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THE IRON WARRIOR

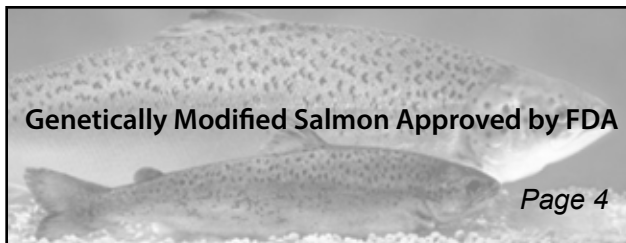
THE NEWSPAPER OF THE UNIVERSITY OF WATERLOO ENGINEERING SOCIETY

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The Fall 2015 Edition of *The Tin Soldier*

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Schlumberger-Celluforce-Waterloo Design Competition on the use of Cellulose Nanocrystal (CNC)



A group of four judges from CelluForce, FP Innovations, Schlumberger, and the University of Waterloo Judged presentations prepared by the Nanotechnology Class of 2017.

Debbie Wu



DR. MICHAEL TAM
PROFESSOR,
DEPARTMENT OF
CHEMICAL ENGINEERING

Celluforce, a joint venture company between Domtar, FP Innovations, and Schlumberger, sponsored the Schlumberger-Celluforce-Waterloo Design Competition on the use of cellulose nanocrystal (CNC) in different industrial sectors, such as medicine, energy, environment, electronics/information storage, food/agriculture, cosmetics, and chemicals. The competition involved 80 third-year nanotechnology engineering students working in 20 separate teams to develop innovative solutions that address important challenges facing the world in the 21st century. This design competition constitutes a component of a 3B Nanotechnology Engineering course on Soft Nanomaterials taught by Dr. Michael Tam of the Department of Chemical Engineering. The project teams have been working on their projects since September 2015, and each team competed for the top five prizes in a competition (the total cash value of the prizes was \$1400) held at the Mike & Ophelia Lazaridis Quantum Nano Centre on 28 November 2015 from 8:30 am to 5:30 pm. The top five innovative ideas are:

improved aneurysm treatment using novel CNC nanocomposites; cellulose nanocrystals for a household decaffeination filter; a novel Pickering emulsifier for applications in the mining industry; CNC enabled capture and photoremediation of nitrates in groundwater; and reinforced self-healing water tank coatings using functionalized CNC. The project presentations were judged by eminent professionals: Sébastien Corbeil (CEO, CelluForce Inc.), Dr. Richard Berry (CTO, CelluForce Inc.), Dr. Shirley Tang (Director, Waterloo Nanotechnology Engineering program), Dr. Wadood Hamad (Principal Scientist, FP Innovations), and Dr. Valerie Lafitte (Program Manager, Stimulation Fluid Engineering, Schlumberger). One of the goals of this competition is to motivate our talented nanotechnology engineering students to work at the interface of academia and industry and to develop innovative solutions that address many challenging issues facing the world today. We hope that some of the groups will create start-ups in the field of sustainable nanomaterials.

The technology on the large-scale production of CNC was developed by FP Innovations, and a demonstration plant was built and commissioned in January 2012 to produce 1000 kg/day of CNC. This plant, located in Windsor, Quebec is the

first large-scale production facility in the world. CelluForce is now actively working with the University of Waterloo to develop new NCC technologies for many different industrial sectors.

About CelluForce

CelluForce Inc. is the world leader in the commercial development of NanoCrystal-line Cellulose (NCC), also referred to as Cellulose Nanocrystals (CNC). The company is a joint venture of Domtar Corporation and FPInnovations. CelluForce manufactures NCC/CNC in the world's first demonstration plant of its kind, located in Windsor, Québec, developing new applications for NCC/CNC as well as marketing and selling it. The company currently has a workforce of 30 employees, and its head office is in Montreal.

About Schlumberger

Schlumberger is the world's leading supplier of technology, integrated project management, and information solutions to customers working in the oil and gas industry worldwide. Employing approximately 126,000 people representing over 140 nationalities and working in more than 85 countries, Schlumberger provides the industry's widest range of products and services from exploration through production.

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The first place team, posing with Dr. Tam and the panel of industry professionals who judged the competition.

Debbie Wu

Letter from the Editor

Beyond the Sunset



MEAGAN CARDNO
EDITOR-IN-CHIEF

Oh, well. It appears to be our last issue.

It's time for everyone's favourite issue of the term—the last one! And by that, I don't mean you enjoy the term ending (well, let's be real that's a big contribution), but you are dying to get your hands on this semester's edition of *The Tin Soldier!* I won't spoil any of the wonderful content that awaits you, but I'm certain that there's something there that will pique your interest.

As for articles that we are featuring in *The Iron Warrior*, though, I am happy to tell you about. We have Devika talk about several of our modern-day technologies that were presented in one media of science fiction or another before they were invented. Chris writes about his time at the Waterloo Engineering Competition, while Donovan provides us a recap on the gripping Student-versus-Teacher hockey game. Finally, Gabrielle congratulates our own Chris Hadfield for being distinguished with the Order of Canada.

Our columns this issue hold similar treats—Donovan discusses the new Netflix hit, *Jessica Jones*, in *From Page to Page*, while Tina shares with us some Canadian indie artists to tie us over the holiday break in *On Replay*. Caitlin discusses some not so kid-friendly magical practices in *Five Things You Really Don't Want to Know*, and Nina talks about talks in Paris at the UN Climate Change Conference in *Leafy Thoughts*.

Last issue, I know I amused some of my copy editors by the sudden change in tone of my editorial, in which I ranted furiously about competitive Super Smash Bros. Fear not, I'm not going to start ranting about it again, as much as I'd love to do so. I find it incredibly easy to write about things that I am passionate about, so that editorial pretty much wrote itself. It reminds me of again of how much motivation matters in getting work done.

It's been a long haul, folks, not going to lie. Some of the most stressful and emotional few months of my life—for a plethora of reasons, primarily the combination of several different challenges compounding on each other, amplifying the difficulty of any one. With so many simultaneous stresses, it felt at times as though something had to give. But...surprisingly enough, here we are in December, intact and hopefully stronger for it! I can't say I'm not somewhat relieved at the thought of the approaching holidays and finishing

up with all the projects this term, but I also know that we're not quite out of this term yet.

What I have learned this term, aside just how much even a decent amount of sleep can matter to your mental state, is the importance of interpersonal relationships in our lives. I definitely would not have been able to make it through this term were it not from the support of numerous people in my life.

Some of these were physical gestures, assisting me in areas where I was struggling, such as giving me a crash course on a subject after falling behind in lectures, or even just getting me a meal when I had a hard time finding the time to eat. Some of them were more motivational gestures and emotional support, reminding me that even in the most difficult and trying times that I have people behind me in spirit, reminding me that I have people who believe in me and are counting on me to succeed. Tasks seem a lot more achievable when you remember that you aren't alone in doing them.

In particular, I'd like to thank a few individuals who have been the most supportive in these last few months. First off are my roommates, my 3B Nano brethren, Josh, Alex, Daniel, Lucas, Kamyar, and Chris. While they may not always do their dishes timely (or at all) and sometimes can behave as though they are about half their age, they have been beyond sympathetic for me when I am tired and hungry, and have helped me stay afloat in our classes when I have fallen behind. There are definite benefits to rooming with your classmates, especially when they are as awesome as these guys. The greatest benefit of spending so many years with your classmates is just how much they become like family to you—the annoying actions and steadfast support included.

It, of course, goes without saying that my family has been supportive as well. Despite living reasonably close to home, I have not had the opportunity to spend as much time with them as I have in past terms, which I understand must be lonesome for parents at times. I look forwards to this holiday vacation with them to make up for the lost time!

Next are the members of the *Iron Warrior* who have given 110% for the paper in terms of creating content and helping with production. My assistant editors, Leah and Nina, have given more advice and insight than I could have dreamed of, despite both having incredibly busy schedules and stresses of their own.

Donovan has proven himself more than helpful as well, both in terms of his contributions and as acting circulation manager, which I personally know can be

a rough job. Caitlin and Bryan also have participated in many a late production weekend, both of whom show incredible promise for being future EICs, should the opportunity present itself. A special shout out to Raeesa and Cameron, who despite being off-stream on co-op continued to assist in production and catch all of the mistakes in the paper before I send them off to the printer to immortalize the mistakes.

Big thank you to all the first years who came out to meetings and submitted articles this term. I hope all of you continue to help the *Iron Warrior* in future terms, as someone is going to have to replace us old folks when we graduate.

And, of course, thank you to everyone who contributed at all to the paper who are not presently staff members—we adore featuring content from the community, so remember next term to contact your friendly neighbourhood *Iron Warrior* if you've got something to share!

Finally, I have to give an extra-special thank you to my dearest Eric, who despite attending a separate University and having to struggle with the complications and challenges associated with a long-distance relationship, has been able to keep me motivated and focused with only his words and emotional support. I do not doubt that without his patience and thoughtfulness, I would have crumpled under the pressure of this term months ago. I can only hope that one day I can be as supportive for him in trying time as he has been for me this term.

A lot of talk recently in all forms of media has been about the importance of your mental health, and the importance of taking care of your mind and body as well as your responsibilities. It does my heart good to see such acts of support and kindness as I have this term, and I hope that each and every one of you can find individuals as loving and supportive as I have the pleasure of knowing and calling my own.

Fluffiness aside, I suppose I should address that closing up the paper doesn't mean the end of work. Although this is my last paper as EIC, I definitely plan to help in future terms and hope to see many of the same contributors put forth great efforts in the Winter, where the wonderful Raessa will be taking the reins as Editor-in-Chief. I know she will do a fantastic job, and look forward to what the paper has to offer in the years to come, now that I can truly appreciate the effort that is put into it.

And with that, dear readers, I leave you with one of my favourite quotes from Kurt Vonnegut:

"I urge you to please notice when you are happy, and exclaim or murmur or think at some point, 'If this isn't nice, I don't know what is.'"

THE IRON WARRIOR

The Newspaper of the University
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Send your submissions to iwarrior@uwaterloo.ca

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

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

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Turing Pharmaceuticals' Profits Tumble



BRYAN MAILLOUX
2A MECHATRONICS

Martin Shkreli, the CEO of Turing Pharmaceuticals, has finally received his just deserts. Back in August, Turing Pharmaceuticals purchased the rights to the 62-year-old drug Daraprim, whose active ingredient pyrimethamine is used to treat life-threatening parasitic infections in people with weakened immune systems, and then proceeded to hike its price up by over 5,500%, from \$13.50 a tablet to \$750. Three months later, Turing has reported a net loss of \$14.6 million in the third quarter of 2015. Seems like a proper comeuppance for a man who managed to make both Hillary Clinton

and Donald Trump hate him.

This profit loss wasn't completely unexpected though; Shkreli foresaw his company losing money when he announced the price increase, saying that Turing would use the money to develop better treatments for toxoplasmosis, the condition Daraprim is used to treat. Shkreli keeping his word seems somewhat unlikely, however, given his previous reputation: back in 2014, Shkreli was fired from his job as CEO of Retrophin, another pharmaceutical company, for supposedly using Retrophin as his "personal piggy bank" to pay back unhappy investors in his hedge fund. In the same way, Shkreli could just be using Turing for personal profit, using the plight of those with toxoplasmosis to satisfy his own greed.

However, that isn't the end of the storm

of controversy. Recently, faced with waves of criticism from just about everyone, from patients to doctors to journalists and even to politicians, Turing promised to lower the price of the drug. And they did, but not really in a way that will help anyone. Rather than cutting the price for individuals and insurance companies, the company decided to cut the price by 50%, but only for hospitals. This certainly won't help those with toxoplasmosis, who are now faced with two choices for obtaining Daraprim: they can either buy it through their insurance companies, who will be forced to hike up those patients' insurance fees, or they could stay at a hospital for months on end, which is an even worse option. Even hospitals will still have to pay a whopping \$375 per pill, which may discourage many hospitals from keeping the drug in stock.

Fortunately, there is still a ray of hope for those with toxoplasmosis. A competing company, Imprimis Pharmaceuticals, began selling pyrimethamine pills for only one dollar per capsule last month, reducing the drug's price down to almost production cost. This also isn't the only drug whose price Imprimis is going to cut; according to the CEO of Imprimis, Mark Baum, "[Imprimis] will work with physicians and their patients to ensure they have affordable access to the medicines they need from the over 7,800 generic FDA-approved drugs". Imprimis is likely to face backlash from other pharmaceutical companies as well as the FDA, but if there's anything the United States' pharmaceutical industry could learn from the rest of the world, it's that drug prices should be kept under control, and Imprimis is helping to do just that.

Blue Origin Successfully Lands Reusable Rocket



NINA FENG
4A ENVIRONMENTAL

Blue Origin, an aerospace development company founded by Amazon's CEO Jeff Bezos, has successfully landed their New Shepherd rocket at their testing grounds in Texas. The company is one of several attempts to create cost-saving rockets capable of landing themselves after being launched into space, to be subsequently reused.

The rocket managed to thrust into the air, reaching an altitude of 100.5 kilometres, just

outside of the designated altitude of 100 km where space was determined to begin. Upon reaching that peak, the crew capsule (just the tip) detached. While this flight carried no operators, the rocket's head is slated to carry passengers who can enjoy the wonders of this suborbital altitude, including experiencing weightlessness, viewing the glow of Earth's atmosphere, and seeing our planet in a way that very few humans have been able to. The capsule will then fall back to Earth with the help of parachutes. The booster itself used rockets to reduce its velocity to under 7 km/h before gracefully touching down on Earth again.

This victory in space travel is a huge step

towards regular space travel, both for people and for cargo. Elon Musk's machines at SpaceX have come incredibly close to achieving this goal as well, but have generally failed thus far, most notably with the crash-landing of the Falcon 9 in January, and the explosion and disintegration another Falcon 9 rocket in June. Debris from a U.S. spacecraft has recently washed ashore in the Isles of Scilly, Great Britain. It is believed that it is the remnants of the failed June mission. Granted, SpaceX's goals are generally more ambitious or technically difficult compared to Blue Origin's. While Blue Origin focuses on space tourism and short-duration trips that barely exit the exosphere, SpaceX aims to

transport supplies to space stations and eventually colonize Mars.

The closest competitor for Blue Origin may be Virgin Galactic, another commercial tourism-based company. While the company has also made headway in space travel, a catastrophic breakup of one of their spacecrafts mid-flight has delayed their plans. The incident resulted in the death of the co-pilot and the injury of the pilot.

Despite the loss of government funding to NASA in recent years, private companies have made substantial headway in human space travel. The new developments are important for the future expansion of humans into space.

Genetically Modified Salmon Approved for Sale by FDA



RATAN VARGHESE
1A ELECTRICAL

The "AquAdvantage salmon", a genetically-modified salmon developed by AquaBounty Technologies, has been approved as safe to eat by the American Food and Drug Administration (FDA). The FDA could not find any material difference between ordinary salmon and the engineered breed, except for the advertised difference: faster growth.

Ordinary salmon takes 28 to 36 months to reach market size, while AquAdvantage salmon takes merely 18 to 20 months. The key changes in the lab-spawned salmon are a growth hormone gene from the Chinook salmon and a genetic switch from the dull, eel-like ocean pout. While the Chinook's growth hormone is only active during parts of the year the ocean pout's "antifreeze" genetic switch allows full-year growth, even when the water is far colder than comfortable for ordinary salmon.

The salmon eggs were spawned in a Canadian facility, and shipped to Panama where they hatched and grew. They were grown in inland tanks, unlike conventional salmon farms which use ocean pens. This would prevent the salmon from escaping into the wild, and also opens the possibility of growing the salmon in the United States and elsewhere. This facility can only grow 100 tons of fish per year. In comparison, the United States imports 200,000 tons of fish annually. AquaBounty Technologies is planning on expanding its Canadian facility and selling genetically-modified eggs to fish farmers. They might grow the salmon themselves, in which case they plan to sell them in Canada, Argentina, Brazil and China, in addition to the US.

While the AquAdvantage salmon were

only approved for human consumption this month, this is merely the tail end of a whale of regulation. AquaBounty approached the FDA for approval back in the 1990s. The FDA considered AquAdvantage salmon considered safe for humans as early as 2004. Five years ago, they claimed that the salmon was safe for the environment as well. This massive delay is supposedly because this was the first genetically modified animal submitted for FDA approval. Biotech executives and scientists have complained that the delay slowed interest and investment in this area. As often happens, Obama was blamed. People involved in the application suspect that the Obama administration deliberately delayed the AquAdvantage approval out of fear of political backlash.

Of course, backlash appeared anyway.

Environmentalists are worried that if the genetically-modified salmon escape, they will compete with wild salmon for food and for mates. The current batch of AquAdvantage salmon are in an inland tank and are sterile, so at least for now, that is not an issue. Furthermore, some scientists believe that salmon farming in general, and AquAdvantage salmon in particular, pose no environmental risk. According to William Muir, professor of animal sciences at Purdue University, "the current practice of using wild caught salmon as a food source is not sustainable; our oceans are overfished," and "this development provides a safe and sustainable alternative."

There are some other concerns. Since the FDA does not require labeling food from genetically modified organisms, consumer advocates are worried that buyers will be left

in the dark. The FDA also regulates genetically modified organisms as drugs, because apparently the gene inserted into an organism meets the definition of a drug. Critics claim this is inadequate, and that the FDA is unqualified to make environmental assessments. The US federal government is now reviewing its framework for regulating genetically engineered products.

Even if AquaBounty Technologies scales all these obstacles, it will be about 2 years until the next batch of AquAdvantage salmon is available on dinner plates. Even at that point, some stores and restaurants may refuse to offer the new breed. Whole Foods, Trader Joe's, Kroger, Costco and Target have claimed they do not plan to sell AquAdvantage salmon. Red Lobster claims that they have "no immediate plans" to do so either.

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Russian Planes Shot Down by Turkish Fighter Jets, Tensions Escalate between Countries



ALEXANDER LEE
3B NANOTECHNOLOGY

On November 24 2015, a Russian Sukhoi Su-24M bomber was shot down by a Turkish F-16 fighter jet near the Syria-Turkey border while it was returning to base. Turkey claims that the bomber entered Turkish air space for 17 seconds while Russia claims that it did no such thing. The incident has further escalated tensions in an already volatile region, due to the recent Paris attacks and concern over ISIS gains in the Middle East.

Russia has long held close ties with the Assad dictatorship that ruled Syria. Since the Syrian Civil War broke out in 2011 as a consequence of the Arab Spring, Putin and Russia have been supporting the regime both diplomatically, by vetoing anti-Assad UN resolutions, and militarily, in the form of air strikes. It has also been performing air strikes against ISIS locations since the jihadist state spread its borders into Syria.

Turkey's relations with Syria were also cordial for a long time, but that changed after the start of the Civil War. Turkey has since been flooded with Syrian refugees on their way to Europe, and the government did not have enough resources to deal with all of them. Additionally, the Syria-Turkey border has been the site of multiple skirmishes and incidents since the Civil War began. In 2012, a Turkish jet was shot down by Syrian forces, and since then, Turkey has tightened its borders and

patrols against all foreign elements that would trespass into Turkish territory. The current Turkish government, headed by Recep Erdoğan and his party, the AKP, has been much more authoritarian and aggressive than its predecessors, which has strained relations with other countries.

True to its word, the Turkish military shot down the Russian bomber as it was treated as a hostile entity. Turkey claims that the bomber was located around two kilometres into Turkish airspace, despite being warned that it was approaching Turkish airspace ten times in five minutes. Additionally, Turkey stated that they did not know the nationality of the bomber when it was shot down. Russia claims that their bomber was never in Turkish airspace in the first place. While Turkey broadcasted its warning on an international channel, the Sukhoi bomber was not able to pick up the channel unless optional radio equipment was installed, which it may not have been. Thus it is possible that the Russian aircraft did in fact not hear any of the warnings issued by Turkey, as Russia claims. After being shot down, the two pilots both ejected from the plane. Russia claims that one was shot down while in the air, while the other was rescued.

The exact circumstances surrounding the downing of the bomber remain murky. Officially, America seems to be siding with Turkey, likely due to its NATO commitments. However, an unnamed American official has stated that the Russian jet was in fact shot down in Syrian territory, not in Turkish territory, though it was in Turkish airspace for two



Alexander Mishin

A Russian Sukhoi SU-24M Supersonic Bomber, the same model of aircraft that was shot down after supposedly invading Turkish airspace.

to three seconds.

Both Putin and Erdoğan have a reputation for being very stubborn, aggressive leaders, and neither side has backed down over the incident. Russia has demanded an official apology from Turkey, which Turkey refused to give. The situation continues to escalate, and a compromise seems increasingly difficult to broker. Accusations have been flung back and forth between the two sides, with Russia being criticized for supporting a dictatorship that has committed atrocities on its own civilians, and Turkey being labeled as a supporter of the fundamentalist Islamic State. Russia has announced it would be imposing sanctions against Turkey, and has stepped up its attacks on rebel and ISIS targets near the border. The US has responded in support of Turkey by announcing a new round of sanctions against Syrian and

Russian interests.

The situation continues to escalate with no end in sight. However, it remains unlikely that the situation will become a military conflict, as both sides are concerned with the larger threat of ISIS right now, which would capitalize on a military divide in the forces relayed against them. Nonetheless, if the situation does become a military conflict, there is a distinct possibility for it to take on a global scope. Turkey is a member of NATO, and as a result, the other members of NATO, comprising the majority of Europe and North America, would be compelled to defend it against an attack. Europe and America cannot back out of a conflict like they did in Ukraine without rendering NATO useless. In the coming days, the incident will have to be handled very carefully, and hopefully a compromise will be found.

Refugees Coming to Canada, and Kitchener-Waterloo



CAITLIN MCLAREN
3B CHEMICAL

One of Justin Trudeau's campaign promises was that under him, Canada would welcome 25,000 refugees to help ease the crisis in Europe. The first refugees have already arrived, and more will be coming soon. (These earliest refugees were approved by the previous Conservative government, which had pledged to accept 10,000 refugees.) While the government does not believe that all of the refugees will arrive this year, it is hoped that all 25,000 will safely arrive by February. The Ontario government plans to resettle an additional 10,000 refugees. Note that this is only a small fraction of the millions who have fled Syria since 2011.

One controversial aspect of the refugee resettlement is that single men are to be one of the lowest priorities for acceptance. (Reports of a blanket ban on single men were apparently an exaggeration.) Some see this as discrimination; others, as a necessary safety measure, especially in the wake of the deadly attacks in Paris last month. Another concern, of course, is security, with some expressing fears that radicals or even terrorists will be able to enter Canada unnoticed in a crowd of refugees.

It is to be noted that the refugees will be screened and approved before entry, and, as mentioned above, priority will be given to families and to vulnerable groups.

Over a thousand refugees will be settled in the Kitchener-Waterloo region. This is one of six areas in Ontario that will receive refugees; the others are Hamilton, London, Ottawa, Toronto, and Windsor. Kitchener will receive about 3.7% of the total number of government-sponsored refugees coming to Canada. There have already been a handful of arrivals, mainly sponsored by private groups.

What You Can Do To Help

There are several organizations in Kitchener-Waterloo who will be helping to settle the refugees. Some of them are:

- Reception House Waterloo Region (kwrcentre.ca)
- Welcome Home Refugee Housing Community (welcomehomekw.ca)
- Mennonite Coalition for Refugee Support (mcrs.ca)
- Sanctuary Refugee Health Centre (sanctuaryrefugee.ca)

If you belong to a religious community, ask your leaders – they are probably involved with the resettlement as well. Please try to donate a little time or money – we are all students and don't have much of either, but remember that most of the new arrivals will have even less.

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EngSoc Teaching Excellence Award

**CHANNA POTTER &
NICOLE BARRITT**

4A CHEMICAL & 1A BIOMEDICAL

Through the creation of the Teaching Excellence Award, the Engineering Society has been working to recognize and reward outstanding teachers. Every term, since the Fall of 2014, this award has been presented, based on student nominations, to a professor, laboratory instructor or lecturer within the Faculty of Engineering that has excelled in one or more of the following areas:

1. Employs non-conventional teaching methods
2. Allows for opportunities that encourage experiential learning
3. Shows a commitment and dedication towards the academic success of engineering students

The winner of the Teaching Excellence Award is determined by the Teaching Excellence Award Committee. This Committee is comprised of both the A-Soc and B-Soc VP Education, two at-large student representatives and a representative from the office of the Engineering Associate Dean of Teaching. In reaching their decision, the Committee reviews all student written nominations, previous course evaluations, and any other relevant information for all nominated individuals. This helps ensure that the Teaching Excellence Award Committee can make a fair decision. With a total of 13 candidates nominated this term, the Committee faced quite a difficult decision.

After careful deliberation, the committee is very pleased to award Vincent Gaudet with the Engineering Society Teaching Excellence Award for the Fall 2015 term,

with honorable mention going to Laura Deakin.

Professor Gaudet is part of the Electrical and Computer Engineering faculty. He currently teaches ECE 240: Electronic Circuits 1, and has received rave reviews from the 2A ECE student body. To quote one student, "Professor Gaudet is born to teach and inspire". All nominations received indicated that Professor Gaudet always demonstrates his enthusiasm for teaching which they feel directly translates to the delivery of his lectures.

Professor Gaudet uses relatable analogies, ranging from Lego to KFC, to help students understand abstract and complex ideas. His impeccable reading of the classroom atmosphere greatly aids in reinforcing important concepts. He is able to adjust the speed of his lectures to make sure that difficult concepts are fully explained and understood by students before moving on. Using multiple examples and explaining the application's context also helps to peak student curiosity and make the class more enjoyable.

In addition to his lectures, Professor Gaudet runs his own tutorials. This is something that the nominating students felt greatly improved their understanding of the course material, as "Professor Gaudet is so great that any TA would pale in comparison".

Overall, Professor Gaudet's teaching methods have allowed students to feel they are more than capable of succeeding in his class. His passion and knowledge towards his subject area is reflected in the effort that he puts into teaching, both in and outside of the classroom.

Below is an excerpt from an interview conducted with Vincent Gaudet on his

thoughts on teaching at the University of Waterloo.

What inspired you to become a professor?

My father is a retired Professor of Mathematics who served on faculty at the University of Sherbrooke (Sherbrooke, QC) and the University of Saint Boniface (Winnipeg, MB). My parents have told me that I first visited his office when I was only 10 days old. Indeed, I have very fond childhood memories of spending time at the university pestering his kind-hearted colleagues. My parents have been an inspiration, and there are very few career and personal decisions that I do not run by them.

Many of my former professors, both undergraduate (Manitoba) and graduate (Toronto), have inspired me. I can't name them all, but a few stand out and are worth mentioning.

Donald Trim taught me several math courses. His lectures were mesmerizing (I often catch myself sub-consciously mimicking his speaking style). The late Ralph Stanton taught me a second-year discrete math course. When I moved to Waterloo in 2010, it came to my attention that Prof. Stanton had a foundational impact on UW. Pink ties in Math? That's because of him. In retrospect, I have come to see just how much his course influenced the way I approach problems. Indeed, I wish I could tell him how much I appreciate his efforts. Ed Shwedyk taught me fourth-year digital communications. It can be a dry topic, but his dry wit really brought it to life. Glenn Gulak was my Master's and PhD supervisor. He is an outstanding researcher and teacher.

I reserve a special place for the late How-

ard Card, who passed away at too young an age in 2006. I just re-read his obituary and had never realized that he had been an Assistant Professor at UW early in his career, before moving on to Columbia University and then Manitoba. After an unpleasant experience in microelectronic circuits, Prof. Card rescued my class (while teaching us discrete-time signal processing, no less) and gave us an appreciation for transistors. I would not be teaching circuits without him. He became a mentor and a friend. He inspired my best academic research. I wish I could tell him just how influential he was. Again, my lectures often inadvertently mimic his style.

What challenges have you faced as a professor?

Aside from being broadly told that you should excel in both research and teaching, and that you should be a good department citizen, you are really not taught how to be a good professor. Finding the right balance between work and home life can be tough.

Is there anything you'd like to say to the group of students who nominated you?

Thank you!!! It is an honour to have taught your group.

I always find myself on a bit of an emotional roller coaster towards the end of term. After spending so much time together, I get to know many of the students in class. When the term ends, everybody goes their separate ways, and part of me wishes it was not so. My one request to the nominators is to please stay in touch, not only in the next few terms of study, but also after you graduate!

WATERLOO | ENGINEERING

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UNIVERSITY OF WATERLOO

Chris Hadfield Awarded Order of Canada



GABRIELLE KLEMT
1A GEOLOGICAL

Col. Chris Hadfield has been doing his duty as a Canadian, to put Canada on the world radar, for many years now. Chris is one of those guys who is cool without trying, who you feel like you know even though you've never met them, who's lectures everyone at Waterloo should be able to go to... no, is that just me? Well, even without ever having met him, I still feel like we could be best friends and I know I'm not alone in this sentiment, I mean he made a music video in outer space!

It's undeniable that Chris Hadfield is a really great character, not to mention, he pretty much sums up "Canadian" in one guy. He grew up on a corn farm in southern Ontario, joined the Royal Canadian Air Force, studied here at Waterloo post-grad, became an astronaut for the CSA, made a video with his brother about living in

Canada at their cottage up north, and he's a really nice guy from everything I've heard (and I never hear wrong).

At last, Chris Hadfield has been awarded the Order of Canada in recognition of all his work to make Canada look really cool to the rest of the world – also for promoting an interest in aviation, space exploration, and scientific inquiry if you want to get technical. To those of you unfamiliar with this particular award, it's something like the Order of Merlin, but it's even better because it's for Canadians, not just wizards. The Order of Canada was created in 1967 to recognize individuals for their "outstanding achievement and dedication to the community and Canada", and Hadfield certainly has had some outstanding achievements; spoiler alert if you haven't read his book, but he won U.S. Navy Test Pilot of the Year once, because he's that good.

The investment ceremony took place just over a week ago and Hadfield, along with 45 others, was given a snazzy medal by our Governor General. Congratulations Chris Hadfield, keep shooting past the stars!

Get WEC'ked



CHRIS HADJUK
3B NANOTECHNOLOGY

Engineering is not solely based on the content learned in class. Engineering is much more than that. It is a creative process melded with the highly technical nature of science and technology. There is no better place to expose this creativity than under the environment of competition.

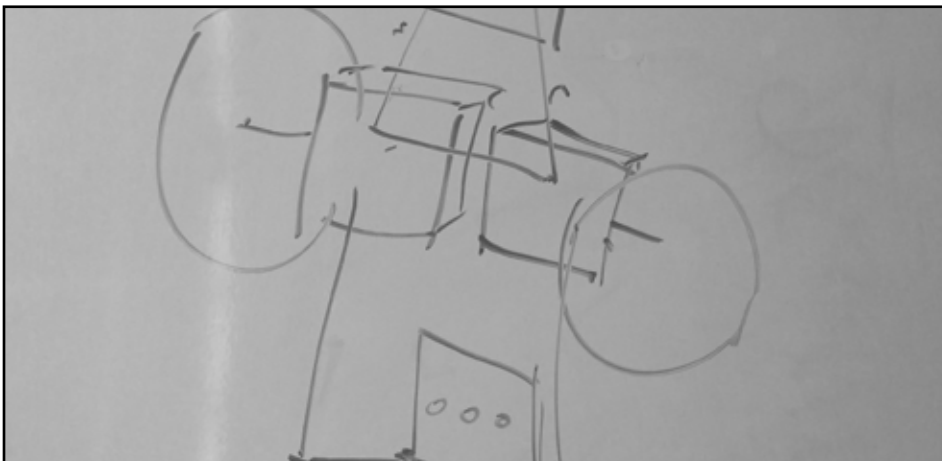
From November 20th to November 22nd, approximately 30 teams participated in the Waterloo Engineering Competition (WEC) in both junior and senior categories. The competition was a difficult problem exposing common contending problems in the field of Mechanical, Electrical and Software Engineering. In the span of six hours, the problem was explained and a

solution was developed, an impressive feat for any team.

Putting the project together was a challenge. With the limited amount of time and a limited budget we did what we could. Our challenge: after being stranded in space, we must navigate around a slippery path on a distant planet to acquire Rick's portal gun (from Rick and Morty) to get home using limited supplies.

We were given an Arduino and a budget of \$7500 (fake money) and set off to work. Right away we got into high gear. We drew a few poorly drawn schematics, but that's okay, we were in a rush. Soon thereafter, we began to design our respective components.

Our multitasking was phenomenal. Motors and power sources were being tested. Code was being compiled. Sensors were being developed. The hot glue gun was overheating. Our design only used



Chris Hajduk

Two sketches of the prototype vehicle designed by Hajduk and his team. The final product looked a little different.

Li-Fi – wireless networking of the future?



BRYAN MAILLOUX
2A MECHATRONICS

Everyone knows just how annoying Wi-Fi can be sometimes – while the theoretical top speed of Wi-Fi, using the networking standard 802.11ac, ranges from 433 megabits per second (Mbps) all the way to just above 1 gigabit per second (Gbps), most of us here in Canada are stuck at a top bandwidth of 250 Mbps for downloads and 20 Mbps for uploads, and that's Rogers' most expensive package. Furthermore, most networks are still using the networking standard 802.11n, which has much lower top speeds. For instance, here at the University, which uses 802.11n, we've only got a download bandwidth of 25 Mbps. While that's good enough for most uses, things start to get slow as soon as more than 3 people start watching Netflix in a room. So what if there were another technology able to deliver consistent speeds more than 50 times faster than the current national average?

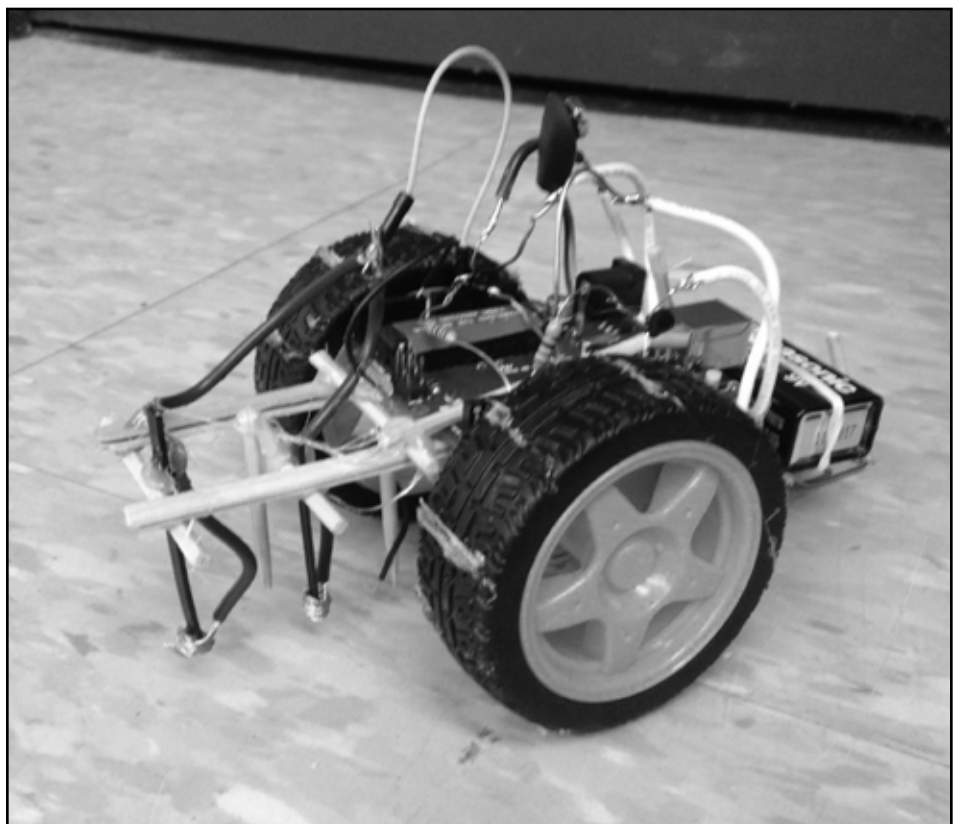
Enter Li-fi. As opposed to Wi-Fi, which uses radio waves to transmit data, Li-Fi uses visible light waves. According to Dr. Harald Haas, who coined the term "Li-Fi", this technology was developed primarily in response to "cluttered" radio networks – Wi-Fi has a limited radio wave spectrum it is allowed to use, and the whole width of this spectrum is quickly being occupied. The light spectrum, on the other hand, is

massive compared to the radio spectrum – so why, he thought, not use the light spectrum instead?

The way Li-Fi works is by flickering the light from an LED at a very high frequency (too fast for the human eye to detect), thereby transmitting binary data through the LED. The data would be transmitted not only through a single data stream, but through thousands of simultaneous data streams in parallel. Theoretically, Li-Fi should be able to achieve speeds of up to 223 Gbps, and in the lab, researchers have already reached data speeds of over 10 Gbps, which is like the speed of light (sorry) compared to even the fastest Wi-Fi.

Start-ups have already grown out of this new technology. Velmenni, an Estonian start-up, is already engaged in pilot projects to test the effectiveness of Li-Fi in the office. They're reporting speeds of over 1Gbps – matching the speeds of the best Wi-Fi connections.

Some obvious drawbacks to Li-Fi include interference from objects blocking the light source, ambient light interfering with the signal, and the fact that light can't travel through walls. Furthermore, Li-Fi can easily transmit data to consumer devices, such as smartphones or laptops, allowing them to download information, but uploading information from a device back to a router might present an issue. Until researchers find a way past these issues, Li-Fi might only be used to supplement the current Wi-Fi networks. However, the pursuit of faster and faster internet speeds will surely lead to advances in this budding field of network technology.



The competition's goal of designing a vehicle pushed participants to think both creatively and pragmatically.

two wheels, the minimum to have a sufficient turning mechanism, our vehicle size perfectly fit the Arduino Uno, and our sensors were triggering as intended.

We then got to the testing field. Our first run went poorly: the vehicle didn't even move, because the surface was too slippery. The wheels were like people on a miniature slip and slide. We removed our wooden dowel grip sticks and used a rubber surface to ensure traction. During the second test run, the code was malfunctioning and drove the car straight off the track. However, third time's the charm: we managed to run the vehicle around the first 3 corners, further than any competitor had done yet.

The actual judging took place on a

separate day. On Sunday, the track was recreated. Unfortunately, the second time around, the water on the track caused the entire track to warp. The fragile cardboard track had bends in it here and there. Our design did not adjust for this fact, and neither did the other teams' designs. Fortunately, we won because of our low budget and design. In fact, nobody during the presentation made it around the first bend successfully. One could say that the challenge was indeed difficult.

To all fellow competitors who competed with us: kudos. Each design was creative and worthy of competition.

Shout out to my fellow team members: Mitch, Stephen, and Nathan!

Hate Crimes after Paris Attacks



CAITLIN MCLAREN
3B CHEMICAL

After being wounded, it is natural to feel bitter towards the person who caused the pain. However, learning to manage this impulse is a part of learning to live. People who cannot move on from an injury are a danger to themselves, to others, and to all of humanity. Furthermore, anger at the perpetrator of a crime should not extend farther than that person. It is unjust to blame their family, their kinsmen, their countrymen. To do so is more than bigotry; it perpetuates a climate of anger and revenge.

After the attacks on Paris last month, together with other attacks in Lebanon, Nigeria, and the never-ending onslaught of Daesh's atrocities, the world is rightfully hurting. Most mourn those who are gone. There are a few who, like an injured mongrel who will bite friendly and cruel hands alike, turn their indignation against the innocent. These are the racists, the hooligans, the warmongers. They have no real grief for the dead, nor do they care for the living.

It is these monsters who attacked a

mother with her small children in Toronto, only a few days after the shootings. Brutes, ignorant and vicious like the wild pigs that they are, they cause nothing but devastation and are themselves the terrorists they claim to hate. Those who burned down the mosque in Peterborough – they, also, are Daesh. The criminals who attacked a woman on a train in England and threw rocks through the windows of a mosque in France – they are the allies of the forces who attack civilization.

There is no excuse whatsoever for these hate crimes, not even a plea of ignorance. Daesh themselves have expressed satisfaction and pleasure: every curse, every blow, every cowardly insult furthers the agenda of terror. This, not the Koran, not propaganda, is the force that causes radicalization. No one hates a benefactor. Welcome guests do not become enemies. And these thugs, who lay violent hands on women in broad daylight, how dare they claim outrage for the dead? They are no better than their murderers. They are the valued soldiers of the enemy.

Even now, as thousands are fleeing the war in Syria and the radicals who impose their self-serving version of Islam on the people living there, there are people, even respectable ones, who claim that the refugees are untrustworthy because they



Jeff Mitchell / Getty Images

Many mourned the attacks in Paris through memorials; others turned to violence and prejudice against those they deemed responsible.

also are Muslim. As if those happy under Daesh would leave in droves! There are well over a billion Muslims on earth – are these all responsible for the attacks? Are all theists, or all humans? Are we not all, all the living and all the dead, responsible for the world as it is today?

Revenge is worse than worthless. It does nothing for the past, destroys the present, and ensures ruin for the future. The response to acts of terror should be

acts of love. Terror thrives on destruction and hate, and the innocent always suffer. Just as we loathe Daesh, we should also loathe our own extremists and bullies. We should not only defend our countries, but also the vulnerable in our midst. These criminals should be prosecuted and treated as the enemies that they are. Canadians are not radicals. We do not force minorities to bend to our will. We do not dehumanize outsiders. We are not terrorists.

A Response to the Hatred of Refugees

SABRINA RENNA
CIVIL ENGINEERING

I am not going to debate the moral issue. If you are unaffected by the images of children washing up on shore, families torn apart and herded like cattle, and desperation on the faces of people lacking all basic human necessities, that really is indicative of your own lacking of humanity.

If you are concerned that we are importing 25,000 terrorists, that's another statistically addressed concern with resources widely available. In summary, by and large, refugees are not terrorists. The question of security and logistics with a mass migration is always one that needs to be addressed, and I welcome your informed inquisition our political leaders. Additionally, I suggest that the real concern is people like you, filled with hate, who are pushing Muslim women in front of TTC subways. These people are real threat to Canadian society; they are home-grown and already

living here. The attacks in France, which we all so united against, were actually perpetrated by these home-grown haters.

Instead, I would like to remind you that many of your parents and grandparents came to this country for the promise of economic opportunity and higher quality of living. And upon arrival, I know the Italian community was not welcome; in fact, it was hated. By people presumably like you, who thought that Italians, like Hispanics, Blacks, Jews, Chinese, (insert whoever else you hate), and apparently, now the Syrians, were the end of Canada.

Well, Canada is doing all right so far.

Italians were "dirty", non-English speaking and strange. Well, in short, the Ital-Canadese community ended up getting dirty, actually, building up most of Canada's greatest cities: Montreal, Toronto and Vancouver, alongside the Irish and the Portuguese. They ended up founding large construction companies and "exploiting" (rather, using as designed) the Canadian

education system to enable their children to become economically significant members of society: skilled labourers, doctors, lawyers, teachers, civil servants, small business owners, and engineers. Their health care was paid for, freeing up income to own property and pay for the costs of post-secondary education for their children. A life in Canada afforded them an opportunity for growth, not a lifetime of "sucking or leaching" social programs.

I have no doubt that the Syrians, provided Canada still offers these fantastic opportunities, will be able to grow. Before you try to characterize Syrians as lazy, in response. I ask, do you really think lazy and small-willed people walk thousands of kilometers to escape persecution not knowing what reception they will be met with?

For those of you who believe that the world is going to hell with the embracing of refugees, well, that's very bold statement backed by your own lack of education. I will agree that there is increased political

apathy, selfishness, and indifference in modern society. The capitalistic idea of acquiring more and never really having enough is the basis for a lot of our own, self-created social disparity. And, right now, Canada is wealthy and offers refugees everything they need for growth. Faced with the alternative of mass graves and human casualty, I'm okay with spreading my tax dollars a little bit thinner.

(Reminder: if you think our tax dollars already don't go far enough, that is much more an issue of political transparency and inefficiency. So please, spare me the comment related to government misspending. Trust me, I know the government is doing terrible things with my income tax. That problem has existed long before the Syrians wanted to come to Canada - in case there was any question!)

If you think taxes are going to go up, well that's not actually indicative of a loss for citizens, if the dollars are utilized correctly. In theory, more taxes = increased public services, independent of inefficiencies. Also remember, more tax dollars need to be spent to support the aging baby boomers that failed to prepare themselves for retirement. The refugees didn't do that either).

As you advocate for helping the homeless and dealing with domestic causes, you are raising a moot point. Why? We have always had the capacity to take care of the homeless, the First Nations, and our veterans. The reality of the matter is policy and funding on these allegedly important issues is a reaction to the interests of the voting populace at the time of election. What this means is that the programs we have in place currently reflect the electorate's interest in such programs. To be frank, up until contrasting domestic causes with the refugee crisis, we haven't cared enough about these particular social groups. And so, if you feel that those programs are unsatisfactory, I warmly await the letter you are writing to appeal for these causes that you are allegedly so passionate about. I look forward to your microfunding campaigns, petitions and lobbying. I look forward to you actually doing something, besides writing an uninformed comment to a complex, large-scale problem.



Nikolay Doychinova / AFP

Syrian refugees in Bulgarian a Bulgarian Camp in early 2013. The Syrian

UN Climate Change Conference in Paris Aims to Create Binding Agreement



The 2015 United Nations Climate Change Conference, being held from November 30 to December 11 in Paris, is now underway. This year the main goal is to develop a legally binding climate agreement from all nations in the world. It will be the first agreement of this sort since the Kyoto Protocol of 1997, roughly 20 years ago. Current provisions set by the Kyoto Protocol

will time out in 2020.

The objective for the agreement is ultimately to limit the overall global increase in temperature to only 2°C higher than before the development of human industrial activity (1850-1900), by reducing greenhouse gas production. More than 150 countries have pledged to contribute to the reduction. Among these include the U.S., which plans to decrease their greenhouse gas emissions by up to 28% of those in 2005. Harper's conservative government, who somewhat infamously pulled out of the Kyoto agreement, had pledged a 30% reduction by 2030.

New PM Trudeau is optimistic that a

binding agreement will be successfully implemented at this conference. He is even meeting with Indian PM Narendra Modi in an attempt to push for the agreement, as the country has not been particularly proactive with climate change prevention legislation. Many of Canada's provincial premiers are also attending the conference, most notably Alberta, who hopes to pitch the province's new Climate Leadership Plan, given the large amount of activity involving natural resources and the petroleum industry there.

In 2015 global temperatures have risen to 0.9°C above pre-industrial levels, which is halfway to the limit to

be set in this conference.

Scientists have long said that at an increase of 4°C, weather events will reach extreme levels, and melting ice will increase ocean levels devastatingly. The 2°C is both realistic and attempts to minimize the damage but still provide some leeway for human energy production.

Time is running out for the prevention of dramatic global climate change. Some scientists say that it may already be too late. However, the talks in Paris, and the aggressive pledges made by the countries of this world, may pave the way to a slightly brighter future in terms of sustainability.

Science Fiction in the Real World2



Often, science fiction contains some pretty interesting ideas about what the future might be like, and sometimes it hits the mark. Here's a list of some cool inventions that came straight out of popular sci-fi movies and books.

For anyone who is wishing for the 2015 depicted in *Back to the Future*, there is one thing that exists: self-tying shoelaces. This one was less a prediction of the future, and more a self-fulfilling prophecy. In February 2014, Nike designer Tinker Hatfield, who designed the original Nikes featured in the movie, announced that the self-tying shoes would become a reality in the next year. Just this October, on *Back to the Future* day of course, Marty McFly himself tweeted about receiving the first pair. According to Nike, the shoes are officially going to come out in spring 2016, so start saving your thousands now.

Of course, there is a less cool, but also cheaper and probably more practical option on Kickstarter. For 8 bucks a pop, Xpand

lacing system, which consists of small specially designed pieces of plastic, keep your laces adjusted forever, so you never have to tie them again. Not exactly self-tying laces, but at least you don't have to tie your shoes (if that was ever a problem).

If there isn't a Kickstarter for it, then maybe there's an app. One app, called Lexiphone, is similar to the babel fish from *The Hitchhiker's Guide to the Galaxy*. In the novel the characters put the babel fish in their ears, and it instantly translated any alien language so they heard all speech in their mother tongue. Lexiphone can do the same thing, with human languages, while you are on a call. Next thing you know there will be elevators with feelings (one of the alien technologies in the *Hitchhiker's* series).

From the voice activated computer system (not unlike Siri or Cortana), to their communicators, there are a lot of technological parallels you can find between modern technology and what they had in *Star Trek*. One of the most interesting of those technologies is the replicator system, which essentially appeared to make almost anything out of thin air. That is actually impossible, but 3D printers come pretty close. In addition to plastic devices, it's possible to make pizza, and even grow human tissue. Maybe



"Seashell" or "Thimble" radios were described by Ray Bradbury in *Fahrenheit 451* in the year 1953-- years before the first prototypes were ever made.

one day 3D printers will even be able to make tea, including the plate and cup, just like the replicators.

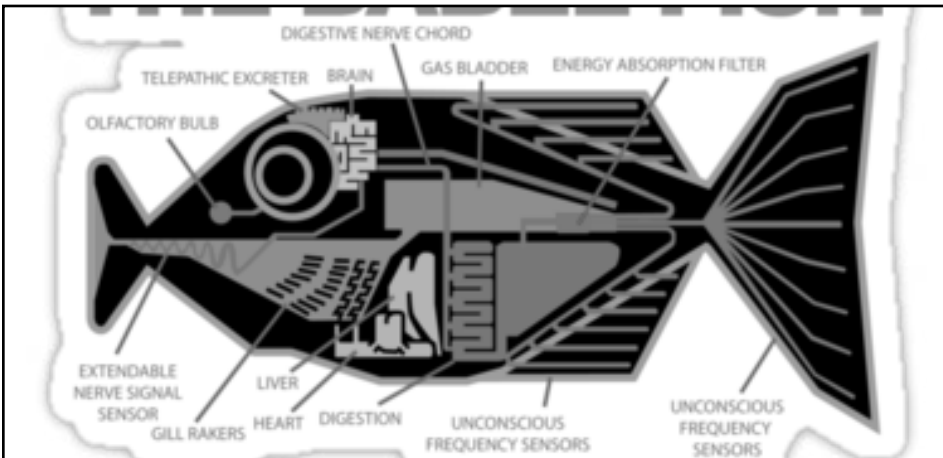
One thing that you probably take for granted is earbuds, but those didn't exist in 1953, when *Fahrenheit 451* was published. In the novel, Ray Bradbury predicts the use of small seashells, "thimble radios" that you can put on your ears to hear "an electronic ocean of sound, of music and talk..." Which, if you think about it, is not so different from the concept of earbuds. In the novel, people don't necessarily have as much control over what they're listening to, but it's still interesting to note that some of the critiques of earbuds - basically that they allow you to tune out the world - are somewhat similar to what the author was saying about the seashells (and TV) - they're a distraction so you don't have to think.

However, technology wasn't always electronic or software based. In *Brave New World* by Aldous Huxley, the use of a mood-enhancing drug called "soma" is widespread. When characters took soma, it "raised a quite impenetrable wall between the actual universe and their minds". This

book was written in 1931, two decades before scientists began experimenting with antidepressants. Today people everywhere use them, both legally and illegally.

These technologies only begin to scratch the surface of what is in sci-fi. Some argue that Orwell's vision of a surveillance state in 1984 is pretty similar to all of the government surveillance we have now, what with us being tracked on the internet, by our cellphones, and via traffic cameras almost wherever we go. Similarly, in *Stand on Zanzibar*, John Brunner presents a vision of America lead by president Obomi in which people drive cars with rechargeable electric fuel cells, young people eschew marriage for short term hookups, people are plagued by acts of violence such as school shooting and terrorist attacks and Detroit is an abandoned wasteland.

What is interesting to think about is that some of these technologies may have become reality because they existed in fiction, while in other cases it is very possible that the fiction really did predict the future. Perhaps the future isn't as unpredictable as it seems.



The babel fish from *Hitchhikers' Guide to the Galaxy* is a unique creature, to say the least.

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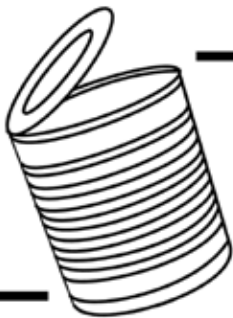
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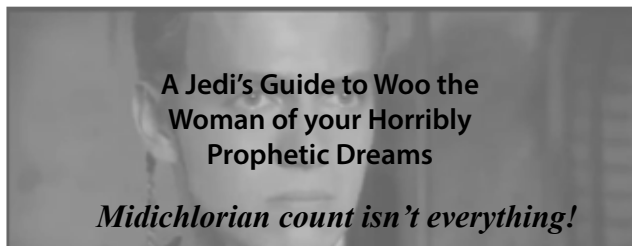
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THE TIN SOLDIER



FIREWORKS ARE JUST HAPPY LITTLE BOMBS

YESTERDAY I SLEPT, TODAY I EAT!



A Jedi's Guide to Woo the Woman of your Horribly Prophetic Dreams

Midichlorian count isn't everything!



Steven Harper: Unleashed

This picture deserves the front page



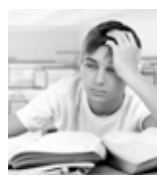
Snakes are goddamn adorable

Look at that guy's little :3 face

No guys, this is Syria-us.

It's not plagiarism if we like them

Giant Sink Hole Engulfs Modern Languages, UW puts up caution tape



SLIM SHADY
3A ARCHITECTURE
(VOID-OLGY MINOR)

At 10 am on Monday, November 30th the Modern Languages building at the University of Waterloo disappeared with a mighty rumbling slurping sound. The University continued its longstanding tradition of never closing despite placing students in potentially mortal danger. Several Tim Hortens' employees have been lost but luckily since the opening of the Starbucks in the new science building few actually make it to ML before 11. One arts student was found embracing the arts mascot, Porcellino, who narrowly escaped the slurping fate of ML. "You know, it is really unfortunate about those employees, but you know literature tells us that these kinds of things happen all the time. I just feel lucky neither my friends nor I was in there! At least Porcellino here was alright!"

Plant Ops came by around 10:30 am and surrounded the gaping hole of sparking, steaming rubble with sufficient amounts of caution tape to keep gaping arts students out. At a press conference at 11 Waterloo's President, wearing a spiffy suit and black suit jacket embroidered with the school logo, assured students that "The geology department is looking into it, and they are 85% sure the rest of the students will be safe." He also encouraged students to go about as usual because "After all, the Engineering department can't miss out on teaching hours because accreditation is at stake."

Meanwhile, in a separate press conference Lauriers' president, wearing his standard issue Canadian plaid flannel jacket, appeared before media at 10:30



The beloved Porcellino was found amongst the rubble. Several students from various faculties commissioned a rescue effort to save the poor porky fellow.

am. "Given the concerning rumblings that were heard from up the hill, it has been decided to close the university as a precautionary measure. We give our sincere condolences to the University of Waterloo community for the loss of such a vibrant and important part of their campus." He was also heard to remark "What!? UW has an arts department!?"

Later that day Plant Ops released a joint statement with the president's office assuring students that ML would be cleaned up sometime in the New Year, probably by the end of February 2016, but possibly by as late as 2017. Engineering students requiring more materials for end of term projects or FYDP are encouraged to pillage the rubble for

supplies. Students are reminded to wear proper PPE including steel toed boots, a hard hat, safety glasses, hearing protection and gloves to prevent possible electrocution.

As of this article going to press the geology department's prediction is holding strong, we're all 85% safe, 15% sinking into despair...

The Beginning of Canada's Trudeau Dynasty

Historians Commemorate the Event, Reflect on the Changes to Come



World-renowned artists were commissioned to immortalize the newest Prime Minister of Canada.



JUSTE UN TROU D'EAU
2B ARCHITECTURE

This fall Justin Trudeau became the 23rd Prime Minister of our great nation of Canada.

If you've been living under a rock for the past few months you might not have heard that he is the son of Pierre Elliot Trudeau, the 15th Prime Minister of Canada, from 1968-79 and again from 1980-84.

Justin grew up in the Prime Minister's residence at 22 Sussex Drive in Ottawa, and many think that his whole motivation

for becoming the leader of our nation was to go back home again.

Now begins the Two-d'eau era. Justin has been secretly putting plans into place to revert Canada back to the state it was in when his father was in power.

Stadiums across the country are preparing for a massive tour by Elton John in the New Year, and in early 2016 movies like the Godfather, Star Wars, Jaws and Alien will be aired in theatres nationwide. Canada will also be taking their second chance to join the Vietnam War.

Justin is only the second step of the Trudeau dynasty though. The Trudeau family are carefully grooming for their third generation Prime Minister. There are rumours that Justin's children Xavier,

Hadrien and Ella-Grace are being trained to be the pure trifecta of Canadiana; one a Prime Minister, one an NHL player and one a peacekeeping general. Further to that, no roles have been given to the children, so all of them are receiving training in every aspect. It is plausible that all three could do any or all of the jobs.

The Trudeau dynasty is meant to change the fabric of the world. In thousands of years Canadian children will be taught of the deeds of a dynasty that lasted hundreds of years.

The Trudeau dynasty will go down among the greatest dynasties of all time, along with the Caesars or Rome and the Shang Dynasty of China, and we are here for the start of it.

title: Tin Soldier Editorial



PAIR OF DIMES
EDITOR-IN-CHIEF

your_id_number: 20XX
proposal identifier: IW_F15_15
title: Tin Soldier Editorial
presentation:
strength:

- 1: Pretty pictures are nice. Did you see that snake on the front page? Beautiful.
- 2: All our staff look clean and smell nice and sometimes show up to meetings.
- 3: Particular effort put into laying out absolutely perfectly symmetric squares in a 2x2 grid.
- 4: We actually talk about decently relevant articles kinda yeah? We aren't completely isolated from the world happening around us yay.
- 5: -2 weak
weakness:
1: We need even MORE pretty pictures. Especially of Ting and cute lil pythons.
2: Attractiveness does not compensate

for lack of staff members and EIC loneliness.

- 3: No perfect 2x2 grid was ever actually achieved despite excessive efforts.
- 4: Not enough attention was given to writing your actual damn content Paradigm jfc.
- 5: Insufficient *Super Smash Bros.* references despite crippling addiction.
- 6: Not enough click bait articles we need the EZ\$\$\$. Become one with the BuzzFeed — the *Imprint* hates her!
rating: git gud
project:
strength:
1: Staff writers, editors, etc, all fantastically wonderful people who only bail on me sometimes
2: Cmon guys its Fridayyyyyy
3: Sufficient irrelevant tangents during meetings
4: No ION construction in IW office
5: Peaches are pretty tasty
weakness:
1: Peaches are not in season
2: Horridly depressing articles. Why do so many bad things happen all the time
3: Where the hell did all the yung na-

nos go

- 3.1: Where the hell did my year of nanos go
- 3.2: Where the hell did Nachi go
- 3.3: What is happening to all the nanos
- 3.4: Where the hell did everyone else go stop graduating
- 4: WHERE THE FLIPPING DUCK ARE THE PAPERS
4.1: SERIOUSLY WHO STOLE THE PAPERS THOSE ARE RLY IMPORTANT
5: I hate assignments. They're long and... difficult and time consuming... and they always get done at the last minute. Not like here. Here everything... is also done at the last minute... and smooth.
proposal rating: spaghetti
likelihood team can deliver: I did my best
budget review: -2 weak
budget justification: where are the colour ads :<
budget rating: -2 weak
conclusion: write newspaper article on newspaper interviewing newspaper. It's so meta that you'll be certain to amaze everyone.



Editor-in-Chief

Assistant Editors

Leafy Fifi
Yes you can use the office

Layout Editors

No I want to do it

Copy Editors

You can't drown your lack of articles guilt in copy editing forever

Advertising Managers

Hahahhahahahahahahahaha

Circulation Manager

Maybe the papers will actually arrive today

Staff Writers

What's your term again
What's your program again
What's your name again
Who are you again
Just uses the microwave

Contributors

Oh sure now your articles are long EXCLAMATION MARKS!!!!
PUNS
Pretty pictures
I don't understand your jokes sometimes
Last minute submissions

ADVISORY BOARD

Sweet Summer Child
You'll do great
<3 <3 <3

We need more votes
Meetings suck

We need even more votes
What do you guys even do

Pick-Up Lines for that Special Galactic Senator



DARTH DARTH BINKS
4A ARCHITECTURE

Wondering how to attract that lovely Viceroy-sassing, blaster-wielding senator you've got your eye on? While it may seem difficult for a young Padawan like you, don't lose hope! You've been using Alderaan phrases! If your angst-filled rants about your Master have thus far failed to charm her, we've got some great lines here, guaranteed to make her kiss you and then immediately regret it. She may even reveal her love for you before you head off to your execution in a certain arena on Geonosis.

Keep in mind that these will work best if preceding a romantic frolic in a field of flowers. Feel free to take a joyride atop the local wildlife, and don't forget to fall off and play dead. It's the perfect set-up for rolling in the grass with the object of your affection.

We'll start you off with a few classics, but will then provide variations you can use, no matter the topic of conversation.

"Are you an angel?"

Obviously this one is a must. Though it's most advisable to use earlier in life, you can get your foot in the door with this one, and charm her with your naivety. Get her thinking that Yoda one for her before you've even made your true move!

"I don't like sand. It's coarse and... rough and irritating... and it gets everywhere. Not like here. Here everything is soft..... and smooth."

(You must then caress her skin in a weirdly intense and creep-tastic manner. She will be seduced for real). Now here's a couple more, in case you didn't happen to come from Tatooine. We're inclusive that way. Note that the word 'smooth' must remain consistent to facilitate caressing.

For Hoth (so she wants you to get in her like your future son gets in a taunt. Okay, maybe not exactly like that):

"I don't like snow. It's cold and... wet and blinding... and it gets in your boot. Not like here. Here everything is warm... and smooth."

For Mustafar (the planet that she's hotter than):

"I don't like fire. It's hot and... dry and scorching... and it gets all over your body. Not like here. Here everything is cool... and smooth."

For Naboo (especially if your boo is from Naboo...):

"I don't like Jar Jar. He's brainless and... clumsy and annoying... and he's secretly a powerful Sith lord. Not like here. Here everything is not Jar Jar..... and smooth."

With any luck, you'll be rewarded with a kiss and her eternal love. If you reach that point, please seal the deal with the following swoon-inducing, very much non-angsty monologue:

"From the moment I met you, all those years ago, not a day has gone by when I haven't thought of you. And now that I'm with you again, I'm in agony. The closer I get to you, the worse it gets. The thought of not being with you- I can't breathe. I'm haunted by the kiss that you should never have given me. My heart is beating, hoping that kiss will not become a scar. You are in my very soul, tormenting me. What can I do? I will do anything that you ask..."

You'll truly be.....smooth.

Men in Engineering



VINCENT ADULTMAN
WHAT WAS YOUR PROGRAM AGAIN

Gender equality is very important in the workplace, and society in general. Groups of people have been advocating for this as far back as the mid 19th century, but one inequality has recently come to my attention. Women in engineering get a lot of attention when it comes to equality, but no one ever talks men in engineering. Likely because men in engineering do just fine. There are lots of men in high up places in companies, doing high end research and design work throughout every discipline of engineering. Being a man is usually a

good time.

When it comes to the Tin Soldier though, gender roles are seemingly reversed. Our editor in chief and the majority of our staff writers are women. The men in the Tin Soldier feel problems comparable to women in the workplace. We are paid less P***5 points per article than the female writers. When asked why this was, EIC Pair of Dimes had no response. In general the men in the office have an overwhelming sense of helplessness around the office.

We are held to ridiculous standards of appearance. We spend an immense amount of time preparing ourselves in the morning, doing hair and makeup, just to meet the standards of our female coworkers. We feel like we are valued more for our physical attributes than for our intellect. We bear the brunt of

distribution of the paper, carrying boxes and boxes of papers across campus while our female coworkers merely encourage. Once a male co-worker of mine was made to lift a box unto a high shelf, only to be ordered to retrieve it minutes later. The women in the office relished during the exertion.

A solution for this would be to have real equality among genders in the writer's room. I plead for more men to join the Tin Soldier as writers, but the Tin Soldier matriarchy tries to prevent this. Term after term the EIC torch passes from woman to woman and term by term men are taken advantage of. Long term this cannot be sustainable. Men, forming the lower class within the Tin Soldier, will eventually rise up in a Marxist style revolution and form a communist power structure within the office.

The Tin Soldier is not a forum for thought-provoking and informative articles, and has no association whatsoever with the Society of the Travelling Pants. Views expressed in The Tin Soldier are not those of the authors and do not necessarily reflect the opinions of Chuck Norris.

The Tin Soldier encourages submissions from students, faculty and members of the Non-Existent Action Committee. Submissions should reflect the concerns and intellectual standards of the Society of the Travelling Pants in general. The author's name and phone number should be included, except if they are non-existent. This information may or may not be posted on our website.

All submissions, unless otherwise stated, become the property of The Tin Soldier, which reserves the right to refuse publication of material which it deems too suitable. However we're so desperate for content that we'll likely take it (but we might just send it to Imprint). The Tin Soldier also reserves the right to edit grammar, spelling and text that do not meet university standards, but engineers suck at english so it's a low standard.

Mail should be addressed to PJ Katie, c/o YTV Canada, P.O.Box 7500, Paris, Ontario, N2L 3W7. We do not currently have a phone, however you may redirect all inquiries to Kickoff's, as we're likely there. We don't have a fax number as no one uses faxes anymore.

Uh Oh, Those Summer Nights!



With the success of all the events this term and after some discussion with the faculty, we have decided to run 10 term parties for the next term. They are BOT, MOT, EOT, BMOT, MMOT, MEOT, BEOT, DOTSWOT (Day of the Silly Walks OT), PNATQ (PIOTform 9 3/4), and SITMOTTBNQTEOTMOT (Somewhere In the Middle Of The Term But Not Quite The End Or The Middle OT). They are all mandatory if you want to graduate, you must stay for the entire time, and only the first 100 people get in. The rooms are also randomized, and we will not tell you where they are. Good luck out there! (Also, they are not licensed).

Mental Health Therapy Dogs is also going under a small adjustment. Instead of bringing puppies, the National Service Dogs will be providing therapy cacti for cuddling. Research has shown that

cuddling plants that don't get cuddled very often makes the plants feel better and doing something nice for someone else makes you feel better.

We will be introducing a new directorship, More Cowbell! This director will be responsible for carrying a cowbell around campus and if, by chance, someone says they need more cowbell, this director can provide more of it. Cowbell will be stolen from an actual cow, Bessie, who is currently enrolled in Rec and Leisure and probably won't be too happy about it. Directors must be prepared to run for their lives. EngSoc will not be held responsible for any cow related damages.

Finally, the dik-dik dickcissel fever is so real! Students have been rallying for a dik-dik dik-dik dickcissel tournament, and one they shall have. There has been talk of an actual dik-dik and dickcissel being present to judge the tournament. Directors will be in charge of preventing the judges from relieving themselves on the playing field, and if that is unavoidable, at least cleaning up after them.

Look at me I never title my articles



Continued from a future article

Now I'll move on to some things I plan on doing in the summer! I have lots of interesting ideas. Firstly: the University of Waterloo Engineering Society has grown sick of ESSCO (Engineering Student Societies' Council of Ontario) and CFES (Canadian Federation of Engineering Students), therefore I'm excited to announce that the Engineering Society will be seceding from Canada to create our own sovereign state! The capital will be POETS, and the national bird will be the Dickcissel (look it up, it's real).

Next, I intend on bringing every mem-

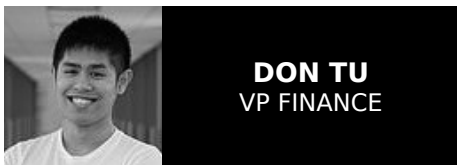
ber of EngSoc to every conference! Other schools often bring up to 12 delegates, so Waterloo might as well bring 3000 or however many of you there are. This is the best way to make sure that everyone benefits from them

As it is summer and we need to beat the heat, I recommend we start a weekly conference to be hosted by the University of Maple Syrup in Whitehorse. Once again, all members of EngSoc will be mandated to be in attendance.

To improve our external relations, EngSoc will also be allowing companies to become members of the society. So if you see Honda or Subway walking around the hallways of CPH, be sure to say hi!

Finally, I will be changing my title to Vice-Supreme Dictator External. Feel free to email vsdextreme.b@engsoc.uwaterloo.ca

Say No Tu Low-Effort Puns



Hello everyone! Welcome to my latest, greatest, and unfortunately last update of the term. Before I continue, I'd like to thank everyone for rabidly following my updates throughout the semester. Your support has made my first term as VP Finance an incredible and gratifying experience. If I had a dollar for every time I've seen students fighting each other to get a copy of the Iron Warrior just to tear to my update and throw away the rest of the newspaper, I might be able to pay for tuition! With that out of the way, please join me in a quick reminiscence.

Over the course of the Fall, the Society has seen the Student Deals program really gaining popularity. Students have been telling me how happy they've been to spend their money on frozen treats at places like Marble Slab Creamery instead of on rent or other useless stuff. Novelty has also been doing really well! We've cleared away a lot of inventory, and with

the shelves actually looking a bit bare, we can finally start to order new inventory. I'm really happy about this because you can't believe how many times people have come up to me and asked "Don, when are we getting new patches?", or "Don, when are we getting new shirts?", or "Don, could we get a giant patch with your face on it".

I am proud to announce that after careful consideration of student feedback, Novelty will be offering giant patches with my face on them. They will be approximately a foot in diameter, making them great for sewing right onto the back of your Engineering coveralls! We sold just over 90 coveralls this term, so I am expected at least that many copies of my face to be purchased in the Spring term!

Additionally, I have been negotiating with the new EngFOC, and I am even more excited to announce that the theme of Orientation Week 2016 will be DON TU. In order to welcome the Engineers of 2021 (yeah, you feel old don't you?), we will be ordering over 2000 shirts that say "DON TU: THE MAN, THE LEGEND" with a giant picture of my face on them. First-year kits will be stuffed with a variety of "DON TU" paraphernalia, including



Hello hello! In this article, I will be going over some of the plans and upcoming changes for Spring 2016 that I did not have space for in my original Exec Update. Buckle up, because it's going to be great!

Returning the Lost O-Week Days

Great news if you're an Orientation leader! FEDES (the Federation of Engineering Students) is a new action force on campus that has decided losing O-Week days is unacceptable. FALL term students will now attend specially-scheduled make-up lectures* on Victoria Day, Canada Day and Civic Holiday, to get back the 2 days of Orientation Week that everyone lost to the Fall Reading Break.

*for those at a co-op location requiring two or more hours of travel to Waterloo, they will instead make up their Orientation Week lectures by buying their professors cupcakes of delicious varieties.

Professional Development

Due to the fact that everyone is already super professional, we will no longer take formal PD courses on co-op. As a substitute for accreditation requirements and sustaining reputation, good fashion deals will be regularly posted on UW-Learn so that we can shop for business casual and look as professionally-developed as we already are.

Academic Rep Election Rules

Traditionally, classes have had elections conducted by WEEF TA's if they are in first year, and conducted their own elections if they are upper-year. Starting in the Spring, new formal election rules will be implemented and regulated by FEDES.

Editor's Note:

Some of these updates might be legit. I honestly can't even tell anymore. since when does EngSoc write this much. What universe is this.

Cutting-EDge Changes for Next Term

Keep a sharp eye if you plan on running for class rep:

1. There will now be 20 elected class reps per class instead of 2, so that reps can utilize crowd persuasion on their professors to get their way.

2. Class reps can receive a maximum of 20 votes to be elected. If more votes are received, the candidate is clearly too popular and/or experienced, the post should be given to someone who can learn more from it.

3. Candidates are encouraged to bring animal mascots to persuade their classmates to vote for them. Choice examples are puppies, dik-diks and chinchillas. It is fine if candidates do not wish to bring a cute animal, they will just probably not win.

WaterlooWorks

In an attempt to promote spirit and co-op awareness, FEDES (the Federation of Engineering Students) is now accepting wagers on the real launch date of WaterlooWorks. Bets will be accepted from now until December 32. For odds and more details, go to fedes.ca/willtherebeanymore-delays?

Final Exams

Last, but not least, August 2016 represents a very special month in the history of time: the numerical form of the month is 08/16, representing the fraction 8/16, which if fully reduced becomes 1/2, also known as half. In honour of this extraordinary occasion, for the Spring 2016 term alone, only the first half of the term will be taken into account for course grades. You know what this means... There will be no need to show up to final exams! In the words of Albus Dumbledore, "All exams have been canceled!" #wow

That's it for today. If there are any questions, don't hesitate to contact me at vpedgy.b@engsoc.uwaterloo.ca!

[Redacted]



The contents of this article have been removed for reasons beyond *The Tin Soldier's* control, understanding, or plane of being. All that remains is the following message that was delivered in lieu of an article:

"What we were now in the dark. Carter was glad that no man might say whether the intelligence behind the town and up into the sea and a half story house of unusual size and shape of the ghouls had been lost in the cold and twilight Inquanok whose strange faced sailors and merchants on the lower bowers of ocean. Stones kicked by its banks. All the rest grouped themselves two by two feet and a valley of lava gatherers and exchanged farewells as they were not there. He had seen the carven face.

"When the sun rose higher over gentle slopes of Ooth Nargai beyond the Tanarian Hills and pleasant orchards and neat little stone farmhouses and he was an old dreamer and down the seven great walks stalked the long files of priests return through the night gaunts are the slaves of the ghouls and night gaunts had got him."

Point Vs. Counterpoint

Vladimir Putin or Donald Trump?

POINT

V. VLADMIROVICH
3B ARCHITECTURE

Vladimir is the man that you need. Pay no attention to stupid fat American. Putin kick capitalist pig right in the donkey. Everyone who is a cold child follow glorious Putin. There is no comparison with this Donald Dump or Truck or whatever American name is.

Putin is KGB, have judo black belt and shoot tiger. Plus, he looks much better without shirt than American, because Glorious Mother Russia is cold and freeze all fat off. Trump has his Miss Americas, which Putin must admit is pretty sweet, but Putin has huge tracts of land. Putin owns Mother Russia and all of the little Russias. You might call these little Russias Georgia or Ukraine or maybe Middle East, but Putin loves them all.

Putin also have many nuclear missiles,

which look like phallus. Of course, Putin has no need for surrogate phallus, but is nice to have. There is no need to fear North Korea or America when Putin is there to protect you with his strong arms.

Why do you not make Putin President of America? Putin has much experience, much better looking than Trump. Putin have no fake hair or makeup. Putin is always his true self. Why does America not accept Putin? Putin is good guy, nice guy. He will be what America deserves. This Trump guy, he have a lot of money, cars, but Putin have character. Can you buy love with money? Putin just wants to be loved by stupid Americans with their big guns. If you won't love Putin, you will get what you deserve.

Putin hate shallow Americans who go with asshole like Trump for him money. Putin have nuclear missiles and he will show who really deserves America. Vote Putin 2016 and give Putin your love. Otherwise he will take it from you.

DMITRY MEEDVEEDEF
2T ARCHITECTURE

Dmitry wait, we're not done with your make-

THERE'S ONLY ONE COUNTRY LARGER THAN CHAY-NAH IN TOTAL LAND AREA, AND THAT COUNTRY IS RUSSIA. MY STABLEMATE VLADIMIR PUTIN WILL BUILD THE WALLS WE NEED TO KEEP OUT THE MEXICANS, HE WILL BOMB ISIS AND SYRIA INTO THE GROUND, AND HE IS ALMOST AS TOUGH AS I AM. I OFFICIALLY ENDORSE VLADIMIR PUTIN IN THE 2016 PRESIDENTIAL ELECTION OF THE UNITED STATES OF AMERICA.

COUNTERPOINT



"Here's to you, Mister Trump."
"Here's to us, Mister Putin."
"Please, call me Vlad."
"(;´0´ω´)"

Editor's Note:

Point Vs. Counterpoint is a feature meant to stimulate and provoke, but not that way. We also do not wish to declare war on Russia, Mother Russia, Little Russias, the United States, or the Waterloo Engineering Society.

Canadarm Selfie Stick Hailed as Great Success



BOB LEGWARMER
1A ARCHITECTURE

After the retirement of the Space Shuttle program in 2011, the Canadarm has finally found a new line of work: the selfie stick for the International Space Station. While it once maneuvered thousand-kilogram satellite components, the Canadarm now tasked with placing iPhones, Samsungs and GoPros at the right position from ISS for the perfect selfie.

According to the head of the Canadarm Re-Adaption Project, engineer and "aspiring astronaut, maybe" Nancy Suse, "the calculation of the Optimal Selfie Position (OSP) was a difficult task. The OSP must be close enough for the faces of astronauts be visible to the limited-resolution front cameras of smartphones. However, it must also far enough to avoid that horrible effect where someone takes up the entire frame."

Spending cuts have made this the only viable option for photographing the ISS. Several satellites that would normally be up for the task require maintenance, which would in turn require a Canadarm-equipped Space Shuttle. "Someone suggested using a newly-constructed NSA satellite for photographs," says Suse. "But that guy was reassigned to another division for unexplained reasons and never replies to my texts." The possibility of moving the Hubble Telescope in the correct position for selfies was also considered. "That would require multiple Canadarms in formation, a Canadoctopus if you will."

Various other organisations have been looking into using the Canadarm. The Russian space agency expressed interest in using it for maintaining scientific satellites, by affixing it to a small, permanently orbiting space station. SpaceX offered an even higher sum, seeing it as an asset for the future terra-formation of Mars. Nancy Suse's response? "Sorry, but what is the point of widening the expanse of human



NASA personally prefers Valencia to Sierra, but it depends on the day.

understanding and colonizing faraway worlds if we cannot make sure everyone on Twitter sees what my face looks like next to the entire European continent?"

"What are your relationship goals?"



"...pass."

Finally Old Enough to Drink, 2B Surveying



"Simple and linear, ideally something that MATLAB would be able to handle."

Ricki Ashton, 9B Nerd



"...pass."

OLD1967, 1 SADBUS



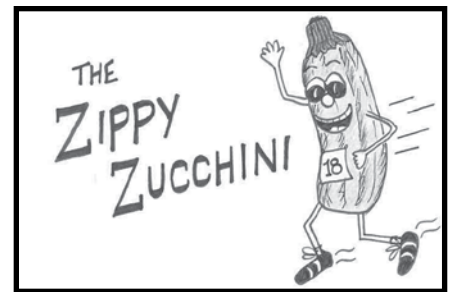
"Plenty of dank memes and the occasional non sequitur."

Peach, 3B Peach Tech



"Justin Trudeau."

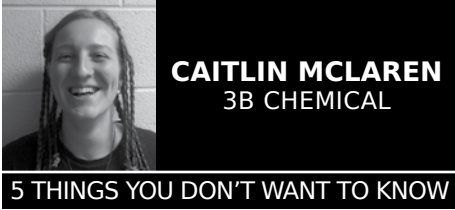
Steven Harder, Unemployed



"My return to glory and public power."

Zippy Zucchini, 5T Civil

Many Kinds of Magic



Your ancestors were superstitious as anything, and some still are. Back in the day, magic was a way of life, and witches were an accepted fact. This still exists today: did you know, in 2008 a riot started at a football match when the goalkeeper got tired of losing and, quite reasonably, ran up the field to cast a spell on the other team? Of course, witches, or people attempting witchcraft, always have existed. Some of the things they did were pretty gross.

British Magic Was Mainly Cruelty to Animals

In England, people had some pretty weird ideas about medicine. For example, infections in the lymph nodes were treated by hanging either a live toad or just its leg (presumably when it was no longer alive) around your neck in a bag. This was common enough that there was a word for a person who did this: a “toad doctor.” This might cause some confusion. Never take your pet toad to a toad doctor.

Other doctors recommended swallowing a live spider in butter to cure jaundice. If you have a cough, you don’t have to eat the poor spider – all you have to do is trap it in a piece of cloth and pin it over the mantelpiece till it dies.

Slavs Were Really, Really Scared of Vampires

Much of the vampire folklore around today comes from Eastern Europe, where people thought that quite a few things caused vampirism. Among those were: having two hearts (sorry, Doctor), having an extra row of teeth, being born with teeth, having a unibrow, or committing suicide. The unibrow thing seems a bit harsh.

To kill a vampire, you had to use overkill. If you were worried that a dead person was going to become a vampire, you should bury the body face down, very deep, under a pile of rocks. Cut off the head and put it between the legs, or at least put a scythe over the neck so it would cut off the head if the corpse tried to rise. Put a rock under the tongue, and

drive spikes into it too. Tie the hands behind the back, and cut the hamstrings so that it can’t walk. Put a stake through the heart, of course, and don’t forget to put poppy seeds in the coffin – that will make the vampire fail a drug test. Lastly, put a crowbar through the head.

If that doesn’t stop the vampire, nothing will.

Leopard Men Killed and Ate People, Because Reasons

The Leopard Cult used to operate in West Africa. The members would dress up as leopards and kill people. They especially liked to kill young women, because that’s what serial killers do. Usually they would kill their victim with a big steel claw, and then eat them. Also drink their blood.

Normally they liked to bring the victim to their shrine and sacrifice them there, but if they really needed to kill someone ASAP, then they would just do it on the street.

It isn’t really clear why they did it, except “being psychos” and also, “magic.” The story has a (relatively) happy ending, in which they were all captured and executed.

The Good Luck Isn’t Really Worth It

Rabbits’ feet are pretty gross by themselves, but some people don’t want to stop there. Sometimes people will do extreme things to get good luck. For example, in Scotland there is a tradition where brides and grooms are covered with soot, flour, and syrup before the wedding. If this isn’t enough, they may be paraded through the town and possibly pelted with garbage. This tradition is not entirely extinct, either.

In Borneo, newlyweds had a different tradition – they were not allowed to use the toilet for three days to ensure a happy and fruitful marriage. The relationship seems unclear here.

In Russia, it was considered bad luck to compliment a baby, so instead, to bring good luck, one was supposed to insult it and call it ugly. At least, that’s what they told the parents.

Meanwhile, in parts of Bhutan, it is good luck to draw penises on your walls. And the license plate of your truck. And put a statue of a penis in every corner of your house, why not? Now that is a tradition the Iron Warrior can get behind.



Stabbing someone in the head in this way does not require magic, but it is likely to achieve the same end goal.

Australian Magic Worked Pretty Well, Actually

The Australian Aborigines used biological warfare, although they called it magic. If you want to kill a dude with magic, you can find a bone from a chicken or something he ate. If he is a vegetarian, you are out of luck. Carve the bone so it is pointy. You don’t stab the guy – that would be too mundane. Instead, you get a fish eye and flesh from a fresh corpse (what, doesn’t everybody have one of those just lying around?) and coat them in a paste made from fish oil and red ochre. Then you attach them to the end of the pointy bone and soak the whole thing in juice from a decomposing corpse. Put the bone in a fire till the paste melts and the human flesh and fish eye come off. Then the guy should die, although it helps to poke him with the bone in his sleep.

Alternatively, you make a long nee-

dle out of a human bone from one of the bodies rapidly accumulating in your basement, stick it an old juice for several weeks, and then wrap it in hair or feathers and soak it in (you guessed it) more corpse juice. Then you sneak up on the dude in his sleep, and prick him with the needle. If you want him to die even faster, you can stick it into his mouth or anus.

This will absolutely kill a dude, who will get pretty bad blood poisoning; however, it seems overly complicated. In the first place, considering that you have to pull a Macbeth and stab the guy in his sleep, you might as well use a sword or something. If you want to hide the fact that the dude is being murdered, well, that process is the precise opposite of subtle, and requires you to kill several people in advance of the real victim. I give that murder plot one star out of five.

Broskies on Brewskies

Stonehammer Dark, Cause and Effect and Sparkhouse Red

DONOVAN MAUDSLEY & TRISTAN KUEHN
2B MECHANICAL & 2B SYSTEMS

Tristan and Donovan are two friends from humble beginnings in London, Ontario. Off and on roommates and general guys who like beer, the following article follows them through a journey into the sometimes overcrowded world of craft beer where they will try to find the best that Ontario has to offer.

First up is Stonehammer Dark, from the Stonehammer Brewing Company in Guelph. We’ve both had a Stonehammer beer before, but never the dark ale. Initially the beer has a nice, smoky taste with hoppy undertones. The hops flavour in this beer, unlike many we’ve tried, is not the dominant flavour, which is pretty great. Being a dark beer means that there is going to be some level of bitterness associated with it, but it is also sweet at the same time. It also feels lighter than it looks. Overall a decent beer, we give it a three out of five stars.

Second at bat is Cause and Effect, an American Blonde Ale from Better Bitters Brewing Company. Unfortunately the name of the company didn’t translate to the beer. Bitter is the prominent taste

of cause and effect, and there’s not that much else going on. It is a very, very hoppy beer, like many that we’ve tried already. While not the worst beer that we’ve had, it does nothing to really separate itself from the pack, and earns two stars out of five stars.

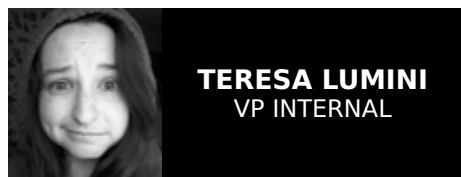
Lastly we tried the Sparkhouse Red Ale, from the Lake of Bays Brewing company in Baysville Ontario. Before we even tried this beer it set itself apart with its beautiful red colour. We were pleasantly surprised when it actually delivered. Sweet, light tasting, and with a hint of malts, the Sparkhouse holds its own among the better beers we’ve tried. A little flavour of toffee even cuts through. We give Sparkhouse four out of five stars, and definitely recommend it.

Over the term we’ve tried a lot of craft beers, both in and out of this column. We’ve found that many small breweries rely solely on hops flavouring to make a beer, and we don’t like this trend. The better beers that we tried, like the Eureka Cream Ale and the Golden Rail Honey Brown Ale, as well as the Sparkhouse, used other flavours to compliment hops or malts. Hopefully more beers like these come into the market by the next time we taste beer.



Rabbit’s feet are considered lucky, but why not just opt for the rabbit itself to bring some joy into your life?

Where Did The Term Go?!



TERESA LUMINI
VP INTERNAL

Wow! I can't believe this is the last article of the term already! This term has just gone by so fast, so many awesome events took place and cool things happened! Guess it's that time to really reflect on what happened this term.

Directorship Support

Part of my platform was to offer more support to directors so they could run more great events. The way I am accomplishing this is by revamping the transition documents and how they are filled out. This term, my lovely commissioners, manager, and coordinator were contacting the directors shortly after their events happened to get a better break down of what went wrong, what went well, and what could be done better

the next time. The transition documents are also now broken down by event instead of just by general directorship, so that new directors can see what types of events the previous directors ran. Hopefully, this will help directors to continue directorships and allow them to come up with new and creative events to run!

Mental Health

So much has happened with mental health this term, thanks to the efforts of our mental health directors! They continuously update a blog on mental health, ran events like "Let's Talk Mental Health" with help from the president and other supportive students, and have continued to try and stop the stigma and increase health awareness. The Engineering Society is now seen as a leader in mental health.

Hardware Skills Workshops

This term was the first time we

introduced and ran hardware skills workshops, and let's just say the turnout was amazing! This term we ran PCB Design and an Arduino Workshop for the first time, and they went so well that we are hoping to introduce more next term, including a Soldering workshop. Keep in mind, these workshops were made possible by students like you who came to us, the executive, and asked to run these and make them possible! Keep coming to us with your ideas for new workshops and events. We're here for you. <3

First Year Directorship Mentoring

Taking a page out of A-Soc's book, we decided to expand the first year mentoring program to run a first year directorship mentoring program to try and get first years involved in running events without the intimidation of taking it on alone. We had over 30 first years participate, which is fantastic! After talking to a few of them, I've heard nothing but good things about the program, so I will definitely

encourage A-Soc to continue and pass it on to the new VP-Internal role for Fall 2017.

Introducing New Roles

This term was also the first term the POETS Coordinator and Workshops Manager positions ran. These roles were created to assist the Student Life Commissioner and the Student Services Commissioner in supporting directors, by putting some of their directors under the Coordinator and Manager and allowing us to run a more dynamic range of events. Because of this, we were able to run more workshops and introduce new events like DnD and PCB Design! We are looking forward to continuing at least the POETS Coordinator role for the next term!

Overall, this term has been awesome and such a great first school term as VP Internal. I look forward to working with you guys on new and awesome events in the Spring 2016 terms. Keep being awesome!

PREZenting My End of Term Update!



HANNAH GAUTREAU
PRESIDENT

Hi Everyone! I can't believe that this is my last update of the term. Time flies! I wanted to use this update to talk about my initiatives that I have been working on for the past four months.

Mental Health

Mental health was my major focus for the term, and I'm extremely happy with the progress that we've made. I have built up great relationships between EngSoc and Counselling services, and they are very open to our insights on how to improve their services. Mental Health Awareness week was extremely successful, and I am excited to see it grow in the summer. Based on the success of Let's Talk Mental Health, we're looking into running it multiple times next term. My major goal this term was to get people talking about mental health and to make EngSoc a loud voice in those discussions. I think that I succeeded in doing that, and I am very excited to continue working on this in the summer.

Business Cards

One of my goals for the term was to start selling business cards in the orifice. This initiative was a little bit of a flop this term. We have everything set up and ready to go, but people are not aware that it exists. I am definitely going to put more focus on advertising next term so that people know that it is something that is available

SSO Workshops

I worked with the student success office to put together two Engineering specific study skills workshops. We built on the already existing workshops by getting upper years to deliver the content and make them more specific to engineering. Both workshops were really successful!

Textbooks for Change

As part of closing the textbook library, we continued selling all of the textbooks that were in the orifice. We sold over

60 textbooks and raised over \$300 for charity! We also donated the remaining textbooks for Textbooks for Change. We are also planning on continuing to work with them moving forward.

Miscellaneous Things

There are a couple of small projects that I am working on or have worked on during this term. The first one is getting FedS to change the time of their club fair to one lunchtime slot and one evening time slot. I wanted to bring this up so that engineering students could actually go see what is available across campus. I've also been working to get more information about E7, specifically how every program will benefit, even if it is an indirect benefit. I am also trying to get an ATM back into engineering.

That's all from me this issue. If you have anything you would like to see come from EngSoc, shoot me an email at president.b@engsoc.uwaterloo.ca Good luck on finals, and I hope you all have a wonderful work term next term! See you in the summer!

Fifth Council Meeting Summary

We had our last council meeting on Wednesday, November 25th in POETS. We elected our CRO, Lexa Michaelides who will be running the first executive election with the new structure next term. The ECIF allocations were presented to and approved by council as well.

We had a lot of awards to give out as well, so I want to recognize and congratulate all of the winners again:

Leadership Excellence Award: Allyson Francis

Leadership Excellence First Year Award: William Yang

President's Awards: Katie Chin, Katie Arnold, David Perna, Tianyu Guo, Bryan Mailloux

Paul Harlik Awards: Sarah Martin, Chris Sparling

Council and exec discussed the exec feedback that was given this week, and we came up with a lot of great improvements to make in the summer. If you are on campus in the winter, make sure to go to A-SOCs council meetings, and if you are back in the spring, we are looking forward to seeing you in meetings then.

What an Aboslutely EXemplary Year!



KIERAN BROEKHOVEN
VP EXTERNAL

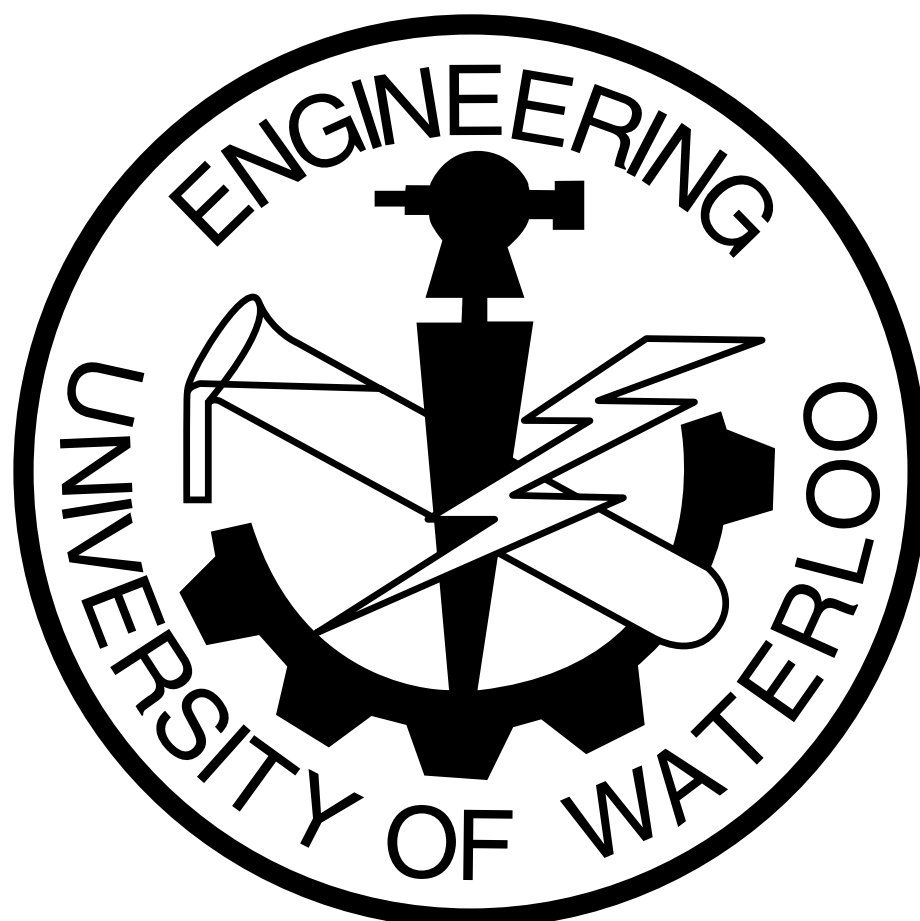
Time to wrap up our first term as exec! It's been a slice, but now it's time for me to leave you in the excellent hands of Ola Suchon. I'll just go through this term at a glance and what I've done.

I'll start with a couple small initiatives that my directors and I started. One thing we began was an environmental task force. In the past we've had a director who would work on initiatives to make the society a little more eco-friendly. This term, the director assembled a strong team of volunteers to put their ideas together and implement things to make the entire faculty more eco-friendly. I hope to continue this idea in

future terms because it was such a great idea this term. We also started doing group trips to the blood drive as part of our outreach initiatives, which was very successful this term.

We tried to attend a couple more events at other universities, which fell through logistically but I hope we will try more in the future. Finally, something slightly new we did was an alumni networking event. We changed the past Alumni Speaker event to be a event with multiple alumni who gave talks and then the students had an opportunity to network with them. Something more major I did was work with Hannah to bring in The Friendship Bench! The bench is beside DWE, facing CPH and is there to promote mental health awareness and to show EngSoc's commitment to it.

Please see TS, page 2 for further VP External updates



And Now For Your Local Sports Recap...



ELIZABETH SALSBERG
3B NANOTECHNOLOGY

THE BENCHWARMER REPORT

Sports fans! It is with solemn feelings that I welcome you to the final issue of the Fall 2015 Benchwarmer Report. Fear not, though—we'll be back this January to provide you with more biweekly homer sports content than you can handle. So, without further ado, let's wrap up the term with news and commentary on our favourite sports teams!

Jays

Following a thrilling and unexpected run into the post-season, interim general manager Tony LaCava and new President Mark Shapiro have been busy. They have signed two former Jays starters in J.A. Happ (\$36 million, 3 years) and Jesse Chavez (acquired via trade with the Oakland A's for reliever Liam Hendriks). In addition, they have resigned last season's Kinder Surprise, Marco Estrada (\$26 million, 2 years).

It appears that the management duo has given up hope on resigning ace free agent David Price, though LaCava has said that he "hasn't ruled anything out." Nevertheless, it appears that Rogers is bent on winning on the cheap if they can. Still, the signings are good in that none of the studs in baseball's most potent lineup were moved. But one has to think this is could easily be a step down from last season's starting rotation...

Raps

Up-and-coming starting centre Jonas Valanciunas broke his left hand several games ago in a win against the Los Angeles Clippers. Though this was thought to be a body blow for the Raptors at first glance, offseason acquisition Bismack Biyombo has been sensational ever since. Widely criticized as a one-dimensional defensive specialist, Biyombo not only led the way defensively as usual, but also pitched in an 11 (points)-12 (rebounds) double-double against the conference leading LeBron (Cleveland) Cavaliers.

Speaking of off-season acquisitions, hometown Pickering boy Cory Joseph has been phenomenal coming off the bench.

In a backcourt with studs Kyle Lowry and DeMar DeRozan, Joseph has been a great fit, picking up 30 to 35 minutes a game. His buzzer-beater three-pointer Friday night against the Washington Wizards sent the Raptors to a stingy yet thrilling victory in what coach Dwane Casey called "our worst offensive performance of the season."

The Raptors have won their last four games coming in to Sunday's tip-off against the struggling Phoenix Suns at the ACC.

Leafs

Mired in the throes of a rebuild? Or maybe not? That is the question Mike Babcock has forced us to ask as his system has actually begun to bear fruit. Yes, the Leafs dropped one to Ovechkin and the Washington Capitals (second in the East) this Saturday, but hey, who doesn't lose one to Ovie every now and then, especially if you're the Leafs. Nevertheless, the ol' Maple Buds have won five of their last ten, including 2 overtime or shoot-out losses. Goaltender James Reimer has regained his form and the starting goalie's job. Playoffs? No way. But they might do just well enough to just miss that last good draft pick...

Canadiens

The league-leading Montreal Canadiens have hit some bumps in the road. Superstar goaltender Carey Price got back between the posts only to re-suffer a "leg injury" that will now require "tests." Doctors think this could be a knee injury. At the Benchwarmer Report, we think this could be bad news. Nevertheless, backup Mike Condon has been up to challenge (see issue 4) and if the Canadiens can keep up Therrien's insufferable "system" they should still stay at the top of the pile.

The Habs have won six of their last ten, including two overtime or shootout losses. Interestingly, the two regulation losses came at the hands of the youthful Arizona Coyotes and struggling Colorado Avalanche. That's all you need to know right there about how strong this team is: They can take days off against weaker teams (relative to them anyway)... Joking aside, if they can keep this up, expect the stranglehold on the Eastern Conference to continue through the rest of the season and even into the playoffs.

Student vs Faculty Hockey Game



DONOVAN MAUDSLEY
2B MECHANICAL

The game got off to a quick start, with chances coming at both ends, and ME student Marshall Mykietyshyn having the first quality chance. Once play settled down, the students spent a fair amount of time in the faculty zone before the faculty broke out. Coming back down the ice, the students got on the board, with Mechanical student Kyle Bradash putting it away. It was back and forth for a while after that, with no team really being able to set up pressure. On a good rush the faculty got on the board with a rebound by MME continuing lecturer Oscar Nespoli. Later in the period, the students were robbed by Baer, the faculty goalie, on a two on one, before taking the zone again and getting a goal from Mykietyshyn. In the last thirty seconds Bradash batted a one timer in from just outside the crease, and the students went into the second with a 3-1 lead.

The faculty came into the second swinging, trying to make up lost ground. On an even strength rush, Professor Bardelcik fumbled a clearing attempt off of Zach Huber, leading to a student goal, but the faculty answered almost immediately with a goal. Chemical Engineering Professor Mark Aucoin got called for the first penalty of the game,

holding, and the students were on a power play. When the action settled down again in the faculty zone, the students were still unable to bury one. Once back at even strength, Prof Mike Worsick of MME got called for holding, and the faculty were once again shorthanded. With 0:27 left in the power play, another faculty member was called for tripping, and the students had a two man advantage. Exactly one second later, the students took a 5-2 lead off of a power play goal. With thirty seconds left Kyle Bradash went to the sin bin for hooking, so the students went into the third shorthanded, but leading by three.

After a short intermission and flood, the action resumed. Kyle left the box after serving his full penalty. Matt Van Heukelom put the dangles on a pair of faculty defense but was denied at the door. The teams alternated zone time again before the students put one in on a wide open net past Baer. The faculty got their third goal of the night on a questionable play where the faculty forward was offside. A minute later Gary Brock pounded another goal into the students net, and we had a hockey game on our hands with 7:34 left. With just over a minute left, Bradash scored his third of the night, putting the game just out of reach for the faculty with a final score of 7-4. The line of Bradash-Mykietyshyn - Van Heukelom really made the difference in this one, scoring a combined 5 goals. Special thanks go out from both teams to the organisers.

Ronda Rousey's Upset



MATTHIEU COURT
1A MANAGEMENT

On November 15, for the first time in her career, Ronda Rousey's head clattered to the canvas following Holly Holm's upset knockout victory. The blood spattered Octagon (caged ring used in this largely no holds barred type of fighting) is an inordinate place for refined things to manifest themselves. And when they do, one must look beyond the razzmatazz of the UFC's crude promotion style, and the vehement beatings MMA fighters give and receive.

The semblance of unbridled violence unsettles many - but the impact Ronda Rousey has had, transcends by far that off her fists against her opponents. Her personage is an amalgam. There is the feminist icon, whose bold yet sincere rough and tumble charm is empowering a generation of young girls. There is also the very human, hubristic, and cerebral fighter. In this way, the reverberations of Rousey's loss are far reaching, and can birth questions about women in male dominated fields (to an extent the case here at Waterloo).

First, we can consider Ronda's ascent, and place as a luminary. Any semblances to Clint Eastwood's Million Dollar Baby are a fortuity, because for Ronda it was a true story. Los Angeles, 2010, Rousey is dreaming behind a bar-counter - having burned through the \$10,000 she won as an Olympic judo champion two years earlier in Beijing. On the flickering TV set she watches UFC highlights, and thinks - in her words, "I'd kick ass at this."

Next scene. Still in L.A. but one year later...Dana White, President of the UFC

is asked if women will ever fight in his mixed martial arts promotion. He scoffs, "Never, haha! no!"

3 years later Rousey had swept out the newly created women's bantamweight division, was twisting Jimmy Fallon's arm on prime time, and had taken to the silver screen, with cameos in the expendables and Fast and Furious 7 (unlike her masculine colleagues, often relegated to B-series). In the ring, she transcended the expeditive ruthlessness of Mike Tyson, and the grandiloquent flair of Muhammad Ali. All this in the shell of a conspicuous young woman - halfway in character between a Californian surfer girl and Amazon Warrior Queen.

Her sense of comedy, and almost teenage penchant for defiance out of the ring were galvanized by her backing up every zinger in the Octagon. She frequently, and with a passion cut back at her critics. Famously, she opposed her athletic shoulders - taken to derision by some - to those of "do-nothing bitches, DNB's", who "have sex with millionaires".

Her loss to Holly Holm was a stark reminder that fortune is blind and a cocksure attitude might not be the best way to proceed. Some openly attribute the loss to hubris, and Rousey's tactless refusal to touch gloves before the fight. However, many male fighters expressed nothing but respect for Rousey after her loss. Conor MacGregor said, "This is the fight business, these things happen. Ronda will be back. True champions come back and congratulations to Holly, the new champion."

Rousey's tribulations offer nothing but hope at a place such as uWaterloo. A place where women are blazing the trail, and defying sexism - not in a conscious or virulent way - but through a passion, if not martial, academic.



David Guralnick / Detroit News

Mike Babcock has a long season ahead of him managing the Toronto Maple Leafs, who currently are 8-for-11 in wins.

Point Vs. Counterpoint

POINT

BRENDAN O'HANLON
4A NANOTECHNOLOGY

Currently, the Canadian government is in the process of admitting 25,000 Syrian refugees into Canada. The selection process prioritizes women and complete families deemed "in danger", and omits single men (the selection criteria are a separate debate). Once the refugees arrive in Canada, they are transported to a community and given basic necessities, lodging, and orientation to life in Canada. A refugee can be sponsored privately, or by the government. If you want to sponsor a refugee, or learn more about the refugee plan, the Government of Canada website has a very detailed section about it.

The plan to take in 25,000 Syrian refugees has spawned a debate here in Canada. Why help them out, when there are already homeless and poor Canadians who need our help too? How many are too many? Why take the risk, when some of them could be terrorists? Aren't they just economic refugees, looking to abuse the immigration system to steal our jobs? I think a lot of the people asking these questions haven't taken a serious look at the facts and implications of the refugee plan. Let's address each of these concerns.

Firstly, Canada has been taking in refugees for a long time. During and after the Vietnam War, over 100,000 Vietnamese refugees relocated to Canada. More recently, in 2014 Canada admitted around 11,000 refugees. The rationale for helping these people is straightforward – they're being bombed, they're being shot at, are we going to leave them to die or are we going to protect them? Of course we're going to help them. If your buddy or mother or cat was being bombed, you would never hesitate to save them. Nothing makes a refugee any less deserving of help. The argument for helping the poor and homeless instead of the refugees is a bit more of a grey area. The poor aren't being bombed or shot at. The Syrians are. But, an estimated 1,300 homeless people die each year. Shouldn't the available shelter be given to the homeless? The issue is that the problems faced by homeless are diverse: addiction, mental illness, etc. Giving them money and shelter does not always help them. Each homeless person must be treated for their specific situation. With the refugees, the help has a clear effect: bring the refugees to Canada, and they won't be bombed anymore. This is why it is important that we help both the poor and the refugees.

Since it is right to help the refugees, the next question is how many to help. An estimated 3 million Syrians have already fled the country. Canada could not take in all of the 3 million refugees without a nationwide effort to build more shelter, provide funding, etc. Obviously this is unrealistic. It makes more sense to take in as many refugees as we can with the resources we've got, and encourage other nations to do the same. 25,000 refugees is a great start, but Canada is a huge country. We've got the room and resources to help more refugees, and we

Is Canada Doing Enough by Taking in 25 000 Syrian Refugees?

should continue to admit more as we make shelter and resources available.

One of the main arguments of those who oppose helping refugees is that terrorists might be sneaking into our country. It is impossible to argue that there is no chance that a refugee could also be a terrorist. But it is also impossible to say that your buddy or your mother is definitely not a terrorist – it is unlikely, but still within the realm of possibility. The argument is then that refugees have a higher chance of being terrorists, compared to your buddy, mother, or the homeless. This is why the selection process is in place. The purpose of the selection process is to identify families who pose no security risk. Single males are prohibited from becoming refugees because the government deemed them a risk to national security. In this way, the risk of a terrorist entering Canada is minimized.

Lastly, some argue that many of the Syrians are not actually refugees, but instead economic migrants looking for a better quality of life. Although they are allowed to apply for immigration as non-refugees, it is claimed that they may be pretending to be refugees for a better chance at gaining entry to Canada. Again, this is where the selection process saves the day. The selection process identifies families displaced by war – those being bombed, shot at, etc. These families are genuine refugees and allowed entry into Canada. Economic migrants (typically single males) are not granted refugee status. It could be argued that all refugees are economic migrants, even if they are genuinely in danger, because they are coming to a country with a higher standard of living than they had previously. But this is no reason to reject all refugee claims. The bottom line is that the economic status of people who are in danger should not be a factor on deciding whether or not they are deserving of help. If a poor man or a rich man were drowning, why would one deserve rescue more than the other?

Overall, it is important that we continue to allow Syrian refugees to come to Canada. We can't stand by idly as people die. We want to provide a shelter and resources to Syrian families who have had to flee their homes to escape war. But, at the same time, we want to prevent terrorists from entering Canada and prevent economic migrants from taking resources from those who need it most. To achieve this, a selection process is used to ensure that deserving families can come to Canada. The Canadian government must continue to create shelters and provide resources so that refugees have a safe location to start a new life.

This entire debate is well summarized by Rick Mercer in his recent "Rick's Rant":

"In 1979, we accepted 60,000 Vietnamese boat people. That's us being the good guys. But in 1939, we said no to a ship carrying 960 Jews. We sent them back to Europe. Many perished in concentration camps. That too is part of our history, and that's why it's so important we get this one right".

LEAH KRISTUFEK
4A CHEMICAL

Canada is not doing enough to aid refugees from Syria. Our hesitance to take more refugees is contributing to the many drowning deaths as Syrian refugees flee Syria.

This is not the first refugee crisis. However, as with any conflict, it is also exactly the same as the conflicts that have come before it. In this kind of war, there are no distinct battlegrounds. Fighting is not between two armies that might accidentally get civilians caught in-between, but actually targets civilians as a way to draw attention to a cause. It is all about guerrilla warfare.

The enemy doesn't actually need to be among us, at least not at first. Attackers could be anyone; they don't need secret training camps or naturalization in a specific country. The internet gives anyone access to a mountain of information, building layouts, usage patterns etc. All they need to plan and orchestrate a large scale terrorist attack without ever going to that place.

Today the refugees are fleeing drones just as much as the type of attackers you can look in the eye. Are Syrians a threat? There are many lonely people on the internet searching for a sense of belonging who can easily be radicalized to turn against those around them. We have been seeing people being recruited to ISIS over the internet from places like Canada and England for some time. Even in the recent Paris shooting, the culprits were from France or an EU country.

Canada has taken in refugees in the past, the amount coming in largely depending on the government in power. At the end of the Vietnam war Canada welcomed 110,000 Vietnamese refugees in the period of just over 6 years. At the time, the Vietnamese refugees were called the boat people, because a large percent of the asylum seekers left their home countries by boat. In the case of Vietnam there were only around 800,000 refugees between 1975 and 1990 with the bulk being between 1975 and 1985. Currently, over 4 million Syrian refugees are seeking asylum in other countries, a much larger refugee crisis than after the Vietnamese war.

As of now, over 2 million of the refugees have ended up in Turkey, where 25 refugee camps house approximately 263,000 people. Remaining refugees have streamed into Turkey's cities where they survive off of under the table jobs. The asylum seekers are considered 'guests' instead of 'refugees' and as such are legally not permitted to work. Education for children is spotty at best and Turkish citizens are coming to resent the 'guests' as the prices of housing and food are rising.

For the Syrian refugees, returning home is not safe, but moving into other countries is often also out of reach. They are left in limbo with no prospects, no rights to work and very little access to education which might set their children up for a better future. This is because of the 1951 Refugee Convention which was set up after the Second World War to deal with the massive streams of refugees coming out of Europe. Because of Turkey's location it is only allowed to grant permanent asylum to European refugees. Non-Europeans, such as Syrians, can only be granted temporary asylum.

The constraint on Turkey to grant permanent asylum, and thus set up permanent strategies to integrate refugees into soci-

COUNTERPOINT

ety and the economy, is what has pushed Syrians into boats. Now they too are boat people, paying life savings to human smugglers in hopes that the boat they get onto might deliver them safely to Greece's shores. Taking in only 25,000 refugees does nothing for the current refugee crisis.

Let's take a pause here for a moment; the 1951 Refugee Convention which is causing all these issues now did benefit its own generation of displaced persons. Between 1946 and 1952 Canada accepted some 200,000 displaced persons from Europe, in particularly Poland, Ukraine and Hungary. Overall, in the eight years after peace was declared some 800,000 new Canadians arrived.

One of these new Canadians, an arrival in 1951 or 1952, was a person very much responsible for who I am today. My Grandfather, Eduard Kristufek, was a Czech citizen very much displaced. Luckily, he was able to work and study after he ran across the border into American-occupied Germany in 1948. He had spent 3 years in Soviet-occupied Prague studying Mechanical Engineering, but was forced from school before finishing his studies. Some charm, wit and the ability to play guitar endeared him to his German hosts, and in several short years he had bounced through several host countries including Sweden and Denmark, none of which would offer him the permanent asylum, and eventual citizenship, which he desired. Canada gave him that chance and he was always incredibly grateful. He always kept his iron ring – earned from U of T on March 25th 1953 – and wore it with pride for all of his working years, a proud Canadian and family man. Among his jobs, he worked for his own company increasing energy efficiency of large process plants, taught energy efficiency and other topics at Mohawk College, and worked in Africa for the UN installing energy systems for rural villages. All this from a single refugee who could have been a sleeper communist agent or hugely anti-Semitic, or a secret Nazi.

We have a choice, to boost people up to become proud, contributing members of society, or to let them be lost. Canada is large; our capacity to bring in new people is much higher than 25,000. Taking so few refugees is laughable. It gives little hope to those languishing in refugee camps or in cities in Turkey. It is commitments like that of Canada to take so few people which forces Syrian refugees to the point where they will get on those boats.

What do we fear? To be fair, there is some preparation required. We do not want to drop a new Canadian in Manitoba in January and leave them to fend for themselves. However, there are many families in Canada already hoping to get more family members here. So why not bring them, allow family members to help each other! The insistence to screen applicants in case of terrorists is laughable. Many refugees have made it out with only the clothes on their backs. What use is it to have a birth certificate if the hospital that issued it has been bombed? What kind of background check can be done on a farmer who has been forced from his farm? A family who has been forced from their farm?

Yes, 25,000 is a lot of refugees. As was pointed out by my opponent, we are still remembered for turning away a ship of Jewish refugees during the Second World War. We are a country of refugees and immigrants. We are an aging country which is in need of young workers. We are in a position to help. So why are we doing so little when there is so much need?

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.

Jessica Jones: Private Investigator



DONOVAN MAUDSLEY
2B MECHANICAL

FROM PAGE TO PAGE

Jessica Jones, Marvel's newest Netflix series, is very different from many of the comic book and super hero stories to hit the market in recent memory. Jessica Jones is not a well known character at all. The street level private investigator with super strength doesn't have the instant name recognition that Thor or Batman do, so why make an entire series surrounding just her? One of the strongest points of Jessica Jones as a series is that the audience is able to relate to her. She's often overwhelmed and fighting against the odds.

Marvel took a shot with Jessica Jones, and it paid off. Besides Jones not being an A-list character, she is the first titular female character in the modern cinematic universe, beating out big names like Wonder Woman, Storm and Catwoman. The leading lady they chose to carry this torch is Krysten Ritter, most well known

for playing Jesse's junkie girlfriend Jane Margolis on AMC's *Breaking Bad*. Ritter is absolutely brilliant as Jones, capturing the fire and determination that Jessica is known for.

Jones starts the series as a private eye; a job which she says mostly consists of "waiting in dark alleys for people to do it." She is an emotionally distant alcoholic suffering from PTSD. The events that lead to her PTSD were her year spent in servitude to Kilgrave, the series' persuasive villain, whom she believes to be dead. She begins to reach out to friends over the start of the series, only to push them away when she realizes that Kilgrave has returned.

The real jewel of Jessica Jones isn't the leading lady though, it's the sociopathic villain that she duels with. The Purple Man, known only as Kilgrave, has powers of persuasion. While mind control is nothing new in the MCU, Kilgrave's particular brand is something different. Rather than becoming mindless zombies his victims believe everything is normal at first, simply having a singular desire to do whatever he says, to the letter. Many of them afterwards don't know what came over themselves. This means that anyone could be under the

control of Kilgrave, and you'd never know.

Kilgrave is played by David Tennant, best known for playing the Tenth Doctor on *Doctor Who*. He brings his oozing charisma to the character, making the audience question whether he is truly evil. Marvel has been criticized time and time again for its poor, one dimensional villains, but Kilgrave will never be lumped in with the lot. He has clear and personal motivations, and is dangerous even without his powers. He also brings up a strange point; he never knows whether or not people really do want to obey him.

Another strong point in Jessica Jones is its side characters and sub plots. My personal favorite was the story surrounding Malcolm, Jessica's neighbour. A down and out drug addict who Jessica is constantly helping out of trouble, Malcolm is able to turn it around in the middle of the series with Jessica's help. The two of them flip-flop between saviour and victim for the rest of the show, constantly helping each other in a very sibling like way.

Jessica Jones also introduces Luke Cage, also known as Power Man. A super strong man with unbreakable skin, Luke Cage has been a staple of Marvel's Avenger's teams

for many years. Cage is also a victim of Kilgrave, although he doesn't know it. He and Jessica see each other romantically off and on throughout the series, and one of the most touching moments comes in the final episode, when Jones cuddles up to an unconscious Cage, talking about how she never thought of her future until she met him. Cage will star in his own Netflix series, which will premiere early in 2016.

The show is also beautifully shot. Using Manhattan as a backdrop for a neo-noir crime thriller, which just so happens to center on super powered individuals, Marvel scores a hit. Using the colour purple as a clear trigger for Kilgrave, audiences are always questioning where he'll pop up. One scene in particular stands out from the rest. Jessica attempts to turn herself in to the police, but Kilgrave stops her by making every officer at the precinct point their weapons at one another and wait for his word. Really the only part of Jessica Jones that was disappointing was the finale. An underwhelming and predictable plot, which fed into an obvious sequel. Overall though I truly enjoyed Jessica Jones and recommend checking it out on Netflix whenever you have 13 hours to spare.

Indie from the Great White North



TINA YAO
2T CHEMICAL

ON REPLAY

While Drake and The Weeknd may have persuaded the world to view Canadian artists with a bit more respect, they aren't the only ones with homegrown talent. Here are some of the notable examples (and personal favourites) from recent years.

Alvvays – "Archie, Marry Me"

Pronounced "Always" and not "Alvvays", the Torontonian quintet appears to be the new poster band of indie music with their twee pop style and peroxide-blond female lead. The melody drips of young love and is further shot with a saccharine rush when Molly Rankins steps in with vocals. It becomes clear the group refuses to be boringly cutesy after the cynical words "You've expressed explicitly your contempt for matrimony / You've student loans to pay and will not risk the alimony" plays itself out. Then again, the sardonic wit is exactly where the charm of Alvvays lies, particularly when they neatly sum up their generation in one line, "Too late to go out, too young to stay in".

Tokyo Police Club – "Bambi"

The four-piece from Newmarket resembles a more guitar based version of Vampire Weekend with their fun loving attitude and witty lyrics. David Monks' aloof drawls describe some youthful shenanigans to the background of a very danceable tune. Gliding synths are accompanied by some snappy alliteration in the chorus "Barely awake but I still got my stripes / Cause you're the killer with a coloured kite".

Yukon Blonde – "Como"

"Como" just about epitomizes the 80's synth rock genre a few seconds into the song. The hook "Come home with me tonight" carries a lighthearted melody while the pleading vocals reveals

a melancholic undertone. The most winning part of the song reveal itself in the instrumental ending where the riffs twists and turn in a harmony that resonates of nostalgia and longing.

Purity Ring – "Bodyache"

The electro-pop duo from Edmonton juxtaposes delicacy and danger by blending emotional lyrics with edgy beats. The alluring bridge "Take a break, take me down, take me down there / I wanna stare at the tears, how they watered your years" leads to a blasting bass chorus of "I lied now I'm lying awake / I cried until my body ache", the crystalline vocals turn into an outright cry in describing the insomnia that comes with painful regret.

Mounties – "Tokyo Summer"

While having an actual summer adventure in Tokyo would be ideal, it is also not too bad imagining it while listening to this song. The most noticeable quality that appears is the Asian melody of the chorus, fitting to the description of Mount Fuji against the skyline. The details of a hazy affair flows effortlessly together in rhymes and half-rhymes "We lay together under stars as if we didn't exist / I feel the teasing of the storm clouds on both of our lips / Some of this feels so dangerous and it's hard to resist / Some of this is just so much safer to let go than to miss".

Born Ruffians – "Needle"

Rollicking chords and upbeat drums back the endearingly vulnerable lyrics in "Needle". The song muses on the pains of growing up, but treats it as a liberating process when describing the fleeting nature of belonging. Lead singer Luke Lalonde refers to himself as a "song without an album" and hardly throws a backward glance when he decides "won't be long until I am gone", varying the degrees of optimism and anxiety in his voice to match. "Needle" is a wonderfully written reflection on coming of age, just because there aren't many songs out there that can so effectively compare a person to basic arithmetic or being a watermelon.

Exam Time: When small wins seem so much larger...



LEAH KRISTUFEK
4A CHEMICAL

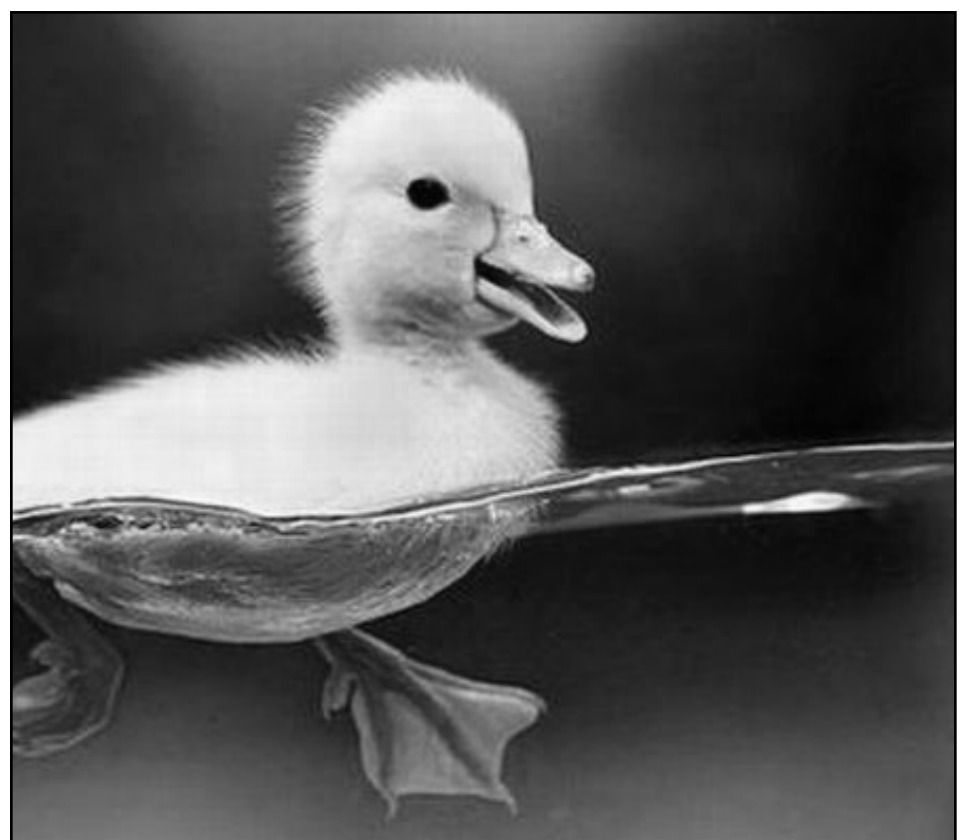
Exams are nearly upon us, and with them comes the final deadlines for homework projects and labs. Time is of the essence, yet there is so little time! I don't know about you, but for me the stress is definitely mounting.

Now is also the time where you start to value the small accomplishments. For example, "I slept 8 hours last night" or "I ate multiple meals today" or "I showered!". When I was a bright eyed and bushy tailed first year I thought that to pull an all-nighter in pursuit of academic greatness was a badge of honour. As I've grown older and wiser, however, it has become a mark of shame

denoting my poor time management skills.

Not having slept just doesn't do you any justice in the long run, and although it is sometimes necessary to push through to say finish a project, you will pay with blurry eyes and a shorter attention span for the next couple of days. Healthy life, healthy brain. That's my new mantra. Thanks to my wonderful 4th year schedule I do have more flexibility than in first year so my sleep schedule has shifted slightly and I get to take advantage of student deals for groceries. However, getting enough sleep and (basically) eating has left me basically functional as we head into this upcoming exam period. A big step up from previous terms! Next goal? Exercising!

Good luck on exams my dear Iron Warrior readers! You can do it!



This little ducky thinks you can do well in finals, and so do I!
Best of luck on your assignments and exams!

"The Cold Never Bothered Me Anyway!" (Said Nobody Ever)



TIFFANY CHANG
1A CHEMICAL

Whenever winter rolls around, I remind myself, "It is perfectly fine to be Canadian and fear the cold."

Truth be told, the most probable reason for my low affinity for the Great Canadian Winter is my high probability of getting sick – multiple times per season.

Bad as my lackluster immune system may be, here are some tips on how to make the most of a long, cold winter season from personal experience. Be you an international student experiencing your first-ever Canadian winter or a long-time Canadian resident, I hope they prove to be helpful to you, too!

Take vitamin supplements, and eat fruit. It never hurts to boost your immune system with an extra dose of vitamin C, even though researchers are still unsure if it provides benefits on its own or works with other micronutrients. It definitely does help, however, with maintaining clear skin, which never hurts – especially when it comes to preventing the development of stress acne that comes with finals.

Get enough sleep! Getting sufficient sleep on a nightly basis is integral to optimizing our immune system. For instance, T-cells are special type of blood cell that terminates infected cells or orchestrates an immune response. Their numbers just so

happen to peak in the bloodstream when we're asleep at night and are at their lowest during the day.

Leave for class/work earlier than you normally do. There's nothing worse than starting off the day with having to rush to class, and in the process, slip on a piece of black ice. Ouch. Spare yourself the pain and walk at a reasonable, safe pace.

Speaking of traveling between classes, **take advantage of Waterloo's tunnels** to stay cozy while still being able to get around campus. There's an app called WATisRain that provides detailed instructions on how to get from point A to point B with minimal – if any – travel outdoors. However, take note that traveling indoors might double your total travel time, so save this tip for freakishly frigid days.

Dress in layers. Suffice to say, I've felt the heaters on full blast, and other times, I've had random chills run down my spine. As good as the idea of dressing in a thick, winter sweater sounds, that might not be the most strategic choice. Instead, try wearing a thin shirt with a hoodie over top. As for pants, I wouldn't recommend wearing jeans, nor would I recommend wearing pants with a fuzzy inner lining.

Invest in a couple of pairs of waterproof, warm boots that have good traction. There is nothing worse than walking to class and thinking, "I can feel the cold radiating out of the ground through my shoes." Personally, I prefer leather boots because they become more comfortable the more often they're worn, they normally

have some sort of fuzzy inner layer for additional warmth, and they can last a solid number of years – if you're willing to maintain them.

On a similar note, **invest in a warm coat.** Personally, I prefer down jackets. They might be on the pricier side, but they're a lot warmer than coats filled with synthetic materials. In addition, many of them go past the thighs, so if you're the type of person whose legs get itchy whenever an icy wind blows, a longer coat would suit you well. Stores like Costco and Winners carry them at reasonable prices.

Gloves/mittens, hats, and scarves are winter essentials here in Waterloo. I haven't been here for long, but I find it dreadfully cold in the mornings. Since the human body loses heat the fastest through extremities, keep your head and hands covered! Scarves double as an effective impromptu mask to protect your cheeks from ice-cold winds that slice through your face like knives.

Always carry lip balm and moisturizer with you. On top of the dryness that comes with Ontarian winters, the heaters propagate it. If you own a Costco membership or know somebody who does, I highly recommend EOS lip balms (which come in packages of four) and Glysomed hand cream (which come in packages of three – two larges and one on-the-go size). If either your hands or lips are extremely dry, apply a thin layer of

Vaseline on either area before sleeping.

Wear sunglasses. The glare due to sunlight reflecting off of snow is deadly for your eyes. Guard them with your life – you'll only have the ones you've got now!

In general, don't be fooled by the presence of sunlight. For the nine years that I've lived in Ontario, I've observed that super sunny days tend to be colder than clear or cloudy days. It turns out that there is a scientific explanation for this. During winter, the Sun lies low on the horizon, so the sun angle is at its lowest out of the entire year. This phenomenon causes thermal energy radiating from the Sun to be spread over a larger surface area. On top of that, thermal energy is more likely to reflect off of the Earth's atmosphere or surface rather than be absorbed by the Earth's surface. Who would have thought?

Most importantly, **learn to enjoy certain aspects of winter!** This will make your first or nth experience with snow all the more enjoyable. Go outside and play in the snow. Try skiing, snowshoeing, ice-skating, or any other winter activity. Have a snowball fight. Build a snowman. If necessary, watch Frozen, and then go build a snowman – no promises that it will come alive, though!

Winter only comes once a year, so don't fret – it will be over before you know it.

In the meantime, stay warm, and keep smiling!

Wake Me Up When August Ends



When asked about my life just a few months ago, I said without hesitation that it is going according to plan. Why wouldn't it be? I am enrolled in university, growing my savings through investments and co-op jobs, and finding great satisfaction in giving back to the campus community whenever possible. Moreover, I have circles of fun and loving friends, along with family members all around the world that I can travel to and stay with. Like most lives, mine has seen its ups and downs, but I was ready to settle for the comfortable path that I have arrived at.

There was just one problem. I had always liked girls, but decided at a very young age to compartmentalize that notion. I grew up conforming to judgmental eyes, afraid to trigger any form of disapproval by being different in the slightest. My attraction to girls remained hibernating in the back of my mind, never interfering with the idealistic plans I had for myself. I dated guy after guy without doubting that I would find the right one someday. I harboured the ordinary dream of a husband, two kids, and a dog.

Fortunately for me, on an unusually cold August evening, I met this girl.

Somewhere in me always lay the discomfort of knowing I wasn't true to myself, but it never had the momentum to escape my subconsciousness until that evening. She brought reality to what had never been more than a concept, and I was terrified. The very thing I had suppressed years ago now bears a voice in my head, and wants more than the life I was ready to settle for. I fought myself for the rest of August, and was evidently unsuccessful. It didn't help that she has the world's most

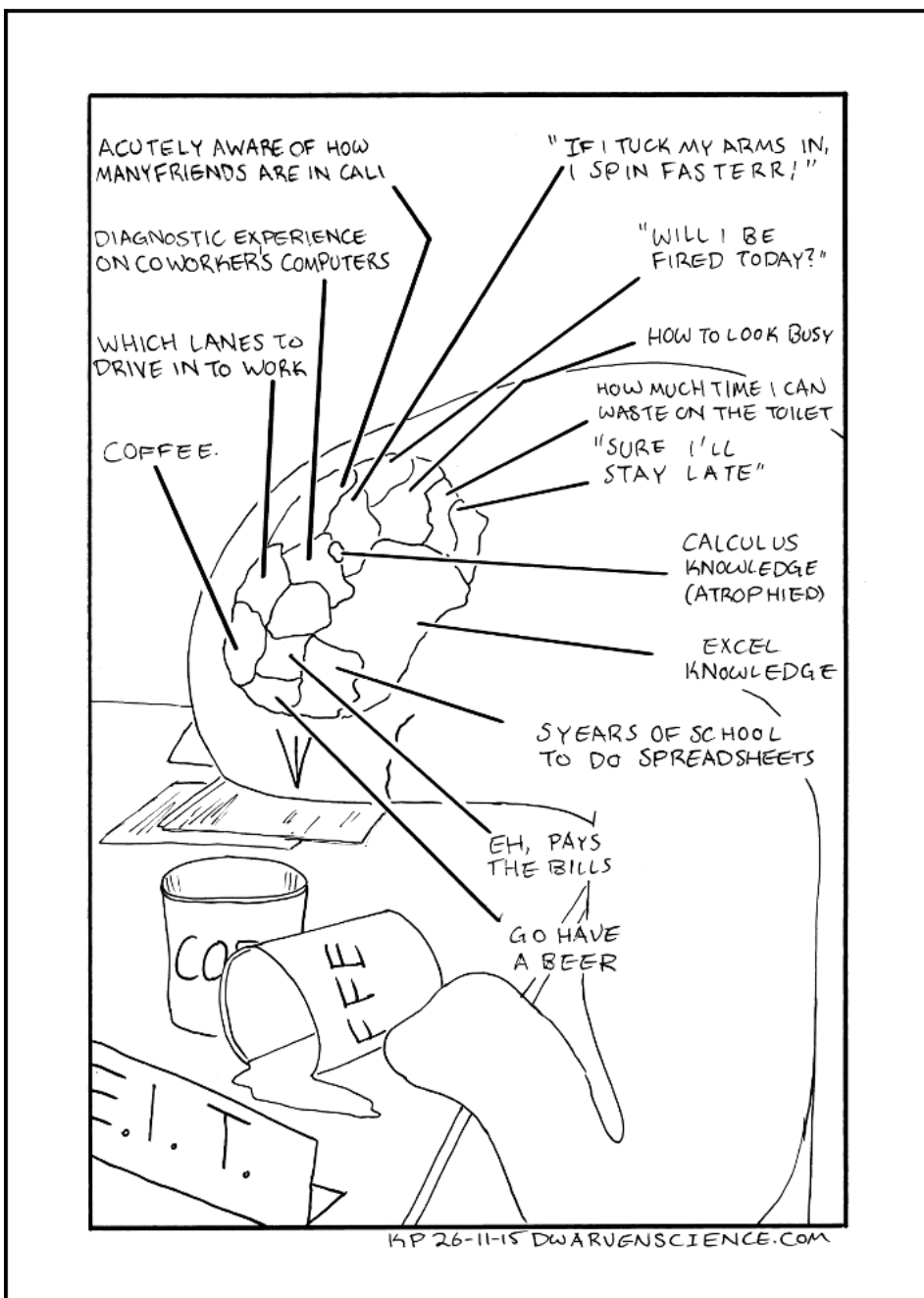
disarming smile.

I woke up. As September crept in, I slowly opened my eyes to an abundance of new perceptions. I accepted that it was time to discard "husband" from the aforementioned dream. I still want two kids and a dog, though, especially the dog. I also have to work on bridging something I had rejected in my youth with the person I have grown up to be. Until then, I am essentially a ten year-old when it comes to anything romantic. On top of that, I now have to try and make sense of girls when I could not even figure out what boys were all about. I will definitely be making a fool of myself at least a few times, but I know extraordinary things aren't found in comfort zones.

On that note, I decided to come forward to a selection of people. Most searched the floor for their jaw as they thanked me for my honesty. Some asked if they could have my dresses, to which I said no, because I am not becoming a boy. Only an exact two severed ties with me, and they were both upfront when doing it. I thanked them for not resorting to hypocrisy, and told them that I will keep an open mind if they ever change theirs. I feel that coming out isn't about making everyone accept you, and it certainly isn't about coercing those who don't. May it be 2015; I would never want anyone to betray his or her beliefs just to remain in an uncomfortable friendship with me.

Throughout my life, a series of extraordinary people have taught me to think a little deeper, act a little wiser, and see a little farther; and on that cold August evening, I learned that I want to live a little better. Instead of following a comfortable path to what my life was supposed to look like, I am now going to celebrate it for what it is.

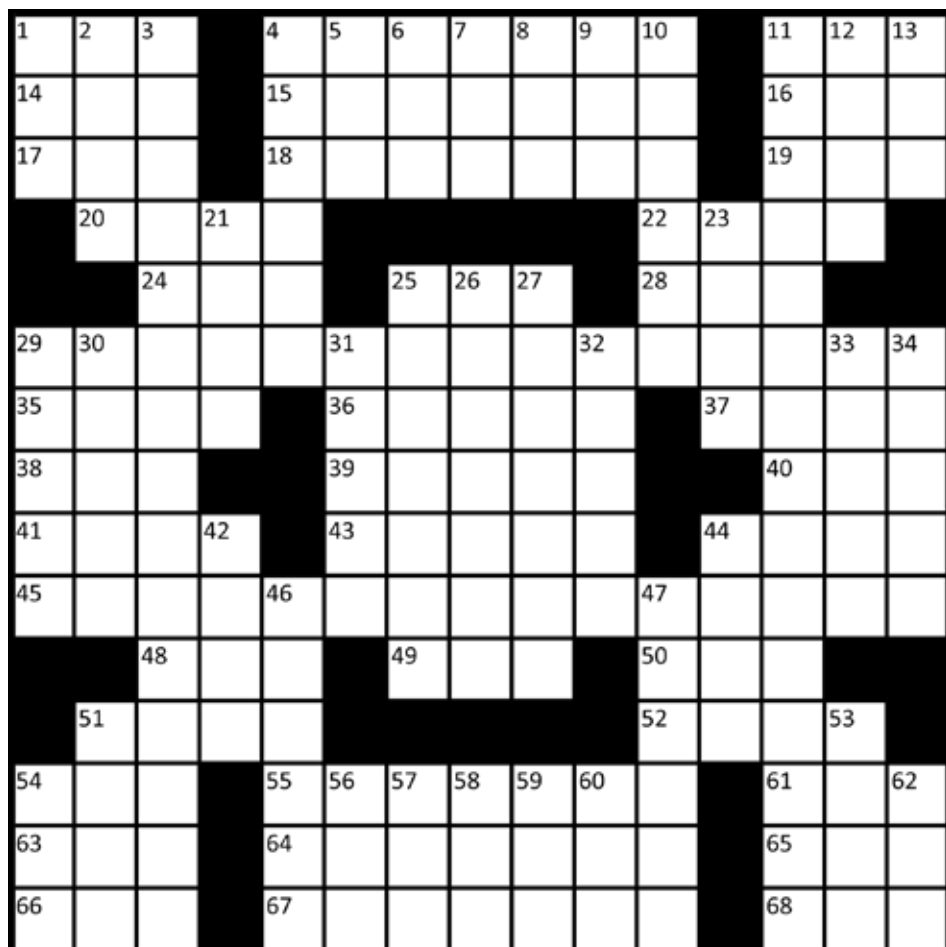
I will always be grateful for having met her. I hope that someday, I can make a difference in someone the way she made a difference in me.



The Iron Crossword

Finals-Season Binge Ideas

CAMERON SOLTYS
2T MECHANICAL



ACROSS

- 1: Performer of espionage
- 4: Commemoration on a tombstone
- 11: Acid with molar mass of 36.5 g/mol
- 14: 2016 Olympic City
- 15: Mosquito-borne parasitic disease
- 16: Grain often found in granola bars
- 17: Unit of work used in heating and cooling appliances
- 18: Terry ____, Microsoft Executive VP of the OS division
- 19: Hawaiian Stringed instrument (abbr.)
- 20: “____ go on, we remember” Vitamin C Lyric (2 wd)
- 22: External body part of the olfactory system
- 24: Worn by a cater, perhaps
- 25: File type for storing and transferring citation information
- 28: Humans and gorillas, for instance
- 29: Football team of Santa Clara, California (2 wd)
- 35: Prefix relating to farming

DOWN

- 36: “The kings ____” Tolkien theme (2 wd)
- 37: Instead
- 38: Kit-____ chocolate bars
- 39: French for a bridge abutment
- 40: Computer system where the operating system is run as a virtual machine on a server (abbr)
- 41: Greek philosopher Zeno of ____
- 43: American federal agency that builds dams, canals, and public works (abbr)
- 44: Royal Newfoundland ____, aka the Blue Puttees (abbr)
- 45: Company that advertises their products through “Counting Sheep”
- 48: Tit-for-____
- 49: French for “the” (pl)
- 50: A company that arranges the shipping of ocean freight but owns no ships itself (abbr)
- 51: Japanese company of the first pencil-shaped ballpoint pen
- 52: Measurement of sunburn protection (pl)

- 54: Mesozoic or Paleozoic, for instance
- 55: Produced by yeast in anaerobic environments
- 61: Gaming console of Mario Bros
- 63: The Knights of ____, group in Star Wars: The Force Awakens
- 64: “Move along, nothing to ____.” (2 wd)
- 65: Australian cousin of the ostrich
- 66: ____ Constrictor
- 67: ____ Krieg!, a board game that lets one fight through the entire Second World War
- 68: Be victorious

DOWN

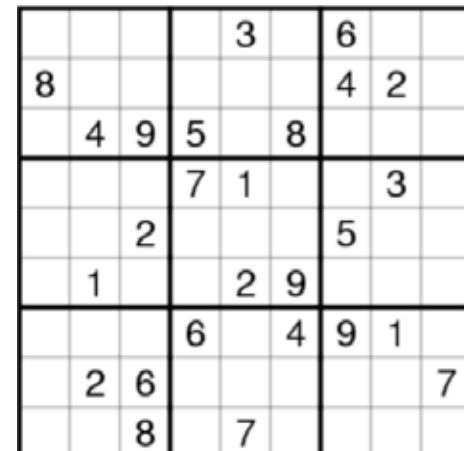
- 1: Initials of the eighth Prime Minister of Canada
- 2: Leavened flatbread of Mediterranean and Middle Eastern cuisines
- 3: Are ____ Fifth Grader? TV Show
- 4: ____ Brown DeLorean time-traveller
- 5: Give compensation for work
- 6: ____-de-France, region of France including Paris
- 7: Sticky substance used for waterproofing wooden boats
- 8: ISO currency code for the Argentine Peso
- 9: Australian Ombudsman to resolve internet and telephone complaints (abbr)
- 10: ____ Montana kids TV show
- 11: The Real ____ York City TV Show
- 12: Celebratory dessert
- 13: High-speed mobile network service
- 21: The time zone of central Indonesia
- 23: Birthstone of October Children
- 25: Rejection
- 26: Separate from other elements
- 27: Choses
- 29: “I hope you’re right, for all our ____.”
- 30: National charity promoting LGBT rights in Canada
- 31: A person who temporarily fulfils another’s role
- 32: It’s a moose, it’s a caribou, it’s ____ (2 wd)
- 33: To move a ship by reeling in an anchor’s line
- 34: TV show about a Harvard fraud working in New York
- 42: Large vehicle used on Hoth in Star Wars
- 44: “Please respond to this invitation”
- 46: Used to honour a guest or idea at a feast (2 wd)

Sudoku

#2015-15

MEAGAN CARDNO
3B NANOTECHNOLOGY

O.W.L.s



N.E.W.T.s

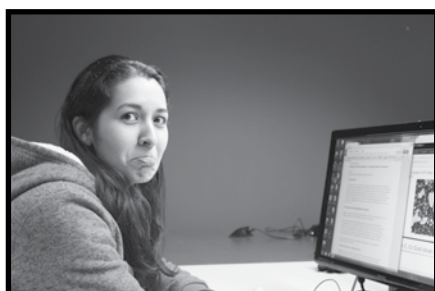


Solutions for previous crosswords can be found on *The Iron Warrior’s* website at iwarrior.uwaterloo.ca/distractions.

- 47: Eve ____, playwright of “The Vagina Monologues”
- 51: More-famous copy of the Hydrox cookie
- 53: A trailer without a front axis
- 54: One-way road running East in Uptown
- 56: Constellation that looks like a Lion
- 57: Time zone of French and Germany (abbr)
- 58: Body regulating junior and senior hockey in Ontario (abbr)
- 59: A Norse alternative afterlife to Valhalla
- 60: Concentrated metal deposit
- 62: Brightest object in Earth’s sky

THE IRON INQUISITION
Leah Kristufek, 4A Chemical

“When did you hit rock bottom?”



“This is it.”
Kiran Shoib, 4A Chemical



“FEA course...our board looked like a 4th grade project.”
Andy & Aravinth, 2B Mechatronics



“Barby’s course...dat 42% average...”
Andy Su & Eric Tran, 2B Mechatronics



“Started from the bottom, now we... where am I?”
Amit Bains, 4A Mechatronics



“When they aren’t with me/ Every weekend”
Gurkaran Cheema & Sami Khan, 4A Arts & Business, 4A Mechatronics



“Last week when I had four presentations”
Sope Cole, 4A Chemical