a demonstration payload called "DemoSat" and two scientific microsatellites for its first launch; DemoSat did not reach its expected orbit and the two microsatellites were put into such a low orbit that they deorbited almost immediately. Falcon 1, SpaceX's first satellite, contained a simulator mass when it finally achieved orbit. The first Space Shuttle, Enterprise, never flew in space; it was launched from a Boeing 747 to test aerodynamics. There is a long history of rockets launching insignificant or dummy payloads, especially with entirely new and revolutionary designs. While, in retrospect, a productive payload could have been taken to orbit, there was a huge amount of risk with the first launch of the Falcon Heavy.

Another reason for SpaceX to launch their own payload, as opposed to someone else's, is that, unlikely with any payload



SpaceX via Wikimedia under CC0

they were likely to find, the car is off to Mars. This is in line with SpaceX's ultimate mission of reaching other planets per their website: "The company was founded in 2002 to revolutionize space technology, with the ultimate goal of enabling people to live on other planets." That being said, the car is in a Mars-crossing solar orbit, not a Mars orbit. A Mars orbit would require a rocket burn to slow the vehicle down to be captured by Mars' gravity, something the Falcon Heavy's upper stage cannot support; instead, it will orbit the sun indefinitely, bouncing between Earth's orbital radius and the asteroid belt.

## The Rocket

The Falcon Heavy is a marvel of engineering. It is currently the largest heavy-lift rocket in existence, capable of taking 64 tonnes to low Earth orbit. It consists, more or less, of three Falcon 9 rockets strapped together. The two side boosters fall off shortly before the middle booster. Then, just like the Falcon 9, the boosters fire up twice more to land back on land. In fact, both of the side boosters used to launch the Falcon heavy are "flight-tested" ex-Falcon 9 first stages.

The central booster burns for a little bit longer than the side boosters because it throttles down. Then that booster too detaches, with the upper stage continuing on to orbit. The main booster can land on a drone barge and be brought back to port

for re-use.

Saving either the side boosters or the main booster takes fuel, since the boosters have to return the way they came and then slow down for the landing. As a result, saving any booster reduces the performance of the rocket. However, since not every launch will use the full capability of the rocket, this will frequently not be an issue. Other configurations, such as landing the side boosters on barges or making the entire rocket expendable, are also possible.

On this first launch, the two side boosters successfully returned to the coast, setting down in perfect synchrony on neighbouring landing pads. The central booster was expected to land on a drone barge, but two of its three engines failed to fire, causing it to crash into the water 100 m away. While successfully landing all three boosters would have been a crowning achievement, it's hard to see it as a failure: SpaceX was only 2/3 more successful than any of their competitors at being reusable on this particular launch.

The most spectacular thing about the Falcon Heavy—and the Falcon 9, for that matter—is the price. The competition to these rockets cost hundreds of millions of dollars. SpaceX charges about \$62 and \$90 million for its Falcon 9 and Heavy, respectively. Even ignoring reusability, it is clear that SpaceX has a huge competitive edge. Since most of the cost of launching

a rocket is in the rocket, not the fuel, the reusability offers incredible opportunity for lucrative profits or lower prices. While every satellite operator can benefit from lower costs, companies and individuals with the goal of commercializing space, like asteroid miners, are wondering if these low costs are going to spark a revolution in their industry.

## The Language

One of the strangest things about following SpaceX is the way that the language and jargon around space travel is changing. The most obvious case is that the cost and payload capability of a SpaceX rocket is not just a straight number anymore. Instead, clarifications like "fully reusable" or "fully expendable" have to be appended, even though the rocket does not change one bit. Another is that the engineers at SpaceX have, in some sense, co-opted the phrase "flight-tested" to refer to their reused equipment. That once referred to systems that had been successfully flown on a previous mission, not using the same equipment over and over again. These days, at least at SpaceX, they have to clarify which meaning is intended.

If the Oxford English Dictionary adding LOL and OMG to its database was worth making international headlines in 2011, one company changing the language a multibillion dollar industry uses is worth paying attention to.

# Elon Musk Leaves Board of OpenAI



**RAEESA ASHIQUE**  
3B ELECTRICAL

Artificial Intelligence is a hot topic these days: while its development is exciting, preemptive damage control is not currently in place, and must definitely become a topic of discussion.

Artificial General Intelligence (AGI) entails human-level intelligence: an AGI machine matches human performance in any intellectual task. Human-level AI has the potential to be very dangerous; it is impossible to predict its behaviour.

Stephen Hawking, Stuart Russell, and Elon Musk are among those who believe that

advanced AI is humanity's biggest existential threat. In July 2017, Musk urged the UN to act before a killer robot arms race ensues. In August, he said that AI poses a bigger threat than North Korea; this comment was made even after the heated exchange between Donald Trump and Kim Jong-Un made the possibility of a nuclear missile attack feel very real.

Elon Musk and Sam Altman, along with other investors, founded the company OpenAI in October 2015, pledging \$1B to the cause. It is a non-profit research company intending to ensure a positive long-term impact on humans of AI development. "OpenAI's mission is to build safe AGI, and ensure AGI's benefits are as widely and evenly distributed as possible. We expect AI technologies to be hugely impactful in the short term,

but their impact will be outstripped by that of the first AGIs."

OpenAI's full-time staff of sixty researchers and engineers has the goal of conducting research to influence the conditions under which AGI is created. Computer visionary Alan Kay says, "The best way to predict the future is to invent it." They publish open source software tools for aiding AI research, and blog to communicate their research. OpenAI believes in sharing information, rather than keeping it private for individual benefit, unless there arises a safety concern in the future.

OpenAI recently contributed to the Malicious Use of Artificial Intelligence report, warning that AI would be exploited by rogue states, criminals, and terrorists. They cited three potential threats which could arise if

AI fell into the wrong hands: drones used as missiles, fake videos manipulating public opinion, and automated hacking.

On February 21, Elon Musk announced his decision to leave the board of OpenAI, although he will continue to donate and advise the organization. The cited reason was eliminating a future conflict of interest as Tesla focuses more on AI. At the same time, the company announced new donors: video game developer Gabe Newell and Skype founder Jaan Tallin.

This means exciting things for Tesla as they begin moving towards level 5 autonomy. A level 5 autonomous vehicle requires no input from its human passenger, other than setting a destination; it can completely fill the functionality of a human driver. Currently, no vehicle has reached this level of autonomy.

# So You've Tanked Midterms and You Don't Know What to Do



**CAMERON SOLTYS**  
4B MECHANICAL

Hello fellow exhausted engineering student! Hopefully you found some time to rest during the wonderful reading week. Unfortunately, many of you—first years especially—no doubt spent the week checking Learn for midterm marks and worrying.

Fear not! You are not alone! You are not the only one in your class who is worried, or thinks, or is absolutely 100% certain that they flunked the midterm, are the worst in the class, and should drop out of engineering because they don't belong here. To put the lighthearted exaggeration aside for a moment, people get stressed and feel like they screwed up every year and every term, especially around Hell Week. They are, generally speaking, wrong.

The first thing to say about midterms is that, typically, they are not worth a tremendous amount of your mark. Coming from high school, it might be scary to see midterms worth 25 or even 35 percent. However, that percentage is not enough to dictate the outcome of the course. Typically, you can't fail a course until the 50%+ end-of-term final. While that does, of course, put a lot of pressure on the final, at least you have a reason not to give up: you can absolutely turn this course around if you can understand the material for the final.

Now that you are, I hope, placated that the world is not ending (until the final) the question becomes: what should I do? Doing nothing different will probably result in you getting the same mark on the final as you got on the midterm, so you need to change something if you're not happy with your mark. Unfortunately, the answer to that question is: "it depends".

## Lake of Bays Brewing Co.



**DONOVAN MAUDSLEY**  
**TRISTAN KUEHN**  
3A MECHANICAL  
3A SYSTEMS

BROSKIES ON BREWSKIES

Welcome to a very special edition of Broskies on Brewskies. This term we're doing special issues devoted to breweries rather than the freestyle issues we've done before. This issue we're pretending to visit the Lake of Bays Brewing Company, one of our favourites. We discovered the Lake of Bays brewing company back in Fall 2015 when we did an issue on amber ales and tried the Spark House Red Ale. This might have even been our first 5/5. Ever since then we've been big fans of any Lake of Bays beers. This issue we tasted four of their beers so that you don't have to.

First up was the seasonal offering A Doppel Do Ya, a doppel weizen (double wheat beer) made specifically for the winter months. This beer is smooth and is definitely a wheat beer, with that distinct taste and feel similar to an Erdinger Weisbier. It's sweeter rather than bitter, with hints of caramel (noticed by me) and banana (noticed by Tristan). Overall we dug this beer. We tasted on a cold reading week night and it fit the evening very well. We gave this beer 4/5, but were ex-

pecting more from the remaining beers. It really does depend. Every single person had different needs. Every single person that did worse on their exam than they wanted did so for different reasons. Every single person responds differently to different study strategies. I believe that the proper study strategy is fundamental to academic success, and that the only person who has the time, ability, or need to figure out that strategy is you.

To start with, there are a multitude of services on campus that can help you with whatever problems you are having. If you don't know what your problem is, they can help you discover that too. Below are just a couple of those resources:

- **Engineering First Year Office:** they can help first years with study skills, academic advice, and—most importantly—the places to go for more help.

- **WEEF TAs:** If you are in first year and even think they may be able to help, go see these fellow undergraduate students. They are specifically instructed to not ever look busy so that they are approachable and available, which is great. The downside is that they are super bored when no one is around so their top wish in the world is that someone would come talk to them.

- **Your Course TAs:** Your Course TAs are there to help just as much as the WEEF TAs. They don't get a kick out of writing big red circles on your reports; they want to help you get it right so they can save on red ink and, more importantly, help you learn about the field they've dedicated their lives to.

- **Your Professor:** While it depends on the professor, they are typically very available and willing to help you. Between their office hours, after classes, and scheduling a special appointment, you should be able to find a time to meet with them. Just a side note (and one that

also applies to the TAs too): it's helpful to come with well-formed questions and a clear understanding of what you're stuck on. It makes the process much smoother and easier, and it's always nice to know that the student didn't just give up immediately.

- **Student Success Office:** A lot like the First Year office, but for all faculties and all years, and with even more resources. They offer similar study skill and academic advice, but also peer tutoring, success coaching, etc. Plus, just like the First Year Office, if they can't help you then they know who can.

The second part of this is study skills. As mentioned above, there are a bunch of resources that can be used to help you learn study skills. The most important thing to remember, however, is that what works for one person will not work for others. If you're stuck, I would recommend trying out a new strategy or two and see what seems most effective. Make your own strategy. Combine strategies for different classes, depending on the course material, content, presentation method, and your aptitude for the course. With that being said, here is some inspiration in the form of strategies I have used or heard of others using:

- Do every practice problem before the tutorial, then go to the tutorial to figure out your mistakes.
- When the professor solves a problem in class, don't copy them: race them to the finish and see if you get the right answer.
- Do the first and last problem in a problem set to assess if you know the material or need to do more.
- Rewrite all your notes every week on Friday night (bonus: you get concise, rewritten notes for studying and future reference).
- Work at home, where you can stretch out and be comfortable.
- Work in a computer lab, where you feel pressure to work and not goof off.
- Set a regimented schedule for

- Set specific length breaks every hour or half hour.
- Work until you get bored, take a walk around the building, then get back to work.
- Accept that a particular quiz, assignment, or midterm is not worth studying intensely for, and develop a plan to do better on other assignments in that course instead.
- Study by teaching a difficult concept to a friend who also doesn't get it. Don't have a friend in need of help? Teach your non-program friends, your high school friends, your parents, or even yourself in the mirror.

Again, all the ideas above are just that: ideas. I would encourage you to figure out what works for you and why. Remember, the time you take to do this now will pay major dividends in the form of better marks and more free time for the next half decade of your life.

Do you trust me, Illumnus?

If we do not act soon, we will no longer be able to crush their spirits!

Do you trust me, Illumnus?

Yes

GET A KNIGHTHOOD IN

- BUCKLE UP MANAGEMENT
- INNOVATION
- SYSTEMS DESIGN ENGINEERING

In just three years, they are demanding fair wages...

\$30/hr

ANY JOB AT THIS POINT

YE OLDE NATIONAL SHOPPE COFFEE

and water that doesn't contain human waste.

Do you trust me, Illumnus?

Do you trust me, Illumnus?

GET A KNIGHTHOOD IN

- BY NEW GRADUATION REQUIREMENTS
- FORFEIT YOUR DESIRES AND PERSEVERANCE

GET A KNIGHTHOOD IN

- BY NEW GRADUATION REQUIREMENTS
- FORFEIT YOUR DESIRES AND PERSEVERANCE

GET A KNIGHTHOOD IN

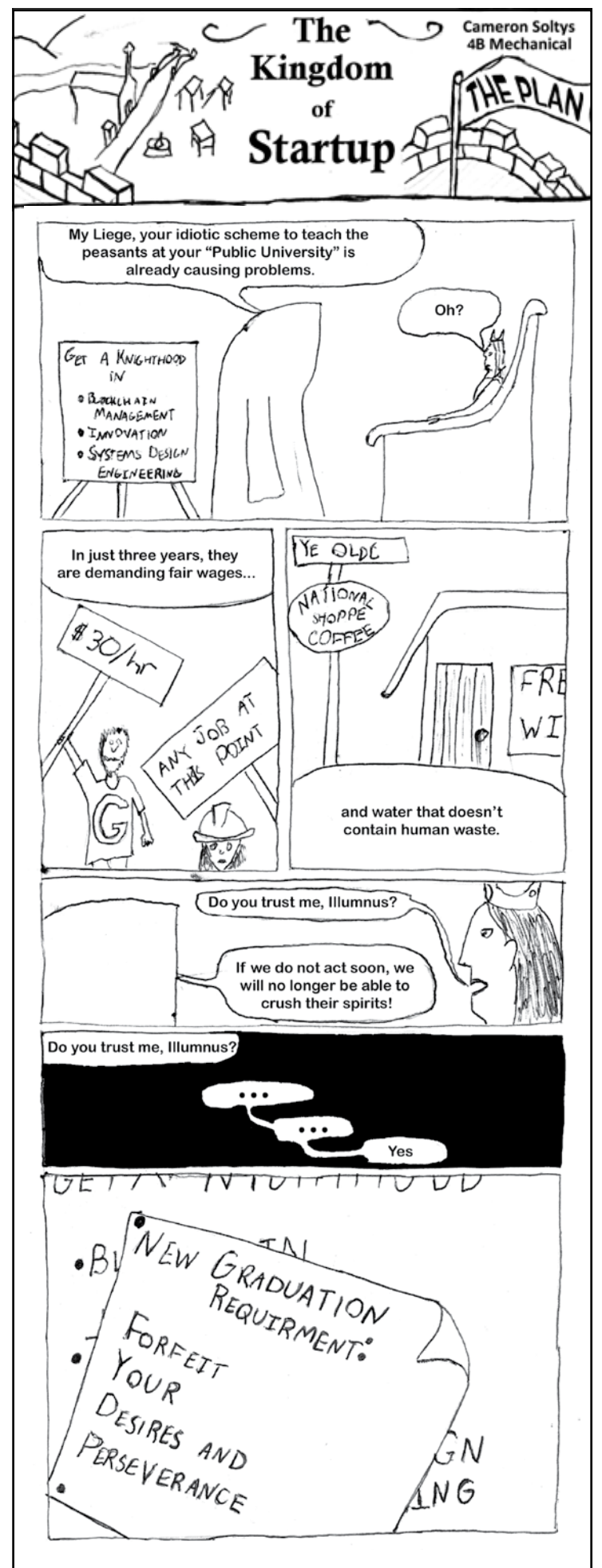
- BY NEW GRADUATION REQUIREMENTS
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GET A KNIGHTHOOD IN

- BY NEW GRADUATION REQUIREMENTS
- FORFEIT YOUR DESIRES AND PERSEVERANCE

GET A KNIGHTHOOD IN

- BY NEW GRADUATION REQUIREMENTS
- FORFEIT YOUR DESIRES AND PERSEVERANCE



# The Iron Crossword

## Special Units

**CAMERON SOLTYS**  
4B MECHANICAL

1	2	3		4	5	6		7	8	9		10	11	12
13				14				15				16		
17			18					19				20		
		21				22				23				
24	25					26				27			28	29
30					31					32			33	
34			35	36						37	38	39		
		40								41				
42	43									44			45	46
47						48	49	50	51				52	
53			54	55		56					57	58		
		59				60					61			
62	63					64				65			66	67
68				69						70			71	
72				73						74			75	

**ACROSS**

- 1: British public broadcaster (abbr)
- 4: Outdoors supply store
- 7: Stomach acid
- 10: Used with an electric guitar
- 13: Agent of Record (abbr)
- 14: Another name for a multimeter (abbr)
- 15: Assessment of environmental impact of a project (abbr)
- 16: Famously British drink
- 17: Response to a statement of opinion (2 wd)
- 21: View
- 22: \_\_\_-running, common prohibition activity
- 23: "He cut me off and \_\_\_ the red!"
- 24: \_\_, steady, GO!
- 26: We \_\_\_ the engineers!
- 27: Perfume extracted from rose petals
- 30: Indicate agreement
- 31: \_\_\_ of '69
- 33: Possessed by him
- 34: Second-largest city in Syria

**DOWN**

- 37: French for "heart"
- 40: Used to control a horse
- 41: Appliance of cookies and pies
- 42: Norse warrior
- 44: Give forgiveness
- 47: Negative, especially contrasted with a positive
- 48: Harmful at sea level, protective in upper atmosphere
- 52: Distinct region in time
- 53: Marks of a bygone civilization
- 56: 3 in Roman Numerals
- 57: Less common
- 59: Grey \_\_\_
- 60: Lossless image format
- 61: Sphere
- 62: Assassin of a top-hat US president (3 wd)
- 68: Feed for animals and humans
- 69: Scoring system for chess
- 70: False statement
- 71: Water! Water! Water!

- 72: \_\_\_ Doubtfire
- 73: Content expansion for a video game (abbr)
- 74: Service used for text messaging
- 75: \_\_\_ the line

**DOWN**

- 1: Measure of intoxication (abbr)
- 2: \_\_\_ Radley, friendly shut-in
- 3: Christian religious warriors (2 wd)
- 4: Pirate word for "friend"
- 5: Mitochondrial \_\_\_
- 6: Group up, especially livestock
- 7: Greek messenger of the gods
- 8: Tobacco product (informal)
- 9: \_\_\_ Secord of 1812 fame
- 10: The US Army's gun-with-wings (3 wd)
- 11: Two-and-a-half \_\_\_
- 12: Hit, especially on the back
- 18: Producer of a school survival guide
- 19: Emanation, especially of an intangible effect
- 20: Placed at a front door
- 24: Single-stranded info molecule (abbr)
- 25: When a manufacturer stops supporting a product (abbr)
- 28: Atmosphere
- 29: Tool for tracking website content updates
- 31: Large ex-Belgian African colony
- 32: Improves a gun's accuracy
- 35: Province of Ann and potatoes
- 36: "Stick a \_\_\_ in that"
- 38: Female gametes
- 39: BTU/hr/W (yes, this is an industrially-used ratio) (abbr)
- 42: Used to play video tapes
- 43: Informal debt
- 45: Metal-containing rock
- 46: National Association of Realtors
- 49: Maker of disposable sandwich bags
- 50: Pig sound
- 51: \_\_\_ Gresley, steam locomotive engineer
- 54: Opposite, as a prefix
- 55: Planted
- 57: Worn by wizards and judges
- 58: Radio telescope in Algonquin Park
- 62: Technical journal for minerals, metals, and materials (abbr)
- 63: Powers a canoe
- 64: Sick
- 65: \_\_\_-City, game enjoyable to sociopaths
- 66: Two, to
- 67: Farming implement

# Sudoku

#2018-03

**CAMERON SOLTYS**  
4B MECHANICAL

Easy

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

Medium

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

Very Hard

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

Solutions for previous crosswords can be found on *The Iron Warrior's* website at [iwarrior.uwaterloo.ca/distractions](http://iwarrior.uwaterloo.ca/distractions).

**THE IRON INQUISITION**  
Stone He, 1B Mechanical

### "How did your Last Exam Go?"



*"I mostly guessed"*  
Kevin Strauss, 2A Geo



*"I don't think anyone survived—but that's OK"*  
Daniel Lahey, 4B Civil



*"Need some fluids in me to forget fluids"*  
Martin Chrabalowski, 2A Geo



*"[muffled crying]"*  
Lindsay Glofcheskie, 2A Syde



*"Midterms are for failing"*  
Kieran Broekhaven, 4B Tron



*"Pretty good"*  
Torasan Lin